BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

ORIGINAL APPLICATION No. 257 of 2020 (SZ)

IN THE MATTER OF:

Tribunal on its own motion Suo Motu based on the News item in the New Indian Newspaper, dt.27.11.2020, "A Cooum in the making in Karur?". Callousness of officials

……. Applicant

Versus

The Chief Secretary to Govt. of Tamilnadu and Ors

…….. Respondent(s)

INDEX

H D Varalaxmi
Regional Director
Central Pollution Control Board
Regional Directorate
Chennai-600058

Place: Chennai

Date:18.11.2021

JOINT COMMITTEE REPORT IN THE MATTER OF OA NO.257/2020 (SZ) AS PER HON'BLE NGT OTDERS DATED 13.09.2021

Submitted To

HON'BLE NATIONAL GREEN TRIBUNAL

SOUTHERN BENCH, CHENNAI

November, 2021

I Preamble

Hon'ble NGT registered Suo Motu case based on the newspaper report published in the New Indian Express, dated 27.11.2020 under the caption "A Cooum in the making in Karur?". It is alleged in the newspaper report that effluent from dyeing units and industries in Karur area are polluting Amaravathi River to such an extent that it could soon become the second Cooum in the State. According to the newspaper report, the Amaravathi River is one of the vital sources of water in Karur. The river is being polluted heavily as dyeing units, textile industries and other industries are releasing their trade effluents without any treatment directly into the river. Apart from this, the Municipality is also contributing their part by letting sewage into the river without proper treatment. In order to ascertain the genuineness of the allegations made in the paper report and action taken by the local body to resolve the issues, Hon'ble NGT vide order dated December 15, 2020 appointed a joint committee comprising of 1) the District Collector, Karur District, or a Senior Officer not below the rank of Assistant Collector or Sub Divisional Magistrate deputed by the District Collector, 2) a Senior Scientist from Central Pollution Control Board (CPCB), Regional Office, Chennai, (3) a Senior Officer from the Tamil Nadu State Pollution Control Board as designated by its Chairman, 4) a Senior Officer not below the rank of Superintending Engineer of Public Works Department and Water Resources Organisation (WRO) of that area, (5) the Municipal Commissioner, Karur Municipality to inspect the area in question and submit a factual as well as action taken report.

In compliance to the Hon'ble NGT order dated 15.12.2020, the committee submitted report during May, 2021. The committee report was considered by Hon'ble NGT in the hearing dated 25.05.2021 and committee was directed to submit further report on digging of illegal channels. In compliance to Hon'ble NGT order dated 25.05.2021, the committee submitted report. Hon'ble NGT considered the committee report in hearing dated September 13, 2021 and directed the committee to suggest measures to avoid stagnation of sewage near the river bed and to give suggestions to prevent pollution of river Amaravathi. The committee is directed to submit the report by October 22, 2021.

II Hon'ble NGT orders

In the matter of OA 257/2020 Hon'ble NGT has passed following orders

Hon'ble NGT order dated 15.12.2020

The committee is directed to inspect the industries in that area and ascertain as to whether they are having proper effluent treatment discharge system and is there any illegal or un-authorised untreated discharge being made by any of the industries in that district to the Amaravathi river so as to cause the pollution of the river water, to ascertain as to whether there is any illegal discharge of untreated sewage from the municipal area to the river, to ascertain the existence and functioning of any Effluent Treatment Plant (ETP), Sewage Treatment Plant (STP) and requirement of a Common Effluent Treatment Plant (CETPs) in that area and its operation level as to whether it meets all the norms by testing the inlets and outlets of the effluents being treated by these units and if there is any violation found, what is the action proposed to be taken against such units. The committee is also directed to ascertain as to whether Karur Municipality is complying with the provisions of the Solid Waste Management Rules, 2016 in its letter and spirit in disposing the waste generated including the sewage and whether there is any illegal discharge of such things into the river which causes pollution and whether the direction issued by the Principal Bench of National Green Tribunal in O.A. No. 606 of 2018 have been complied with. The committee is also directed to test the water quality of the river in respect of all criteria's including the presence of heavy metals, Total Coliform (TCL) and Fecal Coliform (FCL) apart from ascertaining the quality of water in the river and if there is any contamination found, ascertain the source and suggest the necessary steps to be taken for removing the contamination and make the water to the potable level. The committee is also directed to suggest the proposed actions to be taken against the erring units and on that basis; the regulating authorities are directed to take steps against such units so as to prevent such illegal activities being continued in that area.

Hon'ble NGT order dated 25.05.2021

The committee is directed to submit a detailed report regarding the specific allegations made of making illegal channels from the nearby industries for discharging their sewage or other industrial effluents illegally at the place pointed out in the newspaper report. They are also directed to ascertain the location of the area which is covered by the photograph mentioned in the newspaper report and ascertain as to whether allegations made by them in this regard are correct

or not and if it is correct, what is the nature of action taken by the authority to prevent such illegal activities.

Hon'ble NGT order dated 13.09.2021

The committee is directed to ascertain what is the recommendation that they intend to suggest to avoid stagnation of sewage water near the river bed which appears to be one of the reason for the water quality being affected as noted by the Committee. The Committee is directed to give their suggestions as to how this can be avoided and how this can be resolved by diverting the same to some other place from where it can be taken to the STPs available for treatment. Copy of the order is enclosed as Annexure-I.

To comply with Hon'ble NGT orders dated 13.09.2021, the committee was re-composed with following members:

1. Thiru M. Leyakath, District Revenue Officer, Karur
2. Shri.P. Muthusamy, Superintending Engineer, PWD, WRD, Palani
3. Shri. I. Nakkiran Municipal Engineer, Karur Municipal Council
4. Shri. K. Ravichandran, District Environmental Engineer, Karur District
5. Smt. Mahima T, Scientist-D and Shri. S. Karthikeyan, Scientist C, Central Pollution Control Board, Regional Directorate, Chennai

The committee re-inspected the entire area during 30.09.2021 to 01.10.2021 and carried out sampling during inspection and also on 05.10.2021. The committee interacted with media persons and with complainant.

III Scope of the committee

1. To inspect industries and to find out whether there is any illegal discharges from the industries into River Amaravathi
2. To ascertain as to whether there is any illegal discharge of untreated sewage from the municipal area to the river Amaravathi
3. To ascertain the existence and functioning of any Effluent Treatment Plant (ETP), Sewage Treatment Plant (STP) and requirement of a Common Effluent Treatment Plant (CETPs) in that area and its operation level as to whether it meets all the norms by testing

the inlets and outlets of the effluents being treated by these units and if there is any violation found, what is the action proposed to be taken against such units.

4. To ascertain as to whether Karur Municipality is complying with the provisions of the Solid Waste Management Rules, 2016 in its letter and spirit in disposing the waste generated including the sewage and whether there is any illegal discharge of such things into the river which causes pollution and whether the direction issued by the Principal Bench of National Green Tribunal in O.A. No. 606 of 2018 have been complied with
5. To test the water quality of the river in respect of all criteria's including the presence of heavy metals, Total Coliform (TCL) and Fecal Coliform (FCL) apart from ascertaining the quality of water in the river and if there is any contamination found, ascertain the source and suggest the necessary steps to be taken for removing the contamination and make the water to the potable level.
6. To suggest the proposed actions to be taken against the erring units and on that basis
7. To submit a detailed report regarding the specific allegations made of making illegal channels from the nearby industries for discharging their sewage or other industrial effluents illegally
8. To ascertain what is the recommendation that they intend to suggest to avoid stagnation of sewage water near the river bed which appears to be one of the reason for the water quality being affected
9. to give their suggestions as to how this can be avoided and how this can be resolved by diverting the same to some other place from where it can be taken to the STPs available for treatment

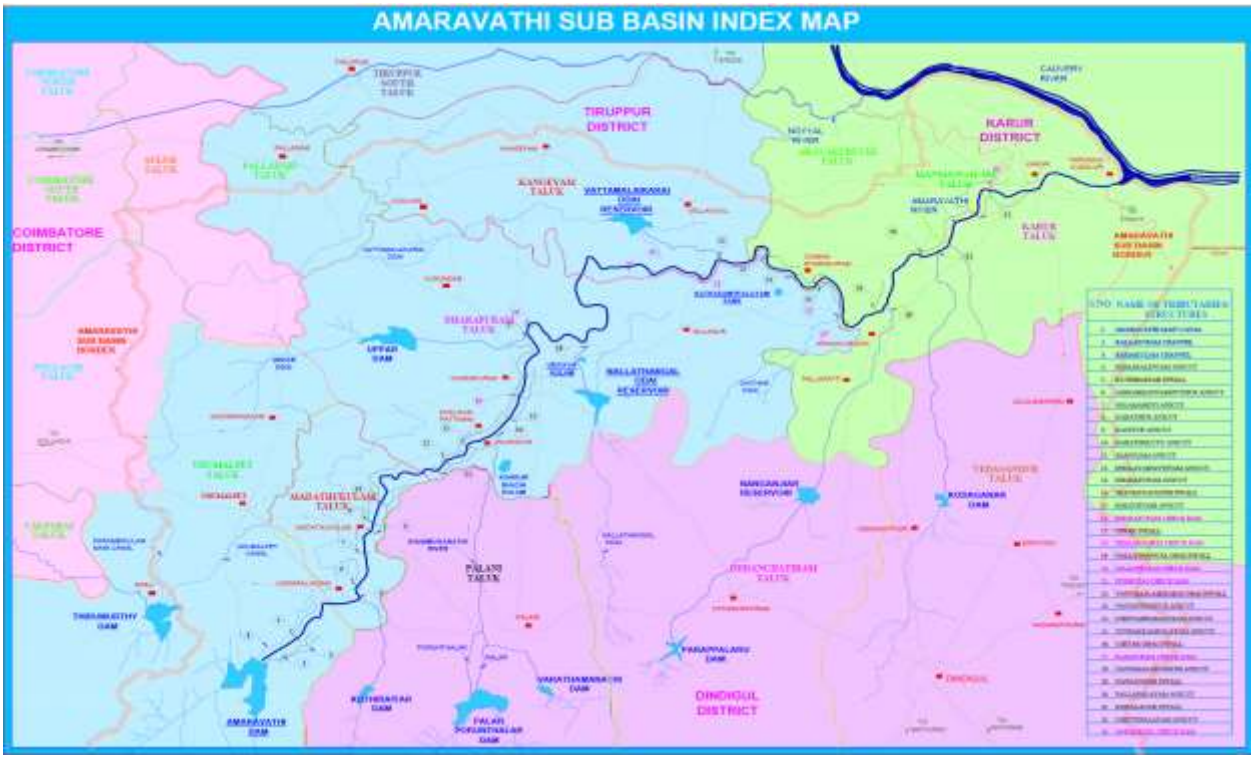
IV About River Amaravathi

River Amaravathi is the longest tributary of River Cauvery. It begins at the Kerala/Tamil Nadu border at the bottom of Manjampatti Valley between the Anaimalai Hills and the Palani Hills. It flows towards North-East till the confluence with River Cauvery on its right bank. Total course of river Amaravathi is around 227 KM and receives a number of small streams. The Amaravathi basin lies between latitudes $10^0 06^l 51^{ll}$ N and $11^0 02^l 10^{ll}$N and longitudes 77^0 03^l 24^{ll} E and $78^0 13^l$ 06^{ll} E. It has a catchment area of 839SqKm constituting of mainly of two districts

Tirupur and Karur in Tamilnadu. River Amaravathi passes through Karur and joins River Cauvery at Thirumukudalur.

Geo-cordinates of River Amaravathi at various locations

River Amaravathi Chettypalyam check dam	10°55'18.1"N 78°01'21.6"E
River Amaravathi at Andankovil check dam	10°57'06.7"N 78°02'26.4"E
Amaravathi river at Madurai road bridge	10°56'33.14"N 78° 3'26.08"E
Erettai vailaval canal starting point	10°57'11.7"N 78°04'8.7"E
Vanjaleshwara temple zero point of digging channel	10°57'5.88"N 78° 4'20.56"E
Vanjaleshwara temple	10°57'48.4"N 78°04'39.2"E
Point where drain joins Amaravathi river	10°57'11.51"N 78° 4'35.66"E
River Amaravathi at Senipiratti D/s of Karur municipality	10°58'14.60"N 78° 6'46.10"E



32→ Chettipalayam anicut→ Located at a distance of around 5KM u/s of Karur

33→ Andankoil checkdam→ located at the entrance of Karur

V.a. Inspection of dyeing units and check for illegal discharges from Industries

There are 68 dyeing/ printing/ bleaching/ textile industries in Karur taluk out of which two industries are not in operation. Out of 66 industries that are in operation, 33 industries are located within one KM from the bank of river Amaravathi. The committee inspected all 33 industries to verify for any illegal discharges. It was observed during inspection that all 33 industries have installed zero liquid discharge system. The type of industries, capacities and facilities available in the units are briefed in table-2(complete details of all 33 industries is enclosed as Annexure-II). Out of 33 industries, two industries namely M/s Jose Colors and M/s Asi Colours Pvt Ltd are located adjacent to the bank of river Amaravathi.

68 units→ bleaching/ dyeing & printing industries existing in Karur municipality

2 units→ closed and not in operation

66 industries→ dyeing/ textile industries in operation in Karur municipality

33 industries → located within 1KM from the river. Red category industries. All 33 industries have installed effluent treatment plant+ RO unit and either MEE+ATFD or Solar Evaporation Pan(SEP)/ dryers

Out of 33 industries located within 1KM from the bank of River Amaravathi, 2no.s of industries are large, 2no.s of industries are medium and remaining 29 are small category industries as per the Consent order issued by TNPCB.

15 small industries→ out of 29 small category industries, 15 industries are still operating solar evaporation pan/ pan dryers to achieve ZLD. In these industries, RO reject is sent to SEP.

Out of 33 industries→ 18 industries have installed MEE+ATFD for management of RO reject.

In all 33 industries, the source of water is ground water (borewells/ dug wells/ open wells). The units have installed flowmeters with totalizer at raw water inlet and at inlet & outlet of ETP. In Large and Medium size units the flow meters are connected with computer recording system and the same is connected with Water Quality Watch Centre at TNPCB Head Office, Chennai and 24 x 7 monitoring is ensured.

All 33 units have installed ZLD system and effluent generated is treated and recycled in the process / evaporated and no effluent is discharged outside the unit premises. Effluent generation from each unit is varying and cannot be compared. For a same capacity of dyeing plant, effluent generation varies from 0.03KL/kg to 0.075 KL/kg. Quantity of effluent generation depends on type of machine (cheese machine or Jiggar machine or manual), material (yarn/ fabric), no. of stages involved & no. of washings.

1Kg of cheese dyeing→ 80 liters of water consumption→ 75 liters of wastewater generation

1Kg of jigger dyeing or manual dyeing → 30 liters of water consumption→ 27-28 liters of wastewater generation.

As per the directions of TNPCB, majority of units have installed ZLD systems during 2012 and few units by 2014. In 18 units which have installed MEE+ ATFD, the units are permitted to draw fresh water only for top-up.

***Description of ZLD system*:** The effluent generated from process area, floor washings, dyeing effluent, boiler blow downs, cooling tower blowdowns is taken into effluent treatment plant comprising of aeration and clarification (two or three stages). The clarified effluent is treated in

ultra-filtration followed by three stage- RO. All 33 units located within 1KM from river bank have installed RO system. Post RO treatment, RO permeate is re-used in the process and RO reject is either treated in MEE+ ATFD or evaporated in SEP.

MEE & ATFD: RO reject is taken to MEE (multiple effect evaporator) followed by ATFD (agitated thin film drier). ATFD salts are stored in hazardous waste shed.

ZLD system with solar evaporation pans: Effluent is treated in ETP followed by RO and then evaporated in solar pans. Small units generating less than 100 KLD of effluent are operating SEP. During rainy season, overflow of effluent from SEP may not be ruled out.

Sewage management in industries

Sewage: out of 33 units located within 1Km from river bank, two units have installed sewage treatment plants and treated sewage is used for gardening. Remaining 31 no.s of units are discharging sewage in septic tank followed by soak pit. Since the units are located close to river, disposal of sewage into septic tank +soak pit may lead to sewage contamination in water body. Hence the committee submits to Hon'ble NGT to direct TNPCB to direct the units to dispose the septic tank overflows to nearest UGD point/ manhole so that the sewage generated from the units can be treated in STP. In addition, the units having more than 50 workers may install STP's with disinfection system and re-use treated sewage. The committee collected two open well samples from the industry premises which are located 25m from the bank of river Amaravathi. The samples were analyzed in EPA approved & NABL accredited M/s Glens Laboratory, Chennai. The analysis results are as follows:

Table 1: Analysis results of open well samples collected from industry premises

Description →	**BIS drinking water standards (acceptable limit)**	Open Well Water sample from Jose colours 25m from river bank	Open Well Water sample from M/s MRC mills 25m from river bank
pH	6.5-8.5	7.84	8.27
Conductivity us/cm		3080	750
Turbidity NTU	**1**	**4**	**2**
Total Dissolved Solids	500	1817	420
BOD		12	BDL(DL:2.0)
TKN		41	BDL(DL:1.0)
Total Chromium as Cr	0.05	0.004	BLQ[LOQ:0.002]
Manganese as Mn	0.1	0.007	0.069

Nickel as Ni	0.02	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Copper as Cu	0.05	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Zinc as Zn	5	0.009	BLQ[LOQ:0.002]
Cadmium as Cd	0.003	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Lead as Pb	0.01	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Sulphate as SO4	200	80	13
Chloride as Cl-	250	**470**	92
Total hardness	200	**672**	78
Calcium Hardness as CaCO3	75	**357**	116
Total Phosphorous as P		0.053	0.051
Sodium as Na		163	66.7
Potassium as K		11	5
Total coliform MPN/100 ml	nil	**110**	**280**
Fecal coliform MPN/100 ml	nil	**50**	**170**

Open well samples does not comply with drinking water standards. From the above results it is observed that Total Coliform and Fecal Coliform are present in open wells of 30ft depth which indicates that there may be sewage contamination from soak pits. The open wells located in the industry premises are not meeting drinking water standards.

***Storm water disposal from industries*:** Currently, out of 33 units, 5 no.s of units have provided rain water harvesting pits. Remaining 28 units are disposing rain water through surface drains which is joining river Amaravathi. The committee submits to Hon'ble NGT to direct TNPCB to direct all the units to provide rainwater harvesting pits. The first wash (first rain shower for 30 minutes) from storm water drains shall be taken to ETP and after that rain water shall be sent for ground water recharge.

Table 2: Details of 33 textile/ dyeing/ printing industries located within 1Km from river Amaravathi

Name and address of the unit	**Geo-coordinates**	**distance from river bed**	**capacity t/ month**	**effluent generation in KLD**	**period of installation of ZLD system and its capacity**	**Sewage generation in KLD & disposal**	**mode of disposal of storm water**	**Remarks**
M/s. Jose Colours, T.S.No.364/4, Karur Town, Pasupathy Layout, No.6, Chinnandankoil Road, Karur District – 639001.	10˚57'16.38 "N 78˚04'36.21 "E	25m	44.85	100	December, 2012 combined capacity of ETP + ZLD 100 KLD	1 KLD septic tank + soak pit	onland surface	
M/s. Asi Colours, T.S.No.363, 364, Karur Town, 45, Gandhi Nagar, Pasupathy Layout, Chinnandankoil Road 1 st Cross, Karur – 639001.	10˚57'13.35 "N 78˚04'31.06 "E	35m	87.37	100	August, 2012 combined capacity of ETP + ZLD 100 KLD	1 KLD septic tank + soak pit	onland surface	
M/s.M.R.C.Mills Private Limited, S.F.No.2419/1, 2459/1, 2420/1, 2415/2 part & 2419/2 Part Andankoil East Village, Manmangalam Taluk, 9/1, Chinnandankoil Road, Near Water Pumping Station, Karur- 639001.	10˚57'00.17 "N 78˚04'00.70 "E	100m	314.7	100	January, 2012 combined capacity of ETP + ZLD 100 KLD	septic tank +soak pit	onland surface water	Unit shall install STP
M/s. Sri Manickam Bleaching, T.S.No.27,28, 29, Balambalpuram Village, Karur Taluk, Karur District - 639003.	10˚58'04.41 "N 78˚05'35.18 "E	100m	13	25	September, 2012 combined capacity of ETP + ZLD 25 KLD	septic tank +soak pit	onland surface water	
M/s.Aarthy Bleaching, S.F.No.547/1,2, Thirumanilaiyur Village,	10˚56'34.11 "N	180m	7.8	15	December, 2012, elevated solar evaporation pan	septic tank +soak	onland surface water	the unit shall dismantle

Maduraiveeran Koil Street, T.Sellandipalayam, Karur Taluk, Karur District - 639003.	78˚04'03.70 "E					pit		solar evaporation pan and install MEE +ATFD
M/s. Malar Dyeing Works, S.F.No.1724/4, 1724/3(Part), 1723/1, 1734/2, Andankoil(East) Village, Amaravathi Nagar, Manmangalam Taluk, Karur District – 639002.	10˚56'57.55 "N 78˚03'11.72 "E	200m	51.35	250	August, 2012 combined capacity of ETP + ZLD 250 KLD	septic tank +soak pit	onland surface water	effluent generation consumption is very high, the unit shall take measures to reuce effluent generation
M/s. Thirumagal Dyeing Works, S.F.No.1724/1,2, 1724/3(Part), 1725, Andankoil East Village, Amaravathi Nagar, Manmangalam Taluk, Karur District– 639002.	10˚56'56.55 "N 78˚03'09.64 "E	200m	125.06	300	January, 2013 combined capacity of ETP + ZLD 300 KLD	septic tank +soak pit	onland surface water	
M/s.Nirma Bleaching, S.F.No.546, Thirumanilaiyur Village, Maduraiveeran Koil Street, T.Sellandipalayam,	10˚56'33.08 "N 78˚04'03.76 "E	200m	7.8	15	December, 2021, solar evaporation pan	septic tank +soak pit	onland surface water	the unit shall dismantle solar evaporati

Karur Taluk, Karur District-639003.								on pan and install MEE +ATFD
M/s. Atlas Processing Mills SF.No:1288,1292,1293,2453,1320, 1321,1326-1334 No:1/168, Sivasakthi Nagar, PeriyandanKovil West Village,Karur-639002.	10˚56'33.08 "N 78˚04'03.76 "E	250m	540	580	July, 2014 combined capacity of ETP + ZLD580 KLD	septic tank +soak pit	rain water harvesti ng pit	The unit shall establish bore well and dug well within the unit premises. STP shall be establishe d with in three months
M/s.Albian Bleaching, S.F.No.1590,1599,1602,1605Thant honi Village, Kolanthanur, Pasupathipalayam Post, Karur Taluk, Karur District.	10˚57'16.31 "N 78˚05'39.67 "E	350m	10	10	November, 2012, SEP	septic tank +soak pit	onland surface	
M/s Sree Attick Dyers S.F.No 1745/ A1A, 1745/ B, 1746/A1, 1749, Andankoil (east) village, Amaravathi nagar, Manmangalam taluk, Karur district	10˚57'03.45 "N 78˚03'07.31 "E	382m	77.35	250	August, 2012 combined capacity of ETP + ZLD250 KLD	septic tank +soak pit	onland surface	
M/s.S.Ponnusamy Bleaching,	10˚56'37.68	470m	5.2	10	August, 2012,	septic	onland	

S.F.No.127/16, Thoranakkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.	”N 78˚04’26.60 ”E				SEP	tank +soak pit	surface	
M/s. Atlantic Fabrics, S.F.No.1656/2, 1653, 1654, 1655, 1637, Andankoil East Village, Amaravathi Nagar, Andankoil Post, Karur District.	10˚57’09.01 ”N 78˚02’59.82 ”E	486m	208	500	April, 2012 combined capacity of ETP + ZLD 500 KLD	septic tank +soak pit		
M/s Asian Fabricx Pvt Ltd- printing and bleaching division	10˚56’24”N 78˚02’42”E	500m	500	500	2014-15	STP-10 KL. STP treated water reused for gardening	ground water recharge	
M/s Asian Fabricx Pvt Ltd- dyeing unit	10˚56’52.920”N 78˚02’43.86 ”E	1098 m	500	350	2012-13			
M/s.Sri Arul Colours, S.F.No.611/A, 611/B, Thirumanilaiyur Village, Salaipudur, Sukkaliyur Post, Karur Taluk, Karur District.	10˚56’22.35 ”N 78˚03’57.63 ”E	509m	15	20	November, 2013	septic +soak pit	onland surface	
M/s. Preethi Dyeing, S.F.No.1839,1842/1, Andankoil East Village, Amaravathi Nagar, Manmangalam Taluk, Karur District.	10˚57’07.44 ”N 78˚03’17.43 ”E	535m	9	25	August, 2012	septic +soak pit	onland surface	
M/s. Aarthi A1 Home Trends Private Limited (Formerly Amutha Dyeing),	10˚56’11.59 ”N 78˚03’48.88	550m	151.06	300	July, 2012. MEE+ pan dryers	septic +soak pit	onland surface	unit shall install ATFD

S.F.No.391, 392, 393 & 394, Thoranakkalpatti Village, Karur Taluk, Karur District.	”E							
M/s.S.M.Dyeing Works, S.F.No. 439, 440, 441/1, 442/2A, 443, 445/2B, 455/2B, 456/2, 480/2C4, Thirumanilayur Village, River Road, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56’45.33 ”N 78˚04’19.94 ”E	595m	231	400	November, 2012, ETP+MEE+ATFD	septic +soak pit	rainwater harvesting	
M/s. Asiajothi Fabrics, S.F.No.2260, Andankoil East Village, Vangiliappa Nagar, Chinnandankoil Road, Karur - 639001.	10˚57’13.30 ”N 78˚03’58.84 ”E	600m	5	2.5	July, 2012 SEP	septic +soak pit	rainwater harvesting	
M/s. Sri Subam Dyers, S.F.No.1276-1286,1293,2453, Andankoil West Village, Periyandankoil Road, Manmangalam Taluk, Karur District.	10˚57’23.80 ”N 78˚02’22.40 ”E	600m	6	3.5	August, 2012 SEP	septic +soak pit	onland surface	
M/s. Arvind A Traders, S.F.No.1979, 1987/2, 2276/2,1977,1980 & 2275/2, Andankoil East village,Manmangalam Taluk, 9/81, Chinnandankoil Road, Karur Distrct.	10˚57’04.25 ”N 78˚03’47.91 ”E	650m	93.34	240	December, 2011. combined ETP+ MEE+ATFD	septic +soak pit	onland surface	
M/s.S.P.G. Bleaching, S.F.No.114/4,6, 122/4, 121/29 etc, Thoranakkalpatti Village, T.Sellandipalayam,	10˚56’35.23 ”N 78˚04’35.49 ”E	650m	20.8	40	August, 2012, SEP	septic +soak pit	onland surface	

Karur Taluk, Karur District.								
M/s.Ashok Bleaching, S.F.No.114/7 etc., Thoranakkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56’33.02 ”N 78˚04’36.57 ”E	650m	5.2	10	December, 2012, SEP	septic +soak pit	onland surface	
M/s. B.S.Dyeing & BLEACHING, S.F.No.116/3, Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56’28.71 ”N 78˚04’24.32 ”E	790m	41.25	35	September 2012, SEP	septic +soak pit	onland surface	
M/s Sun Bleaching, S.F.No.110/2, etc., Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56’24.15 ”N 78˚04’24.59 ”E	810m	5.2	10	November, 2012, SEP	septic +soak pit	onland surface	
M/s. Sri Bhagavathi Colours, S.F.No.90/1, Karuppampalayam Village, Manmangalam Taluk, Karur District..	10˚56’15.72 ”N 78˚02’38.31 ”E	830m	160.225	200	July, 2013, ETP+RO+MEE+ ATFD	septic +soak pit	onland surface	
M/s. Subramani Bleaching, S.F.No.114, Thorankkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56’29.67 ”N 78˚04’35.03 ”E	840m	15	12	December, 2014, SEP	septic +soak pit	onland surface	
M/s.V.Ramasamy Bleaching, S.F.No.110/2, etc., Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56’29.53 ”N 78˚04’36.37 ”E	880m	5.2	10	November, 2012, SEP	septic +soak pit	onland surface	

M/s. Sindhu Bleaching, S.F.No.148/1A, Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur District.	10˚56'19.69 "N 78˚04'21.86 "E	890m	10	10	August, 2012, MEE+ATFD	septic +soak pit	onland surface	The unit shall explan as to why such high capacity ETP is installed
M/s. Moorthy Bleaching, S.F.No.114, Thorankkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.	10˚56'28.55 "N 78˚04'35.30 "E	900m	15	12	December, 2014, SEP	septic +soak pit	onland surface	
M/s. Sri Mariamman Exports, S.F.No.147/B, Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur District.	10˚56'23.40 "N 78˚04'18.55 "E	900m	8.75	25	November, 2013, SEP	septic +soak pit	onland surface	
M/s. Amutham Bleaching, S.F No.2/A1-B, 1/A1, Thoranakalpatti Village, Bharathi Nagar, Rayanoor, Karur Taluk, Karur District– 639003.	10˚56'34.80 "N 78˚05'01.96 "E	950m	276.25	300	June, 2012 MEE+ATFD	septic +soak pit	rain water harvesti ng pit	

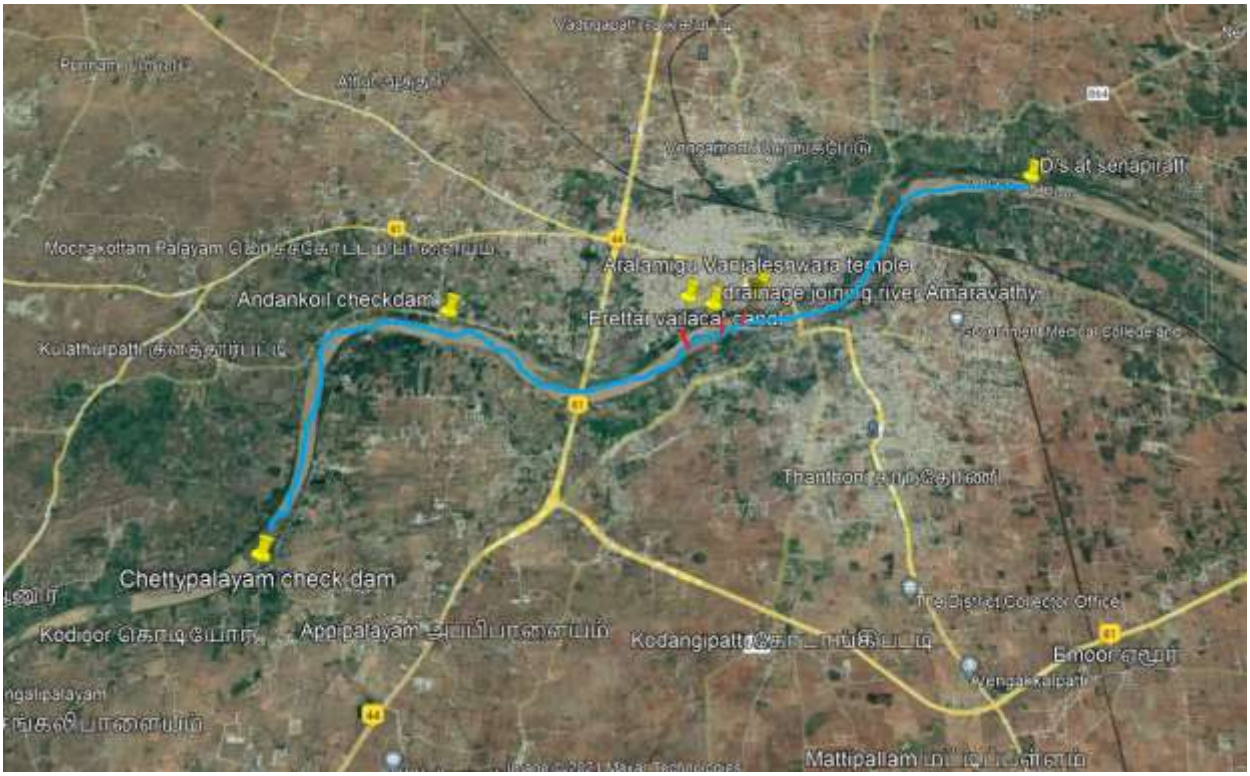
V.b Status of Sewage Management by Karur Municipality

As per 2011 census, the population of Karur municipality is 241458 and it is reported that the water supplied is 28.80 MLD and generally 80% of water supplied comes out as wastewater. Accordingly, 23.07 MLD of wastewater is likely to be generated from Karur municipality. The municipality has 48 wards. Wards 1-32 is connected by UGD system while wards 33-48 are not provided with UGD system. The municipality has installed 15 MLD sewage treatment plant at Arasu colony, Vangal road and wards from 1-32 are connected to STP. But as per log book records the STP is receiving less than 5 MLD of sewage. It was reported that only black water (wastewater from toilets) is collected in STP and sullage/ grey water (water used for other domestic purposes) is discharged into river through drains. This implies that out of 23 MLD of wastewater generated from the municipality, only 5 MLD is treated in STP. Remaining around 18 MLD of untreated sewage is discharged into River Amaravathi. Wards 33-48 are newly developed and the sewage generated is discharged into drainage canal which runs parallel to River Amaravathi. The Karur drainage canal joins Eerttai main drain which ultimately joins Amaravathi river at three locations.

Sewage is treated in STP by extended aeration sludge process system. STP comprises of aeration, clarifiers and maturation ponds. The treated sewage is let into the natural channel below STP and utilized for agriculture. As per the design details, the hydraulic retention time is STP is 31 hrs but currently sewage is stored in STP for 5 days (120 hrs). There is no disinfection treatment. The committee noticed that by physical appearance (color, smell) the river water quality upto Amaravathi river bridge seem to be normal but in the downstream, untreated sewage is discharged. The 11KM stretch of River Amaravathi which crosses through Karur is not perennial and very lean flow due to sewage discharge was observed. Due to lean flow, sewage appears in patches and stagnated.

Population	2,41,458
Water Supply	28.8 MLD
Sewage generated	23.07 MLD
Black water generated	7.5 MLD
Grey water generated	15.57 MLD
Sewage reaching STP	<5 MLD

Satellite image of Chettypalayam checkdam and Andankoil checkdam



River Amaravathi

Sewage joining into River Amaravathi from Karur municipality from wards 33-48.

Photo: Chettypalayam check dam

photo: Andankoil checkdam

Satellite images of river Amaravathi and drains

Eerettai drain

Photo: sewage from Eerttai canal joining River Amaravathi

Photo: Solid waste dumped near Eerattai canal

***Sample collection in River Amaravathi*:** The committee collected samples from river Amaravathi at five locations to test the water quality of the river including the presence of heavy metals, Total coliform and fecal coliform and the committee ascertained the quality of water in river Amaravathi. The samples were analyzed in EPA approved & NABL accredited M/s Glens Laboratory, Chennai. The analysis results are as follows and copy of results is enclosed as Annexure-III.

Table 3: Water quality of river Amaravathi at various locations

Description →	River Amaravathi at	River Amaravathi at	River Amaravathi at	River Amaravathi at	River Amaravathi at

	Chettypalyam checkdam located 5 KM u/s of Karur municipality Reference sample	Anadankoil checkdam Point where river Amaravathi enters into Karur. Located at u/s at the tip of Karur municipality	Madurai road bridge, centre of Karur municipality	Thirumanilaiyur (near to Vanajaleshwara temple)	Sanapiratti, 3KM d/s of Karur
pH	8.2	8.7	8.8	8.52	8.63
Total Dissolved Solids	369	327	339	331	484
Turbidity NTU	12	3	3	10	6
Chloride as Cl-	61	56	61	61	117
Sulphate as SO_4	21	17	14	15	16
Total hardness	210	168	252	163	184
Conductivity us/cm	637	573	606	601	821
Sodium as Na	48.1	43.8	46.0	45.2	92.0
Potassium as K	4.3	4	4	4	8
Total suspended solids	11.5	2	2.8	14.8	8.4
Calcium Hardness as CaCO3	84	68	84	68	95
Total Nitrogen	BDL (DL:1.0)	15.5	14.2	25.9	20.7
Total Phosphorus as P	BDL (DL:0.05)	BDL (DL:0.05)	BDL (DL:0.05)	0.0225	0.206
Cadmium as Cd	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Total Chromium as Cr	0.005	0..005	BLQ[LOQ:0.002]	0.035	BLQ[LOQ:0.002]
Nickel as	BLQ[LOQ:0.0	BLQ[LOQ:0.0	BLQ[LOQ:0.0	0.003	BLQ[LOQ:0.0

Ni	02]	02]	02]		02]
Lead as Pb	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Manganese as Mn	0.011	0.003	0.003	0.004	0.007
Zinc as Zn	0.034	0.005	0.003	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
Copper as Cu	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]	BLQ[LOQ:0.002]
BOD	**BDL (DL-2)**	**BDL (DL-2)**	**BDL (DL-2)**	**BDL(DL:2.0)**	**BDL(DL:2.0)**
TKN	**BDL(DL:1.0)**	**12.9**	**11.6**	**20.7**	**14.2**
DO	**5.8**	**5.6**	**6.0**	5.1	**5.4**
Total coliform MPN/100 ml	**220**	**90**	**140**	**170**	**350**
Fecal coliform MPN/100 ml	**170**	**50**	**90**	**80**	**170**

All results are in mg/L except pH and TC & FC

Table 4: Designated best use water quality criteria

Designated Best Use	Class of water	Criteria
Drinking water source without conventional treatment but after disinfection	A	Total coliforms organism MPN/100ml shall be 50 or less pH between 6.5 and 8.5 Dissolved oxygen 6mg/L or more Biochemical oxygen demand 5 days 20C 2mg/L or less
Outdoor bathing	B	Total coliforms organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved oxygen 5mg/L or more Biochemical oxygen demand 5 days 20C 3mg/L or less
Drinking water source after conventional treatment and disinfection	C	Total coliforms organism MPN/100ml shall be 5000 or less pH between 6 and 9 Dissolved oxygen 4mg/L or more Biochemical oxygen demand 5 days 20C 3mg/L or less
Propagation of wildlife and fisheries	D	pH between 6.5 to 8.5 Dissolved oxygen 4mg/L or more Free Ammonia (as N) 1.2 mg/L or less
Irrigation, Industrial cooling, controlled	E	pH between 6.0 to 8.5 Electrical conductivity at 25C micromhos/cm Max.2250

waste disposal		Sodium absorption ratio Max.26 Boron Max.2 mg/L

The river water quality is compared with designated best use water quality criteria and found that **river Amaravathi is falling under B- class of water.**

The committee collected samples at point where drain joins river Amaravathi near Vanajaleshwara temple. There was lean flow in river Amaravathi and sewage is stagnated. The drain is confluencing with river Amaravathi near Vanjaleshwara temple before Senapirattai which is downstream of Karur municipality.

Table 5: Analysis results of drain outlet to river Amaravathi near Vanajaleshwara temple

Description →	Drain outlet to river Amaravathi near Vanjaleshwara temple
pH	7.89
Conductivity us/cm	584
Turbidity NTU	38
Total Dissolved Solids	327
BOD	**13**
TKN	**23.3**
Total Chromium as Cr	BLQ[LOQ:0.002]
Manganese as Mn	0.008
Nickel as Ni	BLQ[LOQ:0.002]
Copper as Cu	BLQ[LOQ:0.002]
Zinc as Zn	0.005
Cadmium as Cd	BLQ[LOQ:0.002]
Lead as Pb	BLQ[LOQ:0.002]
Sulphate as SO4	26
Chloride as Cl-	97
Totalhardness	137
Calcium Hardness as CaCO3	221
Total Phosphorous as P	BDL(DL:0.05)
Sodium asNa	47.6
Pottasium as K	7
Oil & Grease	-
Phenolic compounds	-
Total coliform MPN/100 ml	**1600**
Fecal coliform MPN/100 ml	**1600**

The committee also collected sample from the outlet of STP. The analysis results are as follows:

Table 6: Analysis results of drain outlet and STP outlet

Description →	Analysis results of inlet & outlet of STP during committee visit in May, 2021		Treated sewage outlet from STP during committee inspection in September, 2021	Treated sewage discharge standards
	Inlet of STP	Outlet of STP		
pH	6.68	7.02	**8.51**	6.5-8.5
BOD mg/L	15	38	**42**	10
Suspended solids	132	168	**1006**	10
Fecal ccoliform	**3100**	**2200**	**900**	**<100 MPN/100ml**

Results and discussions

- Based on analysis results presented in Table-3 and designated best use classification, river Amaravathi **is falling under B- class of water as per designated best use water quality criteria**. By providing desired degree of treatment will make water fit for drinking water purposes. However, river Amaravathi is complying to the Primary Water Quality Criteria for Outdoor Bathing notified under The Environment (Protection) Rules, 1986 in terms of maximum permissible limit of Fecal Coliform (< 500 MPN/100 ml).
- In the entire river stretch that passes through Karur municipality from Chettypalyam checkdam to d/s till Senarapettai, TC and FC is observed. Peak TC & FC values are observed at locations where Eeratttai drain joins river Amaravathi. Presence of high concentration of TC & FC indicates sewage contamination. By the time River Amaravathi is entering Senapirattai (d/s of Karur municipality), BOD and TC & FC concentration has reduced which is due to self purification & dilution.
- It is also evident from the results that River Amaravathi contains TC & FC before entering the Karur municipal limits which may be due to discharge of sewage into River Amaravathi by upstream municipalities in Karur district.
- Treated sewage from STP is not complying with treated sewage discharge standards. Further treated sewage is also containing high concentration of TC & FC and same is discharged into irrigation channel. Presently, disinfection is not being practiced in STP. The committee submits to Hon'ble NGT to direct the municipal authorities to augment

the treatment capacity, provide disinfection treatment as a part of tertiary treatment unit operation in STP and ensure that treated sewage complies with discharge standards.

- Open well water samples in the industry premises (located at a distance of 25m from river bank) also indicates presence of fecal coliform and Total coliform which indicates contamination of open wells which may be due to improper sewage disposal. This may be due to disposal of sewage by the industries in septic tank followed soak pit. The committee submits to Hon'ble NGT to direct TNPCB to direct the industries located within 250m from the river to install individual STP or common STP.

Remedial Measures suggested by the committee: The main cause of contamination of river Amaravathi is presence of high concentration of total coliform and fecal coliform due to untreated sewage. The source of contamination may be discharge of untreated sewage by Karur municipality from wards 33-48, percolation from soak pits, open defecation along the river banks and discharge of untreated sullage into river by Karur municipality.

Short term

1. The sewage is joining to River Amaravathi at three locations; two sewage confluence points are in Periyarnagar colony and another near to Vanajaleshwar Koil. Sewage generated from Periyar nagar is joining river Amaravathi. The municipality shall immediately close the entry points of sewage into River Amaravathi by means of laying earthen bund. Municipality shall identify all sewage leakage points and take measures to prevent sewage leakage. Municipality shall make arrangements to collect sullage water. The municipality can identify appropriate location and tap the sewage and lift and transfer the sewage to the nearest UGD point. From the UGD system sewage will be transported to STP and thereby sewage can be treated and then let out into agricultural channels. This will ensure that untreated sewage is not discharged into river Amaravathi and sewage is treated.
2. The capacity of STP is 15 MLD with 31 hrs retention time in aeration system. The unit shall install additional aerators so as to reduce the retention time in aeration tank to 24 hrs. By doing this the existing STP can treat the entire sewage of 23 MLD generated in the municipality.

3. The municipality shall install disinfection system after maturation pond. The municipality shall treat the sewage properly and only after ensuring that it complies with treated sewage discharge standards, it will be discharged into agricultural channel.
4. TNPCB shall direct the Thanthoni, Aravakurichi panchayat union in Karur district that no sewage from village panchayats are discharged into River Amaravathi.

Long term measures

5. The width of river is 300m and 11KM stretch falling in the Karur municipality. District Collector, PWD and municipality shall fix the boundaries of the river and PWD shall ensure that no drains carrying untreated sewage or trade effluent discharges into the river. The storm water drains shall be closely monitored by TNPCB. The river shall be desilted by manual or semi-mechanized methods and natural flow shall be restored.
6. Municipality shall lay UGD system for wards 33-48 and connect it to STP. Municipality has prepared DPR for same. Municipality shall augment the treatment capacity of STP to treat the entire sewage generated from Karur municipality.
7. Storm water drains shall be cleaned so that storm water runoff can naturally drain into river Amaravathi.

V.c Status of CETP's

Previously Karur was one of the major textile manufacturing hub and till early 2011 around 500 textile dyeing & printing units and 8 CETP's were in operation in Karur municipal limits. Subsequently stringent discharge norms were implemented in the region and many units closed down and currently only 66 units are in operation. All 66 units have installed individual effluent treatment systems within the unit premises and are ZLD systems. Eight CETP's that were in operation till 2011 stopped their operations and closed down. The treatment components in the CETP's have not been dismantled. The sludge generated from CETP's was not disposed. The CETP sludge is categorized as hazardous in nature. Out of eight CETP's, two CETP's have disposed the hazardous sludge to cement industries during late 2020 while six CETP's are yet to dispose the sludge. Around 8000 to 13,000m^3 of hazardous sludge is stacked in each CETP premises in six CETP's. The sludge is packed inside large polythene bags and are stacked upto a height of 10m.

Even though over a period of time the sludge has compacted but however during heavy rains, the sludge may be slowly washed out with rain water and contaminate the ground water. Sludge may contain high lime content and may contribute to high TDS, chlorides and calcium in ground water. Since the sludge is rich in lime content, the cement industries are ready to take the sludge if the CETP's separate the sludge from bags and transport the waste to cement plants. The cement industries are ready to take the sludge free of cost provided the cost of transportation is incurred by CETP's itself.

Table 7: Name and address of CETP's which are still storing the sludge in their premises

Sl.No	**Name and address of CETPs**	**area**	**Date of closing the operations**	**Quantity of sludge laying in premises**
1	M/s. Karur Andankoil Pollution Control Limited, S.F.No.1811, 1812, Andankoil East Village, Amaravathi Nagar, Manmangalam Taluk, Karur District		04.11.2011	35.3-Chemical sludge from waste water treatment - 8500 T
2	M/s. Karur Thiruvai Dyeing Enviro Limited, S.F.No.2001, 2002 etc, Thirumanilaiyur Village, Karur Taluk, Karur District.	own land, 0.287 ha	04.11.2012	35.3-Chemical sludge from waste water treatment - 10000 T
3	M/s. Karur Karuppampalayam Enviro Tech Limited, Karuppampalayam Village, Appipalayam Post, Karur District.	own land, 04 ha	01.12.2011	35.3-Chemical sludge from waste water treatment - 8000 T
4	M/s. Karur Taluk Dyeing &Amp; Bleaching Etp Company Limited, S.F.No.199, Arugampalayam Road, Vengamedu, Karur Taluk & District.	own land, 0.1741 ha	04.11.2011	35.3-Chemical sludge from waste water treatment - 8000 T
5	M/s. Karur Sellandipalayam Pollution Control Limited, S.F.No.476, 488 etc, Thirumanilaiyur Village, Amaravathi Nagar,	own land, 0.447ha	01.12.2011	35.3-Chemical sludge from waste water treatment - 8000 T

	T.Sellandipalayam, Karur District.			
6	M/s. Karur Sukkaliyur CETP Company Limited, S.F.No.431, Thoranakkalpatti Village, Karur Taluk, Karur District.	own land, 0.4 ha	04.11.2011	35.3-Chemical sludge from waste water treatment - 13000 T

Photo: CETP sludge stored in the premises of CETP's

To understand whether due to storage of CETP sludge, ground water is contaminated, the committee collected ground water sample from the nearest borewell of the CETP and analyzed by TNPCB. The analysis results is presented below:

Table 8: Analysis results of borewell samples collected near to CETP's

	BIS drinking water standards	Borewell at East of M/s Karur Thiruvai Dyeing Enviro Ltd	Borewell at Vathuyar thottam at east of M/s Karur Sellandipallayam pollution Control Ltd	Borewell at Panchayat opposite to M/s Karur Sukkaliyur CETP company Ltd	Borewell at Aruselvan house at North of M/s Karur Karuppampalayam Enviro Tech Ltd	Borewell at Rajaram land at Venkaraimman yarn godown at South of M/s Karur Andankoil pollution Control Ltd	Borewell at rajendraparasad house at northeasdt of M/s Karur taluk dyeing and bleaching ETP Co Ltd.
Turbidity, NTU	1	2.1	2	2	1.8	2	1.9
Conductivity		11248	2960	5030	4540	5170	12490
pH at 25 C	6.5-8.5	6.43	6.9	7.1	6.62	6.79	6.91
TDS at 180C	**500**	**7840**	**1912**	**3264**	**2964**	**3336**	**8232**
chlorides	**200**	**3499**	**590**	**1030**	**970**	**1180**	**1699**
sulphates		653	98	327	300	272	826
sodium	200	708	369	577	301	635	670
potassium	250	17	19	14	17	18	30
Total hardness as CaCO3	200	**2800**	**440**	**900**	**1400**	**790**	**2700**
BOD		3.4	3.2	3.2	2.2	3	2.8
calcium hardness		1300	260	320	600	480	1900
TKN		6.72	3.36	4.48	3.36	4.48	7.84
Total Nitrogen		7.481	3.471	4.638	4.074	4.725	8.261
total phosphorus		0.074	0.034	0.052	0.047	0.044	0.101
Manganese	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Zinc	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Lead	0.01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	0.003	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total chromium	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

All results are in mg/L except pH. Copy of results is enclosed as Annexure-IV. TCLP test were carried out on CETP sludge all parameters are within EPA specified limits. Copy of results is enclosed as Annexure-V.

1. CETP sludge mainly contains lime content and it is likely to contribute to TDS in water.
2. Storage of sludge may have contributed to TDS, chlorides and hardness in the ground water.
3. Heavy metals are not found in ground water.
4. During rains, runoff from the CETP's may ultimately join river Amaravathi.
5. Borewell samples are not complying with drinking water standards w.r.t TDS, hardness and chlorides. High level of TDS and chlorides in bore well samples near CETP sludge may be due to seepage from the sludge.

Measures to be taken by CETP owners

1. CETP's shall cover the sludge with tarpaulins to prevent surface runoff from the sludge storage area into river
2. CETP's shall dispose the sludge to cement industries without any further delay. Top layer of the soil where sludge was stored is likely to be contaminated, hence CETP's shall remove the top layer of soil upto a depth 0.5m where the sludge was stored and dispose it to TSDF/ cement industries.
3. The polythene bags recovered from the sludge shall be disposed to incineration facility.
4. District Collector Karur and TNPCB shall jointly monitor that the sludge is disposed safely to cement industries.
5. In case, the CETP sludge area is contaminated, action for remediation of such storage area should be taken care of by the concerned CETP under the overall supervision of TNPCB

V.d Solid Waste Disposal

Karur municipality is generating around 71 tonnes of solid waste per day. The municipality has achieved 100% door to door collection in wards 1-32 and in newly developed wards from 33-48, municipality has achieved 90% of waste collection. 85% to 90% of the waste is segregated at source. The municipality has installed 12 micro-composting centers of total capacity 45 MT to treat organic waste. The municipality has installed 1TPD biomethanation plant and biogas generated is used for lighting purposes and operating the motors. In addition, the municipality has established windrow composting yard but was not in use during committee inspection. 200 TPD central processing unit is established but the facility is receiving only 25 to 30 TPD of waste per day out of which 1TPD of plastic waste is segregated, bailed and sent to cement industries.

The committee observed that though the municipality is having adequate facilities (in terms of capacity) to treat solid waste but however the waste was not transported properly to the disposal facilities and committee observed that solid waste was found laying on the road near to the facility and near Eerattai drainage canal. Solid waste was not dumped along the river banks but however solid waste was found near the Eerttai drainage canal. The municipality has not devised any mechanism for collection and treatment of leachate generated from composting centers. Waste is dumped near Eerttai canal and this drain ultimately joins river Amaravathi, hence municipality shall remove the solid waste laying along the Eerttai canal.

***Legacy waste*:** The solid waste was dumped by Karur municipality in two dumpsites situated adjacent to each other. 1.41 lakh MT of waste was dumped in East dump- in an area of 8.5 acres. 64 MT of waste is dumped in West dump in 6.75 acres. Bio-mining of East dump was started during February, 2020 and completed by September 30, 2021 and the areas is recovered. Municipality had awarded the work of bio-mining of East dump to M/s Zigma Global Environ Solutions Pvt Ltd, Erode.

Waste in the west dump is laying as it is. Reported that municipality has prepared DPR for bio-mining of west dump and same will be completed by March, 2022. The dumpsites are located at a distance of 1Km from the river bank.

Table 9: Materials recovered from Bio-mining of legacy waste of East dump

Quantity of legacy waste bio-mined	Quantity recovered	Mode of disposal/ utilization

RDF	6597.04 MT	M/s Arasu Cement industry Ariaylur
wood	189.59 MT	
Soil	113,609.2 MT	Low laying area for earth filling
stone	9812.9 MT	
Iron/ mild steel/ SS	18.99 MT	M/s Resource recovery (RR centre) Gandhigram
Tyre/ footwear	185.71 MT	
H D plastic	23.87 MT	
glass	35.41 MT	

Photo: drone images of East and West dump respectively

Photo: West dump

Photo: drone photo of dumpsite after completion of bio-mining of East dump

V.e Illegal digging of channel by M/s Vanjaleshwara Koil

Reported that once in 12 years, Kumbham is organized at Vanjaleshwara koil. During 2021, Mahakumbabhisegam was organized wherein devotees take a dip in the tank located in temple premises (which is named as brahmatheertam). During lean flows since sewage is flowing in the river, Vanjaleshwara temple Authorities have dug a channel of around 850m length, 2m width and 1m depth from Amaravathi river before the sewage joins the river course and channel was used to divert fresh water to temple tank. Though the objective of the temple Authorities was to provide river water for bathing purposes and to prevent the spread of any communicable diseases but however the Authorities had not obtained permission for digging the channel. PWD issued Show-cause notice to temple Authorities for digging illegal channel and currently, 350 m length of the channel is closed against total length of 850m. PWD has constructed an earthen bund at the tip of the diversion channel and has restored natural course of river. The temple Authorities are yet to close 500m of the channel. The committee submits to Hon'ble NGT to direct PWD to direct the temple Authorities to close the entire channel dug by them.

Overall Observations of the Committee

1. 33 textile dyeing/ bleaching/printing (red category) industries are located within 1Km from the bank of river Amaravathi. During inspection the committee observed that the ZLD systems installed in the units were in operation and there were no bypass channels. No effluent was discharged outside the unit premises. No industry has dug illegal channels for discharge of effluent into River Amaravathi.
2. 15 small dyeing/ bleaching industries continue to operate solar evaporation pan to achieve ZLD. During rainy season, solar drying is difficult.
3. The entire river stretch that passes through Karur municipality contains TC & FC from the u/s of Karur municipality at Chettypalyam checkdam to d/s till Senarapettai. Peak TC & FC values are observed at locations where Eerattai drain joins river Amaravathi.
4. Previously eight CETP's were functional and during 2011-12, CETP operations were completely stopped. All the treatment components are still present in the CETP premises in dilapidated condition. The sludge generated during the operational phase of CETP is stored within the premises. Out of eight CETP's, two CETP's have disposed the sludge to cement industries during 2020 and remaining six CETP's are yet to dispose the waste. Presently, 8,000 to 13,000 MT of CETP sludge is stored in open within the premises of each CETP's (six no.s) which is stacked upto height of 10m.

5. Treated sewage from STP is not complying with treated sewage discharge standards. Further treated sewage is also containing high concentration of TC & FC and same is discharged into irrigation channel. Presently, disinfection is not being practiced in STP.
6. The municipality is having adequate facilities (in terms of capacity) to treat solid waste but however the waste was not transported properly to the disposal facilities and committee observed that solid waste was found laying on the road near to the facility and near Eerattai drainage canal. The municipality has not devised any mechanism for collection and treatment of leachate generated from composting centers.
7. 2.05 lakh MT of legacy waste was dumped in two dumpsites opposite to each other. The municipality has completed bio-mining of 141733 cum of legacy waste in East dump and recovered 130472.74 MT of material. 8.5 acres of land is also recovered.
8. Municipality has committed to complete the bio-mining of West dump by March, 2022.
9. Vanjaleshwara temple Authorities have dug a channel of around 850m length, 2m width and 1m depth from Amaravathi river before the sewage joins the river course and channel was used to divert fresh water to temple tank. currently, 350 m length of the channel is closed against total length of 850m.
10. PWD has constructed an earthen bund at the tip of the diversion channel and has restored natural course of river. The temple Authorities are yet to close 500m of the channel.

VI Conclusions and Recommendations of the Committee

As alleged in the newspaper report untreated sewage is discharged into River Amaravathi. Total coliform and fecal coliform are present in river water which indicates sewage contamination. The source of contamination may be discharge of untreated sewage by Karur municipality from wards 33-48, percolation from soak pits, open defecation along the river banks and discharge of untreated sullage into the river by Karur municipality. Contamination of river Amaravathi can be mainly prevented by stopping of discharge of untreated sewage and laying of UGD schemes and treating the sewage generated in Karur municipality. There is lean flow in river Amaravathi in most of the times of the year and major flow is observed only during monsoon. When sewage is discharged into the river, due to lean flow the sewage is not getting diluted with river water. Portion of sewage gets evaporated and part of it stagnates in the river bed. Preventing discharge of untreated sewage into river Amaravathi will prevent stagnation of sewage in the river bed and

as well as prevent river contamination. By providing required desired degree of treatment water from River Amaravathi may render it fit for drinking water purposes. However, river Amarvathi is complying to the Primary Water Quality Criteria for Outdoor Bathing notified under The Environment (Protection) Rules, 1986 in terms of maximum permissible limit of Fecal Coliform (< 500 MPN/100 ml).

VI.a. ***Suggestions of the Committee to Industries***

1. The committee submits to Hon'ble NGT to direct TNPCB to direct the units located within 1KM from the river bank to establish either individual or common multiple evaporation systems or common RO reject management systems and to eliminate Solar evaporation pan. The units shall ensure that ZLD systems are properly operated.
2. The committee submits to Hon'ble NGT that the industries having more than 50 employees shall install STP to treat sewage and treated sewage shall be re-used within unit premises. Units having less than 50 employees shall either connect Septic tank outlet to the existing UGD network or establish common STP for treatment of sewage. TNPCB shall ensure that the industries comply with the recommendation made by the committee.
3. The industries shall install rain water harvesting pit for ground water recharge. The industries shall ensure that no rain water is discharged outside the industry premises. The first rain water (for first 30mins) shall be collected separately and sent to ETP.

VI.b ***Suggestions of the Committee to Municipality for Management of Sewage and Solid Waste***

Short term

4. The sewage is joining to River Amaravathi at three locations. The municipality shall immediately close the entry points of sewage into River Amaravathi by means of laying earthen bund. Municipality shall identify all sewage leakage points and take measures to prevent sewage leakage. Municipality shall make arrangements to collect sullage water. The municipality can identify appropriate location and tap the sewage and lift and transfer the sewage to the nearest UGD point. From the UGD system sewage will be transported to STP and thereby sewage can be treated and then let out into agricultural

channels. This will ensure that untreated sewage is not discharged into river Amaravathi and sewage is treated.

5. The capacity of STP is 15 MLD with 31 hrs retention time in aeration system. The unit shall install additional aerators so as to reduce the retention time in aeration tank to 24 hrs. By doing this the existing STP can treat the entire sewage of 23 MLD generated in the municipality.
6. The municipality shall install disinfection system after maturation pond. The municipality shall treat the sewage properly and only after ensuring that it complies with treated sewage discharge standards, it will be discharged into agricultural channel.
7. TNPCB shall direct the Thanthoni, Aravakurichi panchayat union in Karur district that no sewage from village panchayats are discharged into River Amaravathi.

Long term measures

8. The width of river is 300m and 11KM stretch falling in the Karur municipality. District Collector, PWD and municipality shall fix the boundaries of the river. The river shall be desilted by manual or semi-mechanized methods and natural flow shall be restored.
9. Municipality shall lay UGD system for wards 33-48 and connect it to STP. Municipality has prepared DPR for same. Municipality shall augment the treatment capacity of STP to treat the entire sewage generated from Karur municipality.
10. Storm water drains shall be cleaned so that storm water runoff can naturally drain into river Amaravathi.
11. Municipality shall remove the solid waste laying along the Eerattai canal and along roads near to central processing facility.
12. Committee submits that District Collector, Karur shall monitor the implementation of action plans by Municipality
13. The municipalities shall collect leachate from MCC's and treat the same as per TNPCB guidelines.

VI.c. Suggestions of the Committee to CETP's

14. CETP's shall cover the sludge with tarpaulins with immediate effect.
15. CETP's shall dispose the sludge to cement industries. Top layer of the soil where sludge was stored is likely to be contaminated, hence CETP's shall remove the top layer of soil

upto a depth 0.5m where the sludge was stored and dispose it to TSDF/ cement industries.

16. The polythene bags recovered from the sludge shall be disposed to incineration facility.
17. District Collector Karur and TNPCB shall jointly monitor that the sludge is disposed safely to cement industries.
18. In case, the CETP sludge area is contaminated, action for remediation of such storage area should be taken care of by the concerned CETP under the supervision of TNPCB

VI.d. Suggestions of the committee to PWD

19. The committee submits to Hon'ble NGT to direct PWD to direct the temple Authorities to close the entire channel dug by them.
20. For organizing Kumbhabhisegam or other such events where mass bathing is involved, District Collector, PWD and other concerned departments may make arrangements without diverting or affecting natural river course.
21. The tank in the temple premises where bathing takes place shall be frequently cleaned and disinfected at regular intervals.

M. Leyakath
District Revenue Officer,
Karur

P. Muthusamy
Superintending Engineer, PWD, WRD, Palani

I.Nakkiran
Municipal Engineer, Karur Municipal Council

K. Ravichandran
District Environmental Engineer, Tamil Nadu Pollution Control Board Karur

Mahima T
Scientist D, Central Pollution Control Board
Regional Directorate, Chennai

S. Karthikeyan
Scientist C, Central Pollution Control Board
Regional Directorate, Chennai

Item No.17:

BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No. 257 of 2020 (SZ)

(Through Video Conference)

IN THE MATTER OF:

Tribunal on its own motion
Suo Motu based on the news
Item in The New Indian Express
Dt.27.11.2020, "A Cooum in the making in Karur?"

... Applicant(s)

Versus

The Chief Secretary to
Governmen of Tamil Nadu,
Chennai & Ors. ...Respondent(s)

Date of hearing: 13.09.2021.

CORAM:

HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER

HON'BLE DR. K. SATYAGOPAL, EXPERT MEMBER

For Applicant(s): Suo Motu

For Respondent(s): Dr. D. Shanmuganathan for R1 to R5, R7 and R9
Ms. Vivekha Pon for Mr. Sai Sathya Jith for R6
Ms. P. Jayalakshmi for CPCB

ORDER

1. As per order dated 28.06.2021, after considering the order passed by this Tribunal on 25.05.2021, this Tribunal considered the action taken report filed by 8th respondent dated 24.06.2021, e-filed on 28.04.2021 and received on the same date which was extracted in para 2 of the order and then passed the following order:

> 3. It is seen from the report of 8th respondent that the legacy waste which was lying in the dumpyard has been processed fully and the gap observed in the bio-degradable plant will be rectified for which they require time up to September, 2021. The Learned Counsel appearing for State Department submitted that Public Works Department had tried to e-file the report but due to some defect in the system same could not be done, so the report has been e-mailed but the office informed that the same has not been received even on e-mail. The Learned Counsel for the State Department has undertaken that they will rectify the defect, if any, and then e-filed the report, if some time is granted. Smt. Jayalakshmi appearing for Central Pollution Control Board submitted that due to non-availability of some of the members, inspection could not be completed and they want further two months time.
>
> 4. It may be mentioned here that the only question for consideration is whether recommendations and gap found by the Committee, implementation of the recommendation to rectify the same by the respective departments and that will have to be ascertained by the Joint Committee. If some of the members are not available due to illness or other reasons they can depute some other officer in their place for that purpose and then collect the data and submit the report. The Tamil Nadu Pollution Control Board has not come up with any independent report as directed. So under such circumstances, we feel some more time can be granted to the Joint Committee as well respondents to submit their respective reports as directed in earlier orders. The 8th respondents is also directed to submit the further progress report to this Tribunal on or before 18.08.2021 by e-filing in the form of Searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hardcopies to be produced as per Rules.
>
> 5. The Registry is directed to communicate this order to the members of the committee, Tamil Nadu Pollution Control Board, Public Works Department, Karur Municipality apart from informing the same to the Chief Secretary, State of Tamil Nadu, Principal Secretaries of Environment, Public Works Department by e-mail for their information and compliance with the directions.

2. The case was posted to 18.08.2021 for consideration of further report. On 18.08.2021, it was adjourned to today by notification.

3. We have received the compliance report submitted by the Joint Committee dated 17.08.2021, e-filed on 24.08.2021 and received on the same date which reads as follows:

Compliance Report by Joint Committee in compliance with the Order dated 25.05.2021 & 28.06.21 of Hon'ble NGT (SZ), Chennai in the O.A. No.257 of 2020 (SZ) in the matter of Tribunal on itsown motion Suo Motu based on news item in The New Indian Express Newspaper dated 27.11.2020, "A Cooum in the making in Karur?" Vs The Chief Secretary & others.

In compliance with the orders dated 22.02.2021 & 12.04.2021 of the Hon'ble National Green Tribunal, (Southern Zone) in the O.A. No.257 of 2020 in the matter of Tribunal on its own motion Suo Motu based on news item in The New Indian Express Newspaper dated 27.11.2020, "A Cooum in the making in Karur?" Vs The Chief Secretary & Others., the Joint Committee has e-filed the report dt. 20.05.2021 before the Hon'ble National Green Tribunal, Southern Bench, Chennai.

The matter came up for hearing on 25th May, 2021 through video conference and subsequently, Hon'ble National Green Tribunal (Southern Zone) has issued the following directions vide Order dated 25.05.2021 and subsequently on 28.06.2021:

> *7. It is seen from the reports submitted by the Joint Committee as well as the Pollution Control Board that no industrial effluent is being discharged into the Amaravathy River and water quality in the river meets the inland surface water quality and most of the pollution that is being caused on account of the untreated sewage being discharged into the river.*

8. As regards the implementation of the Solid Waste Management Rules, 2016, it was revealed from the earlier report submitted by the Karur Municipality that they have started the bio-mining process for disposal of the existing legacy waste and 80% of the legacy waste was disposed of. But they have not mentioned anything about the present status and they have also not filed any report regarding the gaps found by this Tribunal in the earlier report submitted by the Karur Municipality. Further, it appears from the report that water samples were taken from the nearby areas of the industry alone and not from the areas that has been pointed out in the newspaper report.

9. It is also mentioned in the newspaper report that the people in the locality had stopped the earth mover which was digging the channel inside the river to channel waste water from the nearby industries and in spite of the opposition, the digging resumed. Neither the Karur Municipality nor the Public Works Department (PWD) officials had looked into the matter and submitted any report regarding the allegations made in the newspaper report in this regard.

The committee that has been appointed by this Tribunal also did not go into the question as to whether any internal illegal channels have been provided from any of the industries to discharge their sewage into the river without treating the same. So under such circumstances, we feel it appropriate to direct the Tamil Nadu Pollution Control Board and the committee to consider these aspects as well and submit a detailed report regarding the specific allegations made of making illegal channels from the nearby industries for discharging their sewage or other industrial effluents illegally at the place pointed out in the newspaper report.

11. They are also directed to ascertain the location of the area which is covered by the photograph mentioned in the newspaper report and ascertain as to whether allegations made by them in this regard are

correct or not and if it is correct, what is the nature of action taken by theauthority to prevent such illegal activities.

12. The Public Works Department (PWD) is also directed to file an independent report regarding the mechanism provided by them to protect Amaravathy River from pollution and encroachment. The Karur Municipality is also directed to submit a detailed report regarding the steps taken by them for implementing the recommendations made by the committee to be carried out from their side to avoid discharge of untreated sewage from Ward No.33 to 48 which were subsequently included in their municipality in respect of which no sewage treatment facilities have been provided.

13. The committee as well as the concerned departments are also directed to file their independent statement and also the compliance report as directed by this Tribunal on or before 28.06.2021 by e-filing in the form of Searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hardcopies to be produced as per Rules.

And subsequently vide Order dated 28.06.2021

4. It may be mentioned here that the only question for consideration is whether recommendations and gap found by the committee, implementation of the recommendation to rectify the same by the respective departments and that will have to be ascertained by the Joint Committee. If some of the members are not available due to illness or other reasons they can depute some other officer in their place for that purpose and then collect the data and submit the report. The Tamil Nadu Pollution Control Board has not come up with any independent report as directed. So under such circumstances, we feel some more time can be granted to the Joint committee as well respondents to submit their respective reports as directed in earlier Orders. The 8th respondents are also directed to submit the further progress report to this Tribunal on or

before 18.08.2021 by e-filing in the form of Searchable PDF/OCR Supportable pdf and not in the form of image pdf along with necessary hardcopies to be produced as per Rules.

The copy of the said Orders is submitted at Annexure – 1 & Annexure - 2.

2.0 Meeting of Joint Committee:

In pursuance to the above directions of Hon'ble Green Tribunal, Southern Bench, Chennai, the Joint Committee had its meeting on 12th July, 2021 through VC and deliberated the issues in line with the Order. During the VC, all the members of the joint committee have mutually agreed to carry out the field visit on 23rd July, 2021.

As mutually agreed upon in the VC, all the members of the joint committee had attended the meeting at the chamber of District Revenue Officer, Karur on 23rd July, 2021 at 1030 AM and deliberated the issues, pointwise in line with the Order of Hon'ble Green Tribunal and finalised the field visit accordingly.

3.0 Joint inspection of the Committee:

After the meeting, the joint committee first visited the Brahmatheertham padikattu thurai, near Vanchaleeswarar Temple and re inspected the spot mentioned in the newspaper report and found that the raw/untreated sewage from nearby residential areas particularly Andankoil East Panchayat and AVS – AVR Colony area are discharged into the River Amaravathy. The untreated sewage is not getting mixed with the river water, however, it is stagnated on the side of riverbed in a pool of about 100ft wide. One sample of waste water has been collected from river bed at the place that has been pointed out in the newspaper report and sent for analysis. The analytical test report of the same is submitted at Annexure - 3. Last time, the samples were collected from the discharges (Municipal drain) directly from Periyar Nagar, Periandan Koil (Andankoil East Panchayat) and AVS-AVR Colony just before discharge into the river, whereas

this time, the wastewater sample was collected from river bed after discharged into the river. On upstream of the place that has been pointed out in the newspaper report, the river shifts its flow from Left bank to Right bank, on its own natural course of the flow. The analytical test results of wastewater samples collected from the riverbed is given below:

Analytical Test Results of wastewater samples from riverbed collected from the place that is pointed out in the newspaper report

S.No.	Parameters	Test Results	Standards for the discharge oftreated sewage	Compliance status
1.	pH	7.36	6.5 – 9.0	Complied with
2.	Total Suspended Solids	16	100	
3.	BOD 3 days at 27^{o}C	88	30	Not complied with
4.	Total Dissolved Solids	1084	NN	NA
5.	Chemical Oxygen Demand	304	NN	NA
6.	Dissolved Oxygen	1.1	NN	NA
7.	Ammonical Nitrogen	25.2	NN	NA
8.	Total Nitrogen	0.2	NN	NA
9.	Residual Sodium Carbonate (RSC)	-Ve	NN	NA
10.	Sodium Absorption Ratio (SAR)	7.15	NN	NA
11.	Fecal Coliform MPN/100 ml	Analysis not carried out since facility is not available	< 1000	NA

Note.: All values are in mg/l except pH, RSC & SAR. NN – Not notified. NA – Not applicable

The test results of the wastewater collected from the river stretch has been compared with the Standards of treated sewage for discharge since the sample is a mixture of wastewater and untreated sewage.

The BOD & COD value of the sample indicates considerable Organic load. The TDS value of 1084, which is higher than that of surface water and more or less equal to that of groundwater. During the field visit, it was observed that the wastewater was grey in colour with black tinge. Thus, the results indicate that the water may be the mixture of wastewater and untreated sewage from nearby areas.

The joint committee found that two industries are located near to the place pointed out in the newspaper report and on the left bank of the river. The unit named "M/s. Jose Colours" is not in continuous operation for the past three months due to COVID-19 lock down. Direction for closure of the unit and disconnection of power supply has been issued to another unit "M/s. Asi Colours" by TNPCB, on account of the shortfalls observed by the Committee constituted by TNPCB in compliance with the Order dated 25th May, 2021 of Hon'ble NGT, Southern Bench, Chennai. Inspection Report of both the units is submitted at Annexure – A4 & A5. Copy of the Closure Order is submitted at Annexure – A6 & A7. The units are under surveillance of TNPCB.

The joint Committee inspected the STP located at Village Panchamadevi and found that the STP was in operation. Three samples were collected from STP and sent for analysis. One sample of Inlet and outlet has been collected. Sample from aeration tank was collected for DO & MLSS. The Analytical Test Report is submitted at Annexure - 8. The test results are submitted below:

Analytical Test Results of samples collected from STP

S.No.	Parameters	Inlet to STP	STP Outlet	Standards for the discharge of treated sewage	Compliance status
1.	pH	7.33	7.56	6.5 – 9.0	CW
2.	Total Suspended Solids	52	16	100	CW
3.	BOD 3 days at 27^{o}C	236	95	30	Not CW
4.	Chemical Oxygen Demand	544	232	NN	NA
5.	Ammonical Nitrogen	30.8	19.6	NN	NA
6.	Total Nitrogen	0.5	0.29	NN	NA
7.	Residual Sodium Carbonate (RSC)	-Ve	-Ve	NN	NA
8.	Sodium Absorption Ratio (SAR)	7.67	6.92	NN	NA
9.	Fecal Coliform MPN/100 ml	Not carried out since facility is not available		< 1000	NA
10.	Aeration tank – Dissolved Oxygen – 1.3				

All values are in mg/l except pH, RSC, SAR & Fecal Coliform. NN – Not notified. CW – Complied with.

Results indicate that STP failed to comply with prescribed standards with respect to primary parameter that is BOD. It was found that pH and TSS were complying with the Standards, whereas reduction is BOD observed at only 60%. To improve the BOD removal, the level of DO, MLSS and FM ratio shall be maintained as per the design of STP. Therefore, further improvement is required

to comply with the Standards as well as to achieve the BOD level of 20mg/l as per the design.

Pointwise compliance report of Joint Committee:

Water samples were taken from the nearby areas of the industry alone and not from the areas that has been pointed out in the newspaper report.

The joint Committee had found that drain carrying the untreated sewage, from nearby residential areas particularly Andankoil East Panchayat and AVS-AVR colony area are discharged into River Amaravathy, at the place that has been pointed out in the newspaper report. The untreated waste water was found stagnated on the banks at stretch of about 100 feet. Since it is stagnated one, the committee avoided the sampling of waste water from the river bed earlier, thinking that it will misguide. It was therefore decided to collect sewage samples from the drain directly in order to get the represented one. This time the Committee collected the sample from the river bed itself at the place that has been point out in the newspaper report. Analytical Test report is submitted at annexure – 3. The results are discussed at the Chapter – 3.

Whether any internal illegal channels have been provided from any of the industries to discharge their sewage into the river without treating the same.

The joint committee did not find any illegal channels provided by the industry to discharge their sewage into the river without treating the same.

Specific allegations made of making illegal channels from the nearby industries for discharging their sewage or other industrial effluents illegally at the place pointed out in the newspaper report.

The Joint committee did not find any illegal channels made by nearby industries to discharge their sewage or other industrial effluents illegally at the place

pointed out in the newspaper report. Two industries are located near to the place pointed out in the newspaper report and on the left bank of the river. One unit "M/s. Jose Colours" is not in operation for the past three months due to COVID-19. Direction for closure of the unit and disconnection of power supply has been issued to another unit "M/s. Asi Colours" by TNPCB, on account of the shortfalls observed by the Committee constituted by TNPCB in compliance with the Order dated 25th May, 2021 of Hon'ble NGT, Southern Bench, Chennai. Inspection Report of both the units is submitted at Annexure – A4 & A5. Closure Order is submitted at Annexure – A6 and power disconnection Order is submitted at Annexure – A7.

Ascertain the location of the area which is covered by the photograph mentioned in the newspaper report and ascertain as to whether allegations made by them in this regard are correct or not and if it is correct, what is the nature of action taken by the authority to prevent such illegal activities.

The location of the area which is covered by the photograph mentioned in the newspaper report is around 100 meters away from the Brahmatheertham padikattu thurai, near Sri Vanchaleeswarar Temple and on upstream of the river (On western direction).

The river changes its own course of flow from left bank to right bank at the upstream of the place pointed out in the newspaper report. The temple trust has planned and made a channel along the left bank in order to divert the part of river water to Padikattu thurai for the ceremony related to Kumbhabhishekham festival at Sri Vanchaleeswarar temple and the convenience of devotees. PWD has inspected the spot, enquired the same and issued a show cause notice to the Trust, when the matter came to their knowledge. Copy of the Show Cause Notice is placed at A9. The channel was not made by ULB, PWD or any other industry for discharge of their effluents.

On seeing the JCB digging the channel in the river, local people had started objecting it and agitated. When they came to know that the work was being carried out by the Temple Authority for the purpose of temple festival, they stopped the agitation.

Whether recommendations and gap found by the Committee, implementation of the recommendation to rectify the same by the respective departments and that will have to be ascertained by the Joint Committee

On interaction with the Karur Municipality, they have accepted the recommendations of the Joint Committee and just initiated the steps in line with the recommendations. At this stage, the joint committee find difficulties in analysing the gaps and ascertain the following facts:

Compliance status of Sewage management:

Detailed Project Report (DPR) for rejuvenation of the Sewage Treatment Plant (STP) at an estimate of 7.5 crores is under process by Public Works Department(PWD), Water Resources Department (WRD), Project formulation division, Trichy.

In order to prevent the untreated sewage being discharged into River Amaravathy from the leftover areas of Karur, Imam Karur and Thanthoni & Sanapiratty, where UGSS scheme is feasible, work for underground sewerage line, collection well with mechanical pumping to existing STP at four places is under process. For which Karur Municipality has received the letter for joint inspection from WRD, FMP has been collected from Revenue department and joint inspection has to be carried out along with Revenue Department. Where ever UGSS scheme is not feasible, Decentralized Wastewater Treatment System at five places is proposed and the work is in progress.

From the Test Report of STP, it is observed that there is some improvement of DO, MLSS and BOD reduction. Still further improvement is required in maintaining the DO, MLSS and FM ratio so as to achieve the designed BOD value of 20 mg/l and further comply with the Standards.

Compliance report of Solid waste management:

S.No.	Gaps observed by the joint committee	Compliance status
1.	Mixing of bulk agent with shredded wet waste at Micro Compost Centre.	Complied with
2.	Rotary screen to screen the Compost and partially composted materials at Micro Compost Centre.	Provided
3.	Using partially composted materials as bulk agent at Micro Compost Centre.	Instructions have been issued
4.	Hard surface pad to dry the compost	Tender process is going on
5.	Provision for storing compost	Places are identified and earmarked
6.	Maintenance of stock register for Compost	Started Maintaining

Compliance status of Bio-Methanation Plant:

S.No.	Gaps observed by the joint committee	Compliance status
1.	Leak in rubber gas bladder	Leak in the bladder has been arrested
2.	Gas Holder	It is proposed to install a gas holder made of Poly Urethane.

Compliance status of Legacy Waste:

S.No.	Gaps observed by the joint committee	Compliance status
1.	Bio-mining of Legacy waste at Eastern yard	A quantity of 1,41,731 cubic meters of Legacy waste has been processed fully.
2.	Co-processing of RDF	Forwarded the RDF for co-processing and thus completed the Bio-mining of Legacy waste at Eastern Yard
3.	Bio-mining of Legacy waste at Western yard	Out of 65,000 Cubic meters legacy waste, one third quantity is bio-mined and the bio-mining process is going on.

Protection measures to be provided by PWD-WRD:

The following measures are proposed by PWD-WRD to protect the River Amaravathy in compliance with the Hon'ble NGT Order:

- Based on the request by Karur Municipality for allotment of land adjacent to River Amaravathy to establish STP, the department has identified the same and communicated to the ULB. Accordingly, FMP of the area has been collected by ULB from Revenue Department. These identified lands should be inspected jointly by ULB, PWD and Revenue Department. For which a letter has been sent to Revenue Department by the Assistant Executive Engineer, PWD, Amaravathy Basin Sub Division No.:4 WRD, Karur. After the joint inspection, proposal will be submitted in accordance with the Rules in force for transfer of land to ULB.

- Whenever reports of encroachments are received or observed during inspection, immediate notices are being issued to the encroacher concerned to evict the same. Eviction is carried out in co-ordination with Revenue and Police Department, if necessary.

- ❖ WRD is planning an approach road along the River Amaravathy on both the sides from Chettipalayam to Karur town limit for regular patrolling and to have a quick access to the river for emergency response. For which, a field study is proposed.

- ❖ Here, the joint Committee recommends, a green belt of Miyawaki forest in strip type of suitable width as feasible along the River Amaravathy on both the sides in between river bank in full level and approach road for a wide range of benefits.

By considering all the above facts, the Hon'ble Tribunal may pass appropriateOrders(s)/Directions(s) as deemed fit in this case.

S. KarthikeyanScientist
C
Central Pollution Control Board
Regional Directorate, Chennai

District Environmental Engineer
Tamilnadu Pollution Control Board
District Environmental Office Karur

Shri. I. Nakkiran Municipal Engineer, Karur

P. Muthusamy Superintending Engineer
PWD, WRD, Palani

District Revenue OfficerKarur

4. The Karur Municipality also filed a report dated 16.08.2021 e-filed on 01.09.2021 and received on the same date which reads as follows:

Independent Statement and compliance report by the 8th respondent to the Hon'ble National Green Tribunal (SZ), at Chennai

On receipt of the orders of the Honourable National Green Tribanural (SZ) at Chennai dated 28.06.2021 in Karur Municipality, the following actions were taken.

1) In pursuance to the above directions of Hon'ble Green Tribunal, Southern Bench, Chennai, the Joint Committee had its meeting on 12th July, 2021 through VC and carry out the field visit on 23rd July, 2021.

2) The joint Committee inspected the STP site and the STP was in running condition. Two samples were collected from STP and sent for analysis. One sample at Inlet and One Sample outlet have been collected.

2.01 Analytical Test Results of samples collected from STP

S.No.	Parameters	Inlet to STP	STP Outlet	Standards	Compliance status
1.	pH	7.33	7.56	6.5 – 9.0	CW
2.	Total Suspended Solids	52	16	100	CW
3.	BOD 3 days at 27°C	236	95	30	Not CW
4.	Chemical Oxygen Demand	544	232	NN	NA
5.	Ammonical Nitrogen	30.8	19.6	NN	NA
6.	Total Nitrogen	0.5	0.29	NN	NA
7.	Residual Sodium Carbonate (RSC)	-Ve	-Ve	NN	NA
8.	Sodium Absorption Ratio (SAR)	7.67	6.92	NN	NA
9.	Faecal Coliform MPN/100 ml	Not carried out since facility is not available		< 1000	NA
10.	Aeration tank – Dissolved Oxygen – 1.3 & MLSS -				

All values are in mg/l except pH, RSC, SAR & Faecal Coliform. NN – Not notified.
CW – Complied with.

From the above table, it is found that pH and TSS are complying with the Standards. Whereas the BOD is not complied with the Standards but observed a reduction of 60% this time. Municipality is taking steps to improve the BOD removal, the level of DO, MLSS and FM ratio shall be maintained as per the design of STP, so as to meeting the standards as well as to achieve the BOD level of 20mg/l as per the design.

3) Compliance status of Sewage management:

i) DPR for rejuvenation of the STP at an estimate of 7.5 crores is under process by PWD, WRO, Project formulation division, Trichy.

ii) In order to prevent the untreated sewage being discharged into River Amaravathy from the leftover areas of Karur, Imam Karur and Thanthoni & Sanapiratty, where UGSS scheme is feasible, work for UGD line, collection well with mechanical pumping to existing STP at four places is under process. For which Karur Municipality has received the letter for joint inspection, FMP is ready and joint inspection has to be carried out. Where UGSS scheme is not feasible, Decentralized Wastewater Treatment System at five places are proposed and the work is in progress.

4) **Compliance report of Solid waste management:**

S.No.	Gaps observed by the joint committee	Compliance status
1.	Mixing of bulk agent with shredded wet waste at Micro Compost Centre.	Shredded wet wastes are mixed as a bulk agent in the MCC
2.	Rotary screen to screen the Compost and partially composted materials at Micro Compost Centre.	Rotary screen are provided in the MCC
3.	Using partially composted materials as bulk agent at Micro Compost Centre.	It is Instructed to use partially compost materials as bulking agent in the MCC.
4.	Hard surface pad to dry the compost	To provid hard surface pad in the MCC. Tender process are in progress.
5.	Provision for storing compost	Places are identified and earmarked for storing the compost
6.	Maintenance of stock register for Compost	Stock registers are maintained in the MCC.

5) **Compliance status of Bio-Methanation Plant:**

S.No.	Gaps observed by the joint committee	Compliance status
1.	Leak in rubber gas bladder	Leakage in the bladder has been arrested
2.	Gas Holder	It is proposed to install a gas holder made of Poly Urethane.

6) **Compliance status of Legacy Waste:**

S.No.	Gaps observed by the joint committee	Compliance status
1.	Bio-mining of Legacy waste at Eastern yard	A quantity of 1,41,731 cubic meters of Legacy waste has been processed fully.
2.	Co-processing of RDF	Forwarded the RDF for co-processing and thus completed the Bio-mining of Legacy waste at Eastern Yard
3.	Bio-mining of Legacy waste at Western yard	Out of 65,000 Cubic meters legacy waste, one third quantity is bio-mined and the bio-mining process is going on.

Solemnly affirmed on this the
16th day of August 2021 and
The deponent herein has
Affixed his signature in my presence

Commissioner
Karur Municipality
before me

Advocate, Karur
P. NAGULSAMY, B.A.,LL.B.,
ADVOCATE, MS: 932/2001
No: 267. Jawahar Bazaar,
KARUR - 1, Mob: 98432 34955

5. It is quite unfortunate that in the water analysis report submitted by the Joint Committee of which Central Pollution Control Board and Pollution Control Board are parties, they have mentioned that they could not furnish details of total coliform or faecal coliform in the water analysis report as no facility is available to measure the same. We are receiving number of reports filed by the Tamil Nadu Pollution Control Board as well as Central Pollution Control Board whenever water quality is being directed to be analyzed by them in which they used to mention about the presence of coliform and they used to mentioned that huge level of coliform presence shows the discharge of untreated sewage into the water bodies. Therefore, they are not expected to file such report before this Tribunal especially when this Tribunal wants to ascertain the quality of water and the source for contamination and the remedial measures to be taken to re-solve the issue. Further, it is also seen in the Joint Committee report that "The untreated sewage is not getting mixed with the river water, however, it is stagnated on the side of riverbed in a pool of about 100ft wide". They have not mentioned as to whether this will have any impact on the water quality due to percolation of this stagnated sewage water into the ground and affecting the water quality in the river bed. Further they have mentioned that the BoD is not in conformity with the standard provided. They have not mentioned what is the reason for non-complaince of standards prescribed for BoD in the water and what is the

source of the contamination as well. But ultimately, they gave a report that the result indicate that the water may be the mixture of waste water and untreated sewage from the nearby areas.

6. It is also seen from the report that a water channel was constructed by the Sri Vanchaleeswarar temple during Kumbhabhishekham festival season and a show cause notice had been issued and what is the nature of further action taken pursuant to the show cause notice is also not clear from the report. Regarding the status of sewage treatment plant is concerned, it is not clear as to whether the same has been completed or not. As regards, bio-mining is concerned, it is mentioned that there is still 65,000 cubic meter legacy waste lying on the western yard out of which one-third was bio-mined and remaining is under progress but in both the reports they have not mentioned as to when bio-mining process on the western yard will be completed.

7. It is also seen from the report that for the purpose of establishment of STP in River Amaravathy, the PWD had identified the land and it appears the same is likely to be established in the river bed of Amaravathy. It is not known as to whether the area has been identified beyond the floodplain of the river so as to avoid inundation of the STP during monsoon season when the water flow is high in the river. It is also to be noted that no STP can be established in the river bed at any rate. This must be taken note of by PWD, District Administration as well as Karur Municipality, when

such allotment is proposed to be made to the Karur Municipality for this purpose.

8. When this was pointed out the Learned Counsel appearing for the State Department, Central Pollution Control Board and Tamil Nadu Pollution Control Board submitted that they will come with the further proper report before this Tribunal. The Committee is also directed to ascertain what is the recommendation that they intend to suggest to avoid stagnation of sewage water near the river bed which appears to be one of the reason for the water quality being affected as noted by the Committee, though not satisfactorily to the satisfaction of this Tribunal. The Committee is directed to give their suggestions as to how this can be avoided and how this can be resolved by diverting the same to some other place from where it can be taken to the STPs available for treatment. They are directed to submit the respective reports to this Tribunal on or before 22.10.2021 by e-filing in the form of Searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hardcopies to be produced as per Rules.

9. The Registry is directed to communicate this order to the members of the committee, Tamil Nadu Pollution Control Board, Public Works Department, Karur Municipality apart from informing the same to the Chief Secretary, State of Tamil Nadu, Principal Secretaries of Environment, Public Works Department and Additional Chief Secretary

for Municipal Administration and Water Supply by e-mail for their information and compliance with the directions.

10. For consideration of further report, post on 22.10.2021.

.....J.M.
(Justice K. Ramakrishnan)

.....E.M.
(Shri. Dr. K. Satyagopal)

O.A. No.257 /2020(SZ)
13th September, 2021

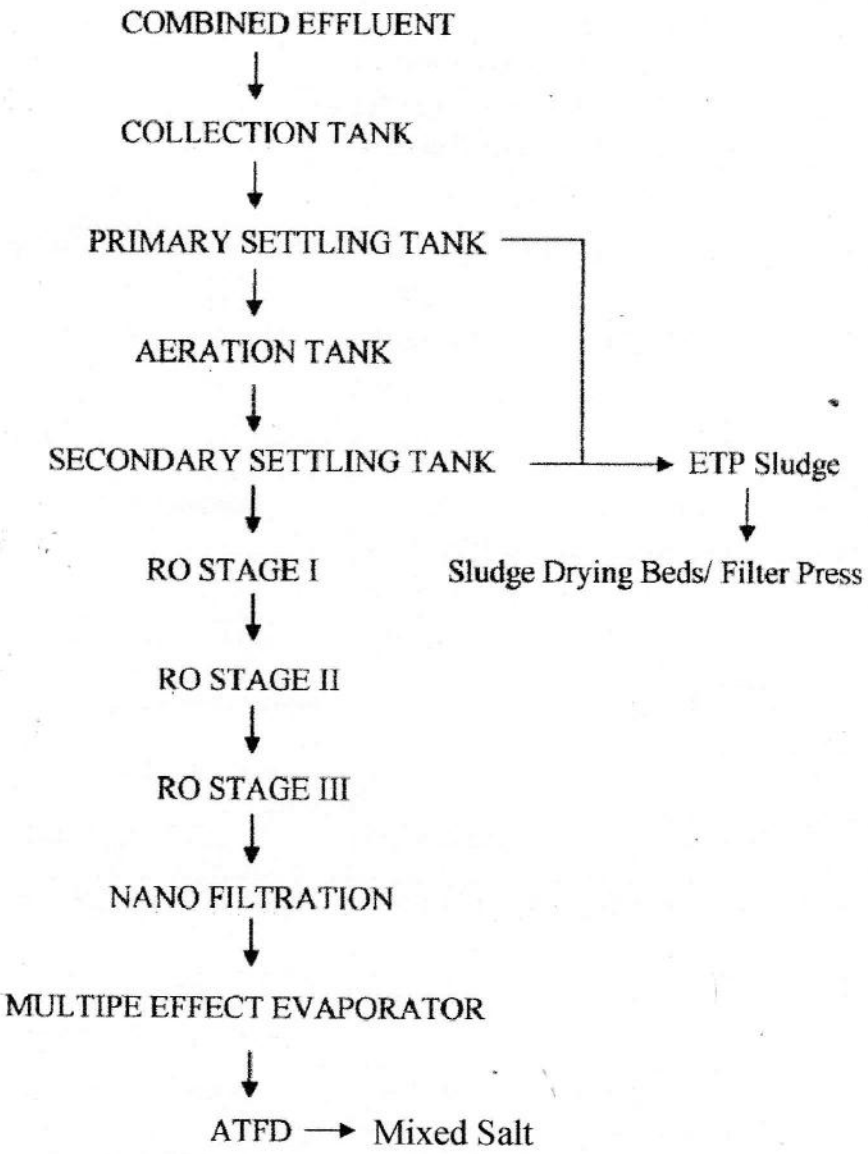
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Jose Colours, T.S.No.364/4, Karur Town, Pasupathy Layout, No.6, Chinnandankoil Road, Karur District – 639001.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn /Fabrics: 44.85 T/Month Trade Effluent: 100 KLD Sewage: 1.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	9.86 KLD (Domestic- 1.30 KLD, Process Make up- 0.81 KLD, Cooling and Boiler feed- 7.25 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	100 KLD
7.	Status of Flow meters and Totalizer	17 No of EMFM provided
8.	Capacity of ETP and Flow chart	100 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	100 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	20 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	25 M
19.	Geo coordinates	Lat: 10°57'16.38"N Lon: 78°04'36.21"E

For JOSE COLOURS

PARTNER

EFFLUENT TREATMENT FLOW CHART



For JOSE COLOURS,

PARTNER

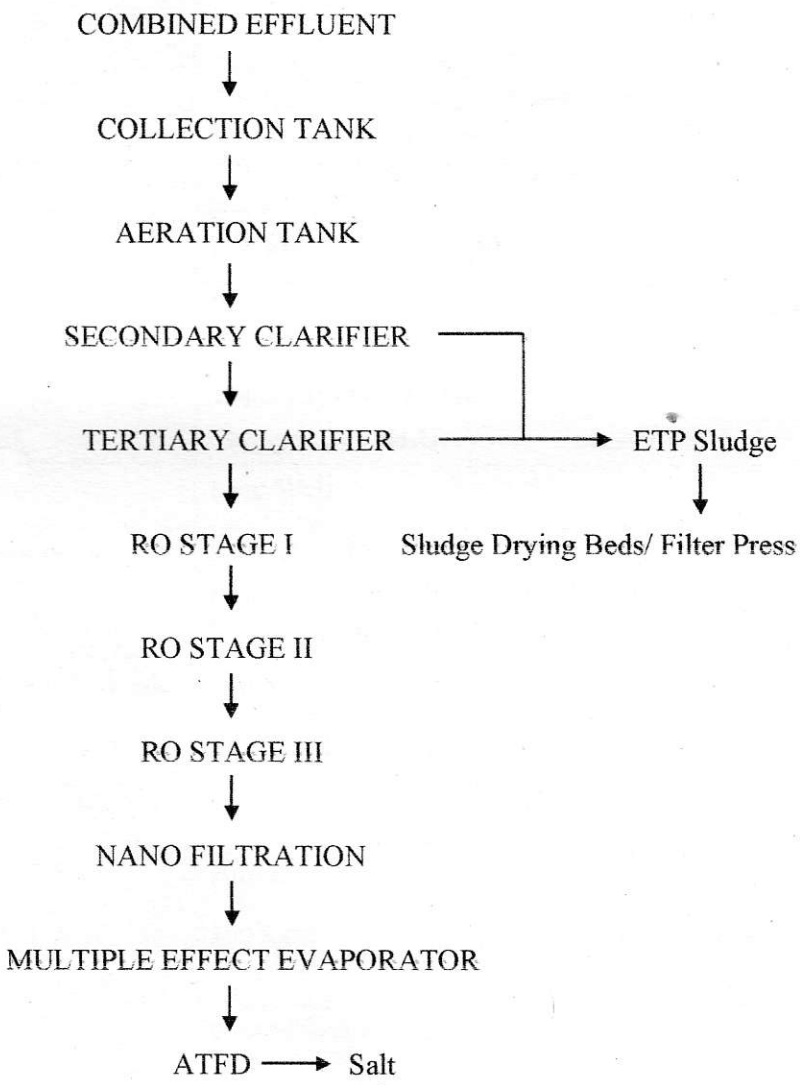
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. ASI COLOURS, T.S.No.363, 364, Karur Town, 45, Gandhi Nagar, Pasupathy Layout, Chinnandankoil Road 1st Cross, Karur – 639001.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn /Fabrics: 87.37 T/Month Trade Effluent: 100 KLD Sewage: 1.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	9.86 KLD (Domestic- 1.30 KLD, Process Make up- 0.81 KLD, Cooling and Boiler feed- 7.25 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	100 KLD
7.	Status of Flow meters and Totalizer	17 No of EMFM provided
8.	Capacity of ETP and Flow chart	100 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	100 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	10 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	35 M
19.	Geo coordinates	Lat: 10°57'13.35"N Lon: 78°04'31.06"E

For ASI COLOURS

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For ASI COLOURS

PROPRIETOR

QUESITIONNARIES FOR IETPs

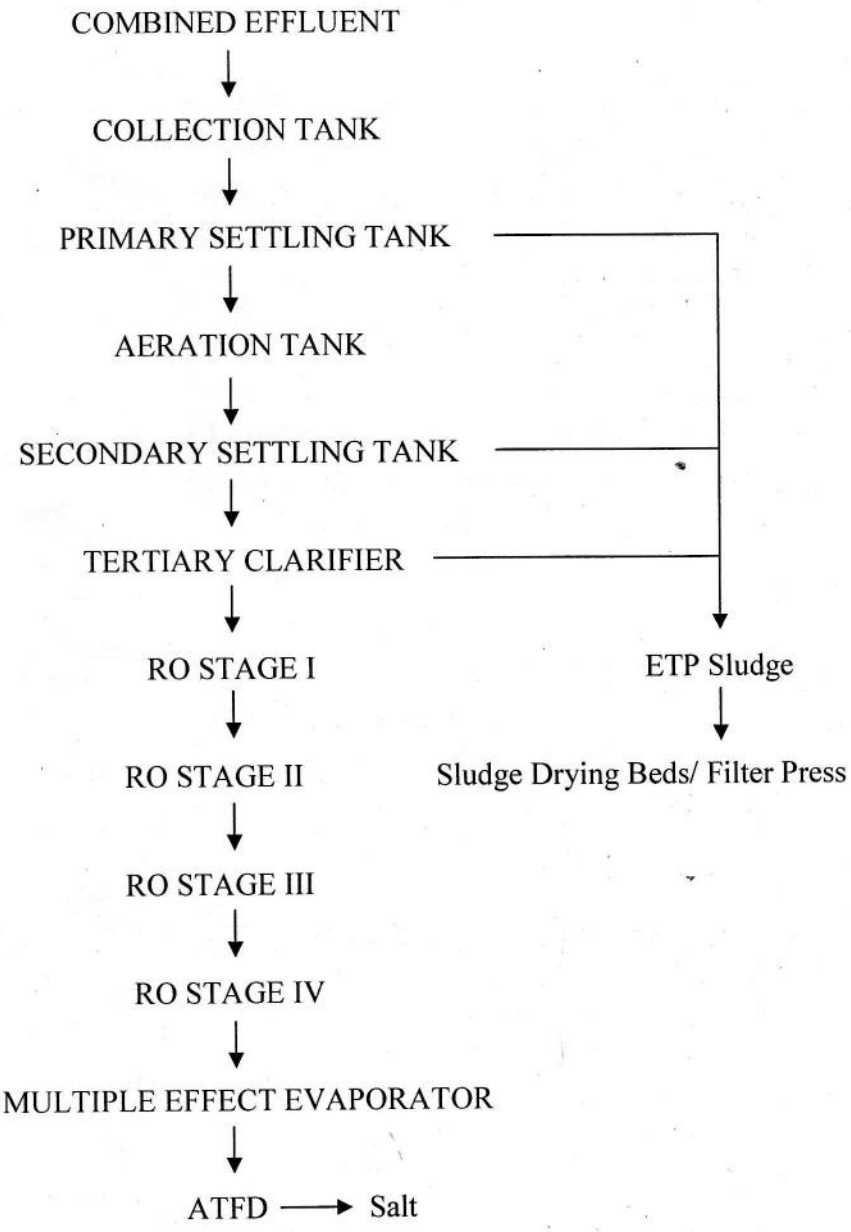
Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.M.R.C.MILLS PRIVATE LIMITED, S.F.No.2419/1, 2459/1, 2420/1, 2415/2 part & 2419/2 Part Andankoil East Village, Manmangalam Taluk, 9/1, Chinnandankoil Road, Near Water Pumping Station, Karur- 639001.
2.	Type of the Industry	Red Small (Bleaching & Printing Unit)
3.	Capacity	Production: 1.Printing of Woven and Hosiery Fabrics: 8.00 T/Day 2. Bleaching of Woven and Hosiery Fabrics: 2.49 T/Day Trade Effluent: 100 KLD Sewage: 1.50 KLD
4.	Source of water	Open Well
5.	Quantity of water consumption	8.75 KLD (Domestic- 3.00 KLD, Process Make up- 3.75 KLD, Cooling and Boiler feed- 2.00 KLD)
6.	Quantity of Effluent generation	100 KLD
7.	Status of Flow meters and Totalizer	13 No of EMFM provided
8.	Capacity of ETP and Flow chart	100 KLD. Flow chart attached
9.	Date of installation of ZLD	January 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	100 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	120 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	100 M
19.	Geo coordinates	Lat: 10°57'00.17"N Lon: 78°04'00.70"E

For M.R.C.MILLS PRIVATE LIMITED

M.R.C. MILLS Private Limited KARUR

AUTHORIZED SIGNATORY

EFFLUENT TREATMENT FLOW CHART



For M.R.C.MILLS PRIVATE LIMITED

M.R.C. MILLS Private Limited KARUR

AUTHORIZED SIGNATORY

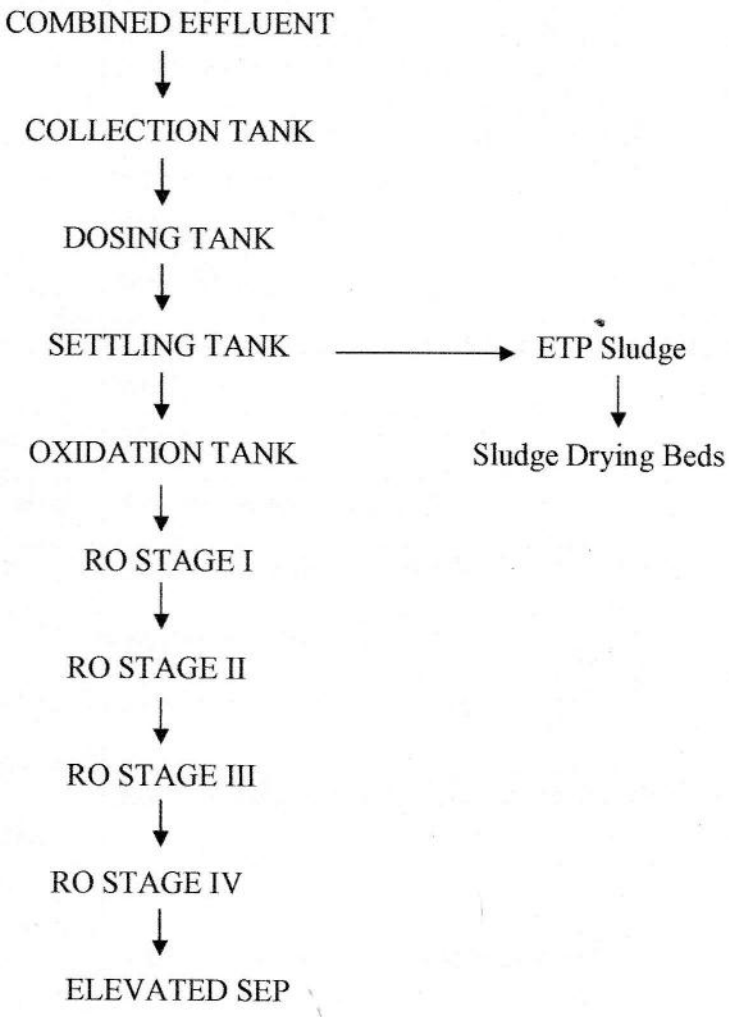
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Sri Manickam Bleaching, T.S.No.27,28, 29, Balambalpuram Village, Karur Taluk, Karur District - 639003.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 13.00 T/Month Trade Effluent: 25 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	2.07 KLD (Domestic- 0.50 KLD, Process Make up- 1.57 KLD)
6.	Quantity of Effluent generation	25 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	25 KLD. Flow chart attached
9.	Date of installation of ZLD	September 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	25 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	6 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	100 M
19.	Geo coordinates	Lat: 10°58'04.41"N Lon: 78°05'35.18"E

For SRI MANICKAM BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For SRI MANICKAM BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

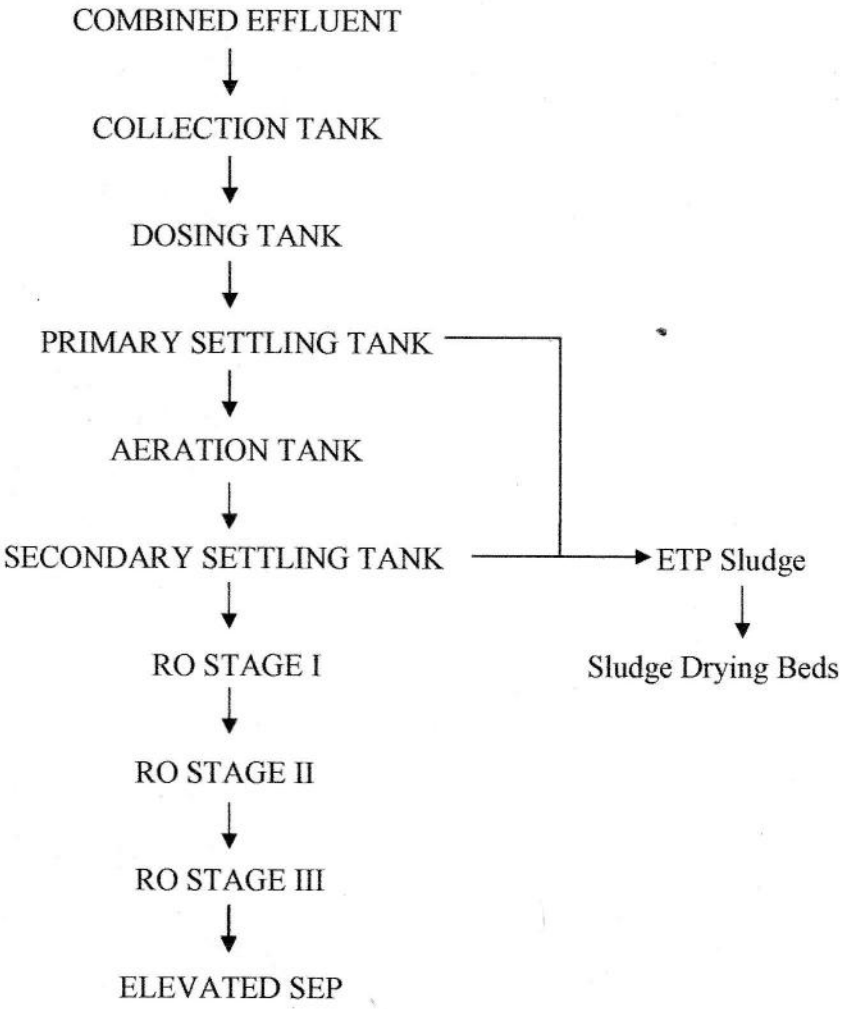
(Note: M/s.Nirma Bleaching & M/s.Aarthi Bleaching have provided combined ZLD system for a capacity of 30 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.Aarthy Bleaching, S.F.No.547/1,2, Thirumanilaiyur Village, Maduraiveeran Koil Street, T.Sellandipalayam, Karur Taluk, Karur District - 639003.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 7.80 T/Month Trade Effluent: 15 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.85 KLD (Domestic- 0.50 KLD, Process Make up- 1.35 KLD)
6.	Quantity of Effluent generation	15 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	30 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	30 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	9 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	180 M
19.	Geo coordinates	Lat: 10°56'34.11"N Lon: 78°04'03.70"E

For AARTHY BLEACHING

PROPRIETOR

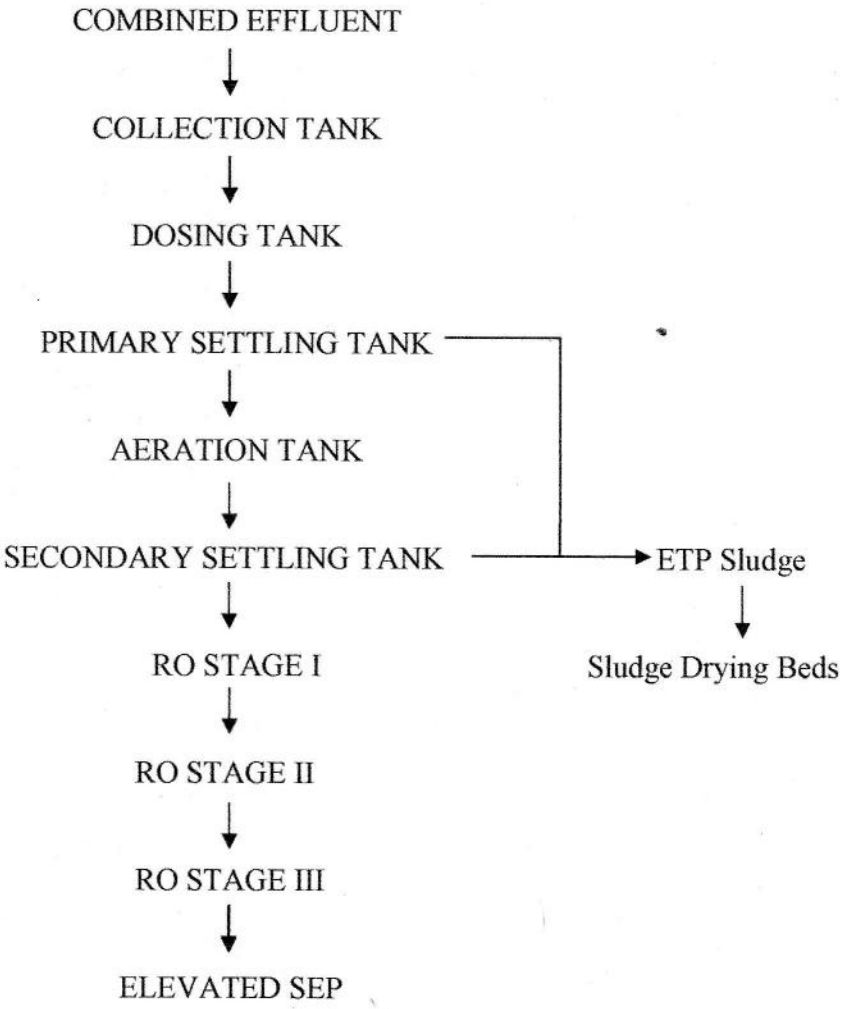
EFFLUENT TREATMENT FLOW CHART



For AARTHY BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For AARTHY BLEACHING

PROPRIETOR

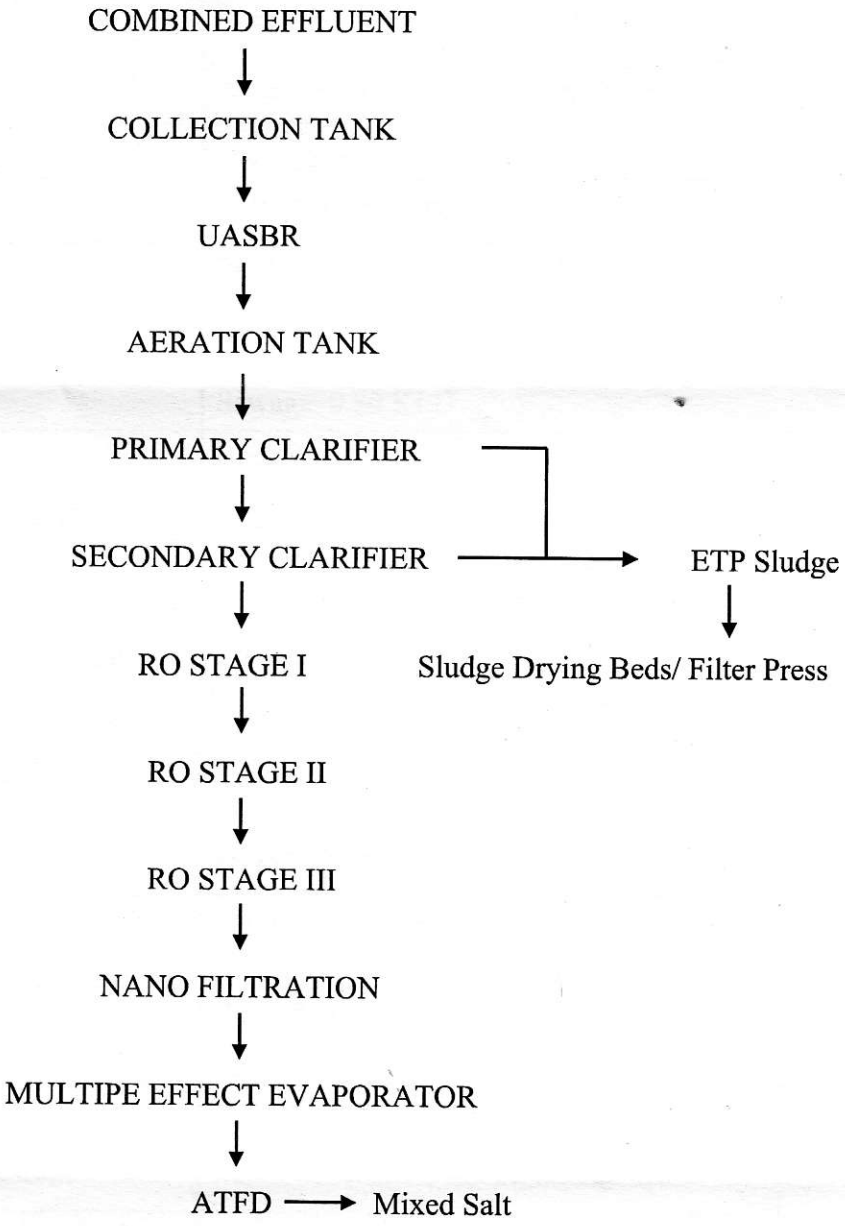
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. MALAR DYEING WORKS, S.F.No.1724/4, 1724/3(Part), 1723/1, 1734/2, Andankoil(East) Village, Amaravathi Nagar, Manmangalam Taluk, Karur District – 639002.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn /Fabrics: 51.35 T/Month Trade Effluent: 250 KLD Sewage: 0.80 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	18.18 KLD (Domestic- 1.00 KLD, Process Make up- 0.68 KLD, Cooling and Boiler feed- 16.00 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	250 KLD
7.	Status of Flow meters and Totalizer	11 No of EMFM provided
8.	Capacity of ETP and Flow chart	250 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	250 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	15 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	200 M
19.	Geo coordinates	Lat: 10°56'57.55"N Lon: 78°03'11.72"E

For MALAR DYEING WORKS

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For MALAR DYEING WORKS

PROPRIETOR

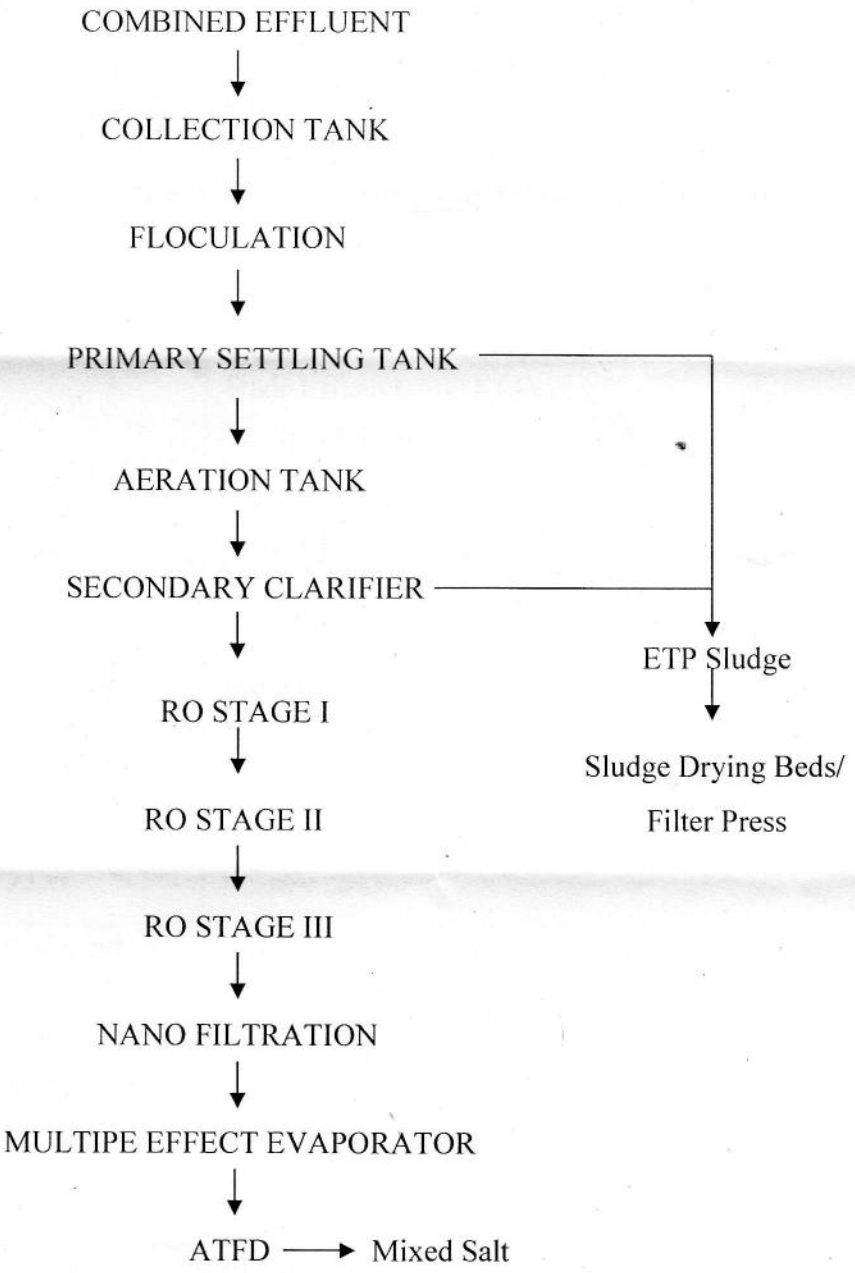
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Thirumagal Dyeing Works, S.F.No.1724/1,2, 1724/3(Part), 1725, Andankoil East Village, Amaravathi Nagar, Manmangalam Taluk, Karur District– 639002.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn /Fabrics: 125.06 T/Month Trade Effluent: 300 KLD Sewage: 1.60 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	25.81 KLD (Domestic- 2.00 KLD, Process Make up- 0.81 KLD, Cooling and Boiler feed- 22.00 KLD & Green Belt Development- 1.00 KLD)
6.	Quantity of Effluent generation	300 KLD
7.	Status of Flow meters and Totalizer	17 No of EMFM provided
8.	Capacity of ETP and Flow chart	300 KLD. Flow chart attached
9.	Date of installation of ZLD	January 2013
10.	ZLD Capacity (RO, MEE & ATFD system)	300 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	30 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	200 M
19.	Geo coordinates	Lat: 10°56'56.55"N Lon: 78°03'09.64"E

For THIRUMAGAL DYEING WORKS

PARTNER

EFFLUENT TREATMENT FLOW CHART



For THIRUMAGAL DYEING WORKS

PARTNER

QUESITIONNARIES FOR IETPs

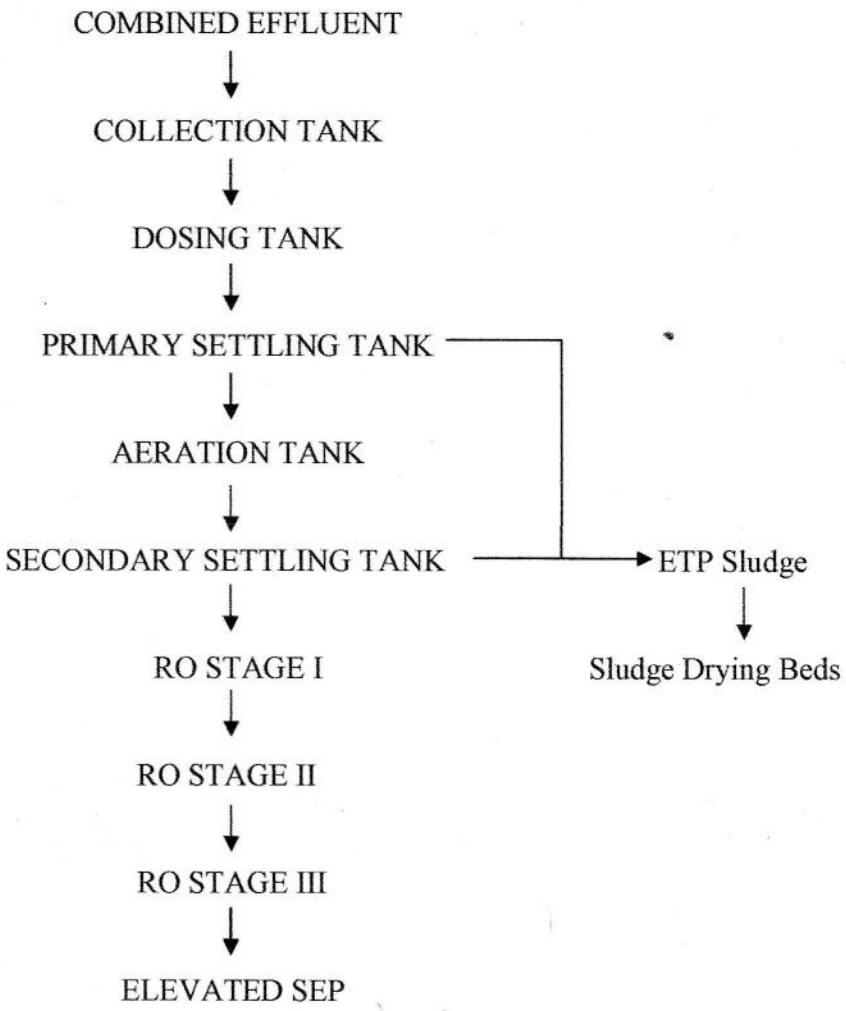
(Note: M/s.Nirma Bleaching & M/s.Aarthi Bleaching have provided combined ZLD system for a capacity of 30 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.Nirma Bleaching, S.F.No.546, Thirumanilaiyur Village, Maduraiveeran Koil Street, T.Sellandipalayam, Karur Taluk, Karur District- 639003.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 7.80 T/Month Trade Effluent: 15 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.85 KLD (Domestic- 0.50 KLD, Process Make up- 1.35 KLD)
6.	Quantity of Effluent generation	15 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	30 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	30 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	9 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	200 M
19.	Geo coordinates	Lat: 10°56'33.08"N Lon: 78°04'03.76"E

For NIRMA BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For NIRMA BLEACHING

PROPRIETOR

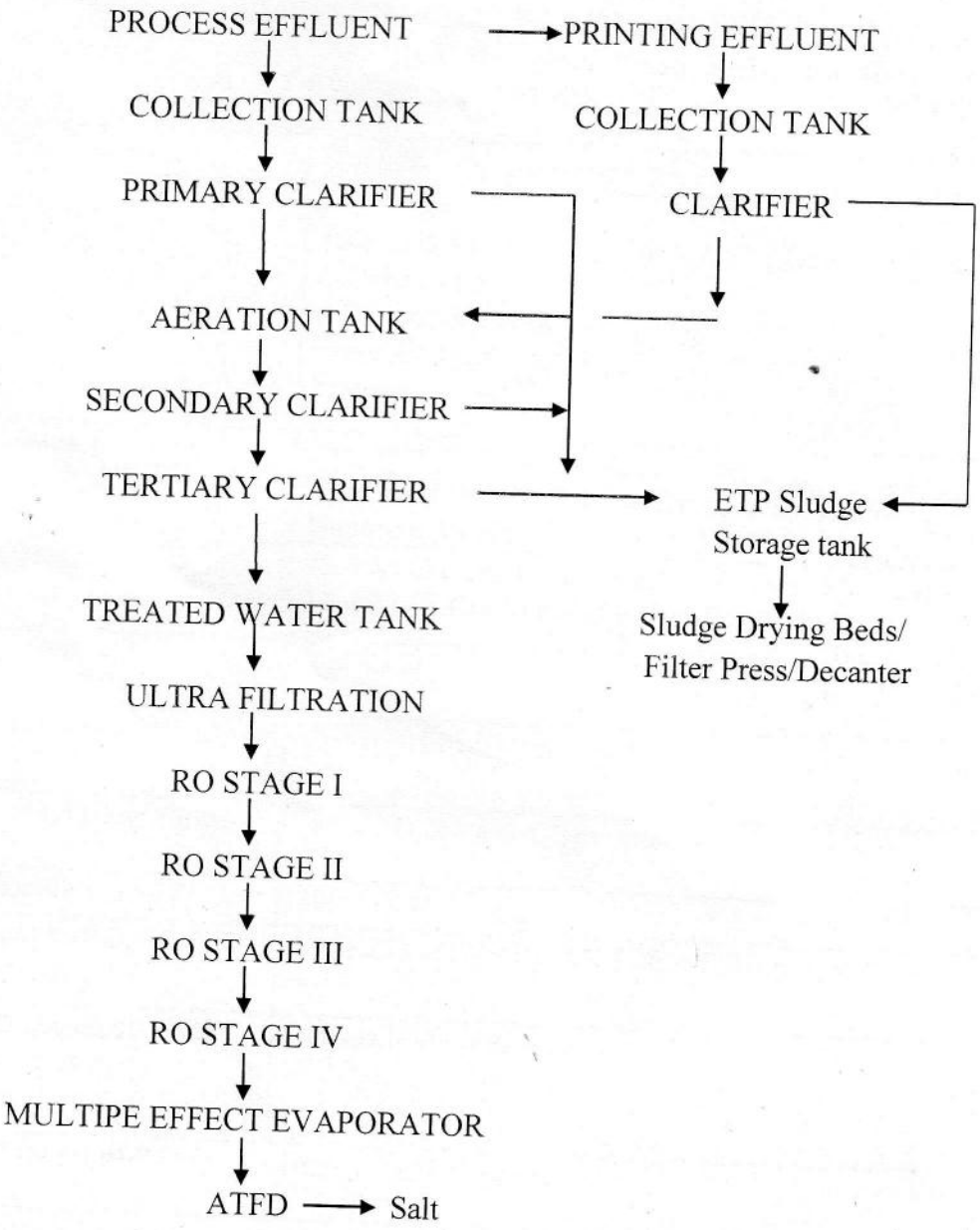
QUESITIONNAIRES FOR IETPs

Sl. No.	Questionnaires	Details
1	Name of the Industry	M/s. Atlas Processing Mills SF.No:1288,1292,1293,2453,1320,1321,1326-1334 No:1/168, Sivasakthi Nagar, Periyandan Kovil West Village,Karur-639002.
2	Type of the Industry	Red Medium (Dyeing Unit)
3	Capacity	Production : 1.Bleached and Dyed Yarn - 4.5 T/ Day 2. Fabric -7.5 T/ Day 3.Printinf of Fabrics - 6 T/Day Trade Effluent : 580 KLD Sewage : 10 KLD
4	Source of water	Dug Well (S.F.No.21, Karur Town) Bore Well (S.F.No.34 Sub Division by 540/5, Nanniyur Village)
5	Quantity of water consumption	43.4 KLD (Domestic - 8 KLD, Process Make up - 15.4 KLD, Cooling and Boiler Feed - 20 KLD)
6	Quantity of Effluent generation	400 KLD
7	Status of Flow meters and Totalizer	13 No of EMFM provided
8	Capacity of ETP and Flow chart	580 KLD & Flow Chart Attached
9	Date of installation of ZLD	July 2014
10	ZLD Capacity (RO, MEE & ATFD system)	580 KLD - (ETP,RO,MEE & ATFD system)
11	Mode of Disposal of MEE Condensate and steam condensate	Reused in the Process
12	Mode of disposal of RO reject	MEE & ATFD system
13	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14	No. of employees in the unit	247
15	If STP installed, STP capacity	-
16	Mode of disposal of treated sewage	-
17	Mode of disposal of storm water	Rain Water harvesting facilities provided
18	Distance from river bed	250 M
19	Geo coordinates	Lat : 10.9822° N Lon : 78.0736° E

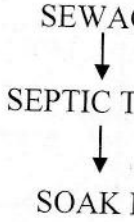
For ATLAS PROCESSING MILLS,

Factory Manager

EFFLUENT TREATMENT FLOW CHART



TREATMENT FLOW CHART - SEWAGE



for ATLAS PROCESSING MILLS.

Factory Manager

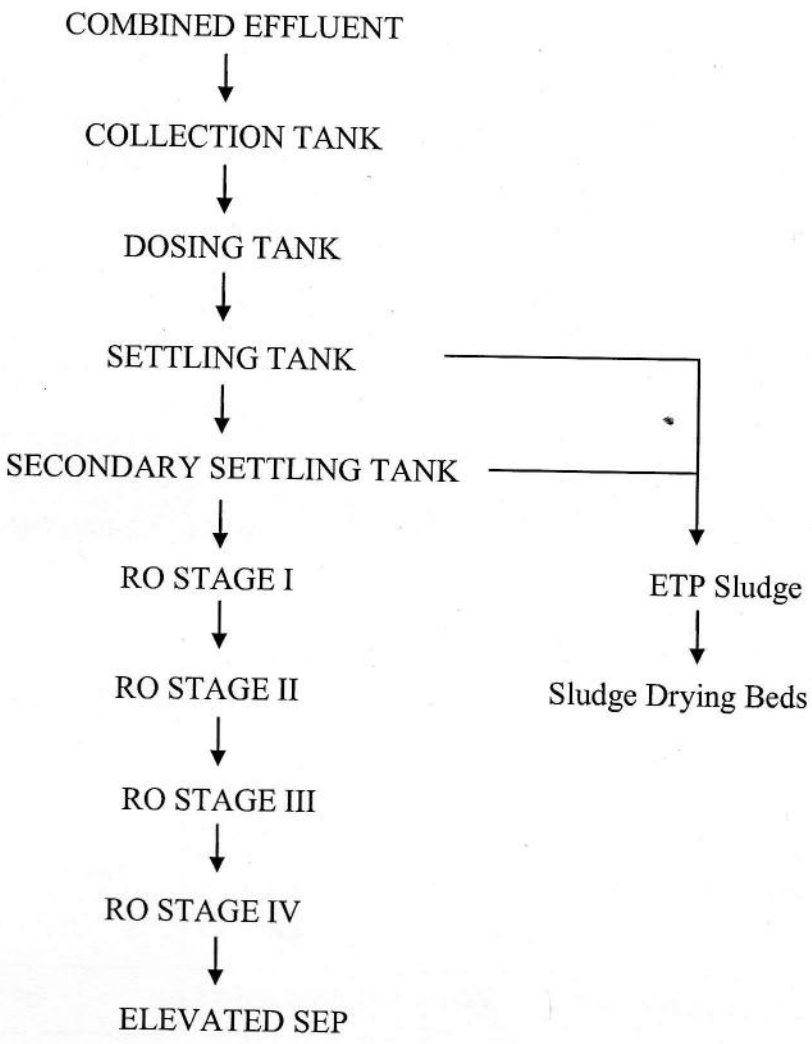
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.Albian Bleaching, S.F.No.1590,1599,1602,1605, Thanthoni Village, Kolanthanur, Pasupathipalayam Post, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 5.00 T/Month Trade Effluent: 10 KLD Sewage: 0.20 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.03 KLD (Domestic- 0.40 KLD, Process Make up- 0.63 KLD)
6.	Quantity of Effluent generation	10 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	10 KLD. Flow chart attached
9.	Date of installation of ZLD	November 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	10 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	8 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	350 M
19.	Geo coordinates	Lat: 10°57'16.31"N Lon: 78°05'39.67"E

For ALBIAN BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For ALBIAN BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

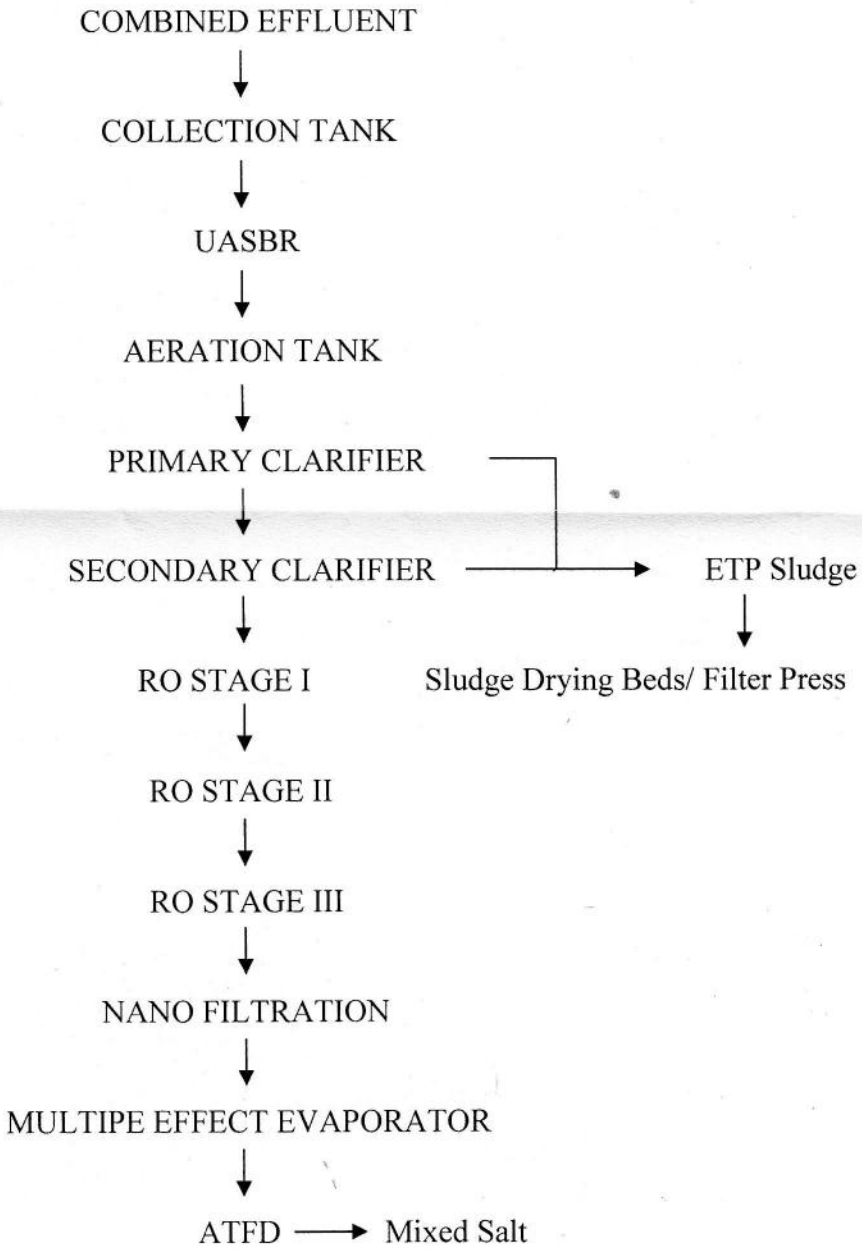
Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Sree Attick Dyers, S.F.No.1745/A1A, 1745/B, 1746/A1, 1749, Andankoil (East) Village, Amaravathi Nagar, Manmangalam Taluk, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn /Fabrics: 77.35 T/Month Trade Effluent: 250 KLD Sewage: 0.80 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	13.18 KLD (Domestic- 1.00 KLD, Process Make up- 0.68 KLD, Cooling and Boiler feed- 11.00 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	250 KLD
7.	Status of Flow meters and Totalizer	13 No of EMFM provided
8.	Capacity of ETP and Flow chart	250 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	250 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	15 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	382 M
19.	Geo coordinates	Lat: 10°57'03.45"N Lon: 78°03'07.31"E

For SREE ATTICK DYERS

A. R. S

PARTNER

EFFLUENT TREATMENT FLOW CHART



For SREE ATTICK DYERS

PARTNER

QUESITIONNARIES FOR IETPs

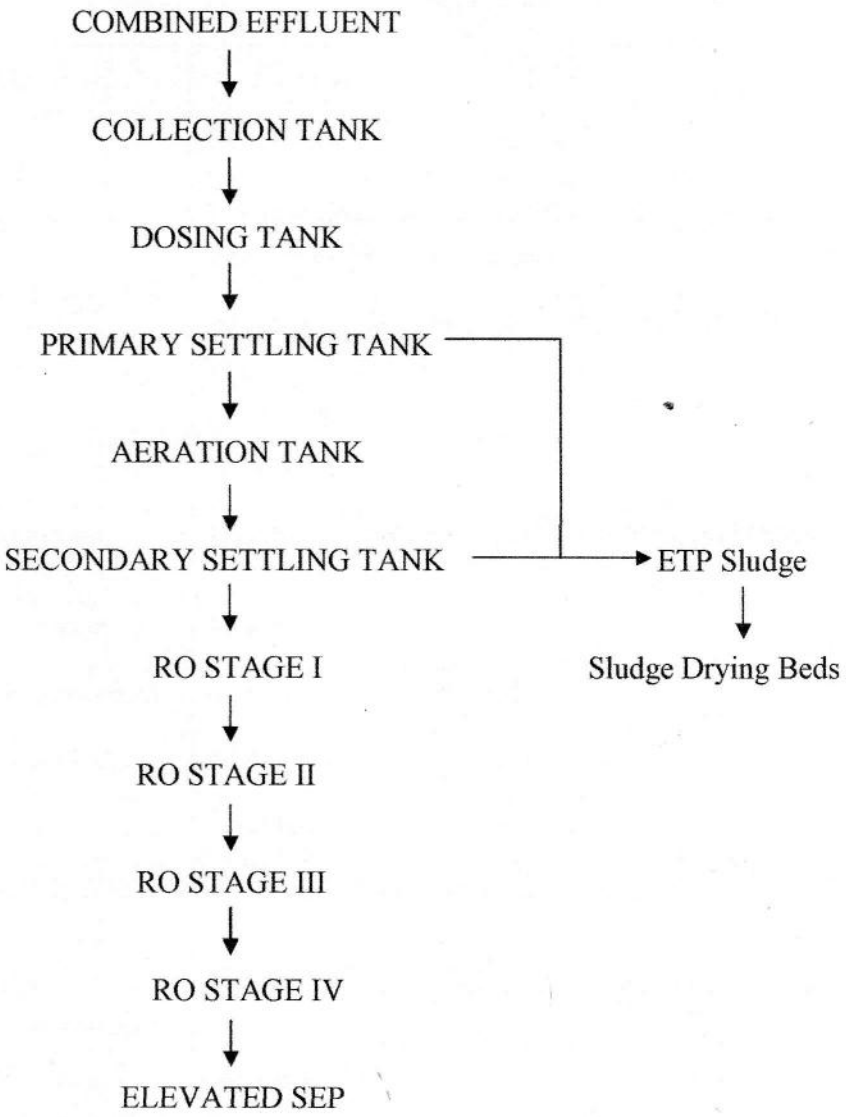
(Note: M/s. S.P.G.Bleaching, S.Ponnusamy Bleaching, Ashok Bleaching, Moorthy Bleaching & Subramani Bleaching have provided combined ZLD system for a capacity of 84 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.S.Ponnusamy Bleaching, S.F.No.127/16, Thoranakkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 5.20 T/Month Trade Effluent: 10 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.13 KLD (Domestic- 0.50 KLD, Process Make up- 0.63 KLD)
6.	Quantity of Effluent generation	10 KLD
7.	Status of Flow meters and Totalizer	6 No of EMFM provided
8.	Capacity of ETP and Flow chart	84 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	84 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	7 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	470 M
19.	Geo coordinates	Lat: 10°56'37.68"N Lon: 78°04'26.60"E

For S.PONNUSAMY BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For S.PONNUSAMY BLEACHING

PROPRIETOR

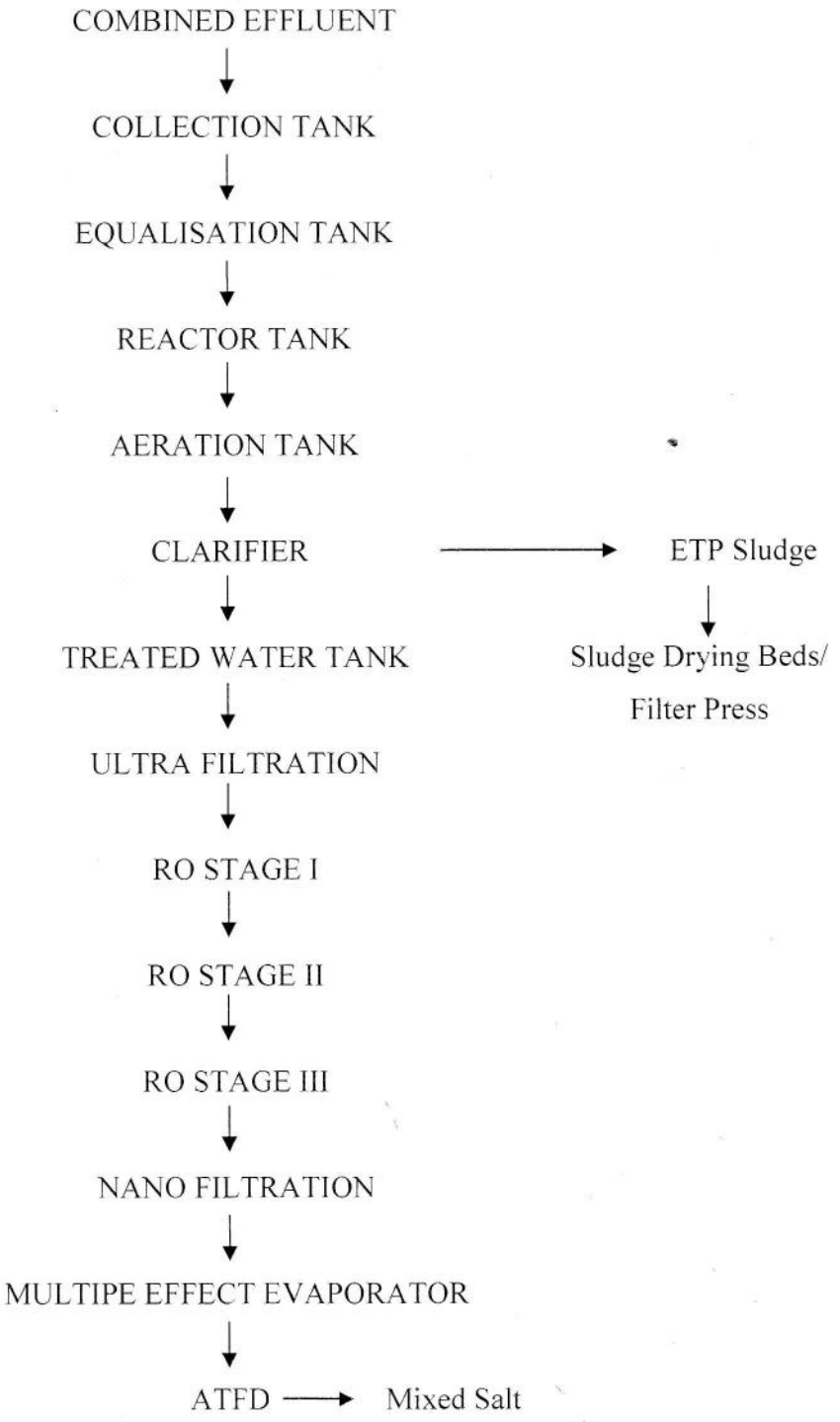
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Atlantic Fabrics, S.F.No.1656/2, 1653, 1654, 1655, 1637, Andankoil East Village, Amaravathi Nagar, Andankoil Post, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: 1.Bleaching and Dyeing of Cotton Yarn: 78.00 T/Month 2. Bleaching and Dyeing of Fabrics: 130.00 T/Month Trade Effluent: 500 KLD Sewage: 2.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	28.40 KLD (Domestic- 2.00 KLD, Process Make up- 1.40 KLD, Cooling and Boiler feed- 25.00 KLD)
6.	Quantity of Effluent generation	500 KLD
7.	Status of Flow meters and Totalizer	17 No of EMFM provided
8.	Capacity of ETP and Flow chart	500 KLD. Flow chart attached
9.	Date of installation of ZLD	April 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	500 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	50 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	486 M
19.	Geo coordinates	Lat: 10°57'09.01"N Lon: 78°02'59.82"E

For ATLANTIC FABRICS

PARTNER

EFFLUENT TREATMENT FLOW CHART



For ATLANTIC FABRICS

PARTNER

QUESITIONERIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	ASIAN FABRICX PRIVATE LIMITED – Printing & Bleaching division
2.	Type of the Industry	Home Textile Wet Processing – RED Large
3.	Capacity	500 KLD
4.	Source of water	Lorry water - Ground water taken from PWD approved place.
5.	Quantity of water consumption	60 KLD
6.	Quantity of Effluent generation	Presently 400 KLD generation
7.	Status of Flow meters and Totalizer	EMFM Yes all stages
8.	Capacity of ETP and Flow chart	500 KLD
9.	Date of installation of ZLD	2014-2015
10.	ZLD Capacity (RO, MEE & ATFD system)	ETP 500KLD , RO-500KLD, MEE -75 KLD , ATFD-7KLD – Complete ZLD system Adopted
11.	Mode of Disposal of MEE Condensate and steam condensate	MEE condensate water reused in our process house
12.	Mode of disposal of RO reject	Treated in MEE –FF, Forced , ATFD
13.	Mode of disposal of Sewage	STP aeration biological sludge used as a fertilizer for gardening
14.	No. of employees in the unit	Total printing & bleaching division 328 employees (in ETP – 22 Employees/day)
15.	If STP installed, STP capacity	YES, 10 KLD

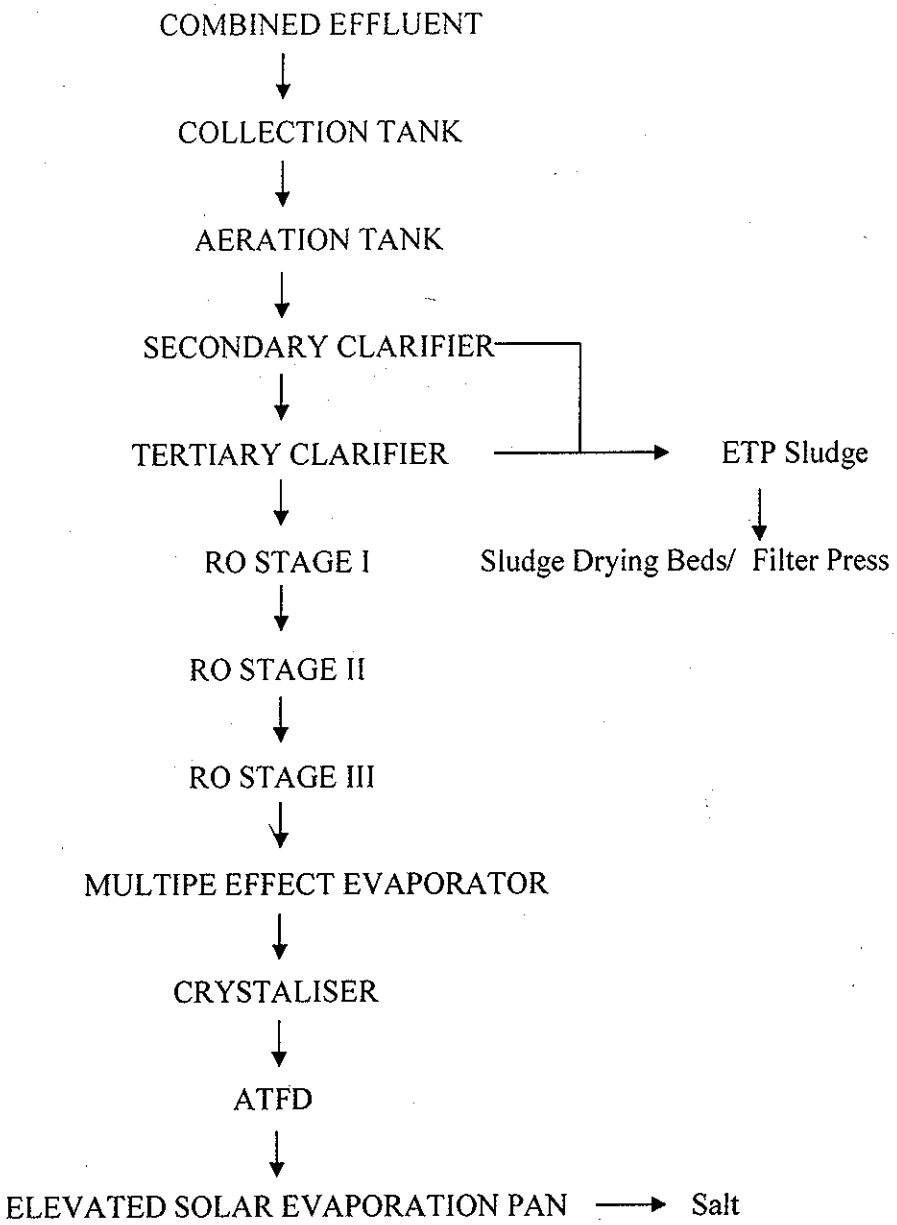
16.	Mode of disposal of treated sewage	STP treated water reused for gardening & ETP
17.	Mode of disposal of storm water	We have rain water harvesting for ground recharge purpose
18.	Distance from river bed	500 meters
19.	Geo coordinates	**Latitude: 10°56′24″N** **longitude:78°2′.42″E**

QUESITIONERIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	**ASIAN FABRICX PRIVATE LIMITED – Dyeing Unit**
2.	Type of the Industry	Home Textile Wet Processing – RED Large
3.	Capacity	500 KLD
4.	Source of water	Lorry water - Ground water taken from PWD approved place.
5.	Quantity of water consumption	60 KLD
6.	Quantity of Effluent generation	Presently 350 KLD generation
7.	Status of Flow meters and Totalizer	EMFM Yes all stages
8.	Capacity of ETP and Flow chart	500 KLD
9.	Date of installation of ZLD	2012 - 2013
10.	ZLD Capacity (RO, MEE & ATFD system)	ETP-500 KLD , RO-1000KLD,MEE-100 KLD , ATFD -10KLD – Complete ZLD system Adopted
11.	Mode of Disposal of MEE Condensate and steam condensate	MEE condensate water reused in our process house
12.	Mode of disposal of RO reject	Treated in MEE –FF, Crystallizer, Forced , ATFD
13.	Mode of disposal of Sewage	STP aeration biological sludge used as a fertilizer for gardening
14.	No. of employees in the unit	Total dyeing division 127 employees (in ETP – 23 Employees/day)
15.	If STP installed, STP capacity	YES, 10 KLD

16.	Mode of disposal of treated sewage	STP treated water reused for gardening & ETP
17.	Mode of disposal of storm water	We have rain water harvesting for ground recharge purpose
18.	Distance from river bed	1098 meters
19.	Geo coordinates	**Latitude 10°56′52.920″N** **longitude:78°02′43.86″ E**

TREATMENT FLOW CHART



For ASIAN FABRICX PRIVATE LIMITED

MANAGING DIRECTOR

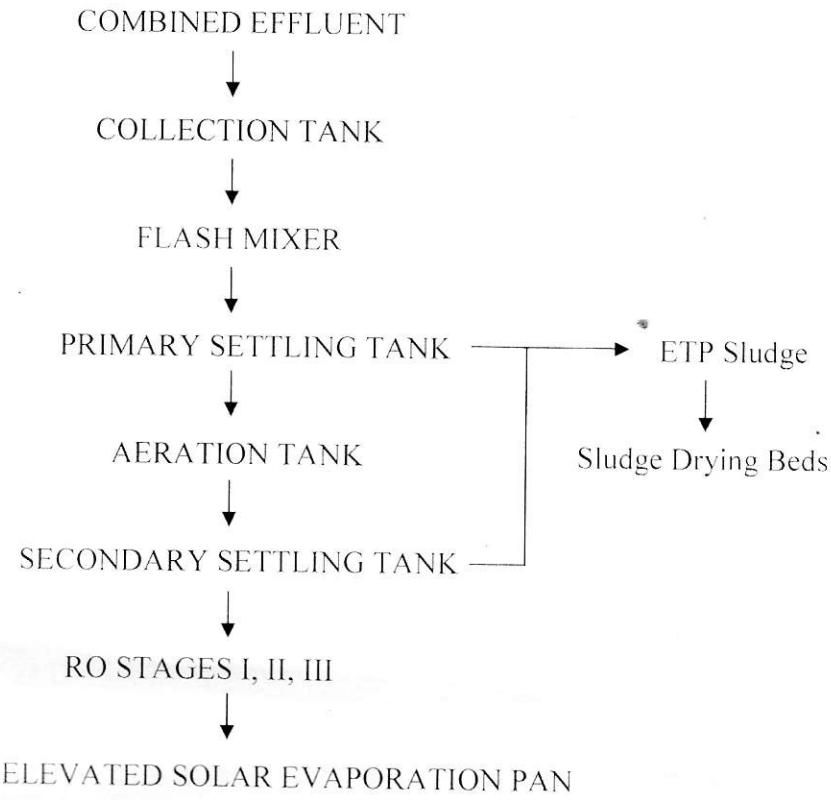
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.Sri Arul Colours, S.F.No.611/A, 611/B, Thirumanilaiyur Village, Salaipudur, Sukkaliyur Post, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn: 15.00 T/Month Trade Effluent: 20 KLD Sewage: 0.40 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	2.00 KLD (Domestic- 0.50 KLD, Process Make up- 1.50 KLD)
6.	Quantity of Effluent generation	20 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	10 KLD. Flow chart attached
9.	Date of installation of ZLD	November 2013
10.	ZLD Capacity (RO, MEE & ATFD system)	20 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual dyeing unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	8 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	509 M
19.	Geo coordinates	Lat: 10°56'22.35"N Lon: 78°03'57.63"E

For SRI ARUL COLOURS

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For SRI ARUL COLOURS

PROPRIETOR

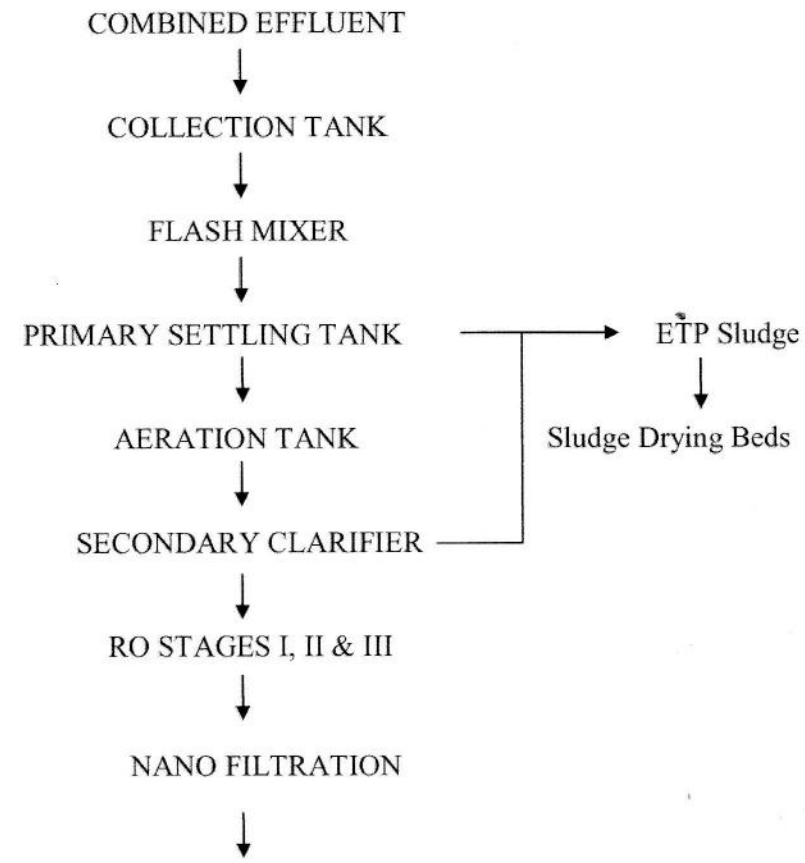
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. PREETHI DYEING, S.F.No.1839,1842/1, Andankoil East Village, Amaravathi Nagar, Manmangalam Taluk, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn: 0.30 T/Day Trade Effluent: 25 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.18 KLD (Domestic- 0.50 KLD, Process Make up- 0.68 KLD)
6.	Quantity of Effluent generation	25 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	25 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	25 KLD - (ETP, RO, NF & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual dyeing unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	8 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	535 M
19.	Geo coordinates	Lat: 10°57'07.44"N Lon: 78°03'17.43"E

For PREETHI DYEING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For PREETHI DYEING

PROPRIETOR

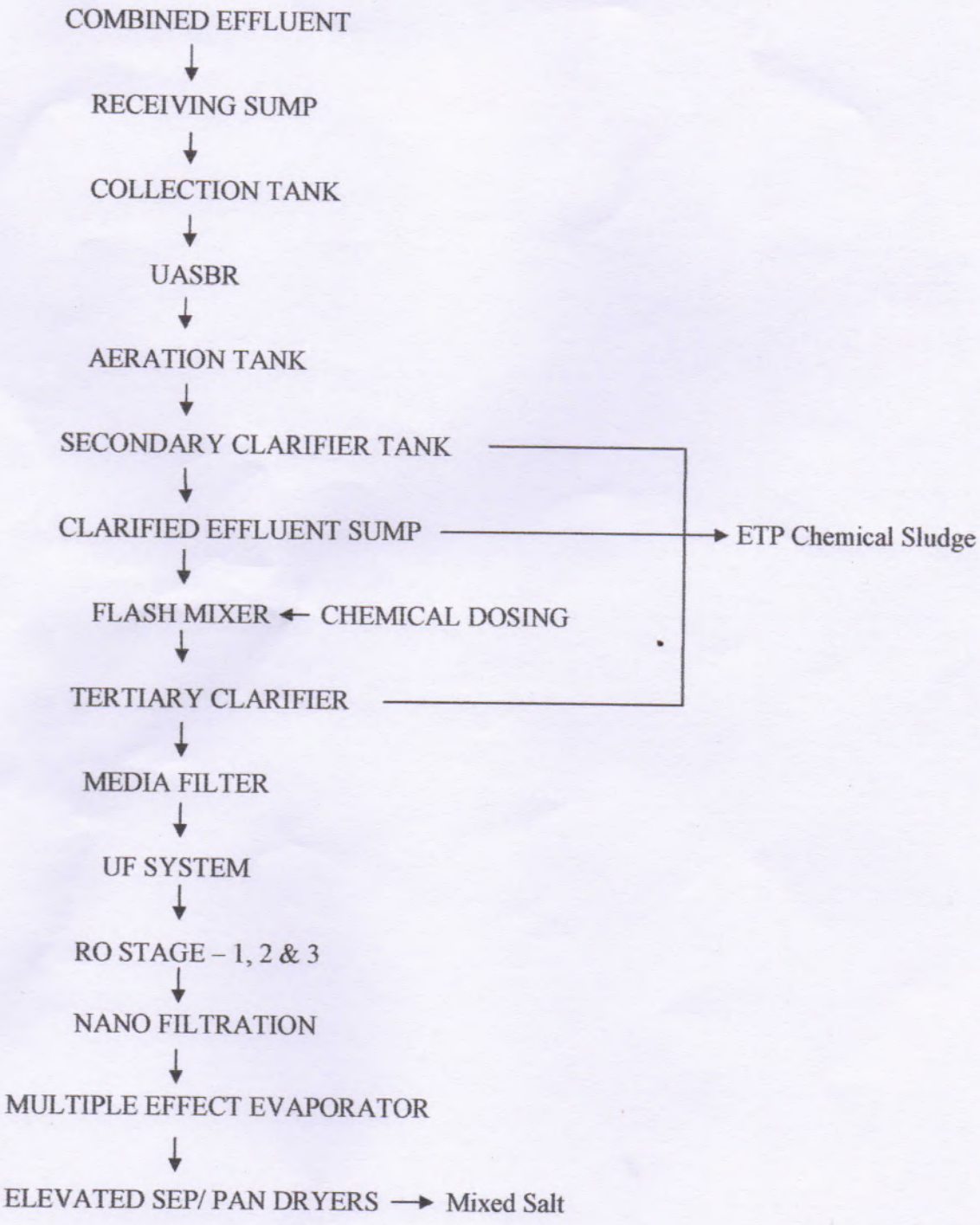
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. AARTHI A1 HOME TRENDS PRIVATE LIMITED (FORMERLY AMUTHA DYEING), S.F.No.391, 392, 393 & 394, Thoranakkalpatti Village, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Dyed Yarn/Fabrics: 151.06 T/Month Trade Effluent: 300 KLD Sewage: 3.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	36.78 KLD (Domestic- 3.60 KLD, Process Make up- 0.68 KLD, Cooling and Boiler feed- 32.00 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	300 KLD
7.	Status of Flow meters and Totalizer	14 No of EMFM provided
8.	Capacity of ETP and Flow chart	300 KLD. Flow chart attached
9.	Date of installation of ZLD	July 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	300 KLD - (ETP, RO, MEE & Pan Dryers)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & Pan Dryers
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	50 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	550 M
19.	Geo coordinates	Lat: 10°56'11.59"N Lon: 78°03'48.88"E

For AARTHI A1 HOME TRENDS PRIVATE LIMITED

MANAGING DIRECTOR

EFFLUENT TREATMENT FLOW CHART



For AARTHI A1 HOME TRENDS PRIVATE LIMITED

MANAGING DIRECTOR

QUESITIONNARIES FOR IETPs

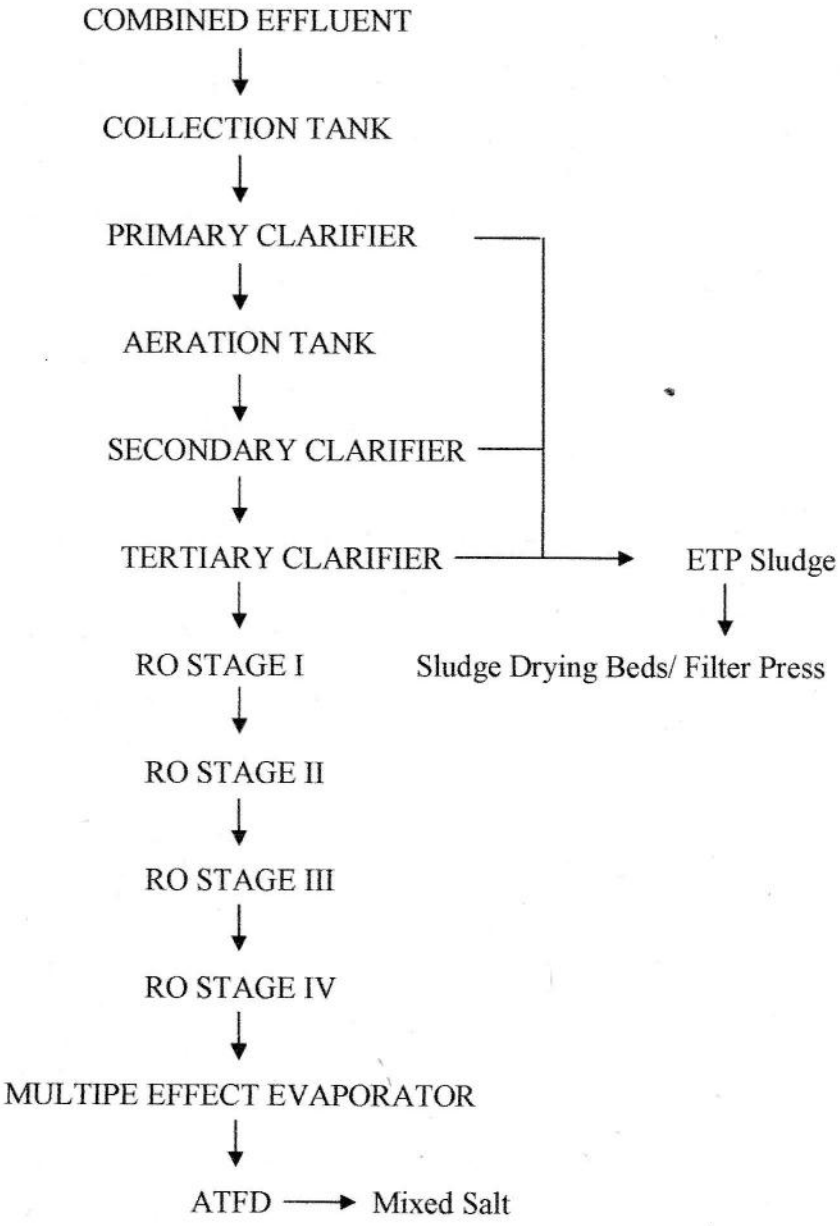
Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.S.M.Dyeing Works, S.F.No. 439, 440, 441/1, 442/2A, 443, 445/2B, 455/2B, 456/2, 480/2C4, Thirumanilayur Village, River Road, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red medium (Dyeing Unit)
3.	Capacity	Production: 1.Bleached and Dyed Yarn and Fabrics: 4.70 T/Day 2. Printing of Fabrics: 3.00 T/Day Trade Effluent: 400 KLD Sewage: 1.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	17.26 KLD (Domestic- 2.00 KLD, Process Make up- 1.26 KLD, Cooling and Boiler feed- 14.00 KLD)
6.	Quantity of Effluent generation	400 KLD
7.	Status of Flow meters and Totalizer	13 No of EMFM provided
8.	Capacity of ETP and Flow chart	400 KLD. Flow chart attached
9.	Date of installation of ZLD	November 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	400 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	15 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	Rain water harvesting facilities provided
18.	Distance from river bed	595 M
19.	Geo coordinates	Lat: 10°56'45.33"N Lon: 78°04'19.94"E

For S.M.DYEING WORKS

S. h

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For S.M.DYEING WORKS

S. H.

PROPRIETOR

QUESITIONNARIES FOR IETPs

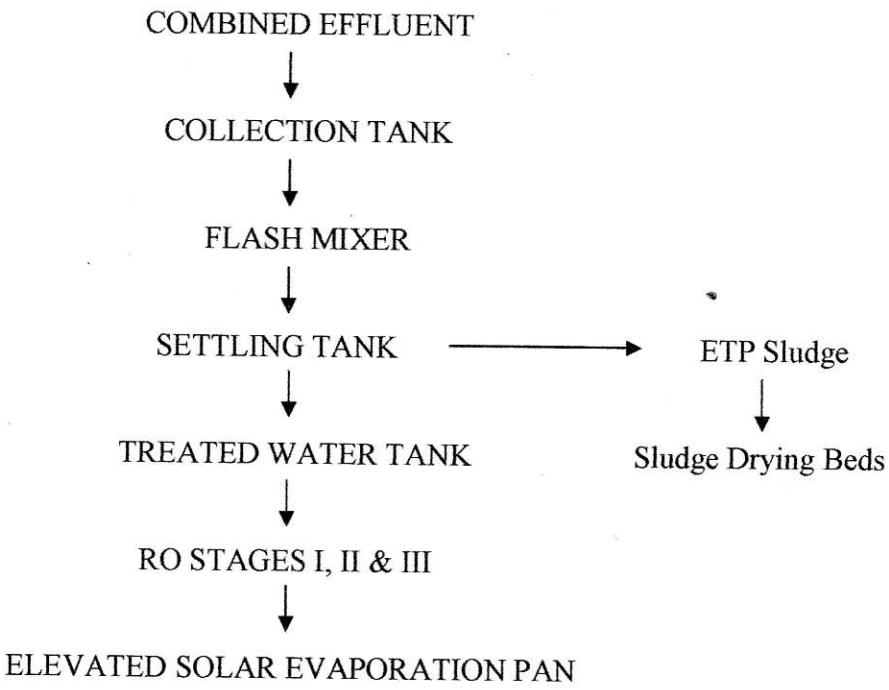
Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. ASIAJOTHI FABRICS, S.F.No.2260, Andankoil East Village, Vangiliappa Nagar, Chinnandankoil Road, Karur - 639001.
2.	Type of the Industry	Red Small
3.	Capacity	Production: Bleaching and Dyeing of Yarn: 5.00 T/Month Trade Effluent: 2.50 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	0.72 KLD (Domestic- 0.50 KLD & Process Make up- 0.22 KLD)
6.	Quantity of Effluent generation	2.50 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	15 KLD. Flow chart attached
9.	Date of installation of ZLD	July 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	15 KLD - RO (Since this is a manual dyeing unit RO reject is treated through Solar Evaporation Pans)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual dyeing unit
12.	Mode of disposal of RO reject	Solar Evaporation Pans
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	6 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	Rain water harvesting structure provided
18.	Distance from river bed	600 M
19.	Geo coordinates	Lat: 10°57'13.30"N Lon: 78°03'58.84"E

Note: The unit is not in operation for the past three years.

For ASIAJOTHI FABRICS

PARTNER

TREATMENT FLOW CHART



For ASIAJOTHI FABRICS

PARTNER

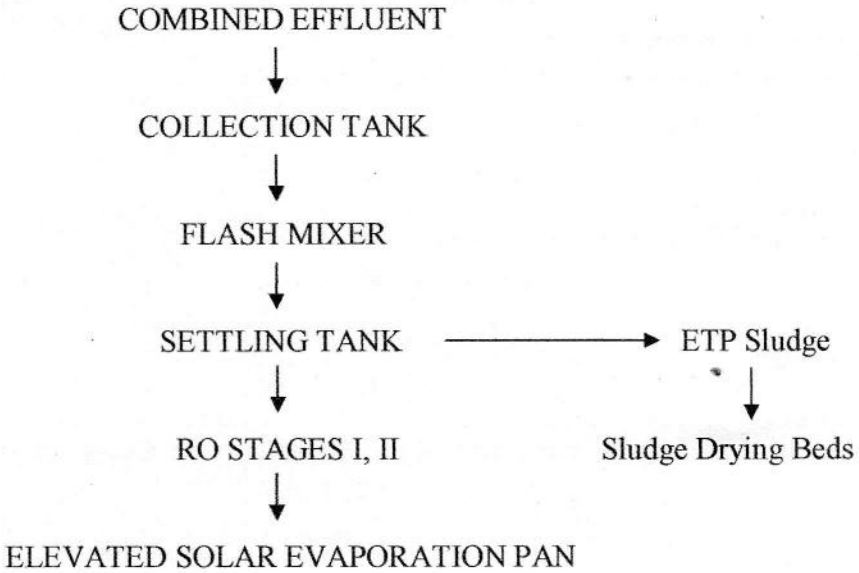
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. SRI SUBAM DYERS, S.F.No.1276-1286,1293,2453, Andankoil West Village, Periyandankoil Road, Manmangalam Taluk, Karur District.
2.	Type of the Industry	Red Small (Dyeing unit)
3.	Capacity	Production: Dyeing of Yarn: 6.00 T/Month Trade Effluent: 3.50 KLD Sewage: 0.35 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	0.98 KLD (Domestic- 0.45 KLD & Process Make up- 0.53 KLD)
6.	Quantity of Effluent generation	3.50 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	10 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	10 KLD - RO (Since this is a manual dyeing unit RO reject is treated through Solar Evaporation Pans)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual dyeing unit
12.	Mode of disposal of RO reject	Solar Evaporation Pans
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	4 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	600 M
19.	Geo coordinates	Lat: 10°57'23.80"N Lon: 78°02'22.40"E

For SRI SUBAM DYERS,

PROPRIETRIX

TREATMENT FLOW CHART



For SRI SUBAM DYERS

PROPRIETRIX

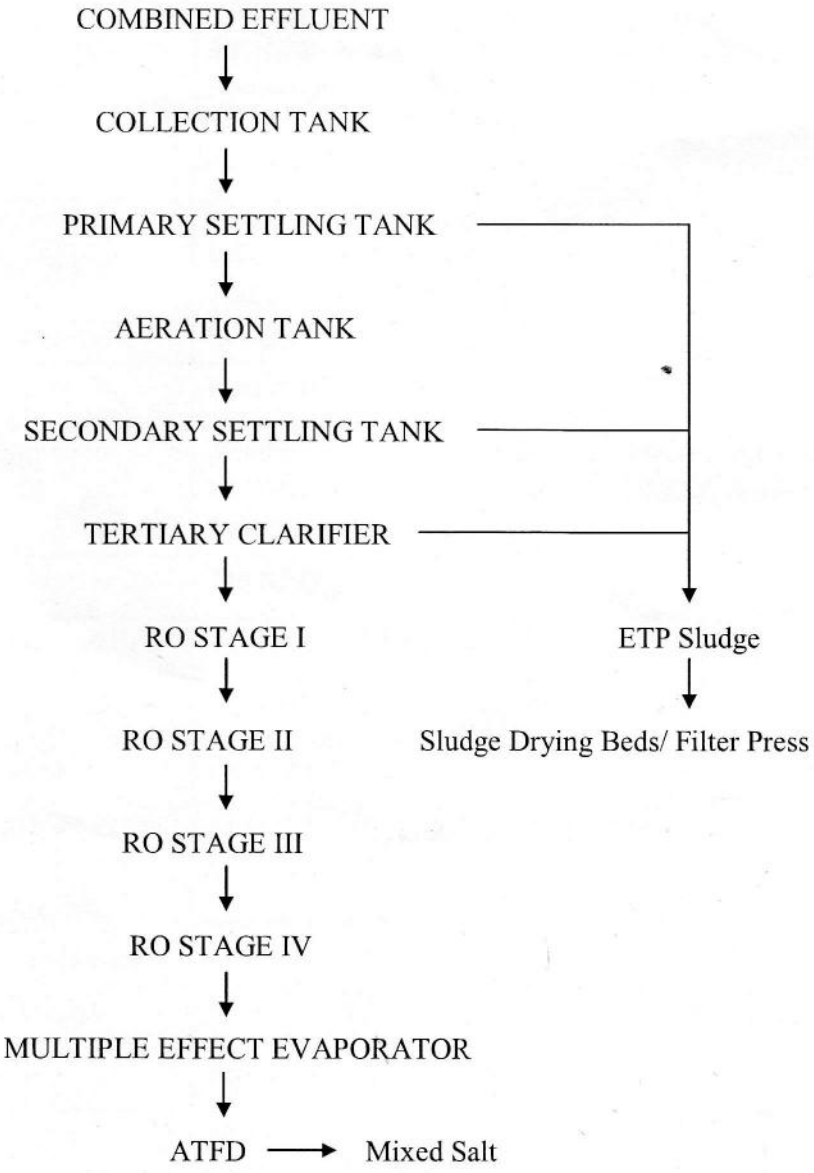
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. ARVIND A TRADERS, S.F.No.1979, 1987/2, 2276/2,1977,1980 & 2275/2, Andankoil East village,Manmangalam Taluk, 9/81, Chinnandankoil Road, Karur Distrct.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Cotton Yarn/ Fabric: 93.34 T/Month Trade Effluent: 240 KLD Sewage: 2.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	26.80 KLD (Domestic- 2.50 KLD, Process Make up- 1.30 KLD, Cooling and Boiler feed- 22.00 KLD & Green Belt Development- 1.00 KLD)
6.	Quantity of Effluent generation	240 KLD
7.	Status of Flow meters and Totalizer	7 No of EMFM provided
8.	Capacity of ETP and Flow chart	240 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2011
10.	ZLD Capacity (RO, MEE & ATFD system)	240 KLD - (ETP, RO, MEE & ATFD)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	40 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	650 M
19.	Geo coordinates	Lat: 10°57'04.25"N Lon: 78°03'47.91"E

For ARVIND A TRADERS

MANAGING PARTNER

EFFLUENT TREATMENT FLOW CHART



For ARVINDA TRADERS

MANAGING PARTNER

QUESITIONNARIES FOR IETPs

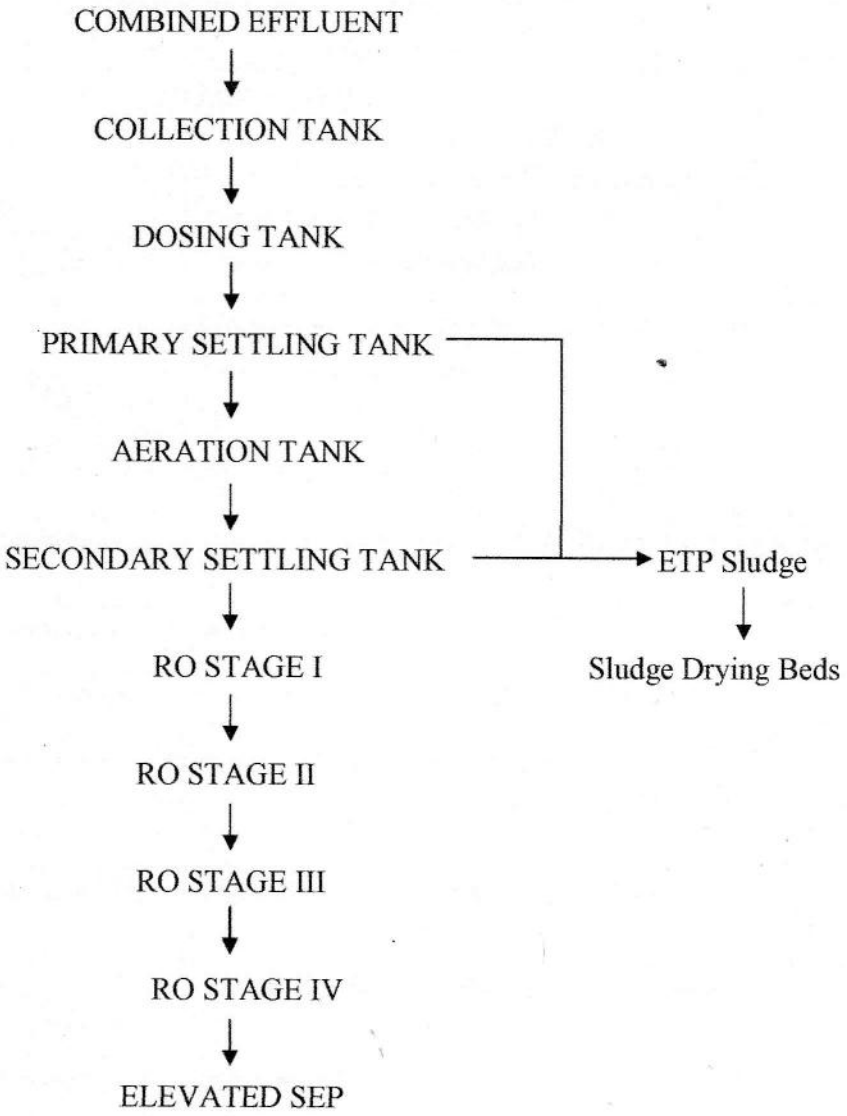
(Note: M/s. S.P.G.Bleaching, S.Ponnusamy Bleaching, Ashok Bleaching, Moorthy Bleaching & Subramani Bleaching have provided combined ZLD system for a capacity of 84 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.S.P.G.Bleaching, S.F.No.114/4,6, 122/4, 121/29 etc, Thoranakkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 20.80 T/Month Trade Effluent: 40 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	3.02 KLD (Domestic- 0.50 KLD, Process Make up- 2.52 KLD)
6.	Quantity of Effluent generation	40 KLD
7.	Status of Flow meters and Totalizer	6 No of EMFM provided
8.	Capacity of ETP and Flow chart	84 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	84 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	12 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	650 M
19.	Geo coordinates	Lat: 10°56'35.23"N Lon: 78°04'35.49"E

For S.P.G.BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For S.P.G.BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

(Note: M/s. S.P.G.Bleaching, S.Ponnusamy Bleaching, Ashok Bleaching, Moorthy Bleaching & Subramani Bleaching have provided combined ZLD system for a capacity of 84 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.ASHOK BLEACHING, S.F.No.114/7 etc., Thoranakkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 5.20 T/Month Trade Effluent: 10 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.13 KLD (Domestic- 0.50 KLD, Process Make up- 0.63 KLD)
6.	Quantity of Effluent generation	10 KLD
7.	Status of Flow meters and Totalizer	6 No of EMFM provided
8.	Capacity of ETP and Flow chart	84 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	84 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	7 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	650 M
19.	Geo coordinates	Lat: 10°56'33.02"N Lon: 78°04'36.57"E

For ASHOK BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART

COMBINED EFFLUENT

↓

COLLECTION TANK

↓

DOSING TANK

↓

PRIMARY SETTLING TANK → ETP Sludge → Sludge Drying Beds

↓

AERATION TANK

↓

SECONDARY SETTLING TANK

↓

RO STAGE I

↓

RO STAGE II

↓

RO STAGE III

↓

RO STAGE IV

↓

ELEVATED SEP

For ASHOK BLEACHING

PROPRIETOR

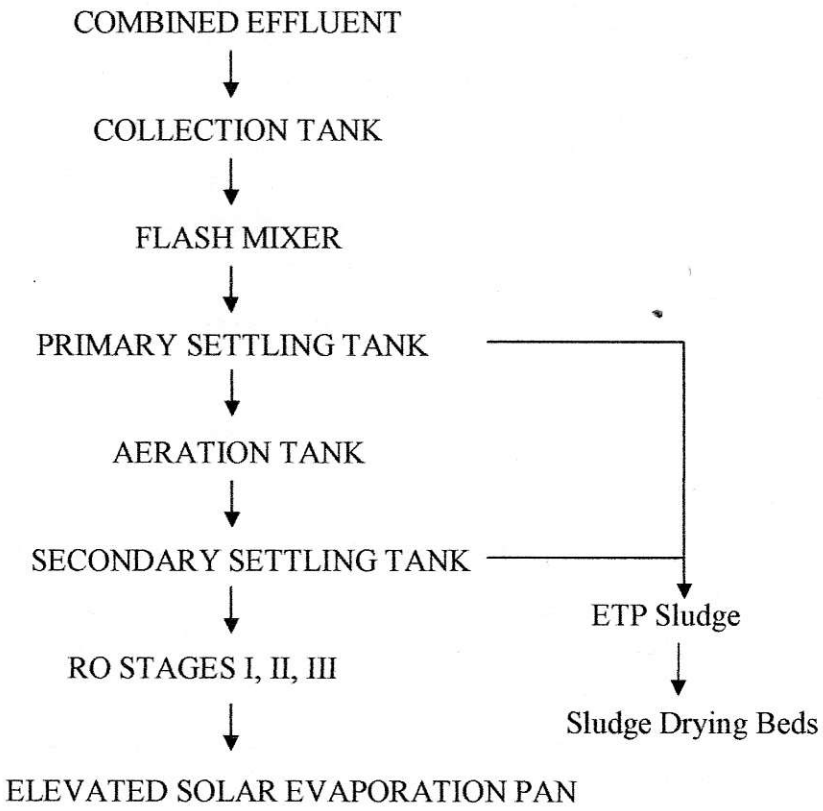
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. B.S.DYEING & BLEACHING, S.F.No.116/3, Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn and Fabric: 41.25 T/Month Trade Effluent: 35 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	2.08 KLD (Domestic- 0.50 KLD, Process Make up- 0.58 KLD)
6.	Quantity of Effluent generation	35 KLD
7.	Status of Flow meters and Totalizer	5 No of EMFM provided
8.	Capacity of ETP and Flow chart	35 KLD. Flow chart attached
9.	Date of installation of ZLD	September 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	35 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual dyeing unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	14 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	790 M
19.	Geo coordinates	Lat: 10°56'28.71"N Lon: 78°04'24.32"E

For B.S.DYEING & BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For B.S.DYEING & BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

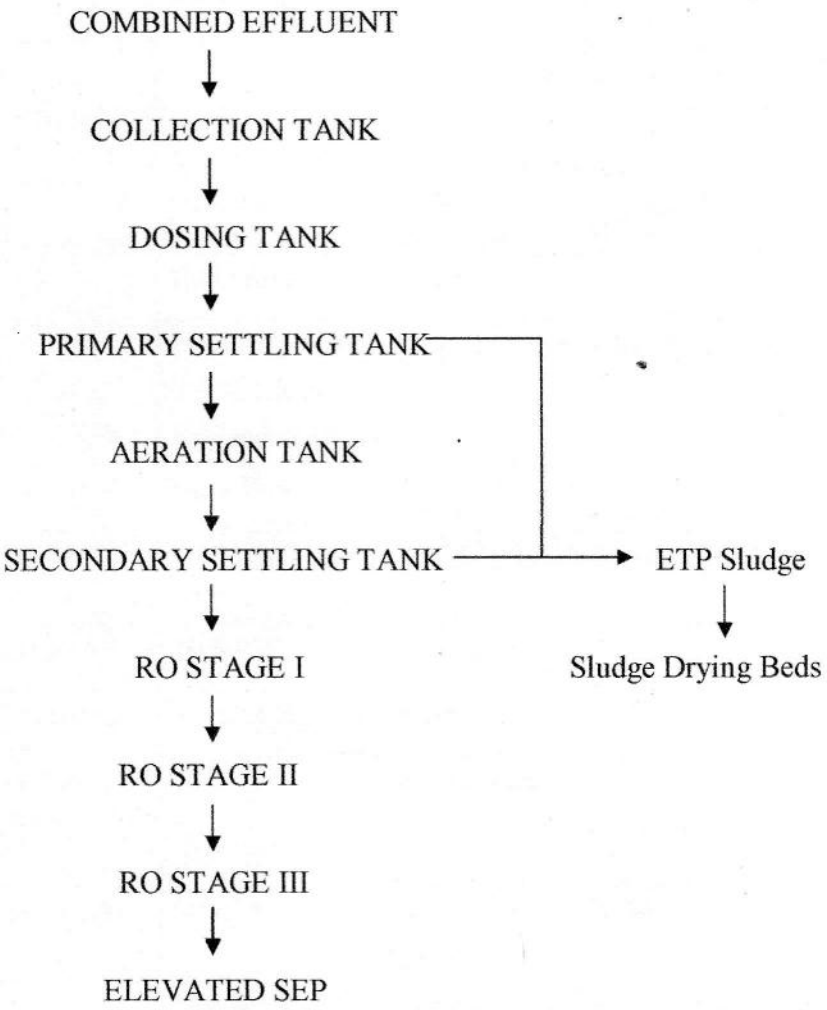
(Note: M/s.R.M.Bleaching, M/s.R.Murugesan Bleaching, M/s.Sun Bleaching, M/s.V.Ramasamy Bleaching & M/s.M.Thangavel Bleaching have provided combined ZLD system for a capacity of 70 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	SUN BLEACHING, S.F.No.110/2, etc., Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Cotton Yarn: 5.20 T/Month Trade Effluent: 10 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.40 KLD (Domestic- 0.50 KLD, Process Make up- 0.90 KLD)
6.	Quantity of Effluent generation	10 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	70 KLD. Flow chart attached
9.	Date of installation of ZLD	November 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	70 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	8 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	810 M
19.	Geo coordinates	Lat: 10°56'24.15"N Lon: 78°04'24.59"E

For SUN BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For SUN BLEACHING

PROPRIETOR

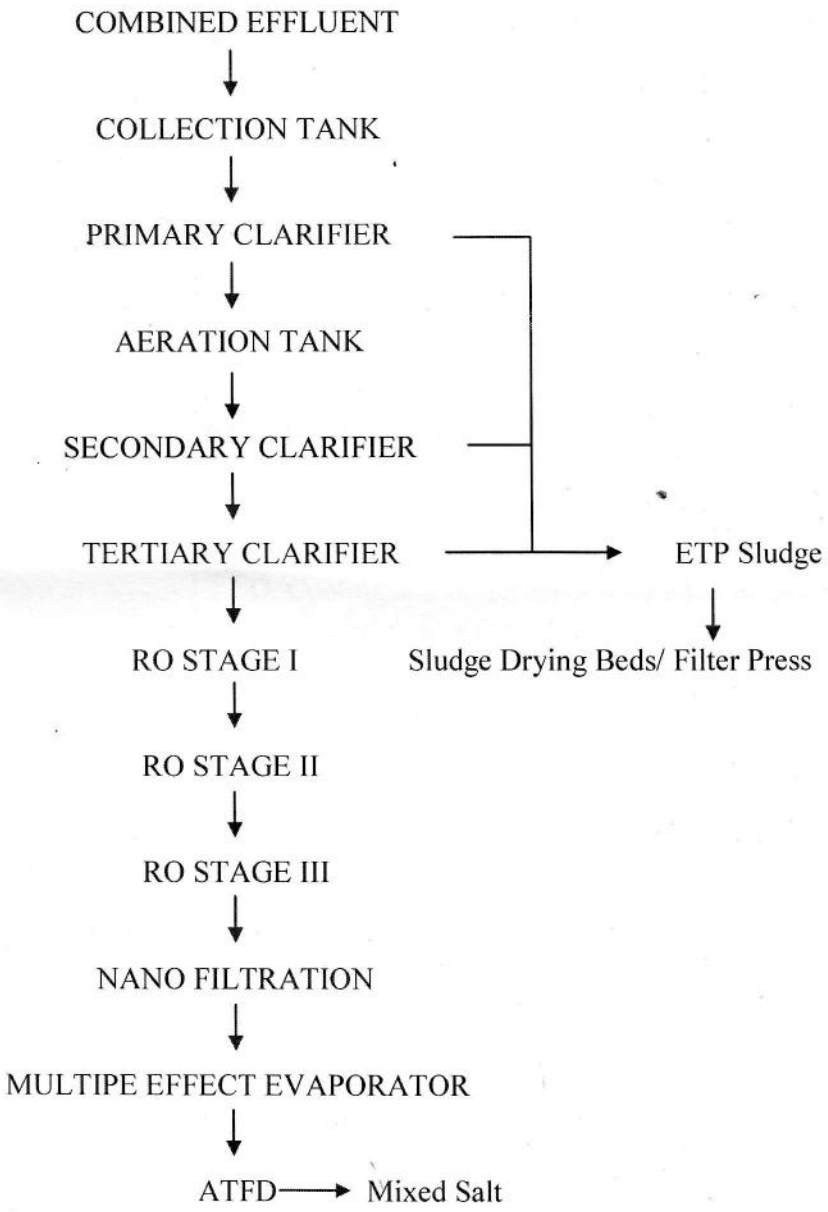
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Sri Bhagavathi Colours, S.F.No.90/1, Karuppampalayam Village, Manmangalam Taluk, Karur District..
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: 1.Bleaching and Dyeing of Yarn /Fabrics: 113.425 T/Month 2.Printing of Fabrics- 46.80 T/Month Trade Effluent: 200 KLD Sewage: 1.00 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	9.71 KLD (Domestic- 1.50 KLD, Process Make up- 0.91 KLD, Cooling and Boiler feed- 6.80 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	200 KLD
7.	Status of Flow meters and Totalizer	15 No of EMFM provided
8.	Capacity of ETP and Flow chart	200 KLD. Flow chart attached
9.	Date of installation of ZLD	July 2013
10.	ZLD Capacity (RO, MEE & ATFD system)	200 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	25 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	830 M
19.	Geo coordinates	Lat: 10°56'15.72"N Lon: 78°02'38.31"E

For SRI BHAGAVATHI COLOURS

PARTNER

EFFLUENT TREATMENT FLOW CHART



For SRI BHAGAVATHI COLOURS

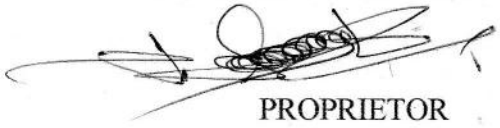
PARTNER

QUESITIONNARIES FOR IETPs

(Note: M/s. S.P.G.Bleaching, S.Ponnusamy Bleaching, Ashok Bleaching, Moorthy Bleaching & Subramani Bleaching have provided combined ZLD system for a capacity of 84 KLD)

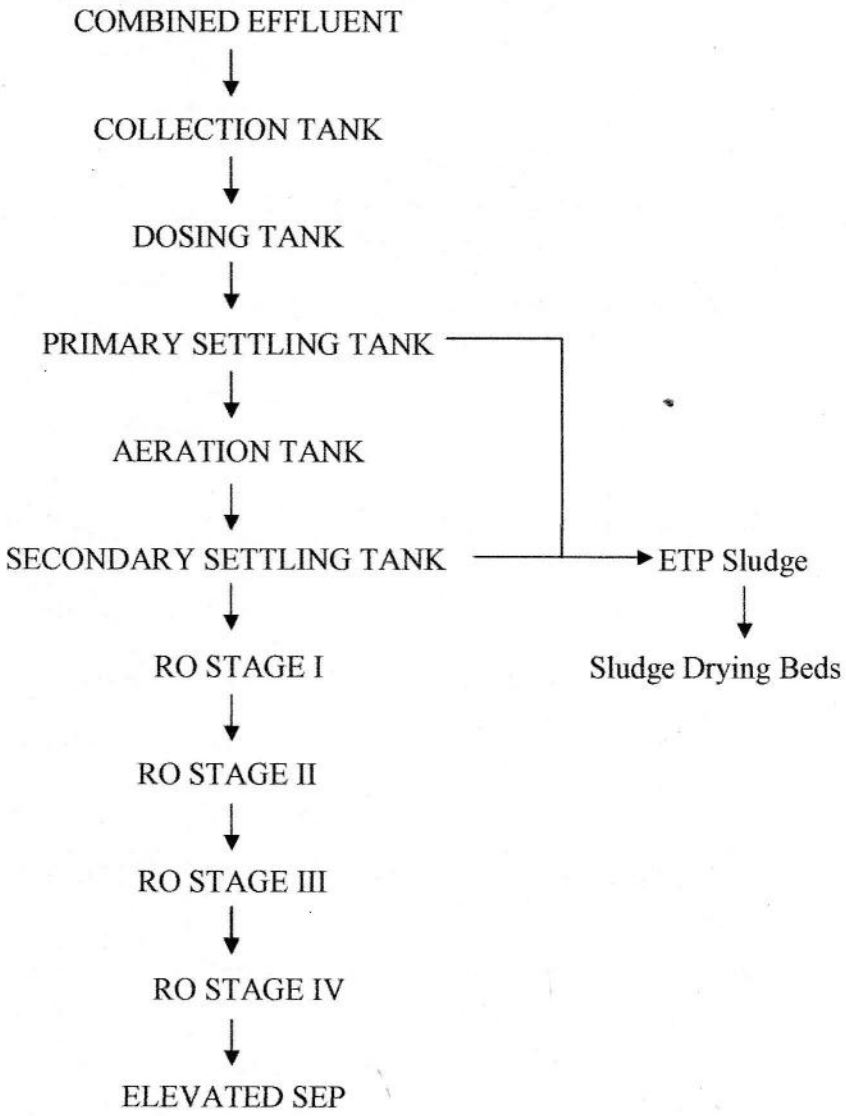
Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.SUBRAMANI BLEACHING, S.F.No.114, Thorankkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 15.00 T/Month Trade Effluent: 12 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.25 KLD (Domestic- 0.50 KLD, Process Make up- 0.75 KLD)
6.	Quantity of Effluent generation	12 KLD
7.	Status of Flow meters and Totalizer	6 No of EMFM provided
8.	Capacity of ETP and Flow chart	84 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2014
10.	ZLD Capacity (RO, MEE & ATFD system)	84 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	9 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	840 M
19.	Geo coordinates	Lat: 10°56'29.67"N Lon: 78°04'35.03"E

For SUBRAMANI BLEACHING



PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For SUBRAMANI BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

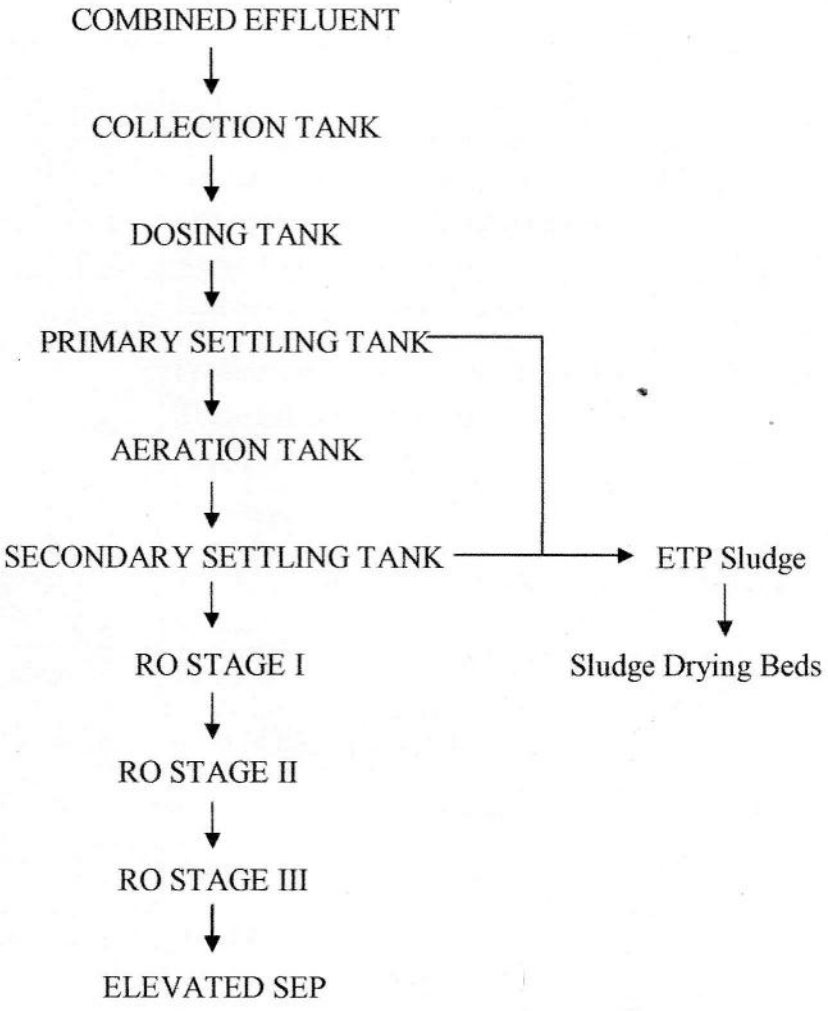
(Note: M/s.R.M.Bleaching, M/s.R.Murugesan Bleaching, M/s.Sun Bleaching, M/s.V.Ramasamy Bleaching & M/s.M.Thangavel Bleaching have provided combined ZLD system for a capacity of 70 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.V.Ramasamy Bleaching, S.F.No.110/2, etc., Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Cotton Yarn: 5.20 T/Month Trade Effluent: 10 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.40 KLD (Domestic- 0.50 KLD, Process Make up- 0.90 KLD)
6.	Quantity of Effluent generation	10 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	70 KLD. Flow chart attached
9.	Date of installation of ZLD	November 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	70 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	8 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	880 M
19.	Geo coordinates	Lat: 10°56'29.53"N Lon: 78°04'36.37"E

For V.RAMASAMY BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For V.RAMASAMY BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

(M/s.Arasi Colors, M/s.Aravind Dyeing Works and M/s.Sindhu Bleaching have provided combined ZLD system for a capacity of 325 KLD)

Note: M/s.Sindhu Bleaching is not in operation for more than 4 Years

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. Sindhu Bleaching, S.F.No.148/1A, Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleached Yarn: 10.00 T/Month Trade Effluent: 10 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	0.77 KLD (Domestic- 0.50 KLD, Process Make up- 0.27 KLD)
6.	Quantity of Effluent generation	10 KLD
7.	Status of Flow meters and Totalizer	6 No of EMFM provided
8.	Capacity of ETP and Flow chart	325 KLD. Flow chart attached
9.	Date of installation of ZLD	August 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	325 KLD - (ETP, RO, MEE & ATFD)
11.	Mode of Disposal of MEE Condensate and steam condensate	Recycled in the process
12.	Mode of disposal of RO reject	MEE and ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	7 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	890 M
19.	Geo coordinates	Lat: 10°56'19.69"N Lon: 78°04'21.86"E

For SINDHU BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART

COMBINED EFFLUENT

↓

COLLECTION TANK

↓

UASBR

↓

AERATION TANK

↓

SECONDARY SETTLING TANK → ETP Sludge

↓ ↓

ULTRA FILTRATION — Sludge Drying Beds/ Filter Press

↓

RO STAGE I

↓

RO STAGE II

↓

RO STAGE III

↓

NANO FILTRATION

↓

MULTIPE EFFECT EVAPORATOR

↓

ATFD → Salt

For SINDHU BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

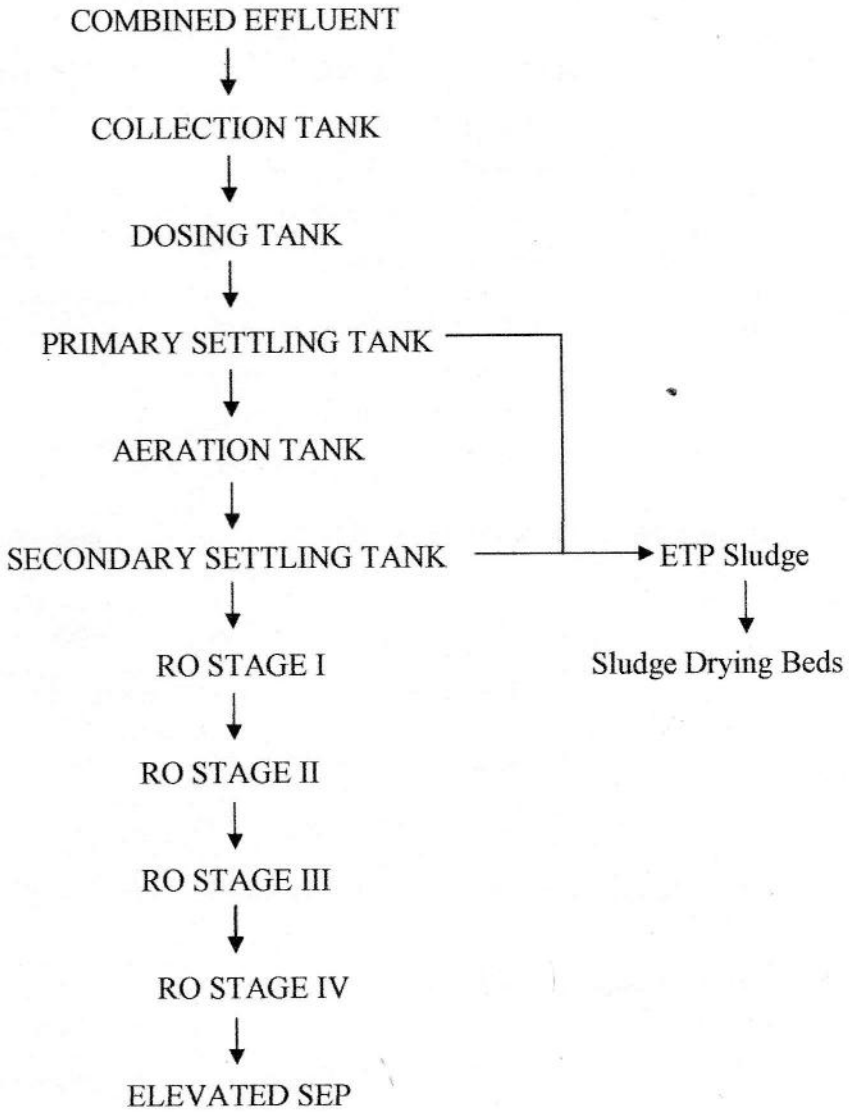
(Note: M/s. S.P.G.Bleaching, S.Ponnusamy Bleaching, Ashok Bleaching, Moorthy Bleaching & Subramani Bleaching have provided combined ZLD system for a capacity of 84 KLD)

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s.MOORTHY BLEACHING, S.F.No.114, Thorankkalpatti Village, T.Sellandipalayam, Karur Taluk, Karur District.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Yarn: 15.00 T/Month Trade Effluent: 12 KLD Sewage: 0.50 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	1.25 KLD (Domestic- 0.50 KLD, Process Make up- 0.75 KLD)
6.	Quantity of Effluent generation	12 KLD
7.	Status of Flow meters and Totalizer	6 No of EMFM provided
8.	Capacity of ETP and Flow chart	84 KLD. Flow chart attached
9.	Date of installation of ZLD	December 2014
10.	ZLD Capacity (RO, MEE & ATFD system)	84 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual bleaching unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	9 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	900 M
19.	Geo coordinates	Lat: 10°56'28.55"N Lon: 78°04'35.30"E

For MOORTHY BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



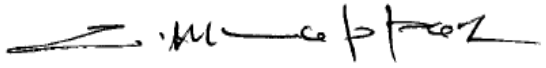
For MOORTHY BLEACHING

PROPRIETOR

QUESITIONNARIES FOR IETPs

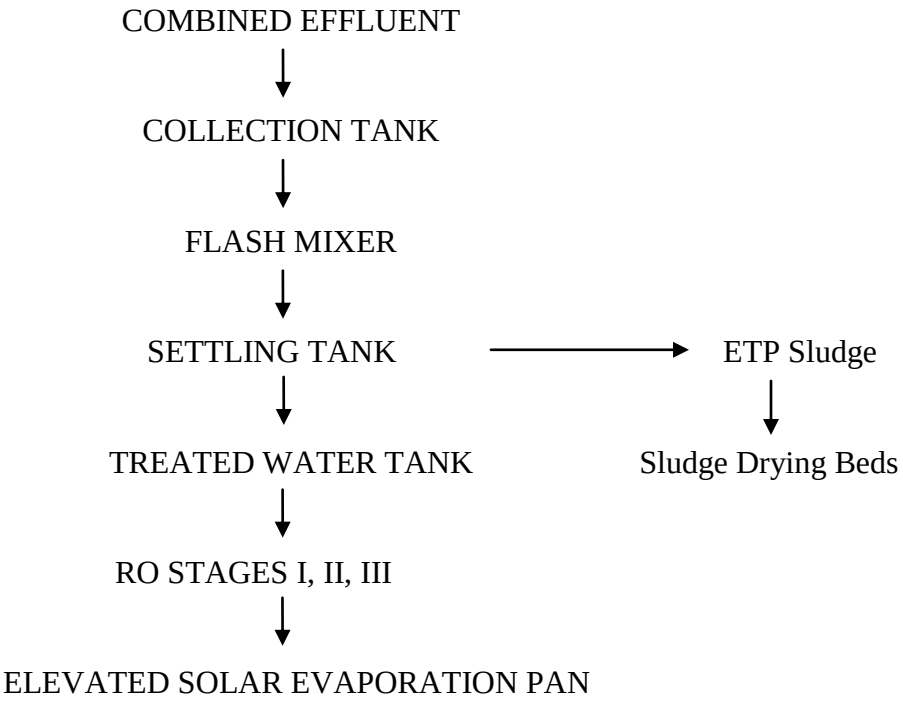
Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. SRI MARIAMMAN EXPORTS, S.F.No.147/B, Thoranakkalpatti Village, Othaiyur Road, T.Sellandipalayam, Karur District.
2.	Type of the Industry	Red Small (Dyeing Unit)
3.	Capacity	Production: Bleaching and Dyeing of Yarn: 8.75 T/Month Trade Effluent: 25 KLD Sewage: 0.30 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	2.55 KLD (Domestic- 0.30 KLD, Process Make up- 2.25 KLD)
6.	Quantity of Effluent generation	25 KLD
7.	Status of Flow meters and Totalizer	4 No of EMFM provided
8.	Capacity of ETP and Flow chart	25 KLD. Flow chart attached
9.	Date of installation of ZLD	November 2013
10.	ZLD Capacity (RO, MEE & ATFD system)	25 KLD - (ETP, RO & Elevated SEP)
11.	Mode of Disposal of MEE Condensate and steam condensate	Not applicable since this is a manual dyeing unit
12.	Mode of disposal of RO reject	Elevated SEP
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	9 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	On land surface
18.	Distance from river bed	900 M
19.	Geo coordinates	Lat: 10˚56’23.40”N Lon: 78˚04’18.55”E

For SRI MARIAMMAN EXPORTS



PARTNER

EFFLUENT TREATMENT FLOW CHART



For SRI MARIAMMAN EXPORTS

PARTNER

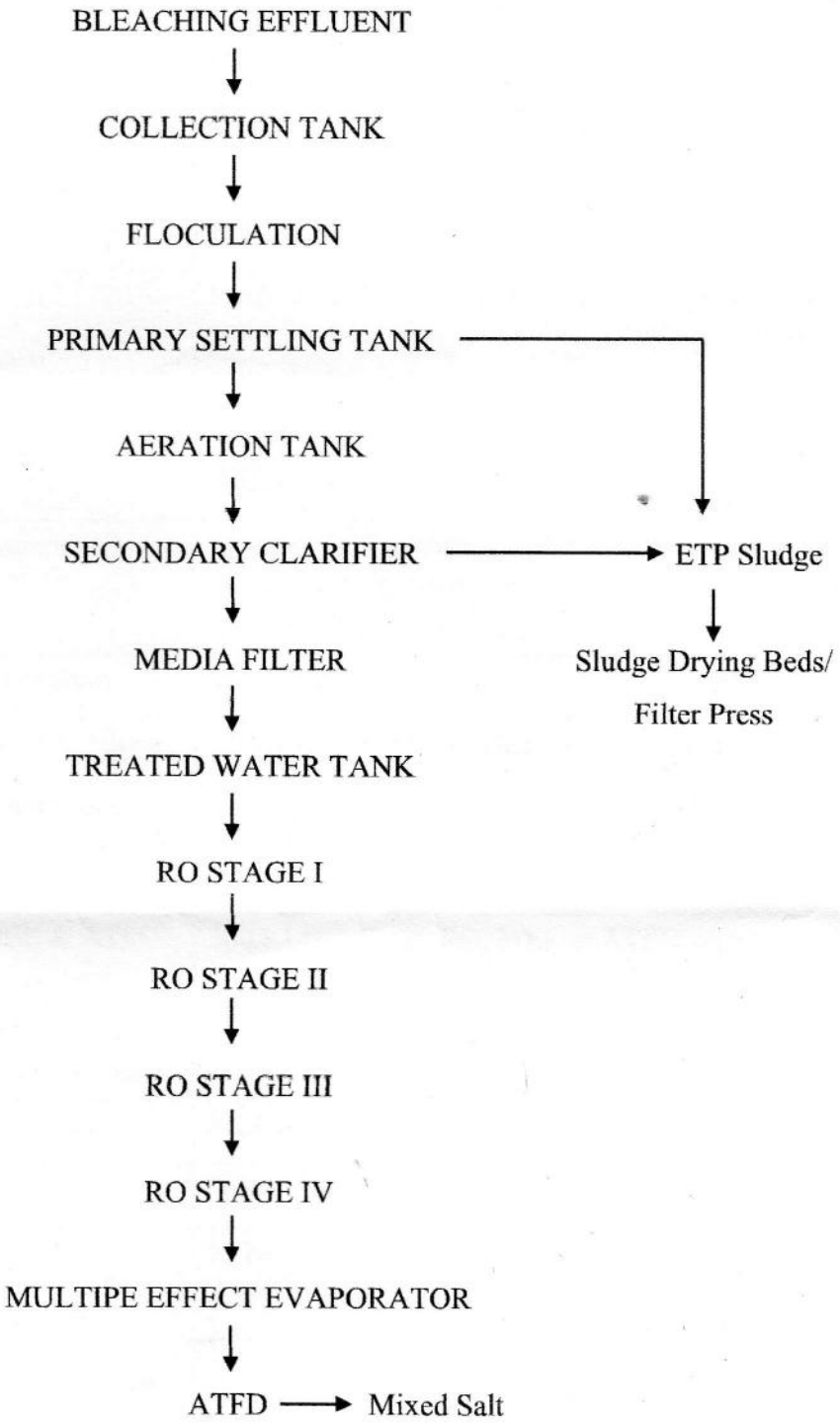
QUESITIONNARIES FOR IETPs

Sl. No.	Questionnaires	Details
1.	Name of the Industry	M/s. AMUTHAM BLEACHING, S.F No.2/A1-B, 1/A1, Thoranakalpatti Village, Bharathi Nagar, Rayanoor, Karur Taluk, Karur District– 639003.
2.	Type of the Industry	Red Small (Bleaching Unit)
3.	Capacity	Production: Bleaching of Cotton Yarn/ Woven Fabric: 276.25 T/Month Trade Effluent: 300 KLD Sewage: 0.70 KLD
4.	Source of water	Bore Well
5.	Quantity of water consumption	26.28 KLD (Domestic- 1.00 KLD, Process Make up- 3.78 KLD, Cooling and Boiler feed- 21.00 KLD & Green Belt Development- 0.50 KLD)
6.	Quantity of Effluent generation	300 KLD
7.	Status of Flow meters and Totalizer	13 No of EMFM provided
8.	Capacity of ETP and Flow chart	300 KLD. Flow chart attached
9.	Date of installation of ZLD	June 2012
10.	ZLD Capacity (RO, MEE & ATFD system)	300 KLD - (ETP, RO, MEE & ATFD system)
11.	Mode of Disposal of MEE Condensate and steam condensate	Reused in the process
12.	Mode of disposal of RO reject	MEE & ATFD system
13.	Mode of disposal of Sewage	Septic Tank and Soak pit arrangements
14.	No. of employees in the unit	12 No
15.	If STP installed, STP capacity	-
16.	Mode of disposal of treated sewage	-
17.	Mode of disposal of storm water	Rain water harvesting structure provided
18.	Distance from river bed	950 M
19.	Geo coordinates	Lat: 10°56'34.80"N Lon: 78°05'01.96"E

For AMUTHAM BLEACHING

PROPRIETOR

EFFLUENT TREATMENT FLOW CHART



For AMUTHAM BLEACHING

PROPRIETOR

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TEST REPORT

Report No	:	**EN21100003-01**	**Report Date**	:	**12 Oct 2021**
SAMPLE DRAWN BY LABORATORY					
Customer Name	:	**M/S. CENTRAL POLLUTION CONTROL BOARD**			
Customer Address	:	**Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058**			
Sample Name	:	Water			
Sample Description	:	River Water			
Sample No	:	EN21100003-01			
Sampling Location	:	River Water – Sample Code 1			
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	04 Oct 2021
Sample Quantity	:	2 Litre	**Test Started on**	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	8.2	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	369	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	61	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	21	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	210	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	637	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	48.1	mg/L
8	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	4.3	mg/L
9	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	11.5	mg/L
10	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	BDL(DL:1.0)	mg/L
11	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L

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TEST REPORT

Report No : EN21100003-01 **Report Date** : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	84	mg/L
13	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	BDL(DL:1.0)	mg/L
14	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
15	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	5.8	mg/L
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	0.005	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.011	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	0.034	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	220	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	170	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

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TEST REPORT

Report No	:	EN21100003-02	**Report Date**	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. CENTRAL POLLUTION CONTROL BOARD			
Customer Address	:	Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058			
Sample Name	:	Water			
Sample Description	:	River Water			
Sample No	:	EN21100003-02			
Sampling Location	:	River Water – Sample Code 2			
Sample Condition	:	Fit for Analysis	**Sample Received on**	:	04 Oct 2021
Sample Quantity	:	2 Litre	**Test Started on**	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	**Test Completed on**	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	8.7	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	327	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	56	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	17	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	168	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	573	µS/CM
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	43.8	mg/L
8	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	4	mg/L
9	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	2	mg/L
10	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	12.9	mg/L
11	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L

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TEST REPORT

Report No : EN21100003-02 **Report Date** : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	68	mg/L
13	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	15.5	mg/L
14	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
15	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	5.6	mg/L
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	0.005	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.003	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	0.005	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	90	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	50	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

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TEST REPORT

Report No	:	EN21100003-03	Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. CENTRAL POLLUTION CONTROL BOARD			
Customer Address	:	Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058			
Sample Name	:	Water			
Sample Description	:	River Water			
Sample No	:	EN21100003-03			
Sampling Location	:	River Water - Sample Code 4			
Sample Condition	:	Fit for Analysis	Sample Received on	:	04 Oct 2021
Sample Quantity	:	2 Litre	Test Started on	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	8.8	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	320	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	61	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	14	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	252	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	606	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	46.0	mg/L
8	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	4	mg/L
9	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	2.8	mg/L
10	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	11.6	mg/L
11	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L

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TEST REPORT

Report No : EN21100003-03 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	84	mg/L
13	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	14.2	mg/L
14	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
15	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	6.0	mg/L
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.003	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	0.003	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	140	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	90	MPN / 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

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TEST REPORT

Report No	:	EN21100003-04	Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. CENTRAL POLLUTION CONTROL BOARD			
Customer Address	:	Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058			
Sample Name	:	Water			
Sample Description	:	River Water			
Sample No	:	EN21100003-04			
Sampling Location	:	River Water - Sample Code 5			
Sample Condition	:	Fit for Analysis	Sample Received on	:	04 Oct 2021
Sample Quantity	:	2 Litre	Test Started on	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	8.63	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	484	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	117	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	16	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	104	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	621	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 - Na B : 2017	92	mg/L
8	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	8	mg/L
9	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	8.4	mg/L
10	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	14.2	mg/L
11	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L

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TEST REPORT

Report No : EN21100003-04 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	95	mg/L
13	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	20.7	mg/L
14	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	0.206	mg/L
15	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	5.4	mg/L
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.007	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	350	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	170	MPN / 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

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TEST REPORT

Report No	:	EN21100003-05	Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. CENTRAL POLLUTION CONTROL BOARD			
Customer Address	:	Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058			
Sample Name	:	Water			
Sample Description	:	River Water			
Sample No	:	EN21100003-05			
Sampling Location	:	River Water – Sample Code 6			
Sample Condition	:	Fit for Analysis	Sample Received on	:	04 Oct 2021
Sample Quantity	:	2 Litre	Test Started on	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	8.52	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	331	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	61	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	15	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	163	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	601	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	45.2	mg/L
8	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	4	mg/L
9	Total Suspended Solids@ 105°C	APHA 23rd Edition Part 2540 D : 2017	14.8	mg/L
10	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	20.7	mg/L
11	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L

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TEST REPORT

Report No : EN21100003-05 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	68	mg/L
13	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	25.9	mg/L
14	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	0.225	mg/L
15	Dissolved Oxygen	APHA 23rd Edition Part 4500 O B: 2017	5.1	mg/L
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	0.035	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	0.003	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.004	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	170	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	80	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

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TEST REPORT

Report No	:	EN21100003-06	Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. THE INDIA CEMENTS LIMITED, DALAVOI WORKS.
Customer Address	:	Cement Nagar post, Sendurai Taluk, Ariyalur District,Tamil Nadu 621730

Sample Name	:	Water			
Sample Description	:	Sewage Water			
Sample No	:	EN21100003-06			
Sampling Location	:	Sewage Water Code S2			
Sample Condition	:	Fit for Analysis	Sample Received on	:	04 Oct 2021
Sample Quantity	:	2 Litre	Test Started on	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	42	mg/L
2	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	8.51	No Unit
3	Sulphate as SO4	IS 3025 (Part 24): 2014	49	mg/L
4	Sulphide as S	APHA 23rd Edition Part 4500 S-- F : 2017	BDL(DL:1.0)	mg/L
5	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C : 2017	462	mg/L
6	Total Phosphorous as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B: 2017	284	mg/L
8	Potassium as K	APHA 23rd Edition Part 3500 – K B: 2017	41	mg/L
9	Sodium Absorption Ratio	IS 11624: 1986 RA : 2015	8	--
10	Total Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	41.4	mg/L

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TEST REPORT

Report No : EN21100003-06 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
11	Total Dissolved Solids	APHA 23rd Edition Part 2540 C : 2017	1006	mg/L
12	Total Suspended Solids	APHA 23rd Edition Part 2540 D : 2017	14.4	mg/L
13	Chloride	APHA 23rd Edition Part 4500 Cl - B : 2017	230	mg/L
14	Oil Grease	APHA 23rd Edition Part 5520 B :2017	BDL(DL:4.0)	mg/L
15	Phenolic compound	APHA 23rd Edition Part 4500 H+ B : 2017	BDL(DL:0.001)	mg/L
16	Total Kjeldahl Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	38.8	mg/L
17	Chemical Oxygen Demand	APHA 23rd Edition Part 5220 B,C : 2017	136	mg/L
18	Calcium Hardness as CaCO3	APHA 23rd Edition Part 3500 Ca B: 2017	252	mg/L
19	Conductivity @ 25°C	APHA 23rd Edition Part 2510 B : 2017	1765	µS/cm
20	Cadmium as Cd	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
21	Copper as Cu	APHA 23rd Edition Part 3125 B : 2017	0.005	mg/L
22	Lead as Pb	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
23	Nickel as Ni	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
24	Total Chromium as Cr	APHA 23rd Edition Part 3125 B : 2017	0.005	mg/L
25	Manganese as Mn	APHA 23rd Edition Part 3125 B : 2017	0.077	mg/L
26	Zinc as Zn	APHA 23rd Edition Part 3125 B : 2017	0.008	mg/L
Microbiological Parameters				
27	Faecal Coliform	APHA 23rd Edition 9221E: 2017	1600	MPN/100 mL
28	Total coliform	APHA 23rd Edition 9221B: 2017	900	MPN/100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

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TEST REPORT

Report No	:	EN21100003-07	**Report Date**	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. THE INDIA CEMENTS LIMITED, DALAVOI WORKS.
Customer Address	:	Cement Nagar post, Sendurai Taluk, Ariyalur District,Tamil Nadu-621730
Sample Name	:	Water
Sample Description	:	Sewage Water
Sample No	:	EN21100003-07
Sampling Location	:	Sewage Water Code 9
Sample Condition	:	Fit for Analysis
Sample Quantity	:	2 Litre
Sampling Plan & Method	:	GL/EN/SOP/001 & 003

Sample Received on	:	04 Oct 2021
Test Started on	:	04 Oct 2021
Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	Biochemical Oxygen Demand @ 27°C for 3 days	IS 3025 (Part 44): 1993 RA : 2014	13	mg/L
2	pH @ 25°C	APHA 23rd Edition Part 4500 H+ B : 2017	7.89	No Unit
3	Sulphate as SO4	IS 3025 (Part 24): 2014	26	mg/L
4	Sulphide as S	APHA 23rd Edition Part 4500 S– F : 2017	BDL(DL:1.0)	mg/L
5	Total Hardness as CaCO3	APHA 23rd Edition Part 2340 C : 2017	137	mg/L
6	Total Phosphorous as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B: 2017	47.6	mg/L
8	Potassium as K	APHA 23rd Edition Part 3500 – K B: 2017	7	mg/L
9	Total Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	25.9	mg/L

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TEST REPORT

Report No : EN21100003-07 **Report Date** : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
10	Total Dissolved Solids	APHA 23rd Edition Part 2540 C : 2017	327	mg/L
11	Total Suspended Solids	APHA 23rd Edition Part 2540 D : 2017	21.1	mg/L
12	Chloride	APHA 23rd Edition Part 4500 Cl - B : 2017	97	mg/L
13	Oil Grease	APHA 23rd Edition Part 5520 B :2017	BDL(DL:4.0)	mg/L
14	Phenolic compound	APHA 23rd Edition Part 4500 H+ B : 2017	BDL(DL:0.001)	mg/L
15	Total Kjeldahl Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	23.3	mg/L
16	Chemical Oxygen Demand	APHA 23rd Edition Part 5220 B,C : 2017	42	mg/L
17	Calcium Hardness as CaCO3	APHA 23rd Edition Part 3500 Ca B: 2017	221	mg/L
18	Conductivity @ 25°C	APHA 23rd Edition Part 2510 B : 2017	584	µS/cm
19	Cadmium as Cd	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
20	Copper as Cu	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
21	Lead as Pb	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
22	Nickel as Ni	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
23	Total Chromium as Cr	APHA 23rd Edition Part 3125 B : 2017	BLQ(LOQ:0.002)	mg/L
24	Manganese as Mn	APHA 23rd Edition Part 3125 B : 2017	0.008	mg/L
25	Zinc as Zn	APHA 23rd Edition Part 3125 B : 2017	0.005	mg/L
Microbiological Parameters				
26	Faecal Coliform	APHA 23rd Edition 9221E: 2017	1600	MPN/100 mL
27	Total coliform	APHA 23rd Edition 9221B: 2017	1600	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

Authorized Signature
E. Prithivirajan
Manager - Lab

#.6/1, Ist Floor, Sri Jothi Complex, Murugesan Street, Balavinayagar Nagar, Arumbakkam, Chennai – 600 106.

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TEST REPORT

Report No	:	EN21100003-08	Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. CENTRAL POLLUTION CONTROL BOARD			
Customer Address	:	Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN21100003-08			
Sampling Location	:	Ground Water – Sample Code 3			
Sample Condition	:	Fit for Analysis	Sample Received on	:	04 Oct 2021
Sample Quantity	:	2 Litre	Test Started on	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	7.8	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	2042	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	745	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	122	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	924	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	3520	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	248	mg/L
8	Potassium as K	APHA 23rd Edition 3500 Ca B:2017	12	mg/L
9	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	41	mg/L
10	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	12	mg/L
11	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	483	mg/L

Authorized Signature
E. Prithivirajan
Manager - Lab

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No : EN21100003-08 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	34	mg/L
13	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
14	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	2	NTU
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.020	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	0.006	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	0.003	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	300	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	130	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

Authorized Signature
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Manager - Lab

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No	:	EN21100003-09	Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	:	M/S. CENTRAL POLLUTION CONTROL BOARD			
Customer Address	:	Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058			
Sample Name	:	Water			
Sample Description	:	Ground Water			
Sample No	:	EN21100003-09			
Sampling Location	:	Ground Water – Sample Code 7			
Sample Condition	:	Fit for Analysis	Sample Received on	:	04 Oct 2021
Sample Quantity	:	2 Litre	Test Started on	:	04 Oct 2021
Sampling Plan & Method	:	GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	7.84	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	1817	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	470	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	80	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	672	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	3000	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	163	mg/L
8	Potassium as K	APHA 23rd Edition:3500 Ca B:2017	11	mg/L
9	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	BDL(DL:1.0)	mg/L
10	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
11	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	357	mg/L

Authorized Signature

E. Prithivirajan

Manager - Lab

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No : EN21100003-09 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	BDL(DL:1.0)	mg/L
13	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	BDL(DL:0.05)	mg/L
14	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	4	NTU
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	0.004	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.007	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	0.009	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	110	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	50	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

Authorized Signature
E. Prithivirajan
Manager - Lab

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No	: EN21100003-10		Report Date	:	12 Oct 2021

SAMPLE DRAWN BY LABORATORY

Customer Name	: M/S. CENTRAL POLLUTION CONTROL BOARD				
Customer Address	: Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058				
Sample Name	: Water				
Sample Description	: Ground Water				
Sample No	: EN21100003-10				
Sampling Location	: Ground Water - Sample Code 8				
Sample Condition	: Fit for Analysis	Sample Received on	:	04 Oct 2021	
Sample Quantity	: 2 Litre	Test Started on	:	04 Oct 2021	
Sampling Plan & Method	: GL/EN/SOP/001 & 003	Test Completed on	:	12 Oct 2021	

Test result

S.No	Test Name	Test Method	Results	Units
1	pH Value	IS 3025 (Part 11): 1983 RA : 2017	8.27	No Unit
2	Total Dissolved Solids	IS 3025 (Part 16): 1984 RA : 2017	420	mg/L
3	Chloride as Cl	IS 3025 (Part 32): 1988 RA : 2014	92	mg/L
4	Sulphate as SO4	IS 3025 (Part 24): 1986 RA : 2014	13	mg/L
5	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 RA : 2014	221	mg/L
6	Conductivity @ 25°C	IS 3025 (Part 14): 1984 RA : 2013	750	µS/cm
7	Sodium as Na	APHA 23rd Edition Part 3500 – Na B : 2017	66.7	mg/L
8	Potassium as K	APHA 23rd Edition 3500 Ca B:2017	5	mg/L
9	Total Kjeldahl Nitrogen as N	APHA 23rd Edition Part 4500 Norg B : 2017	5.2	mg/L
10	Biochemical Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 RA : 2014	BDL(DL:2.0)	mg/L
11	Calcium Hardness (as CaCO3)	APHA 23rd Edition Part 3500 Ca B: 2017	116	mg/L

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Manager - Lab

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GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TEST REPORT

Report No : EN21100003-10 Report Date : 12 Oct 2021

S.No	Test Name	Test Method	Results	Units
12	Total Nitrogen	APHA 23rd Edition Part 4500 Norg B : 2017	10.3	mg/L
13	Total Phosphorus as P	APHA 23rd Edition Part 4500 P B,D : 2017	0.051	mg/L
14	Turbidity	IS 3025 (Part 10): 1984 RA : 2017	2	NTU
16	Cadmium as Cd	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
17	Total Chromium as Cr	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
18	Nickel as Ni	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
19	Lead as Pb	IS 3025 (Part 65):2014	BLQ(LOQ:0.002)	mg/L
20	Manganese as Mn	IS 3025 (Part 65): 2014	0.069	mg/L
21	Zinc as Zn	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
22	Copper as Cu	IS 3025 (Part 65): 2014	BLQ(LOQ:0.002)	mg/L
Microbiological Parameters				
23	*Total coliform*	IS 1622: 1981 RA : 2014	280	MPN
24	*Faecal coliform*	IS 1622: 1981 RA : 2014	170	MPN/ 100mL

Note: BDL-Below Detection Limit, DL- Detection Limit
BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

Authorized Signature
E. Prithivirajan
Manager - Lab

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GLens Innovation Labs Pvt Ltd.

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TEST REPORT

Report No : EN21100003-11 **Report Date** : 12 Oct 2021

SAMPLE NOT DRAWN BY LABORATORY

Customer Name : M/S. CENTRAL POLLUTION CONTROL BOARD

Customer Address : Second Floor,77-A, South Avenue Road, Ambattur Industrial Estate, Chenni-600058

Sample Name : Sludge

Sample Description : ETP Sludge

Sample No : EN21100003-11

Sample Identification : CETP Sludge-Polythene bag-1 **Sample Received on** : 04 Oct 2021

Sample Condition : Fit for Analysis **Test Started on** : 04 Oct 2021

Sample Quantity : 2 kg **Test Completed on** : 12 Oct 2021

Test result

S.No	Test Name	Test Method	Results	Units
1	Cadmium as Cd	GL/EN-INS/SOP/21	BLQ(LOQ:2.0)	mg/kg
2	Chromium as Cr	GL/EN-INS/SOP/21	16.80	mg/kg
3	Nickel as Ni	GL/EN-INS/SOP/21	3.21	mg/kg
4	Lead as Pb	GL/EN-INS/SOP/21	BLQ(LOQ:2.0)	mg/kg
5	Manganese as Mn	GL/EN-INS/SOP/21	9.16	mg/kg
6	Zinc as Zn	GL/EN-INS/SOP/21	9.91	mg/kg
7	Copper as Cu	GL/EN-INS/SOP/21	BLQ(LOQ:2.0)	mg/kg

Note: BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

.....End of Report.....

Authorized Signature

E. Prithivirajan
Manager - Lab

#.6/1, Ist Floor, Sri Jothi Complex, Murugesan Street, Balavinayagar Nagar, Arumbakkam, Chennai – 600 106.

ADVANCED ENVIRONMENTAL LABOURATORY,
TAMILNADU POLLUTION CONTROL BOARD, SALEM-636004.
Accredited by NABL -(ISO/IEC 17025:2005)

ROA NO. 421/AEL – SLM/2021– 22 Dt. 12.10.2021

REPORT OF ANALYSIS

1.Name and address of the sender	The District Environmental Engineer, Tamilnadu Pollution Control Board, Karur.
2. Condition of seal, fastening and Container	1) GCP : Sealed / Fastened Condition in Polythene carbuoy 2.5 Lits X 6 Nos. 2) HM : Sealed / Fastened Condition in Polythene carbuoy 1 Lit X 6 Nos. 3) NPC : Sealed / Fastened Condition in Polythene carbuoy 1 Lit X 6 Nos.
3. Nature of Sample	Ground Water Samples - 6 Nos.

SI.No	Point of Collection	Lab Code No.	DEE Code No.	Date & Time of collection	Date & Time of receipt at Lab
1	Bore well at Chinnasamy Go down at East of M/s. Karur Thiruvai Dyeing Enviro Ltd., Thirumanilayur, Karur.	1464	**11-GCP, 11-HM 11-NPC**	**05.10.2021 at 11.59 am**	**05.10.2021 at 6.00 PM**
2	Bore well at Vathiyar Thottam at East of M/s. Karur Sellandipalayam Pollution Control Ltd., T. Sellandipalayam, Karur.	1465	**12-GCP, 12-HM 12-NPC**	**05.10.2021 at 12.15 pm**	
3	Bore well of Panchayat opposite to M/s. Karur Sukkaliyur CETP Company Ltd., Sukkaliyur, Karur.	1466	**13-GCP, 13-HM 13-NPC**	**05.10.2021 at 12.46 pm**	
4	Bore well at Aruselvan house at North of M/s. Karur Karuppampalayam Enviro Tech Ltd., Karuppampalayam, Karur.	1467	**14-GCP, 14-HM 14-NPC**	**05.10.2021 at 01.01 pm**	
5	Bore well at Rajaram land at Venkaraiamman Yarn Godown at South of M/s. Karur Andankoil Pollution Control Ltd,. Andankoil West Village, Karur Taluk, Karur District.	1468	**15-GCP, 15-HM 15-NPC**	**05.10.2021 at 01.20 pm**	
6	Bore well at Rajendraprasad House at Northeast of M/s. Karur Taluk Dyeing & Bleaching ETP Co., Ltd., Arugampalayam Karur.	1469	**16-GCP, 16-HM 16-NPC**	**05.10.2021 at 02.05 pm**	

N. Vadivu 13/10/21
Dy.CSO

13/10/21
Assistant Director (Lab)
AEL-TNPCB-SALEM.

ADVANCED ENVIRONMENTAL LABORATORY,
TAMILNADU POLLUTION CONTROL BOARD, SALEM – 636 004.
Accredited by NABL – (ISO/IEC 17025:2005)

ULR- TC - 98992100000071 F TO
ULR- TC - 98992100000073 F

Sl. No.	Parameters		Parameters Analyzed for Water Samples - Salem District.			Test Method
		Nature of samples	Ground Water Samples			
		Point of Collection	Bore well at Chinnasamy Go down at East of M/s. Karur Thiruvai Dyeing Enviro Ltd., Thirumanilayur, Karur.	Bore well at Vathiyar Thottam at East of M/s. Karur Sellandipalayam Pollution Control Ltd., T. Sellandipalayam, Karur.	Bore well of Panchayat opposite to M/s. Karur Sukkaliyur CETP Company Ltd., Sukkaliyur, Karur.	
		Date of Collection	05.10.2021 at 11.59 am	05.10.2021 at 12.15 pm	05.10.2021 at 12.46 pm	
		Date & Time of Receipt	05.10.2021 at 6.00 pm			
		DEE Code	11-GCP, 11-HM 11-NPC	12-GCP, 12-HM 12-NPC	13-GCP, 13-HM 13-NPC	
		Lab Code	1464	1465	1466	
	GCP					
1	Turbidity	NTU	2.1	2.0	2.0	APHA 23rd Edi. 2017 2130 B
2	Conductivity at 25°C	µmhos/cm	11248	2960	5030	APHA 23rd Edi.2017 2510 B
3	pH at 25°C	Number	6.43	6.90	7.10	APHA 23rd Edi.2017 4500-H
4	TDS at 180°C	mg/l	7840	1912	3264	APHA 23rd Edi.2017- 2540 - C
5	Total Hardness as CaCO3	mg/l	2800	440	900	APHA 23rd Edi. 2017 2340 C
6	BOD (at 27°C for 3 days)	mg/l	3.4	3.2	3.2	IS3025 (P44) 1993 Reaffirmed 2009
7	Sulphates as SO4	mg/l	653	98	327	APHA 23rd Edi.2017- 4500-E
8	Chloride as Cl	mg/l	3499	590	1030	APHA 23rd Edi.2017- 4500-CIB
9	Sodium as Na	mg/l	708	369	577	APHA 23rd Edi. 2017 3500-Na B
10	Calcium Hardness	mg/l	1300	260	320	APHA 23rd Edi.2017 3500 B
11	Potassium as K	mg/l	17	19	14	APHA 23rd Edi. 2017 3500-K B
12	Total Kjeldahl Nitrogen	mg/l	6.72	3.36	4.48	APHA 23rd Edi. 2017 4500 – Norg B

ADVANCED ENVIRONMENTAL LABORATORY,
TAMILNADU POLLUTION CONTROL BOARD, SALEM – 636 004.
Accredited by NABL – (ISO/IEC 17025:2005)

ULR- TC - 989921000000071 F TO
ULR- TC - 98992100000073 F

Sl. No.	Parameters	Nature of samples	Ground Water Samples			Test Method
		Point of Collection	Bore well at Chinnasamy Go down at East of M/s. Karur Thiruvai Dyeing Enviro Ltd., Thirumanilayur, Karur.	Bore well at Vathiyar Thottam at East of M/s. Karur Sellandipalayam Pollution Control Ltd., T. Sellandipalayam, Karur.	Bore well of Panchayat opposite to M/s. Karur Sukkaliyur CETP Company Ltd., Sukkaliyur, Karur.	
		Date of Collection	05.10.2021 at 11.59 am	05.10.2021 at 12.15 pm	05.10.2021 at 12.46 pm	
		Date & Time of Receipt	05.10.2021 at 6.00 pm			
		DEE Code	11-GCP, 11-HM 11-NPC	12-GCP, 12-HM 12-NPC	13-GCP, 13-HM 13-NPC	
		Lab Code	1464	1465	1466	
	NPC					
13	Total Nitrogen	mg/l	7.481	3.471	4.638	APHA 23rd Edi. 2017 4500 - NH2 -B and PDA Method (Neeri)
14	Total Phosphorous	mg/l	0.074	0.034	0.052	APHA 23rd Edi. 2017 4500-P E
	HM					
15	Manganese	mg/l	<0.1	<0.1	<0.1	APHA 23rd Edi. 2017 3550 - Mn
16	Copper	mg/l	<0.2	<0.2	<0.2	APHA 23rd Edi. 2017 3111. B
17	Zinc	mg/l	<0.1	<0.1	<0.1	APHA 23rd Edi. 2017 3111. B
18	Lead	mg/l	<0.5	<0.5	<0.5	APHA 23rd Edi. 2017 3111. B
19	Nickel	mg/l	<0.2	<0.2	<0.2	APHA 23rd Edi. 2017 3111. B
20	Cadmium	mg/l	<0.1	<0.1	<0.1	APHA 23rd Edi. 2017 3111. B
21	Total Chromium	mg/l	<0.05	<0.05	<0.05	APHA 23rd Edi. 2017 3500-Cr B

Note: < = Indicates Less than Minimum Detectable Limit

Dy.CSO 13/10/21
Technical Manager.

13/10/21
Assistant Director (Lab)
Quality Manager.

ADVANCED ENVIRONMENTAL LABORATORY,
TAMILNADU POLLUTION CONTROL BOARD, SALEM – 636 004.
Accredited by NABL – (ISO/IEC 17025:2005)

ULR- TC - 98992100000074 F TO
ULR- TC -98992100000076 F

Sl. No.	Parameters		Parameters Analyzed for Water Samples - Salem District.			Test Method
		Nature of samples	Ground Water Samples			
		Point of Collection	Bore well at Aruselvan house at North of M/s. Karur Karuppampalayam Enviro Tech Ltd., Karuppampalayam, Karur.	Bore well at Rajaram land at Venkaraiamman Yarn Godown at South of M/s. Karur Andankoil Pollution Control Ltd,. Andankoil West Village, Karur Taluk, Karur District.	Bore well at Rajendraprasad House at Northeast of M/s. Karur Taluk Dyeing & Bleaching ETP Co., Ltd., Arugampalayam Karur.	
		Date of Collection	05.10.2021 at 01.01 pm	05.10.2021 at 01.20 pm	05.10.2021 at 02.05 pm	
		Date & Time of Receipt	05.10.2021 at 6[illegible].00 pm			
		DEE Code	14-GCP, 14-HM 14-NPC	15-GCP, 15-HM 15-NPC	16-GCP, 16-HM 16-NPC	
		Lab Code	1467	1468	1469	
	GCP					
1	Turbidity	NTU	1.8	2.0	1.9	APHA 23rd Edi. 2017 2130 B
2	Conductivity at 25°C	µmhos/cm	4540	5170	12490	APHA 23rd Edi.2017 2510 B
3	pH at 25°C	Number	6.62	6.79	6.91	APHA 23rd Edi.2017 4500-H
4	TDS at 180°C	mg/l	2964	3336	8232	APHA 23rd Edi.2017- 2540 - C
5	Total Hardness as CaCO3	mg/l	1400	790	2700	APHA 23rd Edi. 2017 2340 C
6	BOD (at 27°C for 3 days)	mg/l	2.2	3.0	2.8	IS3025 (P44) 1993 Reaffirmed 2009
7	Sulphates as SO4	mg/l	300	272	826	APHA 23rd Edi.2017- 4500-E
8	Chloride as Cl	mg/l	970	1180	1699	APHA 23rd Edi.2017- 4500-CIB
9	Sodium as Na	mg/l	301	635	670	APHA 23rd Edi. 2017 3500-Na B
10	Calcium Hardness	mg/l	600	480	1900	APHA 23rd Edi.2017 3500 B
11	Potassium as K	mg/l	17	18	30	APHA 23rd Edi. 2017 3500-K B
12	Total Kjeldahl Nitrogen	mg/l	3.36	4.48	7.84	APHA 23rd Edi. 2017 4500 – Norg B

Sl. No.	Parameters	Nature of samples	Ground Water Samples			Test Method
		Point of Collection	Bore well at Aruselvan house at North of M/s. Karur Karuppampalayam Enviro Tech Ltd., Karuppampalayam, Karur.	Bore well at Rajaram land at Venkaraiamman Yarn Godown at South of M/s. Karur Andankoil Pollution Control Ltd,. Andankoil West Village, Karur Taluk, Karur District.	Bore well at Rajendraprasad House at Northeast of M/s. Karur Taluk Dyeing & Bleaching ETP Co., Ltd., Arugampalayam Karur.	
		Date of Collection	05.10.2021 at 01.01 pm	05.10.2021 at 01.20 pm	05.10.2021 at 02.05 pm	
		Date & Time of Receipt	05.10.2021 at 6[illegible].00 pm			
		DEE Code	14-GCP, 14-HM 14-NPC	15-GCP, 15-HM 15-NPC	16-GCP, 16-HM 16-NPC	
		Lab Code	1467	1468	1469	
	NPC					
13	Total Nitrogen	mg/l	4.074	4.725	8.261	APHA 23rd Edi. 2017 4500 - NH2 -B and PDA Method (Neeri)
14	Total Phosphorous	mg/l	0.047	0.044	0.101	APHA 23rd Edi. 2017 4500-P E
	HM					
15	Manganese	mg/l	<0.1	<0.1	<0.1	APHA 23rd Edi. 2017 3550 - Mn
16	Copper	mg/l	<0.2	<0.2	<0.2	APHA 23rd Edi. 2017 3111. B
17	Zinc	mg/l	<0.1	<0.1	<0.1	APHA 23rd Edi. 2017 3111. B
18	Lead	mg/l	<0.5	<0.5	<0.5	APHA 23rd Edi. 2017 3111. B
19	Nickel	mg/l	<0.2	<0.2	<0.2	APHA 23rd Edi. 2017 3111. B
20	Cadmium	mg/l	<0.1	<0.1	<0.1	APHA 23rd Edi. 2017 3111. B
21	Total Chromium	mg/l	<0.05	<0.05	<0.05	APHA 23rd Edi. 2017 3500-Cr B

Note: < = Indicates Less than Minimum Detectable Limit.

N.Vadivu 13/10/21
Dy.CSO
Technical Manager.

13/10/21
Assistant Director (Lab)
Quality Manager.

GLens Innovation Labs Pvt Ltd.

NABL ACCREDITED AS PER ISO/IEC 17025 : 2017, CERTIFIED AS PER ISO 9001:2015 & ISO 45001 : 2018

TEST REPORT

Report No	:	EN21100003-11	**Report Date**	:	12 Oct 2021

SAMPLE NOT DRAWN BY LABORATORY

Customer Name	:	M/S. Tamilnadu Newsprint & Papers Ltd,			
Customer Address	:	Kagithapuram, Karur – 639136.			
Sample Name	:	Sludge			
Sample Description	:	ETP Sludge			
Sample No	:	EN21100003-11			
Sample Identification	:	CETP Sludge-Polythene bag-1	**Sample Received on**	:	04 Oct 2021
Sample Condition	:	Fit for Analysis	**Test Started on**	:	04 Oct 2021
Sample Quantity	:	2Kg	**Test Completed on**	:	12 Oct 2021

Test Results

Sl.No	Test Name	Test Method	Results	Units	Specification limit as per EPA Chapter Seven for TCLP
1	Arsenic as As	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	5.0
2	Barium as Ba	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	100.0
3	Benzene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.5
4	Cadmium as Cd	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	1.0
5	Carbon Tetrachloride	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.5
6	Chlordane	GL/EN-INS/SOP/25	BLQ(LOQ:0.01)	mg/L	0.03
7	Chlorobenzene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	100.0
8	Chloroform	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	6.0
9	Chromium as Cr	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	5.0
10	o- Cresol	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	200.0
11	m- Cresol	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	200.0

Authorized Signature

E. Prithivirajan
Manager - Lab

#.6/1, Ist Floor, Sri Jothi Complex, Murugesan Street, Balavinayagar Nagar, Arumbakkam, Chennai – 600 106.

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TEST REPORT

Report No : EN21100003-11 **Report Date** : 12 Oct 2021

Sl.No	Test Name	Test Method	Results	Units	Specification limit as per EPA Chapter Seven for TCLP
12	p- Cresol	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	200.0
13	Cresol	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	200.0
14	2,4-D	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	10.0
15	1,4-Dichlorobenzene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	7.5
16	1,2-Dichloroethane	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.5
17	1,1-Dichloroethylene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.7
18	2,4-Dinitrotoluene	EPA 1311/EPA 3510 C/ EPA 8270 D	BLQ(LOQ:0.1)	mg/L	0.13
19	Endrin	GL/EN-INS/SOP/25	BLQ(LOQ:0.01)	mg/L	0.02
20	Heptachlor epoxide	EPA 1311/EPA 3510 C/ EPA 8081 A	Absent*	mg/L	0.008
21	Hexachlorobenzene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.13
22	Hexachlorobutadiene	EPA – 1311/EPA 5030 C	Absent*	mg/L	0.5
23	Hexachloroethane	EPA – 1311/EPA 5030 C	Absent*	mg/L	3.0
24	Lead as Pb	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	5.0
25	Lindane	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	0.4
26	Mercury as Hg	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	0.2
27	Methoxychlor	EPA 1311/EPA 3510 C/ EPA 8081 A	Absent*	mg/L	10.0

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TEST REPORT

Report No : EN21100003-11 **Report Date** : 12 Oct 2021

Sl.No	Test Name	Test Method	Results	Units	Specification limit as per EPA Chapter Seven for TCLP
28	Methyl ethyl ketone	EPA 1311/EPA 3510 C/ EPA 8270D	BLQ(LOQ:0.1)	mg/L	200.0
29	Nitrobenzene	EPA 1311/EPA 3510 C/ EPA 8260B	Absent*	mg/L	2.0
30	Pentachlorophenol	GL/ EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	100.0
31	Pyridine	EPA 1311/EPA 3510 C/ EPA 8260B	BLQ(LOQ:0.1)	mg/L	5.0
32	Selenium as Se	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	1.0
33	Silver as Ag	GL/EN-INS/SOP/26	BLQ(LOQ:0.1)	mg/L	5.0
34	Tetrachloroethylene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.7
35	Toxaphene	EPA – 1311/By GC-MS	Absent*	mg/L	0.5
36	Trichloroethylene	EPA – 1311/EPA 5030 C	BLQ(LOQ:0.1)	mg/L	0.5
37	2,4,5-Trichlorophenol	GL/ EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	400.0
38	2,4,6-Trichlorophenol	GL/EN-INS/SOP/25	BLQ(LOQ:0.1)	mg/L	2.0
39	2,4, 5-TP (Silvex)	EPA 1311/EPA 3510 C/ EPA 8081 A	Absent*	mg/L	1.0
40	Vinyl Chloride	EPA – 1311/EPA 5030 C	Absent*	mg/L	0.2

Note: BLQ-Below Limit of Quantification, LOQ-Limit of Quantification

Remarks : The above Sludge sample conform to the specification limit as per EPA Chapter seven for toxicity characteristic.

*Qualitatively scanned by GC-MS

End of Report

Authorized Signature

E. Prithivirajan
Manager - Lab

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