



TAMIL NADU POLLUTION CONTROL BOARD

**Action Plan on Rejuvenation of
River Thamirabarani
Pappankulam to Arumuganeri
Stretch (Priority-V)**

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Comprehensive Report on Prevention and Control of Pollution in River Thamirabarani (Priority-V): An Action Plan for Rejuvenation

1.0 Introduction

The Hon'ble National Green Tribunal (NGT) Principal Bench took Suo-Moto Cognizance of news report appeared in "The Hindu" authorized by Shri. Jacob Koshy titled "More River Stretches are now critically polluted – CPCB" and issued directions in para 50(i) to (x) vide its Original Application No. 673/2018 dated: 20.09.2018

1. All States and Union Territories are directed to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e., BOD < 3 mg/L and FC < 500 MPN/100 ml) within six months from the date of finalisation of the action plans.
2. The action plans may be prepared by a four-member Committee comprising,
 - a. **Director, Environment**
 - b. **Director, Urban Development**
 - c. **Director, Industries**
 - d. **Member Secretary, TNPCB**

This Committee will also be the Monitoring Committee for execution of the action plan. The Committee may be called as "**River Rejuvenation Committee**" (**RRC**). The RRC will function under the overall supervision and coordination of Principal Secretary, Environment & Forest, Govt. of Tamilnadu.

3. The action plan will include components like identification of polluting sources including functioning/ status of STPs/ETPs/CETP and solid waste management and processing facilities, quantification and characterization of solid waste, trade and sewage generated in the catchment area of polluted river stretch. The action plan will address issues relating to; ground water extraction, adopting good irrigation practices, protection and management of Flood Plain Zones (FPZ), rain water harvesting, ground water charging,

maintaining minimum environmental flow of river and plantation on both sides of the river. Setting up of biodiversity parks on flood plains by removing encroachment shall also be considered as an important component for river rejuvenation. The action plan should focus on proper interception and diversion of sewage carrying drains to the Sewage Treatment Plant (STP) and emphasis should be on utilization of treated sewage so as to minimize extraction of ground or surface water. The action plan should have speedy, definite or specific timelines for execution of steps. Provision may be made to pool the resources, utilizing funds from State budgets, local bodies, State Pollution Control Board/Committee and out of Central Schemes.

4. The Action Plans may be subjected to a random scrutiny by a task team of the CPCB.
5. The Chief Secretaries of the State and Administrators/ Advisors to Administrators of the Union Territories will be personally accountable for failure to formulate action plan, as directed.
6. All States and Union Territories are required to send a copy of Action Plan to CPCB especially w.r.t Priority I & Priority II stretches for approval.
7. The States and the Union Territories concern are directed to set up Special Environment Surveillance Task Force, comprising nominees of District Magistrate, Superintendent of Police, Regional Officer of State Pollution Control Board and one person to be nominated by District Judge in his capacity as Chairman of Legal Services Authority on the pattern of direction of this Tribunal dated 07.08.2018, in *Original Application No. 138/2016 (TNHRC)*, "*Stench Grips Mansa's Sacred Ghaggar River (Suo-Motu Case)*).
8. The Task Force will also ensure that no illegal mining takes place in riverbeds of such polluted stretches.
9. The RRC will have a website inviting public participation from educational institutions, religious institutions and commercial establishments. Achievement and failure may also be published on such website. The Committee may

consider suitably rewarding those contributing significantly to the success of the project.

10. The RRCs will have the authority to recover the cost of rejuvenation in Polluter Pays Principle from those who may be responsible for the pollution, to the extent found necessary. In this regard, principle laid down by this Tribunal in order dated 13.07.2017 in O.A No. 200 of 2014, M.C. Mehta Vs. U.O.I will apply. Voluntary donations, CSR contribution, voluntary services and private participation may be considered in consultation with the RRC.

Based on the directions of Hon'ble NGT (PB) vide its Original Application No. 673/2018 dated: 20.09.2018 the Principal Secretary (Environment & Forest) has convened the River rejuvenation committee meeting on 14.11.2018 regarding the directions issued by the Hon'ble NGT (PB) to prepare action plan for the rejuvenation/restoration of polluted river stretches in Tamil Nadu with the heads of the following departments:

1. Municipal Administration and Rural development and its line departments,
2. Chennai Metro Water Supply and Sewage Board.
3. Tamil Nadu Water Supply and Drainage Board.
4. Environment & Forest.
5. Central Pollution Control Board, Bangalore.
6. Tamil Nadu Pollution Control Board.

In the meeting it was decided to evolve the detailed action plan for the rejuvenation/restoration of polluted river stretches in Tamil Nadu. The minutes of the meeting was communicated to the above departments requesting certain details with action plan for the rejuvenation/restoration of polluted river stretches in Tamil Nadu. Remainder was also communicated to the above departments.

As per the Hon'ble NGT (PB) directions in its Original Application No. 673/2018 dated: 20.09.2018, Four member River Rejuvenation Committee (RRC) was constituted in Tamil Nadu and Government Order (G.O.) was issued by the Environment and Forest (EC.1) Department vide G.O. (D) No. 372 dated: 26.12.2018 (copy enclosed) to execute and to review the action plan for the Rejuvenation/Restoration of water along the polluted river stretches in Tamil Nadu as

ordered by the Hon'ble National Green Tribunal, Principal Bench. River Rejuvenation Committee (RRC) members are as follows:

1. Industries Commissioner.
2. Commissioner, Municipal Administration.
3. The Director of Environment.
4. The Member Secretary, Tamil Nadu Pollution Control Board.

The RRC will function under the overall supervision and coordination of Principal Secretary, Environment and Forests Department, Government of Tamil Nadu.

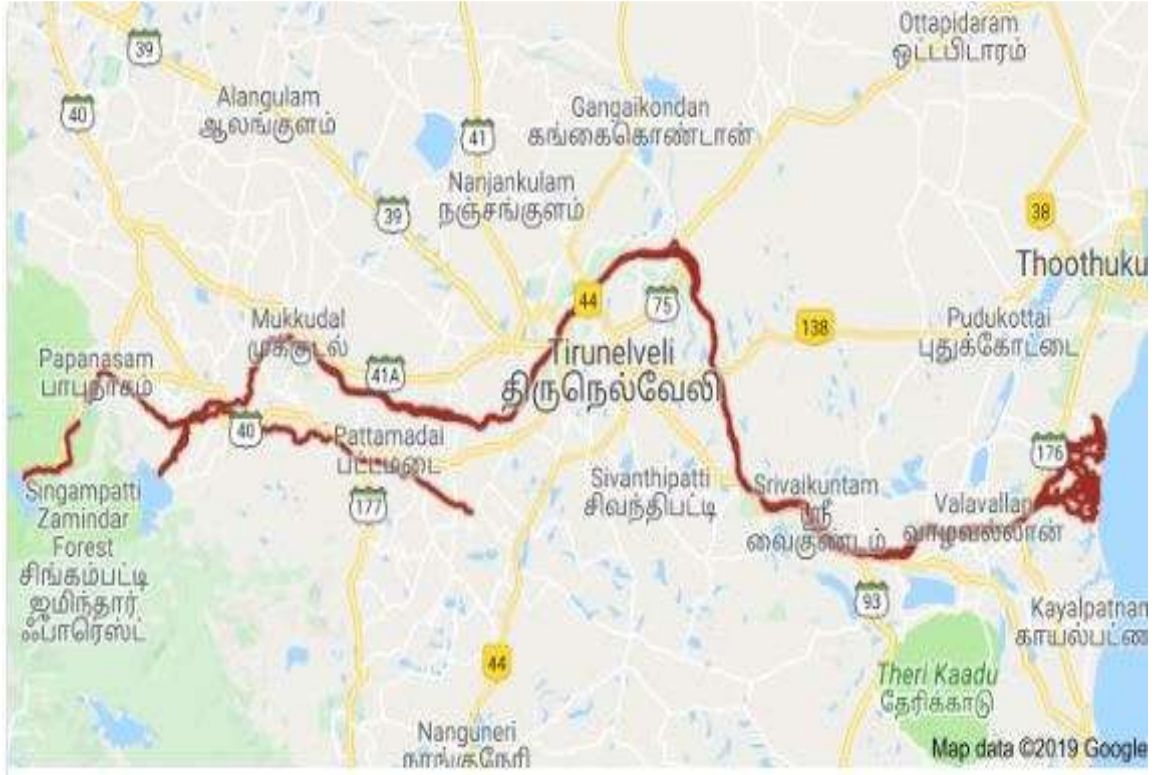
2.0 Introduction about the River Thamirabarani

River Thamirabarani is a perennial river in south Tamil Nadu. The River passes through two districts namely Tirunelveli and Thoothukudi. In Tirunelveli District the River Thamirabarani starts at Agastyarkoodam peak of the Pothigai hills and leaves at Sivalaperi and enters in Thoothukudi District at Kaliyavur and finally confluences in Gulf of Mannar at Punnaikayal.

The river originates from the Agastyarkoodam peak of the Pothigai hills with latitude 8.601962°N and longitude 77.264131°E on the eastern slopes of the Western Ghats at an elevation of 1,725 meters (5,659 feet) above sea-level. The River passes through Ambasamudram taluk, Cheranmahadevi taluk, Tirunelveli taluk, Palayamcottai taluk of Tirunelveli District & Srivaikundam taluk and Tiruchendhur taluk of Thoothukudi District. Villages located along the banks of the River are Papanasam, Sivanthipuram, Aladiur, Thiruvaidaimarudur, Thimmaraja Samuthram, Ambasamudram, Kallidaikurichi, Mukkudal, Cheranmahadevi, Tirunelveli, Sivalaperiof Tirunelveli District and Kaliyavur, Chennalpatti, Murappanadu, Srivaikundam, Athur, Eral, Mukkani, Punnaikayal of Thoothukudi District.

The river confluences into Gulf of Mannar with latitude 8.641316°N and longitude 78.127298°E near Punnaikayal in Tiruchendhur taluk of Thoothukudi district. The total length of the River is 128 km from Pothigai hills to Gulf of Mannar of which 84km in Tirunelveli District and 44 km in Thoothukudi District.

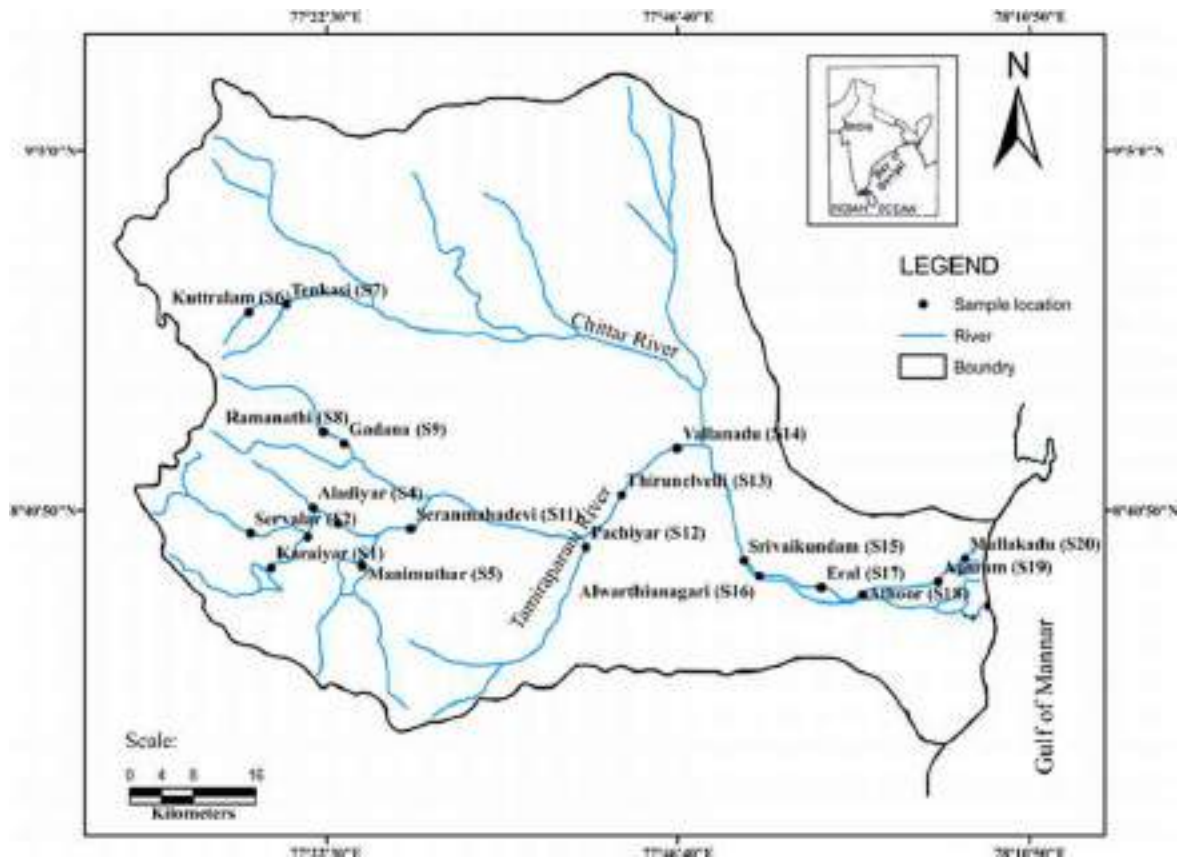
The many anicuts, dams and reservoirs on the Thamirabarani river, along with those on the Manimuthar River, provide a large proportion of the water for irrigation and power generation for Tirunelveli district. It is fed by both the monsoons – the south west and the north-eastern and is seen in full spate twice a year if the monsoons do not fail. The Gadanathi River has 6 anicuts and a reservoir of 9,970,000 cubic meters (8,080 acre·ft) and irrigates 38.87 square kilometers (15.01 sq mi) of wetlands. The Ramanadhi has 7 anicuts, a reservoir of 4,300,000 cubic meters (3,500 acre·ft), and irrigates 20.23 square kilometers (7.81 sq mi) of wetlands. Pachaiyar River has 12 anicuts and irrigates 61.51 square kilometers (23.75 sq. mi) of wet and dry lands.



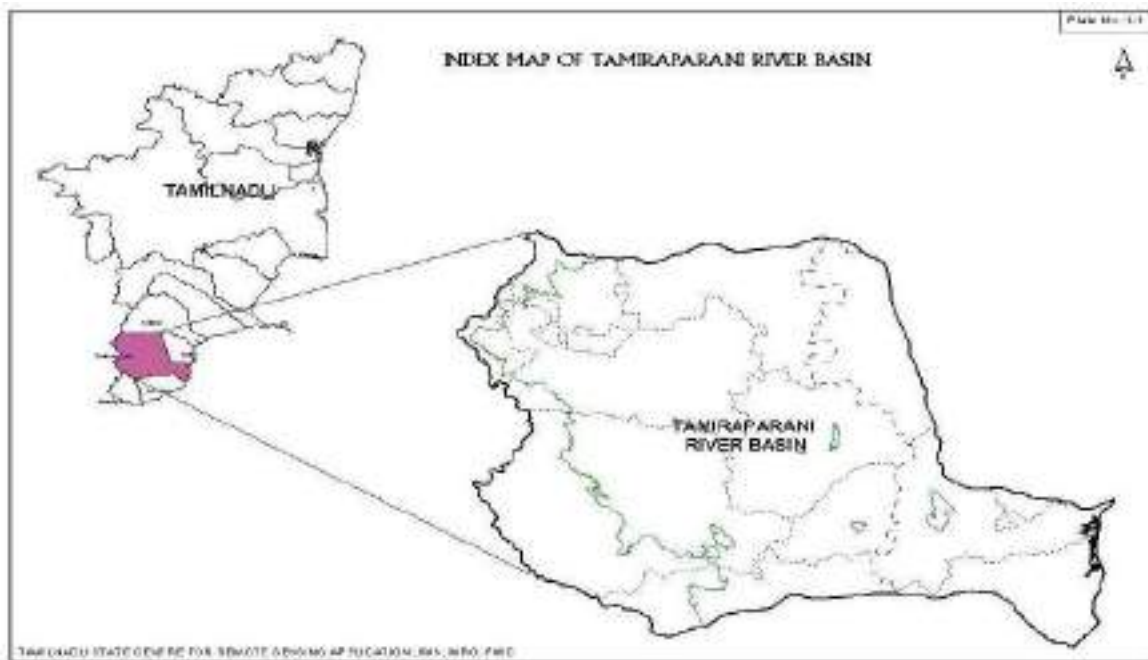
Map showing the Flow of River Thamirabarani

2.1 Tributaries of River Thamirabarani:

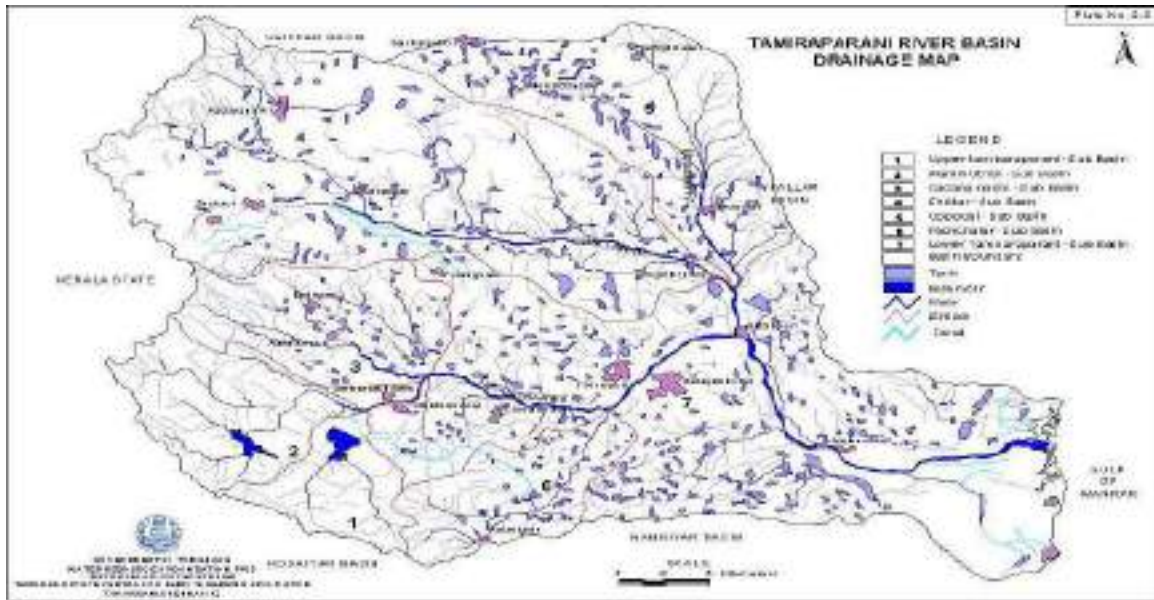
Sl. No.	Tributaries	Origin	Confluence with the River Thamirabarani
1	Karaiyar	Mundanthurai reserve forests	Karaiyar Dam
2	Servalar River	Mundanthurai reserve forests	Servalar Dam & Papanasam Reservoir
3	Manimuthar River	Manjolai hills	Aladiyoor
4	Gadananadhi	Agathiyamalai Biosphere reserve	Tiruppudaimaruthur
5	Ramana nadhi	Agathiyamalai Biosphere reserve	Kizha Ambur
6	Pachiyar	Kalakkadu Reserve Forest	Tharuvai
7	Chittar	Courtallam Hills	Sivalaperi



Map showing the River Thamirabarani in Thoothukudi District



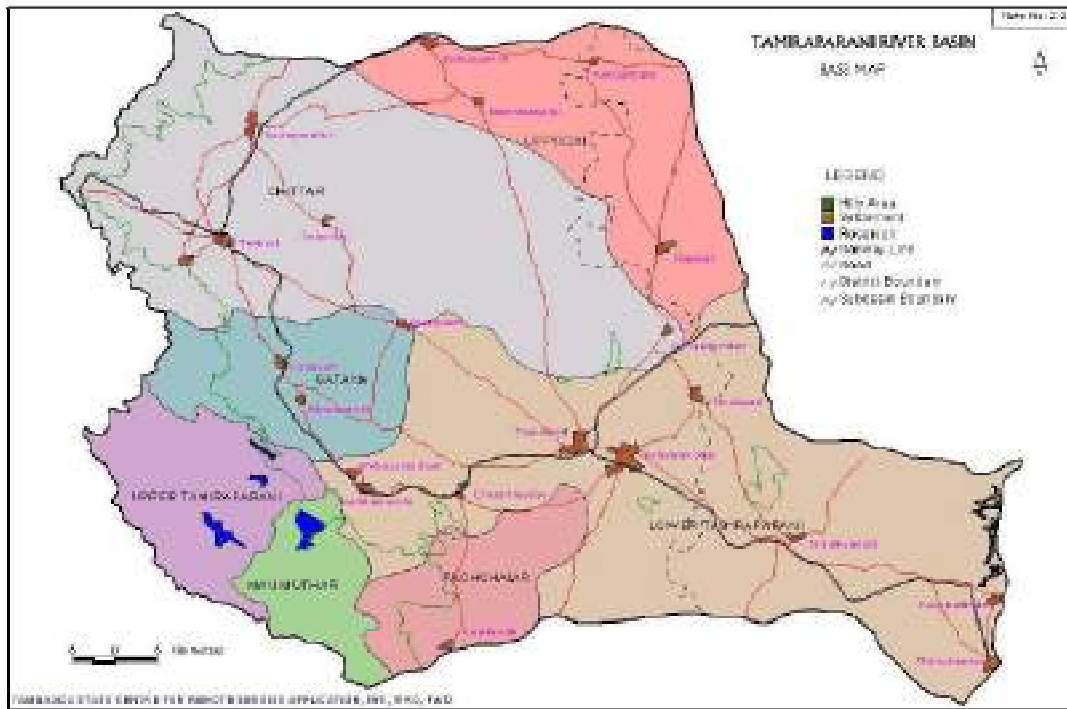
Index Map of Thamirabarani River Basin



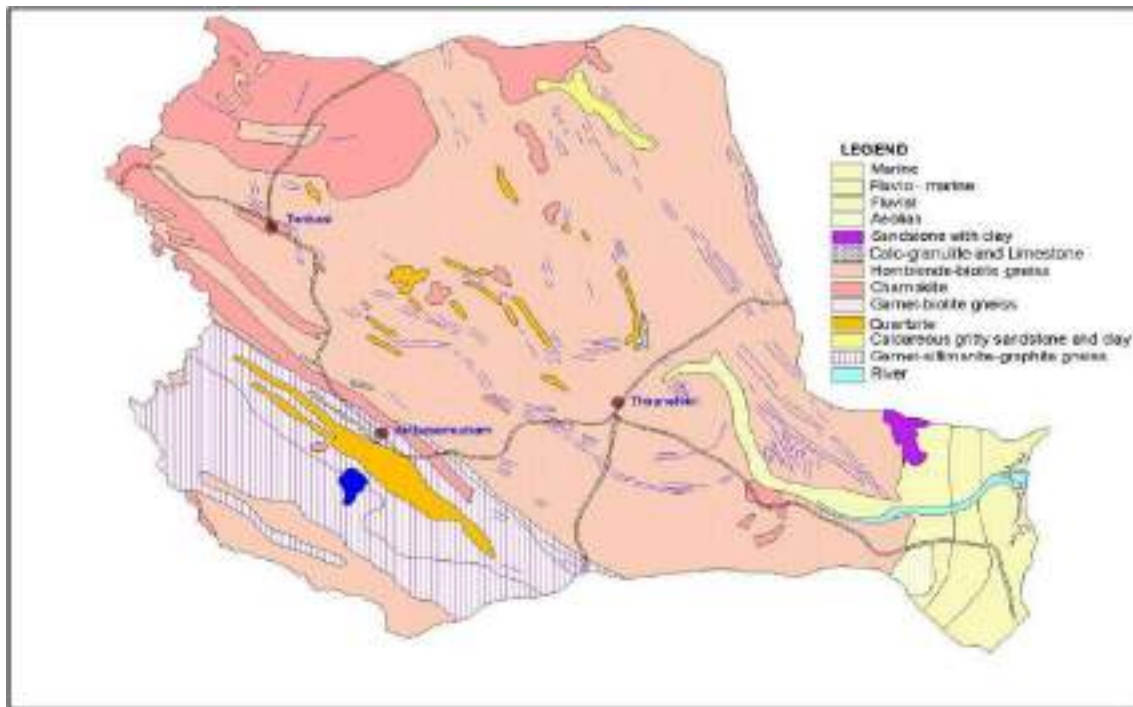
Map Showing the Drainage of Tamirabarani River Basin



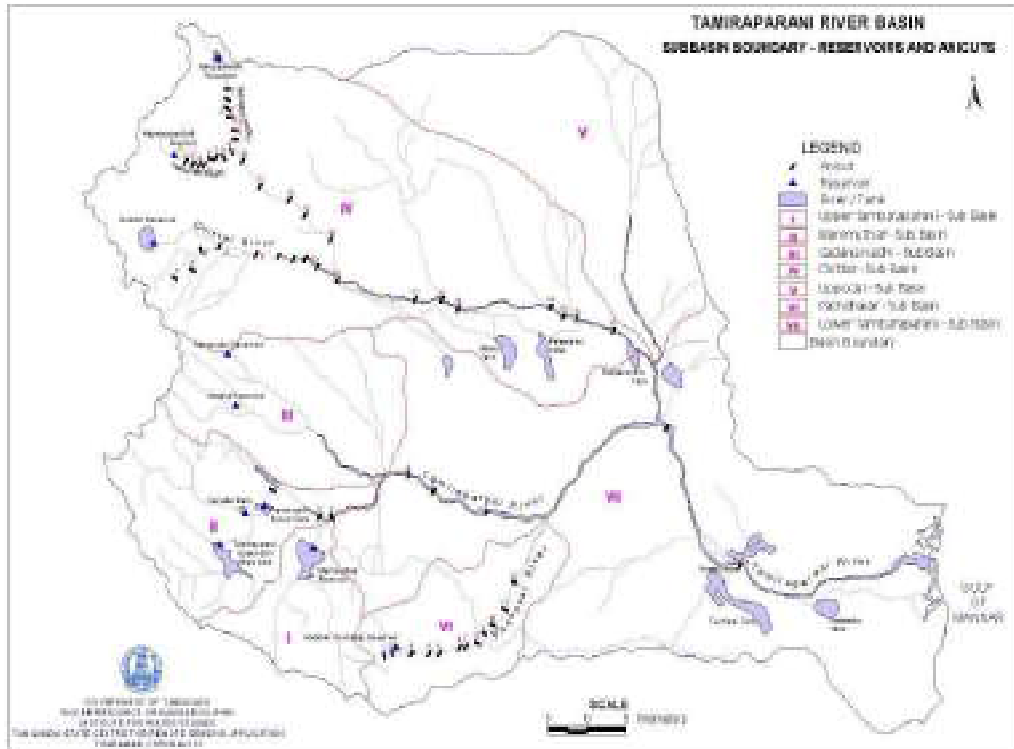
Administrative Map of Tamirabarani River Basin



Base Map of Thamirabarani River Basin



Map Showing the Geology of Thamirabarani River Basin



Map Showing the irrigation system of Thamirabarani River Basin



Photograph showing the River Thamirabarani

2.2 Anicut across River Thamirabarani

Tirunelveli District:

1. Kodaimelalagain anicut, 1,281.67 hectares (3,167.1 acres)
2. Nathiyunni anicut, 1,049.37 hectares (2,593.0 acres)
3. Kannadian anicut, 2,266.69 hectares (5,601.1 acres)
4. Ariyanayagipuram anicut, 4,767.30 hectares (11,780.3 acres)
5. Palavur anicut, 3,557.26 hectares (8,790.2 acres)
6. Suthamalli anicut, 2,559.69 hectares (6,325.1 acres)
7. Marudur anicut, 7,175.64 hectares (17,731.4 acres)

Thoothukudi District:

1. Srivaikundam Anicut
2. Maruthur Anicut

There are two anicuts across the river in Thoothukudi District namely Srivaikundam anicut and Maruthur Anicut combinedly having ayacut area of 18654.48 hectares. Further TWAD Board is having a water supply scheme for drawing 20 MGD and supplying for domestic and industrial uses from Srivaikundam Anicut. However, due to a recent order passed by the Hon'ble National Green Tribunal, the water supply to industries has been stopped.

2.3 Channel flowing across River Thamirabarani

Tirunelveli District

1. South Kodaimelalagain channel
2. North Kodaimelalagain channel
3. Nathiyunni channel
4. Kannadian channel
5. Kodagan channel
6. Palayam channel
7. Tirunelveli channel

Thoothukudi District

8. Marudur Melakkal channel
9. Marudur Keelakkal channel
10. North Main channel
11. South Main channel

The details of channels flowing parallel to the River are as below:

- **Marudur Keelakkal Channel:** The Channel originates at Marudur Village of Srivaikuntam Taluk near 12 km of Srivaikuntam. The total length of channel is 20.8 km. 16 villages are using water from the channel for cultivation purpose. The total area of ayacut is 12762.09 Acres.
- **Marudur Melakkal Channel:** The Channel originates at Marudur Village of Srivaikuntam Taluk near 12 km of Srivaikuntam. The total length of channel is 16.0 km. 15 villages are using the water for cultivation purpose. The total area of ayacut is 7785.00 Acres.
- **North Main Channel & South Main Channel:** The both channel originates at Srivaikuntam Dam. The combined area of ayacut is 25560 Acres.

2.4 Local bodies along the River Thamirabarani:

Tirunelveli District

- Papanasam – Town Panchayat
- Thiruvaidaimarudur – Town Panchayat
- Ambasamudram – Municipality
- Kallidaikurichi – Town
- Cheranmahadevi – Town panchayat
- Tirunelveli Corporation
- Sivalaperi –Village Panchayat.

Sl. No.	Local Body	Population	Water supply in MLD	Water drawl point
1	V.K Puram Municipality	47163	45.4	Thalayanai
2	Ambasamudram Municipality	35645	34.3	Thalayanai
3	Manimuthar Town Panchayat	11323	1.045	Manimuthar
4	Veravanallur Town Panchayat	19585	2.801	Oorakadu
5	Kallidaikurichi Town Panchayat	26398	2.980	Sankarankovil Mudaliyappapuram Thalasseri
6	Cheranmahadevi Town Panchayat	18327	1.480	Kaloor Salai Auvadiamman Kovil River Bed
7	Mukkudal Town Panchayat	14983	1.790	Muthumalaiamman Kovil River Bed
8	Gopalamudram Town Panchayat	10694	1.197	Vadakoore
9	Mela Seval Town Panchayat	8435	0.720	Desamanikkapuram
10	Patthamadai Town Panchayat	16625	1.720	Karisulthamangalam
11	Naranammal Puram Town Panchayat	17094	1.567	Arukankulam

Thoothukudi District

- Murapanadu – Village Panchayat
- Srivaikundam – Town Panchayat
- Authoor – Town panchayat
- Eral – Town

3.0 Introduction to Polluted River Stretch:

Central Pollution Control Board (CPCB) has notified the polluted stretch for the River Thamirabarani from Pappankulam to Arumuganeri (80 KM) classified under Priority-V based on the consolidated sample report of GEMS (Global Environmental Monitoring System) and MINARS (Monitoring of Indian National Aquatic Resources System) from 2005 to 2011.

3.1 Inspection Team Members:

Inspection team was formed by Tamil Nadu Pollution Control Board including Engineers and Scientists for inspection, sample collection and analysis of samples along the entire polluted river stretches including industries located on the Bank of the River as per the Hon'ble NGT (PB) directions in its Original Application No. 673/2018 dated: 20.09.2018.

Sl. No.	Polluted River Stretch	Jurisdiction Office	Name of the Team Members Tvl	Designation
1	Thamirabarani River – Pappankulam to Arumuganeri Stretch-(80Kms)- Priority-V	O/o DEE, Tirunelveli	A. Ronalt Terric Pinto	District Environmental Engineer
2		O/o DEE, Tirunelveli	T. Senthilkumar	Assistant Engineer
3		O/o DEE, Thoothukudi	P.S. Livingston	District Environmental Engineer
4		O/o DEE, Thoothukudi	J. HamonethJoesun	Assistant Environmental Engineer
5		O/o DEE, Thoothukudi	S. Elayaraja	Assistant Engineer
6		O/o AEL, Madurai	U.S. Karunakaran	Assistant Director (Lab)
7		O/o AEL, Tirunelveli	T. Jayasekar	Dy. Chief Scientific Officer
8		O/o DEL, Thoothukudi	T. Chittrarasu	Dy. Chief Scientific Officer
9		O/o DEE, Tirunelveli	S. Madasamy	Field Assistant
10		O/o DEL, Thoothukudi	N. Jeyasankara Subramanian	Field Assistant
11		O/o DEE, Thoothukudi	M. Amutha Selvan	Field Assistant

4.0 Sources of Pollution in River Thamirabarani

Tirunelveli District:

The main sources of pollution in River Thamirabarani are mainly due to the discharge of untreated domestic sewage into the river generated from the nearby local bodies.

4.1 Industrial Source:

There are only 2 major water polluting industries located near to River Thamirabarani namely

1. M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District.
2. M/s. Sun Paper Mill Limited, North Ariyanayagipuram, Cheranmadevi Taluk, Tirunelveli District.

- **M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District**

This industry is a Textile dyeing unit which produces dyed yarn. This unit was consented to discharge the treated trade effluent into the surplus channel South Kodaimelalagain channel (S.K. channel) which reaches River Thamirabarani at a distance of 450m. This unit generally achieves the disposal inland surface water standards as prescribed by the Board.

The unit has now completed the installation of Reverse Osmosis Plant (RO) & Reject management System (RMS) as a tertiary treatment for the treated trade effluent so as to achieve Zero Discharge of trade effluent and the unit has stopped the discharge of trade effluent into River Thamirabarani from 04/02/2019 onwards.

Treated trade effluent samples are collected from M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District on 02/01/2019.

- **M/s. Sun Paper Mill Limited, North Ariyanayagipuram, Cheranmadevi Taluk, Tirunelveli District**

This industry is a Pulp and Paper Mill unit which produces Kraft paper. The unit earlier utilized wood as raw material with digester process to manufacture paper. Now the unit has stopped the digester activity and now utilizing only waste paper as raw material. The treated trade effluent is utilized for on land for irrigation within the unit premises. The unit does not discharge the treated trade effluent into the River Thamirabarani.

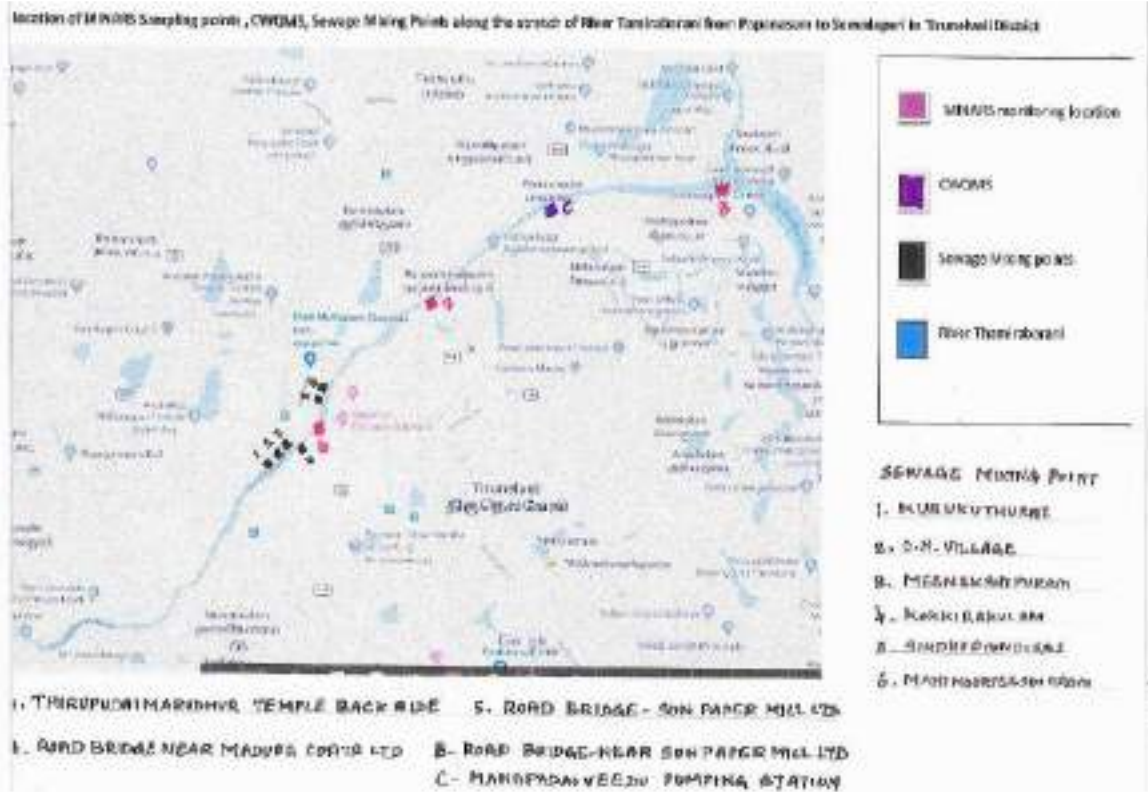
The River receives raw sewage of the Tirunelveli City while entering Tirunelveli at Kurukkuthurai and there are 6 major locations identified where city sewage joins the River as below:

Sl. No.	Sewage outfall point	Co ordinates
1	Kurukkuthurai	08° 42' 01" N, 77° 41' 59" E
2	C.N Village	08° 42' 58" N, 77° 42' 42" E
3	Meenakshipuram	08° 43' 27" N, 77° 42' 42" E
4.	Kokkirakulam	08° 43' 33" N, 77° 42' 35" E
5	Sindupoothurai	08° 43' 36" N, 77° 43' 8" E
6	Manimoortheeswaram	08° 44' 16" N, 77° 42' 57" E

The Tirunelveli City Municipal Corporation is operating a STP comprising of stabilization ponds with designed capacity 24.2 MLD at Megamudaiyar kulam Ramayanpatti. Part of the city sewage is treated in the STP and discharged into irrigation channel. The Remaining city sewage generated is now being discharged into River Thamirabarani and Kodagan Channel without treatment. Presently only 8 MLD of sewage is treated in the STP. Consent was issued to this STP valid up to 31/12/2015 for "Treatment of domestic sewage generation from Corporation – 24200 KLD". Show cause notice was issued on 29/12/2018 to the Commissioner, Tirunelveli Corporation for discharging of the treated sewage into Kodagan Channel against the consent condition to be discharged on units land and also not satisfying the discharge standards. The ROA of the treated sewage reveals that the parameter TSS & BOD exceeds the limit.

4.1.1 Sewage Management by the Local Bodies along the Polluted River Stretch in Tirunelveli district.

Sl. No.	Name of the Town	Mode of disposal of sewage
1	V. K Puram Municipality	Directly discharged into North Kodaimelalageon channel
2	Manimuthar Town Panchayat	Directly discharged into South Kodaimelalagan channel
3	Ambasamudram Municipality	Directly discharged into Nathiyunni channel
4	Veravanallur Town Panchayat	Directly discharged into Canadian channel
5	Kallidaikurichi Town Panchayat	Directly discharged into Canadian channel
6	Cheranmahadevi Town Panchayat	Directly discharged into Canadian channel
7	Mukkudal Town Panchayat	Directly discharged into drainage channel
8	Gopalsamudram Town Panchayat	Directly discharged into Palayam channel
9	Mela Seval Village	Directly discharged into Canadian channel
10	Patthamadai Village	Directly discharged into Canadian channel
11	Naranammalpuram Village	Irrigation Lands



4.1.2 Map Showing the location of Sewage Out-fall points and MINARS Sampling Points

4.1.3 Sewage out fall points in Tirunelveli District – 6 Nos.

1. Kurukkuthurai - 8° 42' 01" N, 77° 41' 59" E (SOF1)
2. C.N Village - 8° 42' 58" N, 77° 42' 42" E (SOF2)
3. Meenakshipuram - 8° 43' 27" N, 77° 42' 42" E (SOF3)
4. Kokkirakulam - 8° 43' 33" N, 77° 42' 35" E (SOF4)
5. Sindupoothurai - 8° 43' 36" N, 77° 43' 8" E (SOF5)
6. Manimoortheeswaram - 8° 44' 16" N, 77° 42' 57" E (SOF6)

4.1.4 Sewage Management along the River Stretch

Sl. No.	Name of the River	Name of the Stretch	Name of the ULB	No. of location joining into major canal/ river	Name of location joining into major canal/ river	Approximate Quantity of wastewater discharged in the river (in MLD)
1	Thamirabarani	Pappankuppam to Arumuganeri	Ambasamudram	6(Canal)	Near Lakshmi Hospital Road	0.18
					Near Sankar street	0.36
					Senaiyar Kalyana Mandapam Opposite	0.42
					Near Pillaiyar kovil	0.21
					Near Ambasamudram Arch	0.39
					Near College Road	0.44
					Total	2.00
2	Thamirabarani	Pappankuppam to Arumuganeri	Vickaramasingapuram	12 (Canal)	Dana	0.18
					Kasavan Odai	0.36
					Krishnan koil	0.25
					Gnaniyar Thoppu	0.21
					Santhai backside	0.21
					Mettupalayam street	0.17
					Kambalathar odai	0.37
					Pannimadasamykoil street	0.12
					Poonthottam street	0.15
					Welfare School	0.23
					Ambalavanapuram	0.11
					Arunthathiyar street	0.11
Total	2.47					

4.1.5 Status of Sewage Treatment Plant

Sl. No.	RIVER NAME	LOCAL BODY NAME	TOTAL SEWAGE GENERATED IN MLD	STATUS OF STP	TOTAL SEWAGE TREATED IN STP IN MLD
1	River Thamirabarani	Murapanadu Village Panchayat	0.054	Proposed	0
		Seevalaperi Village Panchayat	0.035	Proposed	0
		Thirupudaimaruthur Village Panchayat	0.12	Proposed	0
		Kallidaikurichi Town Panchayat	2.224	Proposed	0
		Papanasam Town Panchayat	1.72	Proposed	0
		Cheranmahadevi Town Panchayat	1.56	Proposed	0
		Author Town Panchayat	0.354	Proposed	0
		Eral Town Panchayat	0.526	Proposed	0
		Ambasamudram Municipality	3.28	Proposed	0
Tirunelveli Corporation	31.97	Under Operation	24.2		

4.1.6 Photographs showing the Upstream & Down stream Location of Sewage Mixing points at RiverThamirabarani - Tirunelveli district

1. KURUKKUTHURAI



UP STREAM

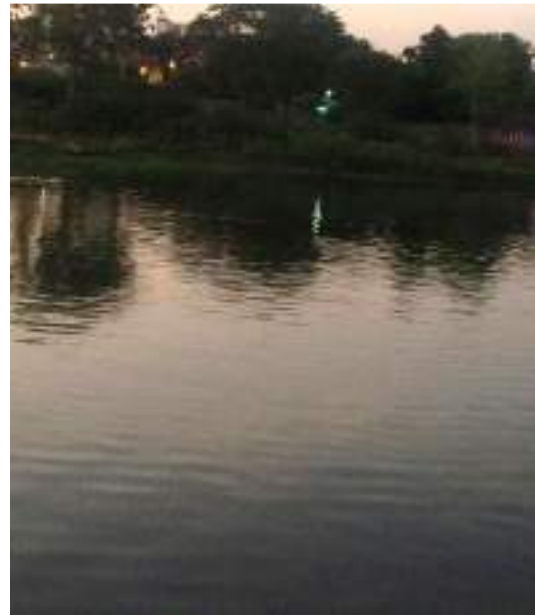


DOWN STREAM

2. CN VILLAGE



UP STREAM



DOWN STREAM

3. MEENAKSHIPURAM



UP STREAM



DOWN STREAM

4. KOKKIRAKUKLAM



UP STREAM



DOWN STREAM

5. SINDHUPOONTHURAI



UP STREAM



DOWN STREAM

6. MANIMOORTHISWARAM



UP STREAM



DOWN STREAM

4.1.7 Photographs Showing the Disposal of Sewage through irrigation channel



Canadian Channel (Cheranmadevi Town Panchayat)



Canadian Channel (Veeravanallur Town Panchayat)



Canadian Channel (Veeravanallur Town Panchayat)



Canadian Channel (Kallidaikurichi Town Panchayat)



Nathiyunni Channel (Ambai Municipality)



North Kodai Melalegiyan Channel (V. K. Puram Municipality)



Drainage Channel (Mukkudal Town Panchayat)



Palayam Channel (Gopalamudram Town Panchayath)



South Kodai Melagiyan Channel (V.K. Puram Municipality)



Canadian Channel (Patthamadai Town Panchayat)



Canadian Channel (Mela Seval Town Panchayat)

4.1.8 Municipal Solid waste disposal on the banks of River Thamirabarani:

Solid dumping points- Nil: (Tirunelveli District)

No solid waste was found disposed inside the River or on the banks of river Thamirabarani.

All the Municipalities (Tenkasi, Sankarankovil, Kadayanallur, Puliangudi, Sengottai, Ambasamudram & Vickramasingapuram) and Town Panchayat (Alangulam, Kallidaikurichi, & Surandai) in Tirunelveli district had obtained Municipal Solid Waste (MSW) Authorization under Solid Waste Management Rules, 2016 from the Board expect Tirunelveli Corporation.

4.1.9 Photograph showing the Municipal Solid Waste Management at Palayamkottai Panchayat Union - Keelapattam Panchayat



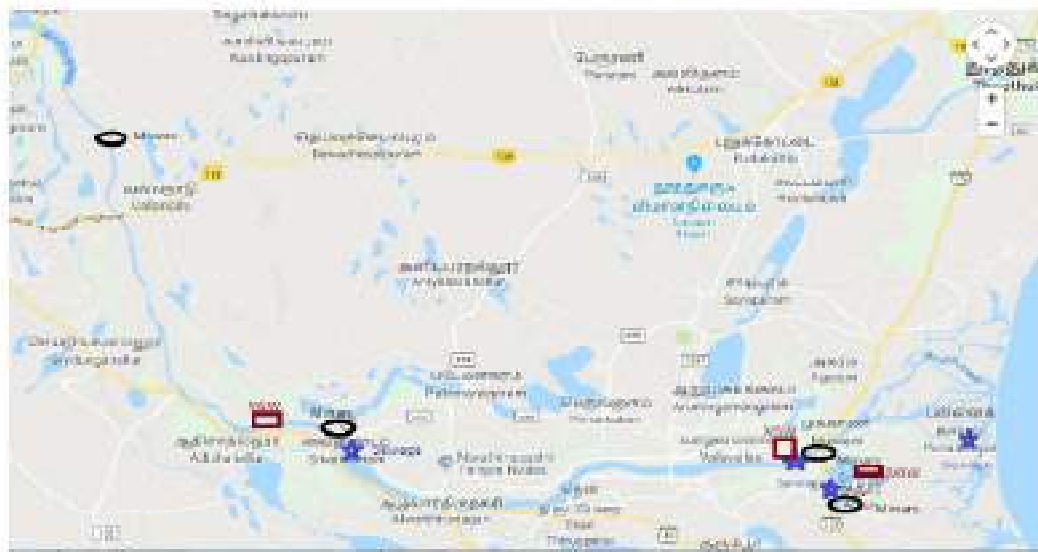


Thoothukudi District:

There is no discharge of industrial trade effluent into the River Thamirabarani in Thoothukudi District.

In Thoothukudi District the untreated sewage is discharged into the river at 3 places which are as follows;

1. Murappanadu,
2. Authoor,
3. Eral villages.



- | | |
|-------------------------|--|
| □ MINARS | - Murappanadu, Srivaikundam, Eral, Authoor |
| → Sewage Outfall Places | - Srivaikundam, Eral, Authoor, Punnakayal |
| □ MSW | - Aarampennai, Eral, Authoor |

Map Showing the location of Sewage Out-fall points and MINARS Sampling Points

4.1.10 Sewage out fall points in Thoothukudi District – 6 Nos.

1. Punnakayal Village – N 08⁰ 48' 23.49", E 078⁰ 05' 07.25"
2. Authoor – N 08⁰ 35' 31.79" E 077⁰ 58' 34.72"
3. Eral Village – N 08⁰ 37' 21.90" E 078⁰ 01' 31.58"
4. Srivaikundam – Vadakal – N 08⁰ 37' 41.30" E 077⁰ 54' 51.41"
5. Alwarthirunagari – N 08⁰ 39' 37.21" E 077⁰ 51' 13.17"
6. Murappanadu – N 08⁰ 43' 10.12" E 077⁰ 49' 54.26"

4.1.11 River Thamirabarani - Alwarthirunagari Town Panchayat:



River Flow in Thoothukudi District



River Thamirabarani origin & merging



River thamirabarani - Sullage out fall points and Resource Recovery Park



Thamirabarani River from Srivaikuntam to Authoor (confluence point of Tamirabarani River) Sampling Point

River Thamirabarani – Sullage Out-fall & R.R Park Locations

Sewage Outfall Points – 3 Locations				
Sl. No.	Sullage Out-fall Location	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	AKILANDAMMAN KOVIL STREET	Alwarthirunagari TP	8°36'23"N	77°56'6"E
2	KUTTUKAL MUDUKKU	Alwarthirunagari TP	8°36'19"N	77°56'12"E
3	VADAMPOKKI STREET	Alwarthirunagari TP	8°36'27"N	77°56'31"E
Resource Recovery Park – 1 Locations				
Sl. No.	R.R Park	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	Nazareth road - <u>Alwarthirunagari</u>	Alwarthirunagari TP	8°37'34"N	78°4'17"E
Industrial Effluent Discharge – Nil				

Map Showing – Sampling Point, Sullage Out-fall & Resource Recovery Park.



<p>SULLAGE OUTFALL POINTS:</p> <ol style="list-style-type: none"> 1) <u>Akilandamman Kovil Street</u> 2) <u>Kuttukal Mudukku</u> 3) <u>Vadampokki Street</u> 	<p>Resource Recovery Park:</p> <ol style="list-style-type: none"> 1) <u>Nazareth road - Alwarthirunagari</u> 	<p>a. Total sullage generation by <u>Alwarthirunagari TP</u> capacity – 0.061 MLD</p> <p>b. Total solid wastes generation by <u>Alwarthirunagari TP</u> - 1.57 T/day</p>
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Photographs showing the sullage out-fall points



AKILANDAMMAN KOVIL STREET
8°36'23"N 77°56'6"E



KUTTUKAL MUDUKKU
8°36'19"N 77°56'12"E

Photographs showing the sullage out-fall points



VADAMPOKKI STREET 8°36'27"N 77°56'31"E

Photographs showing the Resource Recovery Park



Nazareth road - Alwarthirunagari - Thoothukudi 8°37'34"N 78°4'17"E

4.1.12 River Thamirabarani - Authoor Town Panchayat



River THAMIRABARANI (Srivaikuntam to Authoor) – 22 Km
 (River thamirabarani origin ,merging)



RIVER THAMIRABARANI
-Sullage out fall points and Resource Recovery Park



THAMIRABARANI River from Srivaikuntam to Authoor (confluence point of Tamirabarani River) SAMPLING POINT



River Thamirabarani – Sullage Out-fall & Resource Recovery Park

Sullage Outfall Points – 1 Locations

Sl. No.	Sullage Out-fall Location	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	Varaponjan madai (puliyadi street)	Authoor TP	8°37'32"N	78°4'4"E

Sl. No.	Resource Recovery Park	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	Attrangkarai street	Authoor TP	8°37'35"N	78°4'16"E

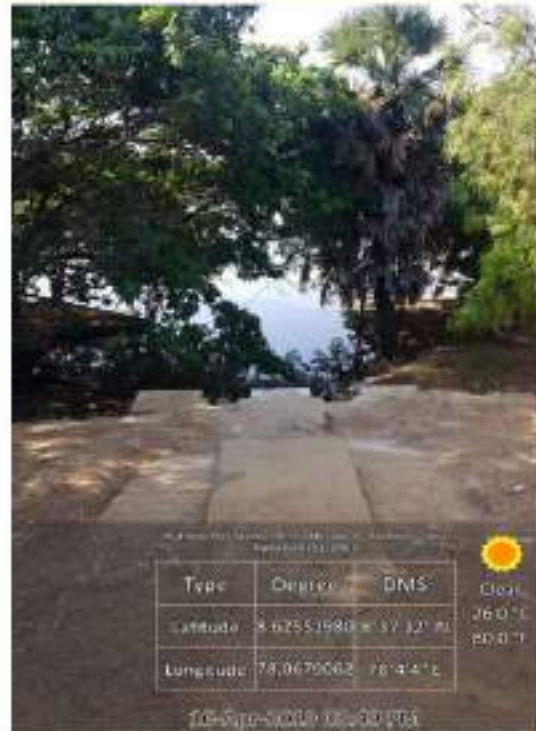
Industrial Effluent Discharge – Nil				
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Map Showing – Sampling Point, Sullage Out-fall & Resource Recovery Points



Sullage Outfall Points: Varaponjan madai (puliyadi street)	R.R Park: 1: Attrangkarai street	a. Total sullage generation by Authoor TP capacity – 0.50 MLD b. Total R.R park generation by Authoor TP – 2.00 T/day
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Photographs showing the sullage out-fall points



Photographs showing the Resource Recovery Park



Attrangarai street - Authoor - Thoothukudi 8°37'34"N 78°4'16"E

4.1.13 River Thamirabarani – Eral Town Panchayat



River THAMIRABARANI (Srivaikundam to Authoor) – 22 Km
 (River THAMIRABARANI origin ,merging)



River THAMIRABARANI
-Sullage out fall points and Resource Recovery Park



THAMIRABARANI River from Srivaikuntam to Authoor (confluence point of Tamirabarani River) SAMPLING POINT



River Thamirabarani – Sullage Out-fall & R.R Park Locations

Sewage Outfall Points – 2 Locations				
Sl. No.	Sullage Out-fall Location	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	Ganeshapuram street	Eral TP	8°37'22"N	78°01'33"E
2	Muthalimar west street	Eral TP	8°37'30"N	78°01'35"E
Resource Recovery Park – 1 Locations				
Sl. No.	R.R Park	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	Ganeshapuram street	Eral TP	8°37'21.6"N	78°01'20.9"E
Industrial Effluent Discharge – Nil				

Map Showing – Sampling Point, Sullage Out-fall & Resource Recovery Park.



Sullage Outfall Points: 1) Ganeshapuram Street 2) Muthalimar West Street	Resource Recovery Park: 1) Ganeshapuram	a. Total sullage generation by Eral TP capacity – 0.211 MLD b. Total solid wastes generation by Eral TP - 2.85 T/day
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Photographs showing the sullage out-fall points



4.1.14 River Thamirabarani – Srivaikundam Town Panchayat



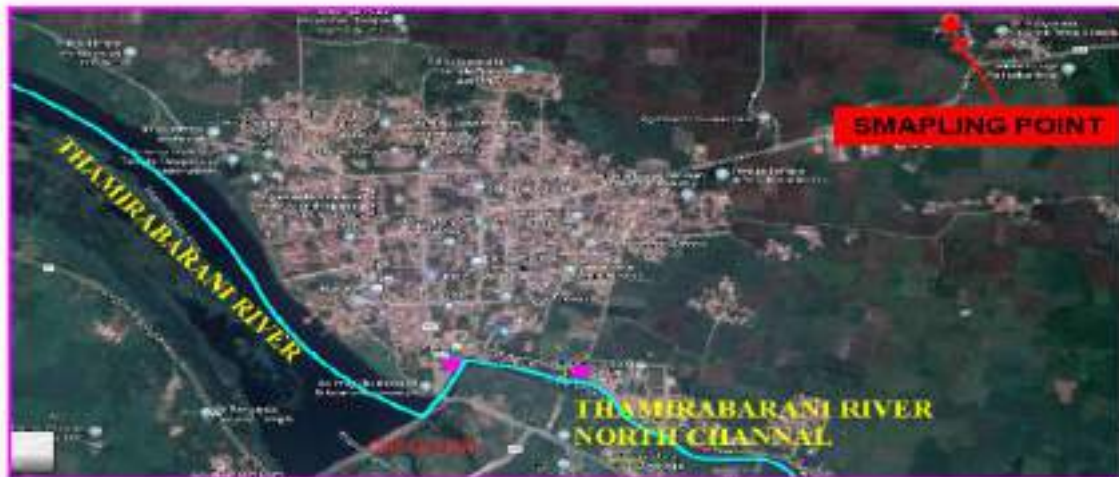
River THAMIRABARANI (Srivaikundam to Authoor) – 22 Km
 (River THAMIRABARANI orgin ,merging)



River THAMIRABARANI
 -Sullage out fall points and Resource Recovery Park



THAMIRABARANI River from Srivaikuntam to Authoor (confluence point of Tamirabarani River) SAMPLING POINT



River Thamirabarani – Sullage Out-fall & R.R Park Locations

Sewage Outfall Points – 2 Locations				
Sl. No.	Sullage Out-fall Location	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	SOUTH SIDE OF DSP OFFICE	Srivaikuntam TP	8°37'40"N	77°54'46"E
2	KURUZ KOVIL STREET NEAR PUBLIC TOILET	Srivaikuntam TP	8°37'41"N	77°54'51"E
Resource Recovery Park – 1 Locations				
Sl. No.	R.R Park	Name of the Local Body	GPS Co-ordinates	
			Latitude	Longitude
1	Thoothukudi Road (Natham)- Srivaikuntam	Srivaikuntam TP	8°38'14"N	77°55'23"E
Industrial Effluent Discharge – Nil				

Map Showing – Sampling Point, Sullage Out-fall & Resource Recovery Park.



Sullage Outfall Points: 1) South side of DSP office 2) Kuruzukovil street Near public Toilet	Resource Recovery Park: 1) Natham – Thoothukudi Road - Srivaikuntam	a. Total sullage generation by Srivaikuntam TP capacity – 0.838 MLD b. Total solid wastes generation by Srivaikuntam TP – 4.2 T/day
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Photographs showing the sullage out-fall points



**SOUTH SIDE OF DSP OFFICE –
8°37'40"N 77°54'46"E**



**KURUZ KOVIL STREET NEAR PUBLIC
TOILET - 8°37'41"N 77°54'51"E**

Photographs showing the Resource Recovery Park



Thoothukudi Road (Natham)- Srivaikuntam- 8°38'14"N 77°55'23"E

4.1.15 Photograph showing the Sewage outfall into the River Thamirabarani in Thoothukudi District



**Location: Punnakayal Village
GPRS: N 08° 48' 23.49" E 078° 05' 07.25"**



**Location: Authoor
GPRS: N 08° 35' 31.79" E 077° 58' 34.72"**



**Location: Eral
GPRS: N 08° 37' 21.90" E 078° 01' 31.58"**



**Location : Srivaikundam – Vadakal
GPRS: N 08° 37' 41.30" E 077° 54' 51.41"**



**Location : Alwarthirunagari
GPRS: N 08° 39' 37.21" E 077° 51' 13.17"**



**Location: Murappanadu
GPRS: N 08° 43' 10.12" E 077° 49' 54.26"**

4.1.16 Details of Town Panchayats and Village Panchayats along the River Stretch and the identified sewage outfall points in the River with GPS Co-ordinates

Details of Town Panchayats:

Sl. No.	Name of the Town Panchayat	Total Population	Quantity of water supplied (KLD)	Quantity of sewage generated (KLD)	Mode of Treatment
1.	Author	10138	507	354	Partially disposed via Soak Pit System in House Hold Level and Partial Quantity of Sewage directly discharged into the River near Author Over Bridge N - 08 ° 35' 31.79" E - 077° 58' 34.72"
2.	Eral	9478	663	464	Partially disposed via Soak Pit System in House Hold Level and Partial Quantity of Sewage directly discharged into the River near MSW Dump site. N - 08 ° 37' 21.90" E - 078° 01' 31.52"
3.	Srivaikundam	15847	1109	776	Partially disposed via Soak Pit System in House Hold Level and Partial Quantity of Sewage directly discharged into the River near Vadakal N - 08 ° 37' 41.30" E - 077° 54' 51.41" and near Madhagu N - 08 ° 37' 42.21" E - 077° 54' 46.88"
4.	Alwarthirunagari	9289	650	455	Partially disposed via Soak Pit System in House Hold Level and Partial Quantity of Sewage directly discharged into the River near Gangai Vinayagar Temple N - 08 ° 39' 37.21" E - 077° 51' 13.17"
5.	Then Thiruperai	4934	350	245	Sewage – Soak pit System (House hold level disposal).
6.	Arumuganeri	27266	1909	1336	Sewage – Soak pit System (House hold level disposal).

4.1.17 Details of Village Panchayats:

Sl. No.	Name of the Village Panchayat/ Taluk / District	Total Population	Quantity of water supplied (KLD)	Quantity of sewage generated (KLD)	Mode of Treatment
1.	Sernthamangalam Village Tiruchendur Taluk, Thoothukudi District.	2423	121	85	Sewage – Soak pit system (House hold level disposal)
2.	Aathinathapuram Village, Alwarthirunagari Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	850	42	30	Soak Pit System (House hold level disposal)
3.	ThirukaloorVillage, Alwarthirunagari Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	3141	157	110	Soak Pit System (House hold level disposal)
4.	Kadayanodai Village, Alwarthirunagari Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	1094	54	38	Sewage – Soak Pit System (House hold level disposal)
5.	Kurangani Village, Alwarthirunagari Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	2300	115	80	Sewage – Soak Pit System (House hold level disposal)
6.	Rajapathy Village, Alwarthirunagari Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	1317	65	45	Sewage – Soak Pit System (House hold level disposal)
7.	Sethukuvaithaan Village, Alwarthirunagari Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	3000	210	147	Sewage – Soak Pit System (House hold level disposal)
8.	Nanalkadu Village, Karungalum Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	900	45	31	Sewage – Soak Pit System (House hold level disposal)
9.	Karungulam Village, Karungalum Panchayat Union, Tiruchendur Taluk,	5443	272	190	Sewage – Soak Pit System (House hold level disposal)

	Thoothukudi District.				
10.	Muthalankurichi Village, Karungalum Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	1066	53	37	Sewage – Soak Pit System (House hold level disposal)
11.	Arampannai Village, Karungalum Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	3132	156	109	Sewage – Soak Pit System (House hold level disposal)
12.	Kongarayankurichi Village, Karungalum Panchayat Union, Tiruchendur Taluk, Thoothukudi District.	3328	166	116	Sewage – Soak Pit System (House hold level disposal)
13.	Murappanadu Village, Srivaikundam Panchayat Union, Srivaikundam Taluk, Thoothukudi District.	1556	77	54	Directly discharged into the River near Pump House N - 08 ° 43' 10.12" E - 077° 49' 54.26"
14.	V.Athichanallur & Athichanallur Village, Srivaikundam Panchayat Union Srivaikundam Taluk, Thoothukudi District.	1442	72	50	Sewage – Soak Pit System (House hold level disposal)
15.	Valavallan Village Srivaikundam Panchayat Union Srivaikundam Taluk, Thoothukudi District.	3782	189	132	Sewage – Soak Pit System (House hold level disposal)
16.	UmarikaduVillage Srivaikundam Panchayat Union Srivaikundam Taluk, Thoothukudi District.	2921	146	102	Sewage – Soak Pit System (House hold level disposal)
17.	Mukkani Village Srivaikundam Panchayat Union Srivaikundam Taluk, Thoothukudi District.	6851	342	240	Sewage – Soak Pit System (House hold level disposal)

4.1.18 Solid Waste Management – Thoothukudi District

The additional source of pollution is due to the dumping of solid waste near the river banks. Such dumping is noted at the following villages.

1. Authoor Village - 08⁰ 37' 27.21" N, 78⁰ 04' 07.28" E
2. Eral Village - 08⁰ 37' 21.82" N, 78⁰ 01' 31.21" E
3. Arampannai Village - 08⁰ 47' 14.96" N, 77⁰ 07' 56.76" E

All the Municipalities (Kovilpatti & Kayalpattinam) and Town Panchayat (Tiruchendur) in Thoothukudi district had obtained Municipal Solid Waste (MSW) Authorization under Solid Waste Management Rules, 2016 from the Board including Thoothukudi Corporation.

4.1.19 Photograph showing the Municipal Solid Waste dumped along the River Thamirabarani



Location : Authoor Village - GPRS: N 08⁰ 37' 27.21" E 078⁰ 04' 07.28"



Location : Eral Village GPRS: N 08⁰ 37' 21.82" E 078⁰ 01' 31.21"



Location : Arampannai Village - GPRS: N 08⁰ 47' 14.96" E 077⁰ 07' 56.76"

4.1.20 - Solid waste dumping points in Thoothukudi District – 3 Nos.

1. Authoor Village – N 08° 37' 27.21" E 078° 04' 07.28"
2. Eral Village – N 08° 37' 21.82" E 078° 01' 31.21"
3. Arampannai Village – N 08° 47' 14.96" E 077° 07' 56.76"

4.2 Details of industries in Tirunelveli District:

The joint inspection team has inspected the industries and collected samples from industries, drains, river and ground water along the polluted river stretch in River Thamirabarani.

4.2.1 Taluk / Area wise details of industries located along the River Thamirabarani

A. Details of industries in operation

Sl. No.	Taluk	Red	Orange	Green	Total
1	Tirunelveli	9	69	22	100
2	Palayamcottai	13	103	19	135
3	Sankarankovil	32	32	9	73
4	Tenkasi	34	49	6	89
5	Sivagiri	7	9	3	19
6	Shencottai	15	56	10	81
7	Ambasamudram	14	42	5	61
8	Nanguneri	20	3	20	43
9	Radhapuram	64	48	16	128
10	V.K.Pudur	8	13	3	24
11	Alakulam	15	56	10	81
12	Kadayanallur	7	15	4	26
13	Thiruvengadam	-	1	-	1
14	Manur	6	19	3	28
15	Cheranmahadevi	4	12	2	18
16	Tisayanvillai	-	-	-	-
	Total	248	527	132	907

B. Details of industries located in the taluks where the River passes:

Taluk Names				
Ambasamudram	Cheranmahadevi	Tirunelveli	Palayamkottai	Total
61	18	100	135	314

Details of industries are enclosed vide Annexure-I.

**C. Details of industries located in the villages along the stretch of River
Thamirabarani**

i) Ambasamudram Taluk:

Sl. No.	Villages	No. of Industries
1	Chernmahadevi	2
2	Kallidaikurichi Vadakku	3
3	Mela Ambasamudram	9
4	Mukkudal	1
5	TherkkuKallidaikuruchi 1	1
6	Vadakkuariyanayagipuram 1	1
7	Vadakkuariyanayagipuram-2	2
8	Vickiramasingapuram 1	2
	Total	21

ii) Cheranmahadevi Taluk:

Sl. No.	Villages	No. of Industries
1	Chernmahadevi	1
2	Gobalasangamudram	1
3	Mukkudal	2
4	Vadakkuariyanayagipuram 1	1
5	Vadakkuariyanayagipuram-2	1
	Total	6

iii) Palayamkottai Taluk

Sl. No.	Villages	No. of Industries
1	Palayamkottai - I	20
2	Palayamkottai - II	25
3	Palayamkottai - III	13
4	Tharuvai	19
	Total	77

iv) Tirunelveli Taluk

Sl. No	Villages	No. of Industries
1	Abisekapatti	2
2	Alangaraperi	1
3	ChathiramPudukulam	2
4	Chitharchathiram	1
5	Gangaikondan	3
6	Gangaikondan Part 1	10
7	Gangaikondan Part 2	2
8	Karuvanallur	1
9	Madavakurichi	22

10	Manimoortheeswaram	2
11	Mathalamparai	1
12	Melaveeragavapuram	1
13	Naranammalpuram	1
14	Naranammalpuram Part 1	2
15	NarasingaNallur	6
16	Palamadai	1
17	Pettai 2	4
18	Pettai-1	2
19	Pudur	4
20	Ramayanpatti	4
21	Sanganthiradu	1
22	Sethurayanpudur	1
23	Sindupoondurai	2
24	Suthamalli	2
25	Thachanallur	3
26	Thalaiyuthu	3
27	Thirupanikarisalkulam	3
28	Thuvarasi	1
29	Tirunelveli	10
30	Vadugampatti	1
31	Vettuvankulam	1
	Total	100

4.3 Details of industries in Thoothukudi District:

Taluk/Area wise details of industries

A. Details of industries in operation

Sl. No.	Taluk	Red	Orange	Green	Total
1	Thoothukudi	65	202	72	339
2	Ottapidaram	43	57	21	121
3	Kovilpatti & Kayatar	16	185	29	230
4	Vilathikullam	11	24	8	43
5	Ettayapuram	9	25	5	39
6	Sattankulam	7	16	2	25
7	Sriyaikundam & Eral	16	63	11	90
8	Tiruchendur	6	38	11	55
	Total	173	610	159	942

B. Details of industries located in the taluks where the River passes:

Taluk Names		
Sriyaikuntam	Tiruchendur	Total
90	55	145

**C. Details of industries located in the villages along the stretch of River
Thamirabarani**

SRIVAIKUNTAM

Sl. No.	Villages	No. of industries	Type of industries	Effluent generated	Remarks
1.	Karunkulam	2	Cashew nut industry Health Care facility	Nil	The cashew nut industry located at a radial distance of 1.2 km from the River Bank. The Hospital is located at a radial distance of 1.0 km from the River Bank.
	Total	2			

TIRUCHENDUR

Sl. No.	Villages	No. of industries	Type of industries	Effluent generated	Remarks
1.	Thirukkolor	1	Brick Kiln	Nil	The brick kiln is located at a radial distance of 0.7 km from the River Bank
2.	Sethukuvaithan	1	Rice Mill	Nil	The brick kiln is located at a radial distance of 0.8 km from the River Bank
3.	Valavallan	2	Rice Mill, Brick kiln	Nil	The brick kiln is located at a radial distance of 0.65 km from the River Bank
4.	Mukkani	1	Brick kiln	Nil	The brick kiln is located at a radial distance of 0.8 km from the River Bank
5.	Sernthamangalam	1	Mineral separation	Yes	This unit is located at a radial distance of 1.2 Km from the river bank. However it is not in operation for the past 3 years
	TOTAL	6			

5.0 Sample collection details in the River Thamirabarani

Details of sample collection along the River Thamirabarani is enclosed in Annexure-III.

Tirunelveli District:

5.1 Details of sample collection from industries:

Sl. No.	Point of collection	GPS coordinates		Date of sample collection
1	M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District	8 ⁰ 42'43" N	77 ⁰ 22'14" E	02/01/2019

Treated trade effluent samples collected from M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District on 02/01/2019. ROA enclosed vide Annexure-V.

Tirunelveli District:

5.2 Details of Ground water samples collected along the River stretch (Bore well, dug well etc.,)

Sl. No.	Point of collection	GPS coordinates		Date of sample collection
1	Manimuthar Township	8 ⁰ 42'32" N	77 ⁰ 22'42" E	02/01/2019
2	Kallidaikurichi	8 ⁰ 41'29" N	77 ⁰ 27'45" E	02/01/2019
3	Ambai	8 ⁰ 42'10" N	77 ⁰ 27'27" E	02/01/2019
4	Mukkudal	8 ⁰ 44'8" N	77 ⁰ 31'11" E	02/01/2019
5	North Ariyanakipuram	8 ⁰ 43'14" N	77 ⁰ 32'39" E	02/01/2019
6	Charenmahadevi	8 ⁰ 41'08" N	77 ⁰ 34'01" E	02/01/2019
7	Gopalsamudram	8 ⁰ 40'59" N	77 ⁰ 38'38" E	03/01/2019
8	Meenakshipuram	8 ⁰ 43'24" N	77 ⁰ 42'37" E	03/01/2019
9	CN Village	8 ⁰ 43'19" N	77 ⁰ 42'18" E	03/01/2019
10	Sindupoothurai	8 ⁰ 43'58" N	77 ⁰ 42'49" E	03/01/2019
11	Vellakovil	8 ⁰ 42'02" N	77 ⁰ 23'49" E	03/01/2019

Regular Monitoring of River Thamirabarani

The River Thamirabarani is being monitored at 8 locations for the collection of water samples under MINARS programme from Road Bridge near Madura Coats Ltd, V.K. Puram to Cremation Ground, Seevalaperi every month (Consolidated ROA of the Water samples collected during 2018-19 is enclosed).

5.2.1 Observations made on the upstream & Downstream of MINARS Sampling

Point as noticed during inspection on 30/03/2019

Sl. No	MINARS sampling location	GPS Coordinates	Observations	
			Upstream	Down stream
1	Road Bridge Near M/s. Madura Coats Ltd,	8°42'34.74"N 77°22'42.28"E	1. No sewage outfall. 2. Bathing and washing	1. No sewage outfall. 2. Bathing and washing
2	Near Railway bridge, Ambasamudram.	8°41'38.96"N 77°27'03.45"E	1. No sewage outfall. 2. Bathing and washing	1. No sewage outfall. 2. Bathing and washing
3	Road Bridge near Kallidaikurichi.	8°41'39.09"N 77°27'44.73"E	1. No sewage outfall. 2. Bathing and washing. 3. Cattle invading. 4. Cremation Ground	1. No sewage outfall. 2. Bathing and washing. 3. Cattle invading. 4. Domestic Water supply infiltration well.
4	Thirupudaimaruthur Temple Back side,	8°43'38.70"N 77°29'46.54"E	1. No sewage outfall. 2. Bathing and washing. 3. Cattle invading.	1. No sewage outfall. 2. Bathing and washing. 3. Cattle invading
5	Road Bridge near M/s. Sun Paper Ltd, Charenmahadevi.	8°42'04.04"N 77°33'57.57"E	1. No sewage outfall. 2. Bathing and washing. 3. Cattle invading. 4. Water supply infiltration well of industry.	1. No sewage outfall.. 2. Bathing and washing. 3. Cattle invading
6	Road Bridge at Kokkirakulam near Tirunelveli Collectorate.	8°43'39.96"N 77°42'54.75"E	1. Sewage outfall. 2. Bathing and washing.	1. Sewage outfall. 2. Bathing and washing.
7	Vellakovil	8°45'19.15"N 77°44'18.65"E	2. No sewage outfall. 3. Bathing and washing	4. No sewage outfall. 5. Bathing and washing.
8	Road bridge near Seevalaperi	8°46'51.17"N 77°48'18.26"E	1. No sewage outfall. 2. Bathing and washing	1. No sewage outfall. 2. Bathing and washing

5.2.2 Photographs Showing the Upstream & Down stream Location of MINARS SAMPLING Points in River Thamirabarani - Tirunelveli district

1. ROAD BRIDGE NEAR M/S. MADURA COATS LTD



UP STREAM



DOWN STREAM

2. RAILWAY BRIDGE NEAR AMBAI

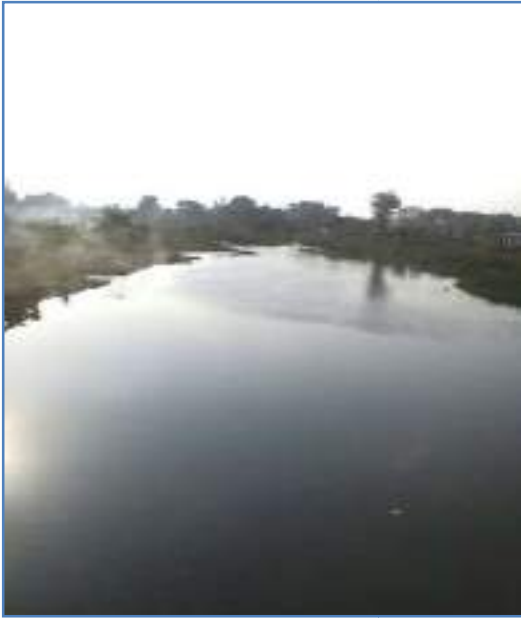


UP STREAM



DOWN STREAM

3. KALLIDAIKURICHI ROAD BRIDGE



UP STREAM



DOWN STREAM

4. THIRUPUDAIMARTHUR TEMPLE BACK SIDE



UP STREAM



DOWN STREAM

5. ROAD BRIDGE NEAR M/S.SUN PAPER MILL LTD



UP STREAM



DOWN STREAM

6. ROAD BRIDGE NEAR TIRUNELVELI COLLECTORATE

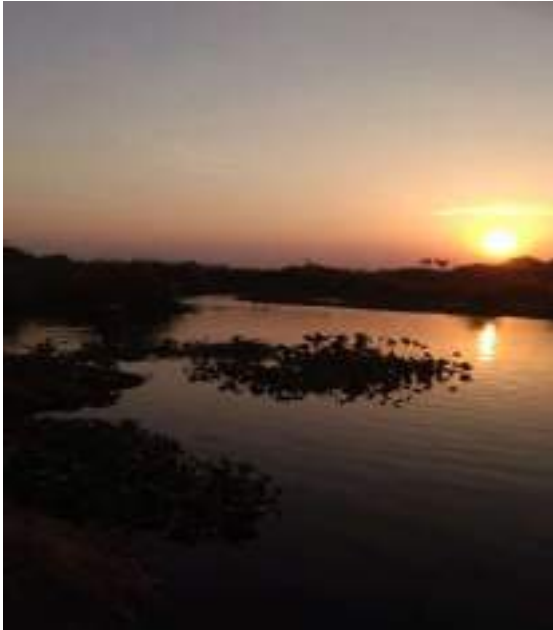


UP STREAM

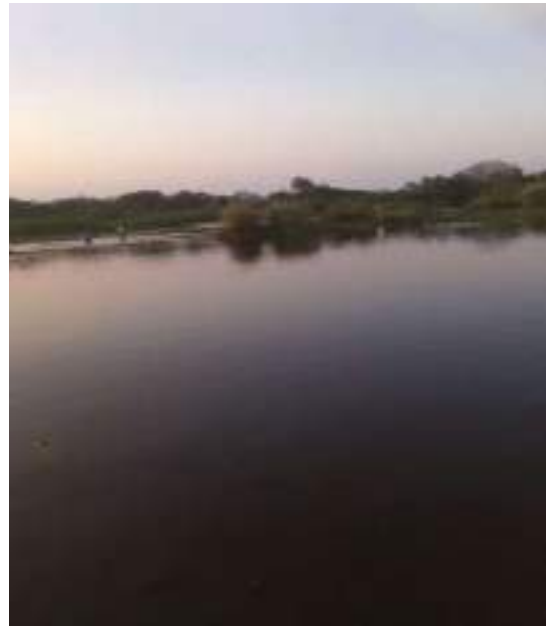


DOWN STREAM

7. VELLAKOVIL



UP STREAM



DOWN STREAM

8. ROAD BRIDGE NEAR SEEVALPERI



UP STREAM



DOWN STREAM

5.2.3 Continuous Water Quality Monitoring Stations:

Also the River Thamirabarani is monitored under continuous basis at 3 locations namely for the parameters pH, TDS, Conductivity, Temp & DO.

1. Road Bridge near Madura Coats Ltd
2. River Bridge at Cheranmadevi
3. Manappadaiveedu, Pumping Station

Presently these online monitors are not functioning due to hardware problem and action is taken to be rectified from the Board office.

5.2.4 Photographs showing the Upstream & Down stream Location of CWQMS Location in the River Thamirabarani - Tirunelveli district

A. ROAD BRIDGE NEAR M/S. MADURA COATS LTD



UP STREAM



DOWN STREAM

B. ROAD BRIDGE NEAR M/S.SUN PAPER MILL LTD



UP STREAM



DOWN STREAM

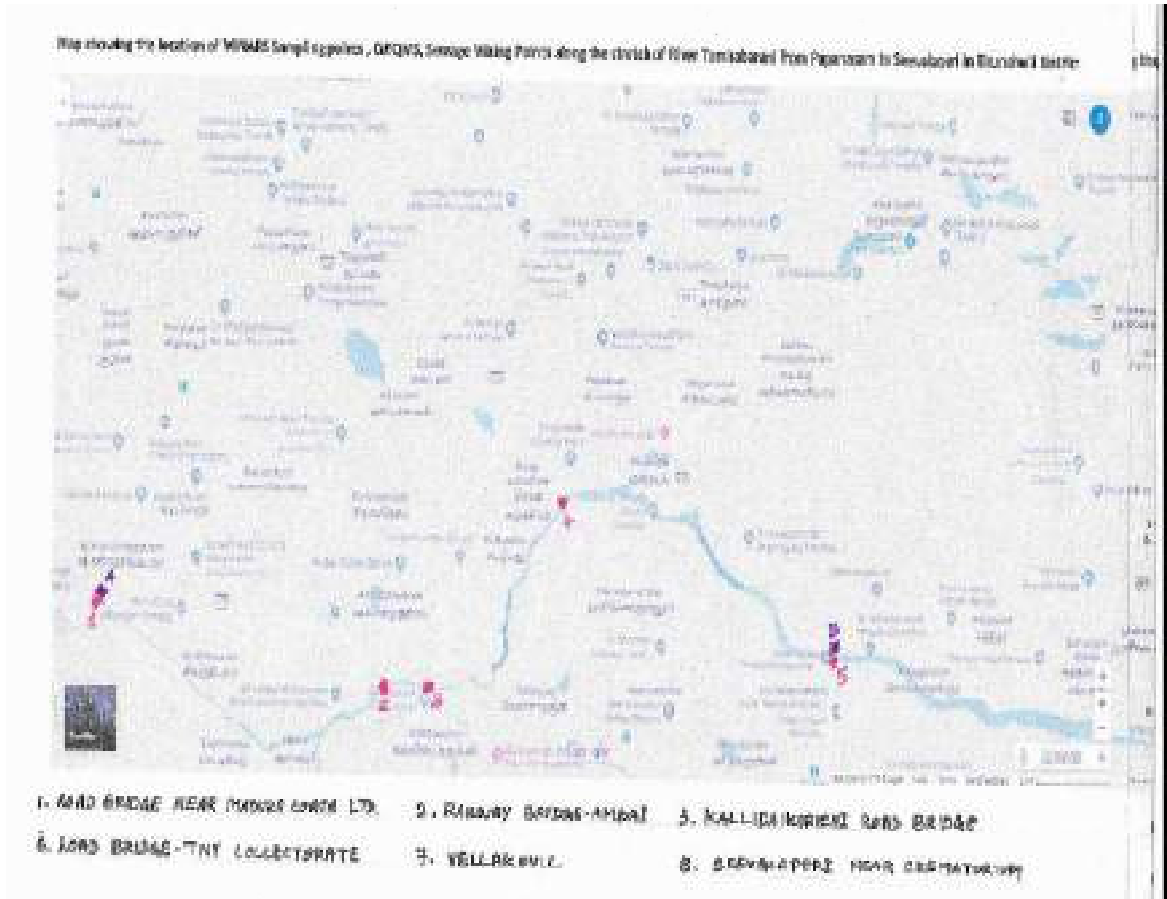
C. MANAPADAIVEEDU PUMPING STATION



UP STREAM



DOWN STREAM



5.2.5 Map showing the MINARS sampling points, CWQMS and Sewage mixing points

Thoothukudi District:

Ground water sample collection Point:

Sl. No.	Point of collection	GPS coordinates		Date of sample collection
1	Bharathi Primary School, Alwarthiru Nagari.	8 ⁰ 36'27"N	77 ⁰ 56'10"E	03/01/2019

Regular Monitoring of River Thamirabarani

The River Thamirabarani is being monitored at 4 locations for the collection of water samples under MINARS programme every month as below,

- ❖ Authoor (Near Bridge)
- ❖ Eral (Near Arulmigu Cherman Kovil)
- ❖ Srivaikundam (Near Bridge)
- ❖ Murappanadu (Near Central Water Commission Office)

5.2.6 Observations made on the upstream & Downstream of MINARS Sampling

Point as noticed during inspection on 30/03/2019

Sl. No.	MINARS sampling location	GPS Coordinates	Observations	
			Upstream	Down stream
1	Authoor (Near Bridge)	8°36'24"N 78°04'40"E	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing
2	Eral (Near Arulmigu Cherman Kovil)	8°37'18"N 78°13'06"E	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing
3	Srivaikundam (Near Bridge)	8°37'38"N 77°54'43"E	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing.• Cattle invading.• Cremation Ground	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing.• Cattle invading.• Domestic Water supply infiltration well.
4	Murappanadu (Near Central Water Commission Office)	8°42'56"N 77°50'1"E	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing.• Cattle invading.	<ul style="list-style-type: none">• No sewage outfall.• Bathing and washing.• Cattle invading

5.2.7 Photographs showing the MINARS Sample Collection Points in Thoothukudi District

River Bed Near over Bridge – Authoor - GPRS: N 8⁰ 36'24'' E 78⁰ 04' 40''



Near over Bridge Eral GPRS: N 8⁰ 37'06'' E 78⁰ 05' 08''



Srivaikundam Padithuri - GPRS: N 08° 37' 38" E 77° 54' 43"



Murappanadu Near Central Water commission office –

GPRS: N 8° 42' 56" E 77° 50' 01"



5.3 Details of River water and drain samples collected:

Tirunelveli District:

Sl. No.	Point of collection	GPS coordinates		Date of sample collection
1	Manimuthar	8 ^o 40'49" N	77 ^o 26'05" E	02/01/2019
2	Rama nathi	8 ^o 46'21" N	77 ^o 24'38" E	02/01/2019
3	Gadananathi	8 ^o 46'20" N	77 ^o 24'36" E	02/01/2019
4	Pachaiyar River	8 ^o 36'51" N	77 ^o 38'46" E	03/01/2019
5	Chittar	8 ^o 46'3" N	77 ^o 47'50" E	03/01/2019
6	Kurukkuthurai (Sewage confluence point)	8 ^o 43'1" N	77 ^o 41'59" E	03/01/2019
7	CN Village (Sewage confluence point)	8 ^o 42'58" N	77 ^o 42'25" E	03/01/2019
8	Sindhupoondhurai (Sewage confluence point)	8 ^o 43'36" N	77 ^o 43'8" E	03/01/2019
9	Kokkirakulam (Sewage confluence point)	8 ^o 43'33" N	77 ^o 42'35" E	03/01/2019
10	Manimoortheeswaram (Sewage confluence point)	8 ^o 44'16" N	77 ^o 42'57" E	03/01/2019
11	Meenakshipuram (Sewage confluence point)	8 ^o 43'27" N	77 ^o 42'42" E	03/01/2019
12	Vellakovil	8 ^o 44'29" N	77 ^o 42'48" E	03/01/2019
13	Sivalaperi	8 ^o 46'3" N	77 ^o 47'50" E	03/01/2019

Thoothukudi District:

Sl. No.	Point of collection	GPS coordinates		Date of sample collection
1	Murappanadu(Upstream)	8 ^o 43'10" N	77 ^o 44'56" E	03/01/2019
2	Murappanadu,Near Central Water Commission Office	8 ^o 42'56" N	77 ^o 50'1" E	03/01/2019
3	SrivaikundamPadithurai	8 ^o 37'38" N	77 ^o 54'43" E	03/01/2019
4	Punnakayal Village, Estuary – Sea – River confluence point near Fishing Harbour	8 ^o 38'15" N	78 ^o 71'3" E	03/01/2019
5	Authoor,River Bed near Over Bridge (Sewage Confluence point)	8 ^o 36'24" N	78 ^o 4'40" E	03/01/2019
6	Eral Village, ValavallanTamiraparani River Backside of MSW Dumping Yard (Sewage confluence point)	8 ^o 37'18" N	78 ^o 13'6" E	03/01/2019
7	Eral village, Near Chairman Swamy Temple South Side	8 ^o 37'6" N	78 ^o 05'8" E	03/01/2019

5.4 Photographs showing the sampling locations along the River
Thamirabarani





5.5 Sample Collection Photographs along the river stretch:

Tirunelveli District



V. K. Puram River



Thalayanai River



House of Thiru. Sundarakariyalan, Manimuthar township



Manimuthar River



Kalidaikurichi Hospital (Bore well)



Ambasamudram Government Hospital



Pappakudi Panchayat office at Mukkudal



Rama nathi, Pappankulam



Kondangaram



Gopalamudram



Gopalamudram



48, Perumal Sanathi Street, Bore well,
Gopalamudram



Pachaiyar dam outlet, Singikulam



Kurukuthurai, Near Murugan Temple (Sewage
Confluence Point)

C. N. Village (Sewage confluence point)



C. N.Village railway bridge



C. N. Village



Kalidaikurichi River



Ansarbai, Meenakshipuram Bore well



C. N. Village, Anna Nagar



Meenakshipuram River (Sewage Confluence point)



Sindhupondurai Bore well (Sewage Confluence point)



Sindhupondurai River



V. K. Puram



Manimoorthiswaram (Sewage Confluence point)



Vellakovil





Manapadaiveedu

Seevalaperi River



Chittar Tributary



Kokirakulam River



Seevalaperi famous Sudalaimadasamy
Kovil

5.5.1 Thoothukudi District – Photographs showing the Sample collection in the River Thamirabarani



Murapparnadu (upstream),
Murapparnadu, Thoothukudi District Entry
Point.



Near Central Water Commission Office



Srivaikundam Padithurai Punnakayal
Village - Estuary Sea River



Confluence point near Fishing Harbor.



Athur River Bed near Over Bridge
(Sewage confluence point)



Aral Village Vallivilan Tamiraparani
River (Sewage confluence point)
Backside of MSW Dumping Yard.



Aral Village – Near Charman Temple
South Side

5.6 Status of water quality of river in the study area.

River water samples are collected from River Thamirabarani at twenty seven locations. Water quality monitoring results for twenty seven samples collected from River Thamirabarani are given in the table below - for general parameters and heavy metals.

Sl. No	Sample No.	Point of Collection	DO	Feecal * Coliform	BOD	Cu	Zn	Pb	Cd	Ni	Mn	Fe	T.Cr	Status of compliance with respect to WQC limit
			mg/l	MPN/100MI	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
1	NGT TNV 05	Manimuthar, near Road Bridge at Vairavikulam, Major Tributary. Originates on Eastern slopes of Western ghats. Length of the River is 9KM	4.5	2	32	0.024	<0.0015	<0.015	<0.0008	<0.006	<0.1	<0.05	0.110	Complied except BOD & DO
2	NGT TNV 01	Road Bridge, near m/s. Madura Coats Ltd., V.K Puram	8.0	2	<2.0	<0.0015	<0.0015	<0.015	<0.0008	<0.006	<0.1	0.192	<0.05	Complied
3	NGT TNV 04	Thalayanai river, Pabanasam	7.0	4	<2.0	<0.0015	<0.0015	<0.015	<0.0008	<0.006	<0.1	0.189	<0.05	Complied
4	NGT TNV 02	Kalidaikurichi, Ambasumadram Taluk	7.7	2	2.34	<0.0015	<0.0015	<0.015	<0.0008	<0.006	<0.1	0.149	<0.05	Complied
5	NGT TNV 10	Thirupudaimarudhur, Near Thirupudaimarudhur temple	5.8	4	2.54	0.005	<0.0015	<0.015	0.001	<0.006	<0.1	0.062	<0.05	Complied
6	NGT TNV 15	Kondanagaram village, Tirunelveli	6.0	2	<2.0	0.069	0.002	0.027	0.002	<0.006	<0.1	0.074	<0.05	Complied
Water quality criteria (WQC) limit for Bathing			≥ 5 mg/l	≤ 500 MPN/100 ml	≤ 3 mg/l	-	-	-	-	-	-	-	-	-

Sl. No	Sample No.	Point of Collection	DO	Feecal * Coliform	BOD	Cu	Zn	Pb	Cd	Ni	Mn	Fe	T.Cr	Status of compliance with respect to WQC limit
			mg/l	MPN/100MI	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
7	NGT TNV 16	Gopalsamudram, Tirunelveli	7.6	2	2.07	<0.0015	0.002	0.030	0.002	<0.006	<0.1	<0.05	<0.05	Complied
8	NGT TNV 29	Manpadaiveedu, Near online monitoring station.	6.8	2	2.77	0.05	0.049	<0.015	0.008	<0.006	<0.1	0.089	<0.05	Complied
9	NGT TN 1	Murappanadu (upstream), Thoothukudi district entry point.	6.4	7	2.37	0.062	0.035	0.018	0.01	<0.006	<0.1	0.056	<0.05	Complied
10	NGT TN 2	Murappanadu, near central water commission office	7.1	6	4.34	0.062	0.023	0.032	0.008	<0.006	<0.1	<0.05	<0.05	Complied except BOD
11	NGT TN 3	Srivaikundam, Padithurai	6.1	6	3.67	0.065	0.028	0.017	0.01	<0.006	<0.1	<0.05	<0.05	Complied except BOD
12	NGT TN 05	Punnakayal village, Estuary-Sea river confluence point near Fishing harbour	4.1	14	18.35	0.075	0.008	0.02	0.015	<0.006	<0.1	<0.05	<0.05	Complied except BOD & DO
13	NGT TN 06	Authoor, Rover bed near over bridge (Sewage confluence point)	7.0	9	6.34	0.086	<0.0015	<0.015	0.013	<0.006	<0.1	<0.05	<0.05	Complied except BOD
14	NGT TN 07	Aral village, Vallivilan Tamirabarani River backside of MSV dumping yard (Sewage confluence point)	1.5	9	7.41	0.071	<0.0015	<0.015	0.013	<0.006	<0.1	<0.05	<0.05	Complied except BOD & DO
Water quality criteria (WQC) limit for Bathing			≥ 5 mg/l	≤ 500 MPN/100 ml	≤ 3 mg/l	-	-	-	-	-	-	-	-	-

Sl. No	Sample No.	Point of Collection	DO	Feecal * Coliform	BOD	Cu	Zn	Pb	Cd	Ni	Mn	Fe	T.Cr	Status of compliance with respect to WQC limit
			mg/l	MPN/100MI	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
15	NGT TN 08	Aral Village, Near Charman Temple, Southside.	5.3	14	3.94	0.092	<0.0015	0.019	0.012	<0.006	<0.1	<0.05	<0.05	Complied except BOD
Water quality criteria (WQC) limit for Bathing			≥ 5 mg/l	≤ 500 MPN/100 ml	≤ 3 mg/l	-	-	-	-	-	-	-	-	-

5.7 Analysis results of the samples collected from drains contributing to pollution load in River Thamirabarani

Drain samples are collected along the River Thamirabarani at twelve locations. Water quality monitoring results for twelve drain samples collected along the River Thamirabarani are given in the table below - for general parameters and heavy metals.

Sl. No	Sample No.	Point of Collection	pH	TDS	COD	BOD	Cu	Zn	Pb	Cd	Ni	Fe	T.Cr	Status of compliance with respect to WQC limit
				mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
1	NGT TNV 08	GadananathiKizha Ambur, (Pattamudaiyarsasthakovil), Gadananthi originates from Agasthyamalai Biosphere Reserve, Trajectory of Tamirabarani river	7.52	78	40	3.14	0.001	0.003	<0.015	0.001	<0.006	0.234	<0.05	Complied
2	NGT TNV 09	Ramanathi River (Kizha Ambur), (Pattamudaiyarsasthakovil), Trajectory of Tamirabarani river	7.15	238	56	3.54	0.003	0.002	<0.015	<0.0008	<0.006	0.075	<0.05	Complied
Effluent discharge norms for inland surface water as per schedule-VI of E(P) Rules 1986 in mg/l except pH			5.5 to 9.0	-	250	30	3.0	5.0	0.1	2.0	3.0	3.0	2.0	-

Sl. No	Sample No.	Point of Collection	pH	TDS	COD	BOD	Cu	Zn	Pb	Cd	Ni	Fe	T.Cr	Status of compliance with respect to WQC limit
				mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
3	NGT TNV 18	Pachaiyar river, Trajectory of Tamirabarani river, Collected from dam outlet as flow was very less	8.23	580	44	4.54	0.009	<0.0015	0.029	0.224	<0.006	0.056	<0.05	Complied
4	NGT TNV 30	Chittar River, opposite sundalaimadasami Kovil, Seevalaperi, Major Trajectory of River Tamirabarani originating from Courtallam hills	6.67	210	32	3.07	0.040	0.040	<0.015	0.007	<0.006	0.139	<0.05	Complied
5	NGT TNV 19	Kurukkuthurai, Near Murugankovil Road.	7.31	56	28	4.14	0.124	0.01	0.031	0.005	<0.006	<0.05	<0.05	Complied
6	NGT TNV 20	CN Village, Near Railway Bridge	7.22	124	40	3.94	0.020	<0.0015	0.025	0.004	<0.006	<0.05	<0.05	Complied
7	NGT TNV 25	Sinthupoonthurai, Nearby Tirunelveli Junction	7.03	112	32	2.97	0.079	0.052	0.024	0.007	<0.006	0.203	<0.05	Complied
8	NGT TNV 32	Kokkirakulam, Nearby Tirunelveli Collectorate	7.01	94	32	5.94	0.068	<0.0015	<0.015	0.008	<0.006	0.138	<0.05	Complied
9	NGT TNV 26	Manimoortheeshwaram, Opposite to sudalaimadan temple, Tirunelveli Junction	6.70	110	40	4.54	0.038	0.017	0.037	0.008	<0.006	<0.05	<0.05	Complied
10	NGT TNV 23	Meenakshipuram, Tirunelveli Junction	6.77	90	32	5.74	0.085	0.118	0.025	0.007	<0.006	0.017	<0.05	Complied
Effluent discharge norms for inland surface water as per schedule-VI of E(P) Rules 1986 in mg/l except pH			5.5 to 9.0	-	250	30	3.0	5.0	0.1	2.0	3.0	3.0	2.0	-

Sl. No	Sample No.	Point of Collection	pH	TDS	COD	BOD	Cu	Zn	Pb	Cd	Ni	Fe	T.Cr	Status of compliance with respect to WQC limit
				mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
11	NGT TNV 27	Vellokovil, near cremation area, Tirunelveli	6.75	110	40	5.34	0.052	0.043	0.021	0.008	<0.006	0.050	<0.05	Complied
12	NGT TNV 31	Seevalaperi, near cremation ground	6.81	140	76	5.61	0.057	0.048	<0.015	0.011	<0.006	0.148	<0.05	Complied
Effluent discharge norms for inland surface water as per schedule-VI of E(P) Rules 1986 in mg/l except pH			5.5 to 9.0	-	250	30	3.0	5.0	0.1	2.0	3.0	3.0	2.0	-

5.8 Status of Ground water quality in the study area

Ground water samples were collected at twelve locations by the Inspection team. Ground water sample collected from the afore-said location was analysed in TNPCB laboratory. Water Quality Monitoring Results of ground water sample collected by the inspection team is given in the table below:

Sl. No	Sample No.	Point of Collection	SO ₄	F	O&G	Cu	Zn	Pb	Cd	Ni	Mn	Fe	T.Cr	Status of compliance with respect to WQC limit
			mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
1	NGT TNV 03	House of Sundarakariyalan, Manimuthar Township, Aladiyar Village	18.3	<1.0	< 1.0	0.010	0.118	<0.001	0.003	<0.006	0.024	0.170	<0.05	Complied
2	NGT TNV 04	Alwarthiru nagar, Bharathi Primary School	61.6	<1.0	< 1.0	0.075	0.030	0.023	0.014	<0.006	0.376	<0.05	<0.05	Cu, Pb, Cd, Mn not complied
IS10500-2012 Drinking water specifications-Acceptable limit (in mg/l)			200	1.0	0.5 *	0.05	5	0.01	0.003	0.02	0.1	0.3	0.05	-

Sl. No	Sample No.	Point of Collection	SO ₄	F	O&G	Cu	Zn	Pb	Cd	Ni	Mn	Fe	T.Cr	Status of compliance with respect to WQC limit
			mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
3	NGT TNV 06	Near Kallidaikuruchi Road Bridge, Ambai Main Road, Elayaraja Orthopedic campus	31.4	<0.01	< 1.0	0.014	<0.0015	<0.015	<0.0008	<0.006	<0.01	<0.05	<0.05	Complied
4	NGT TNV 07	Ambai, Theerthapathy Government Hospital	131	<0.01	< 1.0	<0.0015	0.002	<0.015	<0.0008	<0.006	<0.01	<0.05	<0.05	Complied
5	NGT TNV 11	Pappakudi Town Panchayat office, Mukkudal	113	<0.01	< 1.0	<0.0015	0.003	<0.015	<0.0008	<0.006	<0.01	<0.05	<0.05	Complied
6	NGT TNV 12	Pottal Colony, Muppudathiamman kovil Govt water supply unit, North Ariyanakipuram	72.9	0.24	< 1.0	0.008	<0.0015	0.049	<0.0008	<0.006	<0.01	<0.05	<0.05	Pb not complied
7	NGT TNV 13	Gandhi Park Borewell Cheranmahandevi	72.1	<0.001	< 1.0	0.019	<0.0015	0.038	<0.0008	<0.006	<0.01	<0.05	<0.05	Pb not complied
8	NGT TNV 17	48, Perumalsanathi street, Gopalsamudram, Cheranmahadevi Taluk	108	<0.04	< 1.0	0.036	<0.0015	<0.015	0.034	<0.006	<0.01	<0.05	<0.05	Cd not complied
9	NGT TNV 21	House of Thiru Meenakshipuram	51.9	<0.01	< 1.0	0.047	0.037	0.023	0.004	<0.006	0.028	0.009	<0.05	Pb, Cd not complied
10	NGT TNV 22	Borewell, Tirunelveli Corporation, Ward No. 7, Anna Nagar	18.3	<0.01	< 1.0	0.010	0.118	<0.015	0.003	<0.006	0.024	0.170	<0.05	Complied
11	NGT TNV 24	Common Borewell, Selvi Nagar, Tirunelveli	42.0	<0.01	< 1.0	0.038	0.040	0.030	0.005	<0.006	<0.01	0.094	<0.05	Pb, Cd, not complied
12	NGT TNV 28	House of Thiru. Raja, opposite Sanhamariamman Temple, Vellakovil	47.0	<0.01	< 1.0	0.051	0.062	<0.015	0.006	<0.006	0.013	0.153	<0.05	Cadmium not complied
IS10500-2012 Drinking water specifications-Acceptable limit (in mg/l)			200	1.0	0.5 *	0.05	5	0.01	0.003	0.02	0.1	0.3	0.05	-

Note: Generally in case of ground water samples, concentration less than or equal to <1 mg/l is indicated as BDL by TNPCB laboratories. But as per BIS Drinking water specifications, mineral oil content of sampling points exceed the limit of 0.5 mg/l.

6.0 Status of ground water and drains quality in the study area:

Report of analysis is enclosed vide Annexure-IV. The parameters are within the standards prescribed by the Board for the ground water collected along the River Thamirabarani Stretch. The ground water quality is satisfactory.

Tirunelveli District:

A Study on the quality of River Water, ground water, Tributaries and sewage mixing points were conducted on 02/01/2019 and 03/01/2019 and samples were collected and analysed. The status of the quality of the water collected from various source is narrated below (ROA enclosed):

Water Quality of Thamirabarani River (9 samples):

- The water quality of River Thamirabarani collected at 5 locations satisfies both the Class –B standards (outdoor bathing) and Class-C standards (Drinking water source with conventional treatment followed by disinfection).
- The water quality of River Thamirabarani collected at 2 locations satisfies the Class-A standards (Drinking water source without conventional treatment but after disinfection).
- The water quality of River Thamirabarani collected at other 2 locations shows BOD in the order of 5.34 and 5.61 mg/L

Water quality of Tributaries (5 samples):

- The water quality of the 4 Tributaries samples satisfies the Class –A standards (Drinking water source without conventional treatment but after disinfection) except for BOD.
- The water quality of the 1 Tributaries samples satisfies the Class–C standards (Drinking water source with conventional treatment followed by disinfection) except for BOD.
- BOD was found in the range of 3.07 to 4.54.

Ground water quality (11 samples):

- All parameters as analysed satisfy the desirable limits of drinking water standards for 2 samples.
- All parameters as analysed except TDS and Chlorides satisfies the desirable limits of drinking water standards for 9 samples.
- Parameters TDS and Chlorides satisfy the permissible limits of drinking water standards in the absence of alternate source.

Water quality of sewage mixing points through drain carrying Tirunelveli City sewage samples (6 samples)

- BOD was found in the range of 2.97 to 5.94 mg/l.
- Total Coliform was found in the range of 6 to 17 MPN/100ml.
- Fecal Coliform was found in the range of 2 to 6 MPN/100ml.

Action taken by Tirunelveli Municipal Corporation to stop discharging Tirunelveli City sewage in to River Thamirabarani:

- The Tirunelveli Corporation has proposed to provide UGD system to the remaining unsewered area in the Corporation limit so as to collect the sewage now discharged into River Thamirabarani without treatment.
- It was informed that administrative sanction was issued for implementation of UGSS scheme Phase-1 at an estimated cost of 289.01 crores with financial assistance from Government of India (50 % share), Government of Tamilnadu (20 % share), ULB (10 % share) and remaining 20 % share under AMRUT, 2016-17 vide G.O. Ms. No.111 dated 25/10/2017 By Municipal Administration and Water Supply (MC-2), Department. It was also informed that work order was issued on 25/07/2018 to M/s. Larsen and Toubro Construction, Chennai and the work is in progress and expected to be completed by 31/07/2021.
- Similarly It was informed that administrative sanction was issued for implementation of UGSS scheme Phase-2 at an estimated cost of 440.19 crores with financial assistance from Government of India (50 % share), Government of Tamilnadu (20 % share), ULB (10 % share) and remaining 20 % share under AMRUT, 2016-17 vide G.O. Ms. No.5 dated 22/01/2018 By Municipal Administration and Water Supply (MC-2), Department. It was also

informed that work order was issued on 12/10/2018 to M/s. Simplex infrastructure Limited, Kolkata and the work is in progress and expected to be completed by 31/10/2021.

Thoothukudi District

A Study on the quality of River Water was conducted on 03/01/2019 and samples were collected and analysed. The status of the quality of the water collected from various source is narrated below:

Water Quality of Thamirabarani River (7 samples):

Seven Numbers of Water samples collected from the River in the following locations

Sl. No.	Point of collection	GPS coordinates		Date of sample collection
1.	Murappanadu (Upstream)	8 ^o 43 10 N	77 ^o 44 56 E	03/01/2019
2.	Murappanadu, Near Central Water Commission Office	8 ^o 42 56 N	77 ^o 50 1 E	03/01/2019
3.	Srivaikundam Padithurai	8 ^o 37 38"N	77 ^o 54 43 E	03/01/2019
4.	Punnakayal Village, Estuary – Sea – River confluence point near Fishing Harbour	8 ^o 38 15"N	78 ^o 71 3 E	03/01/2019
5.	Authoor, River Bed near Over Bridge (Sewage Confluence point)	8 ^o 36'24" N	78 ^o 44 0 E	03/01/2019
6.	Eral Village, Valavallan Tamiraparani River Backside of MSW Dumping Yard (Sewage confluence point)	8 ^o 37 18"N	78 ^o 13 6 E	03/01/2019
7.	Eral village, Near Chairman Swamy Temple South Side	8 ^o 37 6 N	78 ^o 05 8 E	03/01/2019

- The Report of Analysis of the samples collected and analysed revealed that out of seven points, the level of BOD was found to be less than 3 mg/l in one station, between 3 among 6 mg/l in three stations, between 6 and 10 mg/l in two stations, and between 10 and 20 mg/l in one station. It is observed that in station 7, the level of BOD was found to be 18.35 mg/l, which could be attributed due to the organic load from the nearby fishing harbour and lower oxygen mixing due to still conditions and high level of Total dissolved solids. (This is the confluence point).

- Generally the stretch is found to be under priority – 5. The level of BOD is found to be more where the domestic sewage confluences into the River. There is no source of industrial activity, which would impact the quality of the River Water. The fishing harbor activity in the confluence impacts the biological quality of the river. The Bacteriological quality is satisfactory.

7.0 Assessment of Compliance of the effluents/sewage discharge norms by the industries in the study area:

In Tirunelveli district, the Report of analysis of the treated trade effluent samples collected from M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District reveals that the unit achieves the inland surface water standards prescribed by the Board. The Report of analysis is enclosed vide Annexure-V.

In Thoothukudi district, the only one industry that is M/s. V.V. Minerals, Serthamangalam and it is not in operation for the past 3 years. Hence, samples are not collected from the unit.

8.0 Operation status of industries type & category wise, consent details and hazardous waste authorization details:

Details of industries located along the River Thamirabarani are enclosed vide Annexure-II.

Thoothukudi District

Srivaikuntam

Sl. No.	Name of the unit	Operation status	Type and Category	Consent details	Hazardous waste
1.	Associated Cashew Nut industries	Not in operation	Orange/Small Cashew nut processing	CTO valid upto 31.03.2015	Not applicable
2.	Govt. Primary Health Centre Hospital, Karunkulam	In operation	Orange / small Health Care facility	RCO Valid upto 31.03.2020	Not applicable

Tiruchendur

Sl. No.	Name of the unit	Operation status	Type and Category	Consent details	Hazardous waste
1.	T.P.S. Chamber	In operation	Orange/Small Brick kiln	CTO valid upto 31.03.2020	Not applicable
2.	Sri Senthil Murugan Rice Mill	Not in operation	Orange / Small Rice Mill	RCO valid upto 30.09.2013	Not applicable
3.	R.M Chamber Bricks	In operation	Orange/Small Brick kiln	RCO valid upto 31.03.2020	Not applicable
4.	Sri Ganesha Modern Rice Mill	In operation	Orange / Small Rice Mill	RCO valid upto 31.03.2021	Not applicable
5.	V.V. Minerals	Not in operation	Red/Small Mining	RCO valid upto 30.06.2018	Not applicable

9.0 Status of industry wise water consumption, wastewater generation and final mode of industrial effluent discharge:

Details of industry wise water consumption, waste water generation and final mode of industrial effluent discharge are enclosed vide Annexure-II.

Tirunelveli District:

List of Industries drawing water from River Thamirabarani

Sl. No.	Name and address of the unit	Water drawl location at River Thamirabarani	Sanctioned/approved quantity in KLD	Actual Water drawl in KLD	Mode of disposal of trade effluent
1	Madura Coats Private Ltd., Aladiyur, Ambasamudram Taluk	Papanasam Lower Dam	9788KLD restricted to 4894 KLD from Feb'2017	1600 KLD	ZLD Plant
2	Sun paper Mills Ltd, North Ariyanayagipuram, Cheranmahadevi Taluk	North Ariyanayagipuram	1818	1818	On land for irrigation
3	Arjun Paper Mills Ltd., Thuvarasi, Tirunelveli Taluk	Kodaganallur	5456	Water drawl not commenced. since Pipe line yet to be laid.	Partly Recycled/Partly on Unit's land for irrigation
4	Shesayee paper and Boards, North Ariyanayagipuram, Cheranmahadevi Taluk	Mukkudal	6000	3000	Partly reused/ Partly on land for irrigation
5	India Cement Ltd., Sankarnagar, Tirunelveli	Anandakrishnapuram	4892	1200	No trade effluent is generated

	Taluk				
6	SIPCOT Industrial Growth Centre, Gangai kondan, Tirunelveli for supply of Water for member units	Sivalaperi	11355 (Infrastructure provided for 7570 KLD)	3785	Discharged inside industrial premises either for green belt development or Recycled in the process.
7	Tirunelveli District Coop Milk Producers Union Ltd., Reddiarpatti, Palayamcottai Taluk.	Karupandhurai	-	50 – 60 KLD	Within in units premises

9.1 Photographs showing the Water drawl locations of industries in the River Thamirabharani



SIPCOT pumping station in the River Tamirabharani at Seevalaperi Village



M/s. The India Cements Limited pumping station in River Tamirabharani at Anandakrishnapuram village



M/s. Arjun pulp and paper India private limited pumping station in River Tamirabharani at Kodaganallur Village



M/s. Seshasayee paper boards limited in River Tamirabharani at Mukkudal village



M/s. Sun paper Limited infiltration well in River Tamirabharani at North Ariyanayakipuram village



M/s. Madura Coats Limited, Water draw source at Papanasam lower dam

Thoothukudi District

Srivaikuntam

Sl. No.	Name of the unit	Operation status	Water consumption	Waste water generated	Final mode of effluent discharge
1.	Associated Cashew Nut industries	Not in operation	2.5 KLD	Boiler blow down	Solar evaporation pan
2.	Govt. Primary Health Centre, Karunkulam	In operation	12 KLD	Sewage	On Industry's own land

Tiruchendur

Sl. No.	Name of the unit	Operation status	Water consumption	Waste water generated	Final mode of effluent discharge
1.	T.P.S. Chamber	In operation	8 KLD	Sewage	On Industry's own land
2.	Sri Senthil Murugan Rice Mill	Not in operation	3 KLD	Boiler blow down	For Irrigation
3.	R.M Chamber Bricks	In operation	8 KLD	Sewage	On Industry's own land
4.	Sri Ganesh Modern Rice Mill	In operation	4.5	Trade effluent	On Industry's own land
5.	V.V. Minerals	Not in operation	100	Trade effluent	72 KLD – Recycling to the process 18 KLD – On land for irrigation

9.2 Details of Water Supply by the Local Bodies:

Name of District		Township		Details of Water Supply											
Name of District		Name of Block		Name of Panchayat		Name of Water Supply		Name of Treatment Plant		Name of Distribution System		Name of Water Supply		Name of Water Supply	
No.	Name of Panchayat	Name of Block	Name of Panchayat	Name of Water Supply	Name of Treatment Plant	Name of Distribution System	Name of Water Supply	Name of Water Supply	Name of Water Supply	Name of Water Supply	Name of Water Supply	Name of Water Supply	Name of Water Supply	Name of Water Supply	Name of Water Supply
1	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam	Arakkonam
2	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai	Chennai
3	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore
4	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli	Tiruchirappalli
5	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli

10.0 Operation status of ETPs:

In Tirunelveli district the ETP provided by the unit of M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District is under regular operation. The Report of analysis of the treated trade effluent samples collected from the unit reveals that the unit achieves the inland surface water standards prescribed by the Board. ROA enclosed vide Annexure-V.

The unit has now completed the installation of Reverse Osmosis Plant (RO) & Reject management System (RMS) as a tertiary treatment for the treated trade effluent so as to achieve Zero Discharge of trade effluent and the unit is expected to stop the discharge in to the River by March'2019.

In Thoothukudi district the ETP provided by the unit of M/s. V.V. Minerals, Sernthamangalm Village, Tiruchendur Taluk, Thoothukudi District is under operational condition. The Report of analysis of the treated trade effluent samples collected from the unit reveals that the unit achieves the inland surface water standards prescribed by the Board. At present the unit is not in operation for the past 3 years.

11.0 Status of installation and operation status of Online Continuous Effluent Monitoring Systems (OCEMS):

The details of Online Continuous Effluent Monitoring Systems installed in industries are enclosed vide Annexure-VIII.

12.0 Main findings and observations:

In Tirunelveli district the ETP provided by the unit of M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District is under regular operation. The Report of analysis of the treated trade effluent samples regularly collected from the unit reveals that the unit achieves the inland surface water standards prescribed by the Board.

In Thoothukudi district the level of BOD is found to be more where the domestic sewage confluences into the River. There is no source of industrial activity, which would impact the quality of the River Water. The fishing harbor activity in the confluence impacts the biological quality of the river. The Bacteriological quality is satisfactory.

13.0 Ground water Quality- Compliance status:

Reports of Analysis (ROA) for the ground water samples collected along the River Thamirabarani stretch are enclosed vide Annexure-IV. The results are satisfactory.

In River Thamirabarani stretch, State Ground Water Authority is having water quality data for Cheranmadevi, Thiruvaidaimaruthur, Ambasamudram, Thirunelveli, Palayamkottai, and Ariyanaygipuram. The collected data shows the ground water quality of this stretch is having all three types of good, poor and moderate based on TDS details.

13.1 Sampling Points along the River Thamirabarani by State Ground Water

Authority

Sl. No.	Name of the polluted River Stretch	Data point of SG & SWRDC			Period of Data
		Location	Latitude	Longitude	
1	River Thamiraparani-Pappankulam to Arumuganeri Stretch-(80Km)- Priority V	Ambasamudram			2011- 2012
		Cheranmadevi	08°49'16"	77°34'14"	2012-2017
		Athoor	10°17'10"	77°51'02"	1998- 2017
		Srivaikundam	08°38'00"	77°55'00"	1978- 2017
		Palayamkottai	08°43'15"	77°44'00"	1973- 2017
		Seevalaperi	08°47'25"	77°48'32"	2014- 2017
		Ariyanayagipuram	09°06'30"	78°15'10"	2016

The State Ground and Surface Water Resources Data centre is having water quality data for the minimum locations of the enclosed list. Moreover this department is mainly concerning with the analysis of inorganic parameters and hence TDS is used as a vital tool in determining the quality of water as Good, Moderate or Poor quality. But to identify pollution in an area, the pollution parameters such as Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Coliform, Faecal Coliform has to be measured. With the water quality data available with this department we can say whether ground water of a particular area is suitable for drinking or not.

14.0 Findings on the River water and drain quality:

Reports of Analysis (ROA) for the river & drain samples collected along the River Thamirabarani stretch are enclosed vide Annexure-VII. The MINARS samples collected for the year 2017-2018 are enclosed in Annexure-VI.

The Report of Analysis of the samples collected and analyzed revealed that out of seven points, the level of BOD was found to be less than 3 mg/l in one station, between 3 among 6 mg/l in three stations, between 6 and 10 mg/l in two stations and between 10 and 20 mg/l in one station. It is observed that in station 7, the level of BOD was found to be 18.35 mg/l, which could be attributed due to the organic load from the near-by fishing harbour and lower oxygen mixing due to still conditions and high level of Total dissolved solids (This is the confluence point).

15.0 Findings on the compliance of the effluent /Sewage discharge norms by the industries:

The Report of analysis of the treated trade effluent samples collected from M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli District reveals that the unit achieves the inland surface water standards prescribed by the Board.

In Thoothukudi district there is no discharge of industrial effluent entering into the River.

16.0 General observations and recommendations of the Inspection

Team:

1. The contamination of River Thamirabarani is mainly due to mixing of Tirunelveli city sewage. This river has water flow throughout the year. The quality of river water will be improved only when the Tirunelveli Municipal Corporation completes UGSS scheme Phase-I & II by which the entire quantity of city sewage will be discharged through Underground drainage system to the existing STP which is operated and maintained by Tirunelveli Corporation.
2. The existing 24.2 MLD capacity STP (Stabilization ponds) operated and maintained by Tirunelveli Municipal Corporation shall also be upgraded to take care of the entire quantity of anticipated sewage to be collected and transported after the implementation of UGSS scheme Phase-I & II so as to satisfy the standards prescribed by the Board.
3. Also the Municipalities and Town Panchayat located along the river stretch shall prepare DPR for treatment of sewage so as to avoid the discharge of sewage into irrigation channel.

During inspection it is observed that there is no discharge of sewage generated by the local bodies let into River from origin up to entry of Tirunelveli City. However the Tirunelveli city sewage was found discharged into River through drains at 8 major places as below:

- 1) Kurukkuthurai, 2) C.N. Village, 3) Meenakshipuram, 4) Kokkirakulam, 5) Sindhupoondhurai, 6) Manimoortheswaram 7) Vellacoil and 8) Sivalaperi.

Further it is observed that M/s. Madura Coats Private Limited, Aladiyur, Ambasamudram Taluk, Tirunelveli has now completed the installation of Reverse Osmosis Plant (RO) and Reject management System (RMS) as a tertiary treatment for the treated trade effluent so as to achieve Zero Discharge of trade effluent.

The River Thamirabarani is being monitored at 8 locations for the collection of water samples under MINARS programme from Road Bridge near Madura Coats Ltd, V.K.Puram to Cremation Ground, Seevalaperi every month. Also the Tamirabharani River is monitored under continuous basis at 3 locations namely,

1. Road Bridge at V.K. Puram.
2. River Bridge at Cheranmadevi.
3. Manapadaiveedu, Pumping Station.

The MINARS samples collected for the year 2017-2018 are enclosed in Annexure-VI.

It is recommended that the Town Panchayat, which is located along the stretch of the River Thamirabarani, shall prepare Detailed Project Report (DPR) for treatment of Sewage as it is presently discharged into irrigation channel which runs parallel to the River.

In Thoothukudi district the untreated sewage let into the river through drains need to be intercepted and diverted as an immediate measure. The industries located in the villages through which the River is flowing are not generating any trade effluent or not in operation for a long period.

16.1 Details of flow in the River

1. Flow is maintained between 700C/s to 1600C/s during irrigation period.
2. During monsoon period, when the dam attains full storage capacity, the discharge in the river varies from 926 Cusecs to 11596 Cusecs.

17.0 Recommendations- Action plan of the River stretch:

The River Thamirabarani receives Tirunelveli city sewage at 6 major locations as below.

- 1) Kurukkuthurai, 2) C.N. Village, 3) Meenakshipuram, 4) Kokkirakulam, 5) Sindhupoondhurai 6) Manimoortheswaram 7) Vellacoil & 8) Sivalaperi

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Thamirabarani:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target
1	Industrial Pollution Control	No industrial discharge	TNPCB	-
2	Sewage Treatment and Disposal plan.	<p>❖ Tirunelveli District</p> <p>Tirunelveli Corporation:</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 6 Nos. • Population: 513284 • Total No. of Households: 159628 • Qty of Sewage generated: 56.46 MLD • Status of UGSS: <p>Under Ground Sewerage scheme work is completed and functional in 10 wards (fully) and 12 wards (partially) with an STP capacity of 24.20MLD and treated sewage water let out as per GOI norms.</p> <ul style="list-style-type: none"> • Status of STP: 24.20 MLD STP Provided. • Present mode of Disposal: Treated through Sewage Treatment Plant for 10 wards only. • Plan of Action: • To cover the remaining wards (33 wards fully & 12 wards partially) <p>Under Ground Sewerage scheme work in 2 phases were</p>	Municipal Administration	

		<p>taken up for implementation at an estimated cost of Rs.729.20crore with financial assistance of AMRUT & ADB. Of which phase-II sewage generated will be treated in Phase-I STP and Phase-III will have a 34.00MLD capacity STP. The scheme is expected to be completed by December 2021.</p>		Dec-2021
		<p>❖ Ambasamudram Municipality</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 1- Sewage into Irrigation Channel out-fall (ICO) • Population: 38850 • Total No. of Households: 15176 • Qty of Sewage generated: 2.98 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • Plan of Action: • In order to treat the black water, construction of 30KLD Faecal Sludge Treatment Plant work is taken up and is in progress at an estimated cost of Rs.3.15Crore and it will be completed before 31.12.2019 under IUDM 2018-19 funds. • To handle the sullage water discharged through 7 nos. of 	Municipal Administration	Dec-2019

		<p>major channel which confluence with the river stretch. It is proposed to provide in-situ treatment methodology by providing Screen, Grit followed by Horizontal planted gravel filter.</p> <ul style="list-style-type: none"> • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of Rs.77.00 lakh. This fund is proposed to be tied up with Infrastructure gap filling fund 2019-20 and is expected to be completed by October 2019. 		Oct-2019
		<p>❖ Vickramasingampuram Municipality</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 2 - Sewage into Irrigation Channel out-fall (ICO) • Population: 47163 • Total No. of Households: 19370 • Qty of Sewage generated: 2.98 MLD • Status of UGSS: Not provided • Status of STP: Not provided • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • Plan of Action: • In order to treat the black water, construction of 30KLD Faecal Sludge Treatment Plant work is 	Municipal Administration	

		<p>taken up and is in progress at an estimated cost of Rs.3.00Crore and it will be completed before 31.12.2019 under IUDM 2018-19 fund.</p> <ul style="list-style-type: none"> • To handle the sullage water discharged through 12 nos. of major channel which confluence with the river stretch. It is proposed to provide in-situ treatment methodology by providing Screen, Grit followed by Horizontal planted gravel filter. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of Rs.1.20crore. This fund is proposed to be tied up with Infrastructure gap filling fund 2019-20 and is expected to be completed by October 2019. 		<p>Dec-2019</p> <p>Oct-2019</p>
		<p>❖ Kallidaikurichi Town Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 3 Nos. - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 26398 • Qty of Sewage generated: 0.350 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian 	<p>Directorate of Town Panchayat</p>	

		<p>Irrigation Channel.</p> <ul style="list-style-type: none"> • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 105.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex / Aeration Technology under IUDM for the year 2019-20. 		June-2020
		<ul style="list-style-type: none"> • Cheranmahadevi Town Panchayat • No. of sewage outfall identified: 4 Nos. - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 18327 • Qty of Sewage generated: 0.110 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian Irrigation Channel. • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 45.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex Technology under IUDM for the year 2019-20. 	Directorate of Town Panchayat	June-2020
		<ul style="list-style-type: none"> ❖ Veeravanallur Town Panchayat • No. of sewage outfall identified: 3 Nos. - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 19585 	Directorate of Town Panchayat	

		<ul style="list-style-type: none"> • Qty of Sewage generated: 0.250 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian Irrigation Channel. • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 49.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex Technology under IUDM for the year 2019-20. 		June-2020
		<p>❖ Mukkudal Town Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 2 Nos - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 16755 • Qty of Sewage generated: 0.070 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Vellodai Channel • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 30.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex Technology under IUDM for the year 2019-20. 	Directorate of Town Panchayat	June-2020

		<p>❖ Gopalamudram Town Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 3 Nos. • Population: 11228 • Qty of Sewage generated: 0.500 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Vagaikulam Kanmai. • Plan of Action: <p>❖ Detailed project report has been prepared at an estimated cost of Rs 41.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex Technology under IUDM for the year 2019-20.</p>	Directorate of Town Panchayat	June-2020
		<p>❖ Patthamadai Town Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 3 Nos. - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 17456 • Qty of Sewage generated: 0.250 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian Irrigation Channel. • Plan of Action: <p>❖ Detailed project report has been</p>	Directorate of Town Panchayat	

		prepared at an estimated cost of Rs 39.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex Technology under IUDM for the year 2019-20.		June-2020
		<p>❖ Melaseval Town Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 3 Nos. - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 8435 • Qty of Sewage generated: 0.020 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian Irrigation Channel. • Plan of Action: <p>❖ Detailed project report has been prepared at an estimated cost of Rs 32.00 Lakhs for treatment and disposal of sullage water by Eco Ozotex Technology under IUDM for the year 2019-20.</p>	Directorate of Town Panchayat	June-2020
		<p>❖ Naranammalpuram Town Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: 1 No - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 17094 • Qty of Sewage generated: 0.050 MLD • Status of UGSS: Not provided 	Directorate of Town Panchayat	

		<ul style="list-style-type: none"> • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian Irrigation Channel. • Plan of Action: ❖ Detailed project report has been prepared at an estimated cost of Rs 30.00 Lakhs for treatment and disposal of sullage water by Reed Bed Filter Method under IUDM for the year 2019-20. 		June-2020
		<ul style="list-style-type: none"> ❖ Manimuthar Town Panchayat • No. of sewage outfall identified: 3 Nos. - Sewage into Irrigation Supply Channel Out-fall (ISCO) • Population: 11323 • Qty of Sewage generated: 0.210 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Canadian Irrigation Channel. • Plan of Action: ❖ Detailed project report has been prepared at an estimated cost of Rs 70.00 Lakhs for treatment and disposal of sullage water by Reed Bed Filter Method under IUDM for the year 2019-20. 	Directorate of Town Panchayat	June-2020

		<p>❖ Thirupudaimaruthur Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 1211 • Total No. Households: 301 • Qty of Sewage generated: 0.02 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • No. of households having Twin Leach pit toilet: 20 • No. of households having toilet with septic tank and method of disposal of over flow water: 249 • No. of households covered with soak pits under MGNREGS: 49 • No of households not covered with soak pit, but having adequate space for construction: 160 • No of households having no space and directly discharging grey water into open drain: 60 • Whether the end point of street drains disposal is in river/water body: No • No of grey water outfall into the river: Nil • Source of grey/sewage water is from the village Panchayat and from the urban local bodies existing in the upstream side of the village Panchayat. 	<p>Rural Development & Panchayat Raj</p>	
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		<ul style="list-style-type: none"> • Present mode of sewage disposal: • In MGNREGS Scheme already 30 Nos. of Soak pit has been provided to treat the sewage. One Vertical filter unit to treat sewage from 100 houses is constructed under MGNREGS 2018-19. • At present the grey water from households are discharged into garden areas and vacant ground of their own land. • Plan of Action: • Total No of Habitation 3 Nos. out of which Thirupudaimaruthur habitation is directly connected to River Thamirabarani. Out of 301 households, 115 Households Sewage water is treated by means of Individual Soak pit and Vertical Filter, Balance 186 Households Soak pit to be provided under MGNREGS 2019-20. • Through IEC activities all the left out households will be provided with soak pits under MGNREGS scheme in priority basis and in phased manner. • After construction of Soak Pits, No sewage water will be directly disposed into the river. 		July-2019
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		<p>❖ Seevalaperi Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 4571 • Total No. Households: 1304 & Commercial buildings – 28 Nos. • Qty of Sewage generated: 0.19 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • No. of households having Twin Leach pit toilet: 380 • No. of households having toilet with septic tank and method of disposal of over flow water: 924 • No. of households covered with soak pits under MGNREGS: 102 • No of households not covered with soak pit, but having adequate space for construction: 723 • No of households having no space and directly discharging grey water into open drain: 479 • Whether the end point of street drains disposal is in river/water body: No • No of grey water outfall into the river: Nil • Source of grey/sewage water is from the village Panchayat and from the urban local bodies existing in the upstream side of the village Panchayat. 	<p>Rural Development & Panchayat Raj</p>	
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		<ul style="list-style-type: none"> • Present mode of sewage disposal: • In MGNREGS Scheme already 101 Nos. of Soak pit has been provided to treat the sewage under MGNREGS 2018-19. • Discharged into Soak Pits. • At present the grey water from households are discharged into garden areas and vacant ground of their own land. • Plan of Action: • . Out of 799 Households Sewage water is treated by means of Individual Soak pit, Balance 698 Households Soak pit to be provided under MGNREGS 2019-20. • Through IEC activities all the left out households will be provided with soak pits under MGNREGS scheme in priority basis and in phased manner. • After construction of Soak Pits, No sewage water will be directly disposed into the river. 		July-2019
		<ul style="list-style-type: none"> ❖ Keelapattam Village Panchayat • No. of sewage outfall identified: Nil • Population: 3061 • Total No. Households: 914 & Commercial buildings – 7 Nos. • Qty of Sewage generated: 0.13 MLD 	Rural Development & Panchayat Raj	

		<ul style="list-style-type: none"> • Status of UGSS: Not Provided • Status of STP: Not provided • No. of households having Twin Leach pit toilet: 167 • No. of households having toilet with septic tank and method of disposal of over flow water: 747 • No. of households covered with soak pits under MGNREGS: 81 • No of households not covered with soak pit, but having adequate space for construction: 621 • No of households having no space and directly discharging grey water into open drain: 212 • Whether the end point of street drains disposal is in river/water body: No • No of grey water outfall into the river: nil • Source of grey/sewage water is from the village Panchayat and from the urban local bodies existing in the upstream side of the village Panchayat. • Present mode of sewage disposal: • In MGNREGS Scheme already 42 Nos. of Soak pits has been provided to treat the sewage. One Horizontal filter unit to treat sewage from 79 houses is sanctioned under MGNREGS 		
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		<p>2018-19.</p> <ul style="list-style-type: none"> • At present the grey water from households are discharged into garden areas and vacant ground of their own land. • Plan of Action: • Out of 604 Households Sewage water is treated by means of Individual Soak pit and Horizontal Filter, Balance 483 Households Soak pit to be provided under MGNREGS 2019-20. • Through IEC activities all the left out households will be provided with soak pits under MGNREGS scheme in priority basis and in phased manner. • After construction of Soak Pits, No sewage water will be directly disposed into the river. 		July-2019
		<p>❖ Thoothukudi District</p> <ul style="list-style-type: none"> • Authoor Town Panchayat • No. of sewage outfall identified: 1 No. • Population: 10138 • Qty of Sewage generated: 0.500 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Thamirabarani river. 	Directorate of Town Panchayat	

		<ul style="list-style-type: none"> • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 30.00 Lakhs for treatment and disposal of sullage water by Aeration Technology under IUDM for the year 2019-20. 		June-2020
		<ul style="list-style-type: none"> ❖ Eral Town Panchayat • No. of sewage outfall identified: 2 Nos. • Population: 10599 • Qty of Sewage generated: 0.600 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Thamirabarani river. • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 60.20 Lakhs for treatment and disposal of sullage water by Reed Bed Filter Technology under IUDM for the year 2019-20. 	Directorate of Town Panchayat	June-2020
		<ul style="list-style-type: none"> ❖ Srivaikundam Town Panchayat • No. of sewage outfall identified: 2 Nos. • Population: 15847 • Qty of Sewage generated: 0.700 MLD • Status of UGSS: Not provided • Status of STP: Not Provided 	Directorate of Town Panchayat	

		<ul style="list-style-type: none"> • Present mode of Disposal: Sullage water Let out into North canal of Thamirabarani river. • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 53.00 Lakhs for treatment and disposal of sullage water by Reed Bed Filter Technology under IUDM for the year 2019-20. 		June-2020
		<ul style="list-style-type: none"> ❖ Alwarthirunagari Town Panchayat • No. of sewage outfall identified: 3 Nos. • Population: 9500 • Qty of Sewage generated: 0.164 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into south canal of Thamirabarani river • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 53.00 Lakhs for treatment and disposal of sullage water by Reed Bed Filter Technology under IUDM for the year 2019-20. 	Directorate of Town Panchayat	June-2020
		<ul style="list-style-type: none"> ❖ Then Thiruperai Town Panchayat • No. of sewage outfall identified: 1 No. 	Directorate of Town Panchayat	

		<ul style="list-style-type: none"> • Population: 4934 • Qty of Sewage generated: 0.400 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • Present mode of Disposal: Sullage water Let out into Town Panchayat own land and Private Land. • Plan of Action: • Detailed project report has been prepared at an estimated cost of Rs 53.00 Lakhs for treatment and disposal of sullage water by Reed Bed Filter Technology under IUDM for the year 2019-20. 		June-2020
		<ul style="list-style-type: none"> ❖ Arumuganeri Town Panchayat • No. of sewage outfall identified: Nil • Population: 27266 There is no discharge in the river. 	Directorate of Town Panchayat	-
		<ul style="list-style-type: none"> ❖ Murapanadu Puthugramam Village Panchayat • No. of sewage outfall identified: 1 No. • Population: 1045 • Total No of Households: 458 • Qty of Sewage generated: 0.033 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • No. of households having Twin Leach pit toilet: 328 	Rural Development & Panchayat Raj	

		<ul style="list-style-type: none"> • No. of households having toilet with septic tank and method of disposal of over flow water: 130 (Disposal of waste water in soak pit) • No. of households covered with soak pits under MGNREGS: 15 • No of households not covered with soak pit, but having adequate space for construction: 35 • No of households having no space and directly discharging grey water into open drain: 100 • Whether the end point of street drains disposal is in river/water body: No • No of grey water outfall into the river: nil • Source of grey/sewage water is from the village Panchayat and from the urban local bodies existing in the upstream side of the village Panchayat. • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing small channel through proper drainage arrangement. • In 15 houses individual soak pit also been constructed under MGNREGS 2018-19 Scheme. • All houses have been provided 		
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		<p>with individual household toilets with twin leach pit.</p> <ul style="list-style-type: none"> • Hence no sewage water has been disposed directly into the channel. • Plan of Action: • The disposed gray water will be treated by providing horizontal soak pit shortly under MGNREGS 2019-20. • One Horizontal Soak pit is proposed to construct at the disposal point (small odai). Proposed to construct under MGNREGS 2019-20 scheme. 		July-2019
		<p>❖ Sernthamangalam Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 2423 • Qty of Sewage generated: 0.078 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Disposed through individual Soak pits. • Plan of Action: • The disposed gray water will be treated by providing horizontal soak pit shortly under MGNREGS 2019-20. 	Rural Development & Panchayat Raj	July-2019

		<p>❖ Aathinathapuram Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 1412 • Present mode of water supply: • Source - CWSS and local source distributed through 10,000 liters OHT - 1No, 30,000 liters, OHT - 2Nos, GLR - 1No. • Qty of Sewage generated: 0.045 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing irrigation channel through drainage arrangements. • Plan of Action: • 20 Nos. of individual and 8 nos. of community soak pits will be proposed under MGNREGS 2019 - 20 at suitable locations. • In 40 houses individual soak pit also been proposed to construct under MGNREGS for year 2019-20. 	Rural Development & Panchayat Raj	July-2019
		<p>❖ Thirukaloor Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 3141 • Present mode of Water supply: • Source - CWSS and local source 	Rural Development & Panchayat Raj	

		<p>10,000 liters OHT - 1No 30,000 liters OHT -2 Nos., 60,000 liters OHT - 1No.</p> <ul style="list-style-type: none"> • Qty of Sewage generated: 0.101 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing irrigation channel through drainage arrangements. • Plan of Action: • 40 nos. of individual and 8 nos. of community soak pits will be proposed under MGNREGS 2019 - 20 at suitable locations. • In 50 houses individual soak pit also been proposed to construct under MGNREGS for year 2019-20. 			July-2019
		<p>❖ Kadayanodai Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 1207 • Present mode of Water supply: • Source - CWSS and local source distributed through 10,000 litres - OHT - 3No, 30,000 litres - OHT - 2Nos. • Qty of Sewage generated: 0.039 MLD 	Rural Development & Panchayat Raj		

		<ul style="list-style-type: none"> • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing irrigation channel through drainage arrangements. • Plan of Action: • 15 nos. of individual and 4 nos. of community soak pits will be proposed under MGNREGS 2019 - 20 at suitable locations. • In 30 houses individual soak pit also been proposed to construct under MGNREGS for year 2019-20. 		July-2019
		<p>❖ Kurangani Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 893 • Qty of Sewage generated: 0.029 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Disposed through individual Soak pits. • Plan of Action: • The disposed gray water will be treated by providing horizontal soak pit shortly under MGNREGS 2019-20. 	Rural Development & Panchayat Raj	July-2019

		<p>❖ Rajapathy Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 1317 • Qty of Sewage generated: 0.042 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Disposed through individual Soak pits. • Plan of Action: • The disposed gray water will be treated by providing horizontal soak pit shortly under MGNREGS 2019-20. 	Rural Development & Panchayat Raj	July-2019
		<p>❖ Sethukuvaithaan Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 2924 • Qty of Sewage generated: 0.094 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Disposed through individual Soak pits. • Plan of Action: • The disposed gray water will be treated by providing horizontal 	Rural Development & Panchayat Raj	July-2019

		soak pit shortly under MGNREGS 2019-20.		
		<p>❖ Nanalkadu Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 1086 • Present mode of Water supply: • Source: Infiltration well in Thamirabarani river. Distributed through 3 OHT (30,000 litres). • Qty of Sewage generated: 0.035 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing small channel through proper drainage arrangements. • Plan of Action: • Horizontal (or) vertical filter will be proposed under MGNREGS during 2019-20 one in Nanalkadu habitation. 	Rural Development & Panchayat Raj	July-2019
		<p>❖ Karungulam Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 5539 • Present mode of Water supply: • Source: Infiltration well in Thamirabarani river. Distributed through 1 OHT (1laksh litres) , 2 OHT (60,000 litres), 1 OHT (30,000 litres), 1 OHT (10,000 	Rural Development & Panchayat Raj	

		<p>litres)</p> <ul style="list-style-type: none"> • Qty of Sewage generated: 0.177 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing small channel through proper drainage arrangements. • In 100 houses individual soak pit also been constructed under MGNREGS scheme. • Plan of Action: • Horizontal (or) vertical filter will be proposed under MGNREGS during 2019-20 one in Karungulam habitation. 			July-2019
		<p>❖ Muthalankurichi Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 1066 • Present mode of Water supply: • Source: Infiltration well in Thamirabarani river. Distributed through 1 OHT (30,000 litres), 1 OHT (10,000 litres), 2 No's of GLR (5000 Litres). • Qty of Sewage generated: 0.034 MLD • Status of UGSS: Not Provided • Status of STP: Not provided 	Rural Development & Panchayat Raj		

		<ul style="list-style-type: none"> • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing small channel through proper drainage arrangements. • Plan of Action: • Horizontal (or) vertical filter will be proposed under MGNREGS during 2019-20 one in Muthalankurichi habitation. 		July-2019
		<ul style="list-style-type: none"> ❖ Arampannai Village Panchayat • No. of sewage outfall identified: Nil • Population: 3132 • Present mode of Water supply: • Source: Infiltration well in Thamirabarani river. Distributed through 1 OHT (60,000 litres), 4 Nos. (1000 litres) HDPE tank. • Qty of Sewage generated: 0.100 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing small channel through proper drainage arrangements. • Plan of Action: • Horizontal (or) vertical filter will be proposed under MGNREGS during 2019-20 one in Arampannai 	Rural Development & Panchayat Raj	July-2019

		habitation.		
		<p>❖ Kongarayankurichi Village Panchayat</p> <ul style="list-style-type: none"> • No. of sewage outfall identified: Nil • Population: 3246 • Present mode of Water supply: • Source: Infiltration well in Thamirabarani river. Distributed through 1 OHT (1lakh litres), 7 No's of (1000 litres HDPE tank). • Qty of Sewage generated: 0.1038 MLD • Status of UGSS: Not Provided • Status of STP: Not provided • Present mode of sewage disposal: • Waste water from the households has been disposed off into an existing small channel through proper drainage arrangements. • In 75 houses individual soak pit also been constructed under MGNREGS 2018-19 scheme. • Plan of Action: • Horizontal (or) vertical filter will be proposed under MGNREGS during 2019-20 one in Kongrayakurichi habitation. 	Rural Development & Panchayat Raj	
3	Solid Waste Management and Disposal Plan	<p>❖ Tirunelveli District</p> <p>❖ Tirunelveli Corporation:</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 513284 	Municipal Administration	July-2019

		<ul style="list-style-type: none"> • Total households: 159628 • Qty of MSW Generated: Wet waste: 97 TPD Dry waste: 73 TPD Total: 170 TPD MSW Collection – 95% MSW Segregation – 80% Present Treatment Method: Wet waste: - 97 TPD • Micro Composting Plant – 41 Nos. of 97 TPD (Completed and put in use) • On – Site Composting – 4 locations – 7.5 TPD (Completed and put in use) • Bio-Methanation Plant -1No of 5TPD – Functioning Dry waste: - 73 TPD • Other saleable waste (Plastic, Rubber, Metal etc.,) of 43 Tonne sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 21 TPD is stored in the RRC at all MCCs in 41 Locations & Periodically disposed to India cements, Tirunelveli. • Inert & Silt – 9 TPD Stored along with C&D waste. Used in Filling Low Lying Areas <p>Proposed Plan of Action: Nil</p>		<p>100% will be achieved before 31.05.19</p>
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		<p>❖ Ambasamudram Municipality</p> <ul style="list-style-type: none"> No. of MSW dumping points identified: Nil Population: 38850 Total households: 15176 Qty of MSW Generated: <p>Wet waste: 9 TPD Dry waste: 6 TPD Total: 15 TPD MSW Collection – 100% MSW Segregation – 80% Present Treatment Method:</p> <p>Wet waste: - 9 TPD</p> <ul style="list-style-type: none"> On – Site Composting – 5 locations – 1 TPD (Completed and put in use) <p>Dry waste: - 6 TPD</p> <ul style="list-style-type: none"> Other saleable waste (Plastic, Rubber, Metal etc.,) of 3.6 Tonne sold out to the identified vendors & registers are being maintained. The Non saleable Non Biodegradable waste of 1.8 TPD is stored in the RRC at Vagaikulam & Periodically disposed to Ultra tech cement, Ariyalur Inert & Silt – 0.6 TPD Stored along with C&D waste. Used in Filling Low Lying Areas. <p>Proposed Plan of Action:</p> <p>Wet-waste:</p> <ul style="list-style-type: none"> Micro Composting Plant – 3 Nos. 	Municipal Administration	<p>100% will be achieved before 31.05.19</p> <p>April-2019</p>
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		of 9 TPD (Will be completed before April 2019) Dry waste: Nil		
		<p>❖ Vickramasingampuram Municipality</p> <ul style="list-style-type: none"> No. of MSW dumping points identified: Nil Population: 47163 Total households: 19370 Qty of MSW Generated: <p>Wet waste: 12.60 TPD Dry waste: 8.40 TPD Total: 21 TPD MSW Collection – 100% MSW Segregation – 80% Present Treatment Method:</p> <p>Wet waste: - 12.60 TPD</p> <ul style="list-style-type: none"> Windrow Composting Plant – 1No. Of 3 TPD (Completed and put in use). <p>Dry waste: - 8.40 TPD</p> <ul style="list-style-type: none"> Other saleable waste (Plastic, Rubber, Metal etc.,) of 5 Tonne sold out to the identified vendors & registers are being maintained. The Non saleable Non Biodegradable waste of 2.5 TPD is stored in the RRC at Dhobi Colony & Periodically disposed to India cements, Tirunelveli. Inert & Silt – 0.9 TPD Stored along with C&D waste. Used in Filling Low Lying Areas. 	Municipal Administration	<p>100% will be achieved before 31.05.19</p> <p>April-2019</p>

		<p>Proposed Plan of Action:</p> <p>Wet-waste:</p> <ul style="list-style-type: none"> • Micro Composting Plant – 4 Nos. of 13 TPD (Will be completed before April 2019) <p>Dry waste: Nil</p>		
		<p>❖ Kallidaikurichi Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 26398 • Qty of MSW Generated: 8.10 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 4.600 TPD are processed by Windrow Compost method. • Dry Waste – 2.0 TPD • Recyclable waste (plastic, metal, rubber etc., 1.00 TPD sold out to the identified vendors. • The Non Recyclable waste of 1.00 TPD periodically disposed. • Inert & Silt -1.50 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action: Nil</p> <ul style="list-style-type: none"> • Collection, segregation, treatment, disposal are under implementation in accordance 	Directorate of Town Panchayat	-

		with Solid Waste Management Rules, 2016.		
		<p>❖ Cheranmahadevi Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 18327 • Qty of MSW Generated: 4.50 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 3.0 TPD are processed by Windrow Compost method. • Dry Waste – 2.0 TPD • Recyclable waste (plastic, metal, rubber etc., 9.00 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.60 TPD periodically disposed. • Inert & Silt -0.60 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action: Nil</p> <ul style="list-style-type: none"> • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 	Directorate of Town Panchayat	-

		<p>❖ Veeravanallur Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 19585 • Qty of MSW Generated: 3.23 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 2.092 TPD is processed by Windrow Compost method. • Dry Waste – 0.940 TPD • Recyclable waste (plastic, metal, rubber etc., 0.440 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.500 (Inert & Silt) TPD periodically disposed. • Inert & Silt -0.20 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action: Nil</p> <ul style="list-style-type: none"> • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 	Directorate of Town Panchayat	-
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		<p>❖ Mukkudal Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 16755 • Qty of MSW Generated: 4.30 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 2.58 TPD are processed by Windrow Compost method. • Dry Waste – 1.72 TPD • Recyclable waste (plastic, metal, rubber etc., 0.50 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.50 TPD periodically disposed. • Inert & Silt 0.50 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs.128 Lakh for Providing Construction of Windrows Platform, Store Room, Watchman Shed, Machinery Room, Vermi Compost Cubical and Providing Fencing, Interlocking paver block road And Water Supply Toilet Arrangement at Compost Yard under SBM 	<p>Directorate of Town Panchayat</p>	<p>Aug- 2019</p>
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		<p>Fund.</p> <ul style="list-style-type: none"> Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 		
		<p>❖ Gopalamudram Town Panchayat</p> <ul style="list-style-type: none"> No. of MSW dumping points identified: Nil Population: 11228 Qty of MSW Generated: 1.42 TPD Source Collection & Segregation – Yes Treatment method: Windrow & Vermi composting Present mode of disposal : Nearly 30 to 40% of Households are practicing home composting process. Town panchayat are also encouraging the home composting. Wet Waste of 0.310 TPD are processed by Windrow Compost method. Dry Waste – 0.4 TPD Recyclable waste (plastic, metal, rubber etc., 0.180 TPD sold out to the identified vendors. The Non Recyclable waste of 0.220 TPD periodically disposed. Inert & Silt -0.710 TPD. Used in 	<p>Directorate of Town Panchayat</p>	

		<p>Filling Low Lying Areas.</p> <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 6.00 Lakh for Road, Water Supply, Light & Toilet under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 		<p>Aug-2019</p>
		<p>❖ Patthamadai Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 17456 • Qty of MSW Generated: 2.62 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 1.72 TPD are processed by Windrow Compost method. • Dry Waste – 0.70 TPD • Recyclable waste (plastic, metal, rubber etc., 0.20 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.50 TPD periodically disposed. • Inert & Silt -0.20 TPD Used in Filling Low Lying Areas. 	<p>Directorate of Town Panchayat</p>	

		<p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 51.00 Lakh for Construction Compound Wall, and Providing Paver Block road Under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 		<p>Aug-2019</p>
		<p>❖ Melaseval Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 8435 • Qty of MSW Generated: 1.38 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 0.412 TPD are processed by Windrow Compost method. • Dry Waste – 0.894 TPD • Recyclable waste (plastic, metal, rubber etc., 0.400 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.494 TPD periodically disposed. • Inert & Silt -0.069 TPD Used in Filling Low Lying Areas. 	<p>Directorate of Town Panchayat</p>	

		<p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 65.72 Lakh for Construction Compound Wall, and Providing Paver Block road Under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 		<p>Aug-2019</p>
		<p>❖ Naranammalpuram Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 17094 • Qty of MSW Generated: 2.37 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 0.591 TPD are processed by Vermi Compost method. • Dry Waste – 1.772 TPD • Recyclable waste (plastic, metal, rubber etc., 1.000 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.509 TPD periodically disposed. • Inert & Silt - 0.270 TPD Used in 	<p>Directorate of Town Panchayat</p>	

		<p>Filling Low Lying Areas.</p> <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Purchase of Mini Tipper Lorry and Battery Vehicle 2 Nos at Estimate Cost of Rs.9.20 • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 		Aug-2019
		<p>❖ Manimuthar Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 11323 • Qty of MSW Generated: 1.60 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow composting • Present mode of disposal : • Wet Waste of 0.750 TPD are processed by Windrow Composting method. • Dry Waste – 0.850 TPD • Recyclable waste (plastic, metal, rubber etc., 0.250 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.150 TPD periodically disposed. • Inert & Silt -0.450 TPD Used in Filling Low Lying Areas. 	Directorate of Town Panchayat	

		<p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 48.30 Lakh for Construction of Windrow Platform, RR shed, Watchman Shed, Vermi Compost cubicles, Machinery Room, water supply, Lighting and Toilet arrangement at resource recovery park. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 		Aug-2019
		<p>❖ Thirupudaimaruthur Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 1211 • Total households: 301 • Qty of MSW Generated: 0.224 TPD • Bio-degradable: 0.1 TPD • Non-biodegradable: 0.124 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 2 Nos of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio 	Rural Development & Panchayat Raj	-

		<p>degradable waste.</p> <p>➤ Bio-Degradable Waste: Vermi composting</p> <p>Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p> <p>➤ Non Bio – Degradable Waste:</p> <p>Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		-
		<p>❖ Seevalaperi Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 4571 • Total households: 1304 & Commercial buildings: 28 • Qty of MSW Generated: 1.425 TPD • Bio-degradable: 0.950 TPD • Non-biodegradable: 0.475TPD <p>Source Collection & Segregation – Yes</p>	Rural Development & Panchayat Raj	-

		<p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 8 nos of Thooimai Kavalars and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads. <p>Plan of Action: Nil Solid Waste facility Provided.</p>		-
		<ul style="list-style-type: none"> ❖ Keelapattam Village Panchayat • No. of MSW dumping points identified: Nil • Population: 3061 • Total households: 914 & Commercial buildings: 7 	Rural Development & Panchayat Raj	-

		<ul style="list-style-type: none"> • Qty of MSW Generated: 0.918 TPD • Bio-degradable: 0.612 TPD • Non-biodegradable: 0.306TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 7 nos. of Thooimai Kavalars and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads. <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		-
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		<ul style="list-style-type: none"> ❖ Thoothukudi District ❖ Authoor Town Panchayat • No. of MSW dumping points identified: 1 location • Population: 10138 • Qty of MSW Generated: 2.0 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 1.50 TPD are processed by Vermi Compost method. • Dry Waste – 0.500 TPD • Recyclable waste (plastic, metal, rubber etc., 0.20 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.30 TPD periodically disposed. <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 95.30 Lakh for Construction of Compound wall, Retaining wall, Shed, Watch man Shed, Roads, Lighting and Toilet facilities under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 	<p>Directorate of Town Panchayat</p>	<p style="text-align: center;">Aug- 2019</p>
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		<p>❖ Eral Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: 1 Location • Population: 10599 • Qty of MSW Generated: 2.85 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 1.71 TPD are processed by Vermi Compost method. • Dry Waste – 0.760 TPD • Recyclable waste (plastic, metal, rubber etc., 0.30 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.460 TPD periodically disposed. • Inert & Silt -0.38 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs.15.00 Lakh for Construction of Compound wall, Water Supply and Vermi Compost under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 	<p>Directorate of Town Panchayat</p>	<p>Aug- 2019</p>
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		<p>❖ Srivaikundam Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 15847 • Qty of MSW Generated: 4.20 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow & Vermi composting • Present mode of disposal : • Wet Waste of 1.50 TPD are processed by Vermi Compost method. • Dry Waste – 2.50 TPD • Recyclable waste (plastic, metal, rubber etc., 1.0 TPD sold out to the identified vendors. • The Non Recyclable waste of 1.50 TPD periodically disposed. • Inert & Silt -0.20 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 27.90 Lakh for infra facility Under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 	<p>Directorate of Town Panchayat</p>	<p>Aug- 2019</p>
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		<p>❖ Alwarthirunagari Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 9500 • Qty of MSW Generated: 1.57 TPD • Source Collection & Segregation – Yes • Treatment method: Vermi composting • Present mode of disposal : • Wet Waste of 0.84 TPD are processed by Vermi Compost method. • Dry Waste – 0.56 TPD • Recyclable waste (plastic, metal, rubber etc., 0.2 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.36 TPD periodically disposed. • Inert & Silt -0.17 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action: Nil</p> <ul style="list-style-type: none"> • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management Rules, 2016. 	<p>Directorate of Town Panchayat</p>	-
		<p>❖ Then Thiruperai Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil 	<p>Directorate of Town Panchayat</p>	

		<ul style="list-style-type: none"> • Population: 4934 • Qty of MSW Generated: 0.75 TPD • Source Collection & Segregation – Yes • Treatment method: Vermi composting • Present mode of disposal : • Nearly 30 to 40% of Households are practicing home composting process. Town panchayats are also encouraging the home composting. • Wet Waste of 0.340 TPD are processed by Vermi Compost method. • Dry Waste – 0.310 TPD • Recyclable waste (plastic, metal, rubber etc., 0.1 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.250 TPD periodically disposed. • Inert & Silt -0.10 TPD Used in Filling Low Lying Areas. <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 41.40 Lakh for Construction of Windrows platform, water supply and Vermi shed are in progress under SBM Fund. • Collection, segregation, treatment, disposal are under 		<p>Aug-2019</p>
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		implementation in accordance with Solid Waste Management Rules, 2016.		
		<p>❖ Arumuganeri Town Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 27266 • Qty of MSW Generated: 4.98 TPD • Source Collection & Segregation – Yes • Treatment method: Windrow composting • Present mode of disposal : • Wet Waste of 3.88 TPD are processed by Windrow Compost method. • Dry Waste – 1.10 TPD • Recyclable waste (plastic, metal, rubber etc., 0.50 TPD sold out to the identified vendors. • The Non Recyclable waste of 0.60 TPD periodically disposed. <p>Proposed Plan of Action:</p> <ul style="list-style-type: none"> • Work under progress at an estimate cost of Rs. 41.00 Lakh for Windrow platform, Vermi Compost and Paver Block Road under SBM Fund. • Collection, segregation, treatment, disposal are under implementation in accordance with Solid Waste Management 	Directorate of Town Panchayat	Dec-2019

		Rules, 2016.		
		<p>❖ Murappanadu Puthugramam Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 1045 • Total households: 458 • Qty of MSW Generated: 0.125 TPD • Bio-degradable: 0.950 TPD • Non-biodegradable: 0.30TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 2 nos of Thooimai Kavalar and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets 	Rural Development & Panchayat Raj	-

		<p>etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		
		<p>❖ Sernthamangalam Puthugramam Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 2423 • Qty of MSW Generated: 0.291 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 4 nos of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting <p>Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p>	Rural Development & Panchayat Raj	-

		<p>➤ Non Bio – Degradable Waste:</p> <p>Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		
		<p>❖ Aathinathapuram Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 1412 • Qty of MSW Generated: 0.169 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <p>➤ All the garbage wastes are collected from each house by 2 nos of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste.</p> <p>➤ Bio-Degradable Waste: Vermi composting</p> <p>Bio-degradable solid waste dumped in the compost pits and</p>	Rural Development & Panchayat Raj	-

		<p>cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p> <p>➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil Solid Waste facility Provided.</p>		-
		<p>❖ Thirukaloor Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 3141 • Qty of MSW Generated: 0.377 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <p>➤ All the garbage wastes are collected from each house by 2 Nos. of Thooimai Kavalar and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste.</p> <p>➤ Bio-Degradable Waste: Vermi composting</p>	Rural Development & Panchayat Raj	-

		<p>Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p> <p>➤ Non Bio – Degradable Waste:</p> <p>Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		-
		<p>❖ Kadayanodai Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 1207 • Qty of MSW Generated: 0.145 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <p>➤ All the garbage wastes are collected from each house by 2 Nos. of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio</p>	Rural Development & Panchayat Raj	-

		<p>degradable waste.</p> <p>➤ Bio-Degradable Waste: Vermi composting</p> <p>Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p> <p>➤ Non Bio – Degradable Waste:</p> <p>Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		-
		<p>❖ Kurangani Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 893 • Qty of MSW Generated: 0.107 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <p>➤ All the garbage wastes are collected from each house by 3 Nos. of Thooimai Kavalari and conveyed to the Segregation</p>	Rural Development & Panchayat Raj	-

		<p>shed and Segregated into Bio-degradable waste and Non Bio degradable waste.</p> <p>➤ Bio-Degradable Waste: Vermi composting</p> <p>Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p> <p>➤ Non Bio – Degradable Waste:</p> <p>Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		-
		<p>❖ Rajapathi Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 1317 • Qty of MSW Generated: 0.158 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <p>➤ All the garbage wastes are collected from each house by 3</p>	Rural Development & Panchayat Raj	-

		<p>Nos. of Thooimai Kavalar and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste.</p> <p>➤ Bio-Degradable Waste: Vermi composting</p> <p>Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers.</p> <p>➤ Non Bio – Degradable Waste:</p> <p>Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		-
		<p>❖ Sethukuvaithan Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 2924 • Qty of MSW Generated: 0.351 TPD <p>Source Collection & Segregation – Yes</p>	Rural Development & Panchayat Raj	-

		<p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 5 Nos. of Thooimai Kavalars and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads. <p>Plan of Action: Nil Solid Waste facility Provided.</p>		-
		<ul style="list-style-type: none"> ❖ Nanalkadu Village Panchayat • No. of MSW dumping points identified: Nil • Population: 1086 • Qty of MSW Generated: 0.347 TPD 	Rural Development & Panchayat Raj	-

		<p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 2 Nos. of Thooimai Kavalars and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads. <p>Plan of Action: Nil Solid Waste facility Provided.</p>		-
		<ul style="list-style-type: none"> ❖ Karungulam Village Panchayat • No. of MSW dumping points identified: Nil • Population: 5539 	Rural Development & Panchayat Raj	-

		<ul style="list-style-type: none"> • Qty of MSW Generated: 1.722 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 11 Nos. of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads. <p>Plan of Action: Nil Solid Waste facility Provided.</p>		-
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		<p>❖ Muthalankurichi Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 1066 • Qty of MSW Generated: 0.128 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 2 Nos. of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. Non Bio-degradable wastes – 65% plastic in which 35% wastes used 	<p>Rural Development & Panchayat Raj</p>	<p>-</p>
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		for plastic roads. Plan of Action: Nil Solid Waste facility Provided.		
		<p>❖ Arampannai Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: 1 Location • Population: 3132 • Qty of MSW Generated: 0.376 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 5 Nos. of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants. 	Rural Development & Panchayat Raj	-

		<p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		
		<p>❖ Kongarayakurichi Village Panchayat</p> <ul style="list-style-type: none"> • No. of MSW dumping points identified: Nil • Population: 3246 • Qty of MSW Generated: 0.389 TPD <p>Source Collection & Segregation – Yes</p> <p>Treatment method:</p> <ul style="list-style-type: none"> ➤ All the garbage wastes are collected from each house by 6 Nos. of Thooimai Kavalari and conveyed to the Segregation shed and Segregated into Bio-degradable waste and Non Bio degradable waste. ➤ Bio-Degradable Waste: Vermi composting Bio-degradable solid waste dumped in the compost pits and cow dung is being sprayed at regular intervals and it becomes manure after 30 days and sold to the local farmers. ➤ Non Bio – Degradable Waste: Non Bio-degradable solid waste Segregated as glass, Plastic bottles, 	Rural Development & Panchayat Raj	-

		<p>Covers, Iron, Aluminium foil sheets etc. once in 15 days and sold to the local merchants.</p> <p>Non Bio-degradable wastes – 65% plastic in which 35% wastes used for plastic roads.</p> <p>Plan of Action: Nil</p> <p>Solid Waste facility Provided.</p>		
4	Ground Water Quality	<ul style="list-style-type: none"> • Generally the ground water quality not satisfied with the prescribed standards. • In Thamirabarani stretch, State Ground Water Board is having water quality data for Cheranmadevi, Thiruvudaimaruthur, Ambasamudram, Thirunelveli, Palayamkottai, and Ariyanaygipuram. The collected data shows the ground water quality of this stretch is having all three types of good, poor and moderate based on TDS. 	State Ground Water Authority, CGWB	-
5	Environmental Flow (E-flow) and Irrigation Practices	<ul style="list-style-type: none"> • E-flow determination/gauging: Suitable gauging arrangements have already been made to measure the discharge of water in rivers, canals, channels and anicuts at all necessary locations. • Regulation of flow from barrages: Water will be released in the channels and canals according to the irrigation and drinking water 	PWD-WRD and Irrigation Department	

		<p>needs. Proper shuttering and regulating arrangements are being maintained regularly in Head regulators of anicuts/barrages.</p> <ul style="list-style-type: none"> • Adopting good irrigation practices to conserve water: Supplying water to the crops by adopting turn system and on rotational basis. Awareness has been created among farmers regarding minimum utilization of water and also above rotation crops in consultation with Agriculture and Horticulture Departments. 		
6	Flood Plain Zone (FPZ)	<ul style="list-style-type: none"> • Demarcation of FPZ and not permitting encroachments: Identification of FPZ areas has been completed in co-ordination with Revenue Department, Police Department and Fire Service Departments. Survey has also been completed, demarcating the encroached boundary and notice has been issued and some encroachments have been evicted. 	PWD-WRD, Forest Department	
7	Encroachments along the river bank	Identification of FPZ areas has been completed in co-ordination with Revenue Department, Police Department and Fire Service Departments. Survey has also been completed, demarcating the	PWD-WRD and Revenue Department	

		encroached boundary and notice has been issued and some encroachments have been evicted.		
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Short Term: Intercepting the sewage drains and to ensure that the sewage is not reaching the River.

Medium Term:

1. Providing sewage treatment plant.
2. Closing the MSW dump location near the River banks.

18.0 Annexures - Consolidated lab reports for ground water, drains and industrial effluents:

The consolidated Reports of Analysis (ROA) for the ground water, river & drain samples and industrial effluents are enclosed vide Annexure-IV, VII & V.

19.0 List of non-complying industries details:

The industries located along the River Thamirabarani are generally complied.

20.0 Conclusion:

River Thamirabarani is categorised as polluted river stretch in Priority-V. The River Thamirabarani gets contaminated due to discharge of untreated sewage. The River Thamirabarani is a perennial river and the water is flowing throughout the year.

Sewage Management:

- The Tirunelveli Corporation shall complete the UGSS and operate the STP provided to prevent the discharge of un-treated sewage into the river.
- The Tirunelveli City Corporation shall provide underground sewerage system for all un-sewered area and the additional sewage flow shall be treated through additional Sewage Treatment Plant (STP).
- The other Town Panchayat in Tirunelveli & Thoothukudi districts shall provide treatment system for the treatment of sewage generated from their local bodies.

Solid Waste Management:

- ❑ The local bodies shall dispose their solid wastes in a scientific manner and shall avoid dumping of solid wastes along the river stretch.

The quality of river water can be improved by intercepting the sewage discharges in short term and by providing sewage treatment plants for the respective local bodies and stopping the dumping of Municipal solid wastes near the River banks.

Annexure-I

INDUSTRY DETAILS ALONG THE RIVER STRETCH

Type of industries located in the Taluks where the River Thamirabarani River Flows

SL.NO	TYPE	Tirunelveli	Ambasamudram	Palayamcottai	Chermadevi	Total
1	1001-Isolated storage of hazardous chemicals (as per schedule of Manufacturing, Storage of Hazardous Chemicals Rules,1989 as amended)	1				1
2	1006-Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black	1				1
3	1009-Power generation plant [except Wind and Solar renewable power plants of all capacities and Mini Hydel power plant of capacity <25MW]		1			1
4	1014-Fire crackers manufacturing and bulk storage facilities			1		1
5	1024-Asbestos and asbestos based industries	1				1
6	1025-Basic chemicals and electro chemicals and its derivatives including manufacturing of acid		1			1
7	1026-Cement	2				2
8	1035-Mining and ore beneficiation			5	3	8
9	1040-Yarn / Textile processing involving any effluent/ emission generating processes including bleaching, dyeing, printing and colouring		2			2
10	1044-Industry or process involving metal surface treatment or process such as pickling/ electroplating/ paint stripping/ heat treatment using cyanide bath/ phosphating or finishing	1		1		2
11	1049-Slaughter house (as per notification S.O.270(E)dated 26.03.2001)and meat processing industries, bone mill, processing of animal horn, hoofs and other body parts		5	2		7

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12	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)	2	4		1	7
13	1069-Non-alcoholic beverages (soft drink) & bottling of alcohol/ non-alcoholic products having waste water generation 100 KLD and above	1				1
14	1085-Stone/Savudu Quarries			4		4
15	1999-Miscellaneous (Red)			1		1
16	2002-Bakery and confectionery units with production capacity > 1 TPD (With ovens / furnaces)	2				2
17	2007-Food and food processing including fruits and vegetable processing		1		1	2
18	2015-Cotton spinning and weaving (medium and large scale)				1	1
19	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	6				6
20	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD		1	21		22
21	2019-Ayurvedic and homeopathic medicine (with Boiler)	1				1
22	2020-Brickfields (excluding fly ash brick manufacturing using lime process)		2			2
23	2021-Building and construction project more than 20,000 sq.m built up area and having waste water generation less than 100 KLD			1		1
24	2024-Dairy and dairy products (small scale)			0		0
25	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	15	2		1	18

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26	2030-Fish feed, poultry feed and cattle feed		1			1
27	2037-Hot mix plants			3		3
28	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	7	1	1		9
29	2039-Ice cream	1				1
30	2042-Industry or processes involving foundry operations having capacity less than 5 MT/hr as such units require coal/coke at less than 500 Kg/hr	1				1
31	2043-Lime manufacturing (using lime kiln)	17				17
32	2044-Liquid floor cleaner, black phenyl, liquid soap, glycerol mono-stearate manufacturing			1		1
33	2054-Paint blending and mixing (Ball mill)			1		1
34	2059-Printing press	2				2
35	2060-Reprocessing of waste plastic including PVC			2	1	3
36	2061-Rolling mill (oil or coal fired) and cold rolling mill	1				1
37	2064-Stone crushers	4	12	11	5	32
38	2070-Tyres and tubes vulcanization/ hot retreating			3		3
39	2077-Cashew nut processing		1			1
40	2079-Parboiled Rice Mills having waste water generation less than 100 KLD and fuel consumption less than 12 MTD	2		1		3
41	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	6	14	50	3	73
42	2088-Tea processing (with boiler)		3			3

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43	2091-Infrastructure development projects including educational institutions, community hall, kalyanamandam, IT Park, Theme park (having waste water generation <100 KLD).		4	4		8
44	2094-Chemical mixing cum storage units	3				3
45	2999-Miscellaneous (Orange)	0	2	1		3
46	3001-Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)	2				2
47	3011-Cement products (without using asbestos / boiler / steam curing) like pipe, pillar, jafri, well ring, block/ tiles etc.(should be done in closed covered shed to control fugitive emissions)	1		2		3
48	3015-Cotton spinning and weaving (small scale)	4				4
49	3016-Dal Mills	1				1
50	3020-Flour mills (dry process)	1				1
51	3023-Gold and silver smithy (purification with acid smelting operation and sulphuric acid polishing operation) (using less or equal to 1 litre of sulphuric acid/ nitric acid per month)			1		1
52	3029-Oil mill Ghani and extraction (no hydrogenation / refining)		1			1
53	3032-Polythene and plastic processed products manufacturing (virgin plastic)	6		3	1	10
54	3037-Ready mix cement concrete			3		3
55	3054-Mineralized water	6	1	2		9
56	3059-Mineral stack yard / Railway sidings			1		1
57	3999-Miscellaneous (Green)	1			1	2
58	4014-Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)		2			2

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59	4016-Fly ash bricks/ block manufacturing	1		3		4
60	4030-Paper pins and u clips			5		5
61	4999-Miscellaneous (White)			1		1
	TOTAL	100	61	135	18	314

Annexure-I**Ambasamudram Taluk-Details of industries along River stretch**

S.No	Industry Name & Address	Village	Category	Classification	Type
1	GOVERNMENT HOSPITAL CHERANMAHADEVI	CHERNMAHADEVI	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
2	FURZANA CLINIC	CHERNMAHADEVI	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
3	ALPHA MINERALS AND CHEMICALS	KALLIDAIKURICHI VADAKKU	RED	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletising, grinding & pulverization
4	BASKAR TOWER LODGE	KALLIDAIKURICHI VADAKKU	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
5	RAJALAKSHMI HOSPITAL	KALLIDAIKURICHI VADAKKU	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
6	COATS INDIA INTERLINING MANUFACTURING FACILITY	MELA AMBASAMUDRAM	ORANGE	Medium	1040-Yarn / Textile processing involving any effluent/ emission generating processes including bleaching, dyeing, printing and colouring
7	THEERTHAPATHY GOVERNMENT HOSPITAL	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

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8	RAMANUJAM HOSPITAL	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
9	SEETHALAKSHMI NURSING HOME	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
10	SUBAM NURSING HOME	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
11	SANKARANARAYANAN CLINIC	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
12	MUTHULAKSHMI HOSPITAL	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
13	OMEGA ZIPS	MELA AMBASAMUDRAM	WHITE	Large	4014-Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)
14	OMEGA ZIPS UNIT II	MELA AMBASAMUDRAM	WHITE	Small	4014-Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)
15	GOVERNMENT PRIMARY HELATH CENTRE MUKKUDA	MUKKUDAL	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

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16	KANNIMAR NURSING HOME	THERKKU KALLIDAIKURUCHI 1	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
17	SUN PAPER MILL LIMITED	VADAKKUARIYANAYAGI PURAM 1	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)
18	SESHASAYEE PAPER AND BOARDS LIMITED : UNIT TIRUNELVELI (CO-GEN PLANT)	VADAKKUARIYANAYAGI PURAM-2	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)
19	SESHASAYEE PAPER AND BOARDS LIMITED - UNIT : TIRUNELVELI	VADAKKUARIYANAYAGI PURAM-2	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)
20	TNSTC TIRUNELVELI LTD PAPANASAM BRANCH	VICKIRAMASINGAPURA M 1	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
21	RAJAM NURSING HOME	VICKIRAMASINGAPURA M 1	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

Annexure-I**Cheranmahadevi Taluk-Details of industries along River stretch**

S.No	Industry Name & Address	Village	Category	Classification	Type
1	INDIRA NURSING HOME	CHERNMAHADEVI	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
2	GNANAM CLINIC	GOBALASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
3	L. HEDWIGE RAJ ROUGH STONE QUARRY	MUKKUDAL	RED	Small	1035-Mining and ore beneficiation
4	R A SAM PLASTIC	MUKKUDAL	ORANGE	Small	2060-Reprocessing of waste plastic including PVC
5	P.R.B POLY PRINT BAGS	VADAKKUARIYANAYAGI PURAM 1	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)
6	GRACE BLUE METALS	VADAKKUARIYANAYAGI PURAM-2	ORANGE	Small	2064-Stone crushers

Annexure-I

Palayamcottai Taluk-Details of industries along River stretch

SL.NO	Industry Name & Address	Village	Category	Classification	Type
1	SLAUGHTER HOUSE FOR SMALL ANIMALS	PALAYAMKOTTAI I	RED	Small	1049-Slaughter house (as per notification S.O.270(E)dated 26.03.2001)and meat processing industries, bone mill, processing of animal horn, hoofs and other body parts
2	TNSTC LTD THAMIRABARANI BRANCH	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
3	NELLAI MOTOR VEHICLE AGENCY	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
4	VIJAY AUTO AGENCY	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
5	ARASAN MACHINERY SERVICE	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
6	M/S. RELIANCE PROLIFIC TRADERS PRIVATE LIMITED	PALAYAMKOTTAI I	ORANGE	Large	2021-Building and construction project more than 20,000 sq.m built up area and having waste water generation less than 100 KLD
7	ESIC HOSPITAL	PALAYAMKOTTAI I	ORANGE	Large	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

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8	PUSHPALATA MATERNITYANDSURGICAL NURSING HOME	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
9	VASAN HEALTHCARE PVT LTD	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
10	SHREE SUDHARSON HOSPITALS	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
11	LAKSHMI MADHAVAN HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
12	JOSEPH HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
13	ROSEMARY MISSION HOSPITALS AND RESEARCH CENTRE	PALAYAMKOTTAI I	ORANGE	Medium	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
14	VELAYUTHAN PILLAI NURSING HOME	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
15	VASAN DENTAL HOSPITALS PRIVATE LIMITED	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

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16	NIVYA RESPIRATORY CLINIC AND ALLERGY CEN	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
17	SANKAR BRAIN AND NERVE CENTRE	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
18	DR ALAGESAN NEURO CENTRE	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
19	CHENDHUR CARDIAC CENTER & HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
20	GOLD CHILD & CHEST HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
21	St Andrews Motor Service P Ltd	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
22	TNSTC TIRUNELVELI LIMITED VM CHATRAM	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
23	DHANAPAL MOTOR WORKS	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD

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24	S.G. JAYARAJ NADAR AND SONS	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
25	DR. AGARWAL HEALTH CARE LIMITED	PALAYAMKOTTAI II	ORANGE	Large	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
26	KRISHNA MATERNITY HOME PEDIATRIC CENTRE	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
27	ANNAIVELANKANNI NURSING HOME	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
28	GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
29	C.S.I. JAYARAJ ANNAPACKIAM MISSION HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
30	C.S.I. BELL PINS INDRANI CHELLADURAI HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
31	CHELLA SURIYA HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

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32	CELIN HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
33	P S HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
34	MANGALA HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
35	NAMBIYAPPAN HOSPITALS	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
36	ST JOHNS COLLEGE OF EDUCATION	PALAYAMKOTTAI II	ORANGE	Small	2091-Infrastructure development projects including educational institutions, community hall, kalyanamandam, IT Park, Theme park (having waste water generation <100 KLD).
37	SELVI KALYANA MAHAL	PALAYAMKOTTAI II	ORANGE	Small	2091-Infrastructure development projects including educational institutions, community hall, kalyanamandam, IT Park, Theme park (having waste water generation <100 KLD).
38	THE BELL PRODUCTS PRIVATE LIMITED	PALAYAMKOTTAI II	WHITE	Small	4030-Paper pins and u clips
39	CHELSONS WIRE MILLS	PALAYAMKOTTAI II	WHITE	Small	4030-Paper pins and u clips

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40	BELL PINS PRIVATE LIMITED	PALAYAMKOTTAI II	WHITE	Small	4030-Paper pins and u clips
41	DARLING SONS WIRE FORMS P LTD	PALAYAMKOTTAI II	WHITE	Small	4999-Miscellaneous (White)
42	A.R.C. Retrading Company P Ltd	PALAYAMKOTTAI II	ORANGE	Small	2070-Tyres and tubes vulcanization/ hot retreating
43	TNSTC Mdu Div-II Ltd Body building	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
44	T.V. Sundaram Iyengar Sons Limited	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
45	N. Mahalingam and Company	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
46	LILLY PINS PRIVATE LIMITED	PALAYAMKOTTAI III	RED	Small	1044-Industry or process involving metal surface treatment or process such as pickling/ electroplating/ paint stripping/ heat treatment using cyanide bath/ phosphating or finishing and anodizing / enamellings/
47	T.V. SUNDRAM IYENGAR & SONS PRIVATE LIMITED	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD

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48	ST. ANTONY SERVICE STATION	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
49	SHRI SATHYASAYEE MOTOR WORKS	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
50	ASHOK AUTO SERVICE	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
51	SETC T.N. DIVISION - I LTD	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD
52	Kannan Treads	PALAYAMKOTTAI III	ORANGE	Small	2070-Tyres and tubes vulcanization/ hot retreating
53	GALAXY HOSPITALS	PALAYAMKOTTAI III	ORANGE	Large	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
54	THANVANTHRI POLY CLINIC	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
55	SUNDARARAJAN NURSING HOME	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD

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56	SRI VISHNU PRIYA HOSPITAL	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
57	DEVI HOSPITAL	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
58	TIRUPATHI ENTERPRISES	PALAYAMKOTTAI III	GREEN	Small	3023-Gold and silver smithy (purification with acid smelting operation and sulphuric acid polishing operation) (using less or equal to 1 litre of sulphuric acid/ nitric acid per month)
59	MUTHU SELVAM BLUE METALS	THARUVAI	ORANGE	Small	1035-Mining and ore beneficiation
60	SUBBIAH STONE QUARRY	THARUVAI	RED	Small	1035-Mining and ore beneficiation
61	MERCY MARY QUARRY	THARUVAI	RED	Small	1035-Mining and ore beneficiation
62	MARIMUTHU STONE QUARRY	THARUVAI	RED	Small	1035-Mining and ore beneficiation
63	S SHANKAR ROUGH STONE AND GRAVEL QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries

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64	MERCY MARY ROUGH STONE QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries
65	SUBBIAH STONE QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries
66	SANKARANARAYANAN SANKARAN STONE QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries
67	RAJAN TAR MIXING PLANT	THARUVAI	ORANGE	Small	2037-Hot mix plants
68	VENKATESWARA CRUSHERS	THARUVAI	ORANGE	Small	2064-Stone crushers
69	RAJAN BLUE METALS	THARUVAI	ORANGE	Small	2064-Stone crushers
70	RS DEVELOPMENT AND CONSTRUCTIONS INDIA PRIVATE LIMITED.	THARUVAI	ORANGE	Small	2064-Stone crushers
71	KULAYABAGAVALI STONE CRUSHER	THARUVAI	ORANGE	Small	2064-Stone crushers
72	GRANT METAL INDUSTRIES	THARUVAI	ORANGE	Small	2064-Stone crushers

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73	JOYS METAL INDUSTRIES	THARUVAI	ORANGE	Small	2064-Stone crushers
74	SRI DURKAMBIGA BLUE METAL	THARUVAI	ORANGE	Small	2064-Stone crushers
75	Sri Balaji Blue Metal Works	THARUVAI	ORANGE	Small	2064-Stone crushers
76	SRI CREATIONS	THARUVAI	ORANGE	Small	2999-Miscellaneous (Orange)
77	KARUNYA HI-POWER BRICKS	THARUVAI	WHITE	Small	4016-Fly ash bricks/ block manufacturing

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Tirunelveli Taluk-Details of industries along River stretch

S.No	Industry Name & Address	Village	Category	Classification	Type
1	SOUTH INDIA BOTTLING COMPANY PVT LTD	ABISEKAPATTI	RED	Large	1069-Non-alcoholic beverages (soft drink) & bottling of alcohol/ non-alcoholic products having waste water generation 100 KLD and above
2	F.N.F PACKAGED DRINKING WATER	ABISEKAPATTI	GREEN	Small	3054-Mineralized water
3	NELLAI CONCRETE PRODUCTS CONSTRUCTION COMPANY	ALANGARAPERI	GREEN	Small	3011-Cement products (without using asbestos / boiler / steam curing) like pipe, pillar, jafri, well ring, block/ tiles etc.(should be done in closed covered shed to control fugitive emissions)
4	SANTHOSH HOSPITAL	CHATHIRAM PUD	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
5	Selson Plastic Industries	Chathirampudhu	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)
6	LAKSHMI CHEMICALS	CHITHARCHATHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
7	Tirunelveli Lime Products	GANGAIKONDAN	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
8	Family Plastic Private Ltd	Gangaikondan	GREEN	Medium	3032-Polythene and plastic processed products manufacturing (virgin plastic)
9	Madurai Weaving Mills	Gangaikondan	GREEN	Small	3015-Cotton spinning and weaving (small scale)
10	NOVA CARBONS INDIA PRIVATE LIMITED	GANGAIKONDAN	RED	Large	1006-Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black

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11	THE GLOBE RADIO COMPANY	GANGAIKONDAN	ORANGE	Medium	1044-Industry or process involving metal surface treatment or process such as pickling/ electroplating/ paint stripping/ heat treatment using cyanide bath/ phosphating or finishing and anodizing / enamellings/ galvanizing
12	G.K.N. BLUE METAL AND MINES PVT LTD	GANGAIKONDAN	ORANGE	Small	2064-Stone crushers
13	BHUVI CARE P LIMITED	GANGAIKONDAN	ORANGE	Small	2019-Ayurvedic and homeopathic medicine (with Boiler)
14	NIYAZ BLUE METAL INDUSTRIES	GANGAIKONDAN	ORANGE	Small	2064-Stone crushers
15	SARAVANA ENTERPRISES	GANGAIKONDAN	ORANGE	Small	2002-Bakery and confectionery units with production capacity > 1 TPD (With ovens / furnaces)
16	NATARAJEN ENTERPRISE	GANGAIKONDAN	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
17	PRATHISHTA BUISINESS SOLUTIOS PVT. LTD	GANGAIKONDAN	GREEN	Large	3054-Mineralized water
18	PRATHISHTA BUSINESS SOLUTIONS PVT LTD. (OATS PROCESSING UNIT)	GANGAIKONDAN	GREEN	Large	3020-Flour mills (dry process)
19	MADURAI WEAVING MILLS	GANGAIKONDAN	GREEN	Small	3015-Cotton spinning and weaving (small scale)
20	BOSCH LIMITED	GANGAIKONDAN	RED	Large	3999-Miscellaneous (Green)
21	RAMCO INDUSTRIES LIMITED	GANGAIKONDAN	RED	Large	1024-Asbestos and asbestos based industries

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22	AATHAVAN MINERALS	KARUVANALLUR	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
23	JEYA MICRO MINERALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
24	JEYA MINERALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
25	JEYA ENTERPRISES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
26	A.M. INDUSTRIES	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
27	RENU ENTERPRISES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
28	VENU CHEMICALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
29	CHENTHUR MICRONS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
30	UDAYAM MINERALS	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
31	SRI RAMAKRISHNA INDUSTRIES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
32	JANNATH CEM INDUSTRIES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
33	S.S. INDUSTRIES	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization

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34	UTHAYA CLAY & MINERALS	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
35	MUTHURASU MINERALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
36	J.R.V. ENTERPRISES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
37	MICROFINE MINERALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
38	RATHNA TRADERS	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
39	VETRIVEL ENTERPRISES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
40	RAJESH MINERALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
41	SUBBIAH MINERALS AND CHEMICALS	MADAVAKURICH	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
42	SRI HARI NARAYANA ENTERPRISES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
43	SRI RAJU CHEMICALS CO	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
44	R. K. T. ENTERPRISES	MADAVAKURICH	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
45	LAKSHMI HOSPITAL	MANIMOORTHEE	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
46	SUN MARKETTING AGENCY	MANIMOORTHEE	ORANGE	Small	2039-Ice cream

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47	S.S.P Rolling Mills Chellammal Alumini	Mathalamparai	ORANGE	Small	2061-Rolling mill (oil or coal fired) and cold rolling mill
48	SRI GANESH SANKAR HOSPITALS	MELAVEERAGAV	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
49	Bhavanish Metal Rolling Mills	Naranammalpara	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)
50	M/S. THE INDIA CEMENTS LIMITED	NARANAMMALPU	RED	Large	1026-Cement
51	M/S. THE INDIA CEMENTS LIMITED (CAPTIVE POWER PLANT)	NARANAMMALPU	RED	Large	1026-Cement
52	LAKSHMI METAL INDUSTRIES	NARASINGA NALI	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)
53	SRI GANESA VILAS	NARASINGA NALI	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)
54	DURAI PVC PIPE	NARASINGA NALI	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)
55	SUMER INDUSTRIES	NARASINGA NALI	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)
56	S G ENTERPRISES	NARASINGA NALI	GREEN	Small	3054-Mineralized water
57	AKASH ASSOCIATES	Narasinga Nallur	GREEN	Small	3054-Mineralized water
58	BALASUBRAMANIYAN BLUE METAL WORKS	PALAMADAI	ORANGE	Small	2064-Stone crushers
59	LAKSHMI METAL INDUSTRIES	PETTAI 2	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)

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60	SANGEETHA HOSPITAL	PETTAI 2	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
61	SRI ROYAL INDUSTRY	PETTAI 2	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)
62	MARUTHI AND CO	PETTAI 2	GREEN	Small	3001-Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)
63	SRINIVASA METAL	PETTAI-1	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)
64	G.M. AND P.M. PLASTICS	PETTAI-1	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)
65	M.R.S MODERN RICE MILL	PUDUR	ORANGE	Small	2079-Parboiled Rice Mills having waste water generation less than 100 KLD and fuel consumption less than 12 MTD
66	AJAY MODERN RICE MILL	PUDUR	ORANGE	Small	2079-Parboiled Rice Mills having waste water generation less than 100 KLD and fuel consumption less than 12 MTD
67	20 MICRONS NANO MINERALS LIMITED	PUDUR	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
68	Twenty Microns Limited	PUDUR	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
69	KRISHNA MINES SUPER WHITE WALLPUTTY	RAMAYANPATTI	ORANGE	Small	2094-Chemical mixing cum storage units
70	KRISHNA MINES SUPER WHITE	RAMAYANPATTI	ORANGE	Small	2094-Chemical mixing cum storage units

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71	KRISHNA MINES SUPER WHITE MINERALS	RAMAYANPATTI	ORANGE	Small	2094-Chemical mixing cum storage units
72	SRI POWER FLY ASH BRICKS	RAMAYANPATTI	GREEN	Small	4016-Fly ash bricks/ block manufacturing
73	LAKSHMI ENTERPRISES	SANGANATHIRADU	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
74	RAMESH CHEMICALS	SETHURAYANPU	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
75	ARAVIND EYE HOSPITAL	SINDUPOONDUR	ORANGE	Medium	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
76	R.R. INN A DIVISION OF OMSAKTHI HOSPITALITIES PRIVATE LIMITED	SINDUPOONDUR	ORANGE	Medium	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
77	SUN MINERAL WATER	SUTHAMALLI	GREEN	Small	3054-Mineralized water
78	SRI ABIRAAMI SPINTEX PRIVATE LIMITED	SUTHAMALLI	GREEN	Small	3015-Cotton spinning and weaving (small scale)
79	HINDUSTAN PETROLEUM CORPORATION LTD	THACHANALLUR	RED	Large	1001-Isolated storage of hazardous chemicals (as per schedule of Manufacturing, Storage of Hazardous Chemicals Rules,1989 as amended)
80	GOSHI PET BOTTLES ENTERPRISE	THACHANALLUR	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)
81	Babu Machine works	THACHANALLUR	ORANGE	Small	2042-Industry or processes involving foundry operations having capacity less than 5 MT/hr as such units require coal/coke at less than 500 Kg/hr
82	Sahna Chemicals	Thalaiyuthu	ORANGE	Small	2043-Lime manufacturing (using lime kiln)

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83	Five Rose Lime and Chemicals	THALAIYUTHU	ORANGE	Small	2043-Lime manufacturing (using lime kiln)
84	FAIFA MINERAL WATER COMPANY	THALAIYUTHU	GREEN	Small	3054-Mineralized water
85	AYYANAR ULUNTHU MILL	THIRUPANIKARIS	ORANGE	Small	3016-Dal Mills
86	PONMANI STORE	THIRUPANIKARIS	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization
87	NATURAL COTTON SPINNERS PRIVATE LIMITED	THIRUPANIKARIS	GREEN	Small	3015-Cotton spinning and weaving (small scale)
88	M/S. ARJUN PULP AND PAPER (I) PRIVATE LIMITED	THUVARASI	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)
89	HOTEL ARYAAS	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
90	BARANI HOTELS	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
91	SRI JANAKIRAM HOTEL	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
92	HOTEL ARUNAGIRI	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler

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93	ARASAN ICE CREAM SWEETS AND BAKERY	TIRUNELVELI	ORANGE	Small	2002-Bakery and confectionery units with production capacity > 1 TPD (With ovens / furnaces)
94	JEYARATHNA HOSPITALS	TIRUNELVELI	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD
95	Hotel Vasantham	Tirunelveli	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler
96	The Tirunelveli Co-op Printing Works Ltd	Tirunelveli	ORANGE	Small	2059-Printing press
97	Sri Ram Blue Metals	Tirunelveli	ORANGE	Small	2064-Stone crushers
98	THANTHI PRESS	TIRUNELVELI	GREEN	Large	2059-Printing press
99	SUBAM PAPERS PRIVATE LTD	VADUGAMPATTI	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)
100	Atlas Metal Processors Pvt Ltd	Vettuvankulam	GREEN	Medium	3001-Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)

AREA WISE INDUSTRY DETAILS ALONG THE RIVER STRETCH

ANNEXURE - II

Tirunelveli Taluk (Areawise Details)

S.No	Industry Name & Address	Village	Category	Classification	Type	Consent Status	Authorization details	WATER WC-I WC-II WC-III WC-IV (KLD)	Sewage generated (KLD)	SEWAGE Disposal Type	TRADE EFFLUENT	TRADE EFFLUENT DISPOSAL
1	SOUTH INDIA BOTTLING COMPANY PVT LTD	ABISEKAPATTI	RED	Large	1069-Non-alcoholic beverages (soft drink) & bottling of alcohol/ non-alcoholic products having waste water generation 100 KLD and above	Valid upto 3/31/2019	Valid upto 5/27/2018	485 90 860 0	50	On Industry's Own Land	350.000 24.000 535.000	On Own Land of Industry -Solar Evaporation Pans -Recycling to Process
2	F.N.F PACKAGED DRINKING WATER	ABISEKAPATTI	GREEN	Small	3054-Mineralized water	Valid upto 31/03/2021	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
3	NELLAI CONCRETE PRODUCTS CONSTRUCTION COMPANY	ALANGARAPERI	GREEN	Small	3011-Cement products (without using asbestos / boiler / steam curing) like pipe, pillar, jafri, well ring, block/ tiles etc.(should be done in closed covered shed to control fugitive emissions)	Valid upto 31/03/2019	-	0 1 0 0	1	On Industry's Own Land	0	Does not Arise
4	SANTHOSH HOSPITAL	CHATHIRAM PUDUKULAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Public Sewer-After disinfection
5	Selson Plastic Industries	Chathirampudhukulam	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 3/31/2018	-	0 0.36 0 0	0.36	On Industry's Own Land	0	Does not Arise
6	LAKSHMI CHEMICALS	CHITHARCHATHIRAM	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2021	-	0 0.6 0 0	0.6	On Industry's Own Land	0	Does not Arise
7	Tirunelveli Lime Products	GANGAIKONDAN	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 3/31/2015	-	0 0.7 0 0	0.7	On Industry's Own Land	0	Does not Arise
8	Family Plastic Private Ltd	Gangaikondan	GREEN	Medium	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 3/31/2017	-	0 2.8 0 0	2.8	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

9	Madurai Weaving Mills	Gangaikondan	GREEN	Small	3015-Cotton spinning and weaving (small scale)	Valid upto 3/31/2018	-	0 1.3 0 0	1.3	On Industry's Own Land	0	Does not Arise
10	NOVA CARBONS INDIA PRIVATE LIMITED	GANGAIKONDAN PART 1	RED	Large	1006-Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black	Valid upto 3/31/2019	-	50 7 63 0.3	5.6	On Industry's Own Land	40	-Solar Evaporation Pans
11	THE GLOBE RADIO COMPANY	GANGAIKONDAN PART 1	ORANGE	Medium	1044-Industry or process involving metal surface treatment or process such as pickling/ electroplating/ paint stripping/ heat treatment using cyanide bath/ phosphating or finishing and anodizing / enamellings/ galvanizing	Valid upto 30/06/2018	-	0 0.2 0 0	0.2	-Sewer	0	Does not Arise
12	G.K.N. BLUE METAL AND MINES PVT LTD	GANGAIKONDAN PART 1	ORANGE	Small	2064-Stone crushers	Valid upto 3/31/2019	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
13	BHUVI CARE P LIMITED	GANGAIKONDAN PART 1	ORANGE	Small	2019-Ayurvedic and homeopathic medicine (with Boiler)	Valid upto 31/09/2018	-	0 0.8 0 0	0.8	-Miscellaneous	0	Does not Arise
14	NIYAZ BLUE METAL INDUSTRIES	GANGAIKONDAN PART 1	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2019	-	0 0.24 0 0	0.24	On Industry's Own Land	0	Does not Arise
15	SARAVANA ENTERPRISES	GANGAIKONDAN PART 1	ORANGE	Small	2002-Bakery and confectionery units with production capacity > 1 TPD (With ovens / furnaces)	Valid upto 3/31/2017	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
16	NATARAJEN ENTERPRISE	GANGAIKONDAN PART 1	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 3/31/2017	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
17	PRATHISHTA BUISINESS SOLUTIONS PVT. LTD	GANGAIKONDAN PART 1	GREEN	Large	3054-Mineralized water	Valid upto 31/03/2019	-	2 2.4 700 0	1.6	On Industry's Own Land	0	Does not Arise
18	PRATHISHTA BUSINESS SOLUTIONS PVT LTD. (OATS PROCESSING UNIT)	GANGAIKONDAN PART 1	GREEN	Large	3020-Flour mills (dry process)	Valid upto 12/31/2018	-	0 2.5 0 0	2.5	On Industry's Own Land	0	Does not Arise
19	MADURAI WEAVING MILLS	GANGAIKONDAN PART 1	GREEN	Small	3015-Cotton spinning and weaving (small scale)	Valid upto 31/03/2020	-	0 1.3 0 0	1.3	On Industry's Own Land	0	Does not Arise

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20	BOSCH LIMITED	GANGAIKONDAN PART 2	RED	Large	3999-Miscellaneous (Green)	Valid upto 3/31/2018	Valid upto 7/25/2022	1 15 0 0	12.75	On Industry's Own Land	0	Does not Arise
21	RAMCO INDUSTRIES LIMITED	GANGAIKONDAN PART 2	RED	Large	1024-Asbestos and asbestos based industries	Valid upto 3/31/2018	-	0 8 82 0	6.4	On Industry's Own Land	82	-Recycling to Process
22	AATHAVAN MINERALS	KARUVANALLUR	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 31/03/2019	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Does not Arise
23	JEYA MICRO MINERALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 1.6 0 0	1.6	On Industry's Own Land	0	Does not Arise
24	JEYA MINERALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 1.6 0 0	1.6	On Industry's Own Land	0	Does not Arise
25	JEYA ENTERPRISES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2019	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
26	A.M. INDUSTRIES	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2021	-	0 0.75 0 0	0.75	On Industry's Own Land	0	Does not Arise
27	RENU ENTERPRISES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2019	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
28	VENU CHEMICALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
29	CHENTHUR MICRONS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 0.2 0 0	0.2	On Industry's Own Land	0	Does not Arise
30	UDAYAM MINERALS	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2019	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise

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31	SRI RAMAKRISHNA INDUSTRIES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 12/31/2017	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Does not Arise
32	JANNATH CEM INDUSTRIES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2019	-	0 0.15 0 0	0.15	On Industry's Own Land	0	Does not Arise
33	S.S. INDUSTRIES	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2021	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Does not Arise
34	UTHAYA CLAY & MINERALS	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 3/31/2019	-	0 2 0 0	2	On Industry's Own Land	0	Does not Arise
35	MUTHURASU MINERALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 0.2 0 0	0.2	On Industry's Own Land	0	Does not Arise
36	J.R.V. ENTERPRISES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 6/30/2015	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
37	MICROFINE MINERALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2021	-	0 1.1 0 0	1.1	On Industry's Own Land	0	Does not Arise
38	RATHNA TRADERS	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2021	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Does not Arise
39	VETRIVEL ENTERPRISES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 3/31/2017	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
40	RAJESH MINERALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 1.6 0 0	1.6	On Industry's Own Land	0	Does not Arise
41	SUBBIAH MINERALS AND CHEMICALS	MADAVAKURICHI	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 1.6 0 0	1.6	On Industry's Own Land	0	Does not Arise
42	SRI HARI NARAYANA ENTERPRISES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2019	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Does not Arise

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43	SRI RAJU CHEMICALS CO	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2018	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Does not Arise
44	R. K. T. ENTERPRISES	MADAVAKURICHI	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2021	-	0 0.05 0 0	0.05	On Industry's Own Land	0	Does not Arise
45	LAKSHMI HOSPITAL	MANIMOORTHEESWARAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Public Sewer-After disinfection
46	SUN MARKETTING AGENCY	MANIMOORTHEESWARAM	ORANGE	Small	2039-Ice cream	Valid upto 31/03/2019	-	0 2 0 0	2	On Industry's Own Land	2	-On Land for Irrigation
47	S.S.P Rolling Mills Chellammal Alumini	Mathalamparai	ORANGE	Small	2061-Rolling mill (oil or coal fired) and cold rolling mill	Valid upto 3/31/2018	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
48	SRI GANESH SANKAR HOSPITALS	MELAVEERAGAVAPURAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 2.4 0 0	2.4	On Industry's Own Land	0	Public Sewer-After disinfection
49	Bhavanish Metal Rolling Mills	Naranammalpuram	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	Valid upto 9/30/2016	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
50	M/S. THE INDIA CEMENTS LIMITED	NARANAMMALPURAM PART 1	RED	Large	1026-Cement	Valid upto 3/31/2017	Valid upto 11/6/2021	2000 25 0 0	15	On land for gardening	0	Does not Arise
51	M/S. THE INDIA CEMENTS LIMITED (CAPTIVE POWER PLANT)	NARANAMMALPURAM PART 1	RED	Large	1026-Cement	Valid upto 3/31/2019	-	632 4 0 156	0.6	On Industry's Own Land	0	Does not Arise
52	LAKSHMI METAL INDUSTRIES	NARASINGA NALLUR	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	Valid upto 9/30/2017	-	0 0.7 0 0	0.7	On Industry's Own Land	0	Does not Arise
53	SRI GANESA VILAS	NARASINGA NALLUR	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	Valid upto 9/30/2017	-	0 0.72 0 0	0.72	On Industry's Own Land	0	Does not Arise
54	DURAI PVC PIPE	NARASINGA NALLUR	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 3/31/2018	-	0 0.26 0 0	0.26	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

55	SUMER INDUSTRIES	NARASINGA NALLUR	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 3/31/2018	-	0 0.12 0 0	0.12	On Industry's Own Land	0	Does not Arise
56	S G ENTERPRISES	NARASINGA NALLUR	GREEN	Small	3054-Mineralized water	Valid upto 3/31/2020	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Does not Arise
57	AKASH ASSOCIATES	Narasinga Nallur	GREEN	Small	3054-Mineralized water	Valid upto 12/31/2017	-	0 0.3 10 0	0.2	On Industry's Own Land	5	Does not Arise
58	BALASUBRAMANIYAN BLUE METAL WORKS	PALAMADAI	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2019	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
59	LAKSHMI METAL INDUSTRIES	PETTAI 2	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	Valid upto 9/30/2017	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Does not Arise
60	SANGEETHA HOSPITAL	PETTAI 2	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2017	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Public Sewer-After disinfection
61	SRI ROYAL INDUSTRY	PETTAI 2	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	Valid upto 31/03/2019	-	0 0.255 0 0	0.225	On Industry's Own Land	0	Does not Arise
62	MARUTHI AND CO	PETTAI 2	GREEN	Small	3001-Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)	Valid upto 31/03/2019	-	0 3.5 0 0	3.5	On Industry's Own Land	0	Does not Arise
63	SRINIVASA METAL	PETTAI-1	ORANGE	Small	2017-Aluminium and copper extraction from scrap using oil fired furnace (dry process only)	Valid upto 9/30/2017	-	0 0.8 0 0	0.8	On Industry's Own Land	0.5	-Solar Evaporation Pans
64	G.M. AND P.M. PLASTICS	PETTAI-1	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 31/03/2019	-	0 0.2 0 0	0.2	On Industry's Own Land	0	Does not Arise
65	M.R.S MODERN RICE MILL	PUDUR	ORANGE	Small	2079-Parboiled Rice Mills having waste water generation less than 100 KLD and fuel consumption less than 12 MTD	Valid upto 3/31/2019	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
66	AJAY MODERN RICE MILL	PUDUR	ORANGE	Small	2079-Parboiled Rice Mills having waste water generation less than 100 KLD and fuel consumption less than 12 MTD	Valid upto 3/31/2017	-	0 0.75 0 0	0.75	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

67	20 MICRONS NANO MINERALS LIMITED	PUDUR	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 3/31/2011	-	0 0.3 0 0	0.3	On Industry's Own Land	7	-Recycling to Process
68	Twenty Microns Limited	PUDUR	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 3/31/2015	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
69	KRISHNA MINES SUPER WHITE WALLPUTTY	RAMAYANPATTI	ORANGE	Small	2094-Chemical mixing cum storage units	Valid upto 31/03/2019	-	0 1.5 0 0	1.5	On Industry's Own Land	0	Does not Arise
70	KRISHNA MINES SUPER WHITE	RAMAYANPATTI	ORANGE	Small	2094-Chemical mixing cum storage units	Valid upto 31/03/2019	-	0 7 0 0	7	On Industry's Own Land	0	Does not Arise
71	KRISHNA MINES SUPER WHITE MINERALS	RAMAYANPATTI	ORANGE	Small	2094-Chemical mixing cum storage units	Valid upto 31/03/2019	-	0 7 0 0	7	On Industry's Own Land	0	Does not Arise
72	SRI POWER FLY ASH BRICKS	RAMAYANPATTI	GREEN	Small	4016-Fly ash bricks/ block manufacturing	Valid upto 9/30/2017	-	0 0.7 0 0	0.7	On Industry's Own Land	0	Does not Arise
73	LAKSHMI ENTERPRISES	SANGANATHIRADU	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 31/03/2019	-	0 0.9 0 0	0.9	On Industry's Own Land	0	Does not Arise
74	RAMESH CHEMICALS	SETHURAYANPUDUR	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 3/31/2017	-	0 0.15 0 0	0.15	On Industry's Own Land	0	Does not Arise
75	ARAVIND EYE HOSPITAL	SINDUPOONDURAI	ORANGE	Medium	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 35 0 0	35	On Industry's Own Land	0.5	Public Sewer-After disinfection
76	R.R. INN A DIVISION OF OMSAKTHI HOSPITALITIES PRIVATE LIMITED	SINDUPOONDURAI	ORANGE	Medium	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 3/31/2017	-	0 20 0 0	20	On Industry's Own Land	0	Does not Arise
77	SUN MINERAL WATER	SUTHAMALLI	GREEN	Small	3054-Mineralized water	Valid upto 12/31/2017	-	0 0.2 0 0	0.2	On Industry's Own Land	0	Does not Arise
78	SRI ABIRAAMI SPINTEX PRIVATE LIMITED	SUTHAMALLI	GREEN	Small	3015-Cotton spinning and weaving (small scale)	Valid upto 3/31/2017	-	0 0.24 0 0	2.4	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

79	HINDUSTAN PETROLEUM CORPORATION LTD	THACHANALLUR	RED	Large	1001-Isolated storage of hazardous chemicals (as per schedule of Manufacturing, Storage of Hazardous Chemicals Rules, 1989 as amended)	Valid upto 31/03/2019	-	0 3 0 0	2.4	On Industry's Own Land	0.5	On Land for Irrigation
80	GOSHI PET BOTTLES ENTERPRISE	THACHANALLUR	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 31/03/2019	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
81	Babu Machine works	THACHANALLUR	ORANGE	Small	2042-Industry or processes involving foundry operations having capacity less than 5 MT/hr as such units require coal/coke at less than 500 Kg/hr	Valid upto 6/30/2001	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
82	Sahna Chemicals	Thalaiyuthu	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 3/31/2017	-	0 0.38 0 0	0.38	On Industry's Own Land	0	Does not Arise
83	Five Rose Lime and Chemicals	THALAIYUTHU	ORANGE	Small	2043-Lime manufacturing (using lime kiln)	Valid upto 6/30/2015	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Does not Arise
84	FAIFA MINERAL WATER COMPANY	THALAIYUTHU	GREEN	Small	3054-Mineralized water	Valid upto 31/03/2019	-	0 0.15 0 0	0.15	On Industry's Own Land	0	Does not Arise
85	AYYANAR ULUNTHU MILL	THIRUPANIKARISALKULAM	ORANGE	Small	3016-Dal Mills	Valid upto 30/06/2018	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
86	PONMANI STORE	THIRUPANIKARISALKULAM	ORANGE	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletisating, grinding & pulverization	Valid upto 31/03/2019	-	0 0.1 0 0	0.1	On Industry's Own Land	0	Does not Arise
87	NATURAL COTTON SPINNERS PRIVATE LIMITED	THIRUPANIKARISALKULAM	GREEN	Small	3015-Cotton spinning and weaving (small scale)	Valid upto 31/03/2019	-	0 2.4 0 0	2.4	On Industry's Own Land	0	Does not Arise
88	M/S. ARJUN PULP AND PAPER (I) PRIVATE LIMITED	THUVARASI	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)	Valid upto 3/31/2019	Valid upto 4/26/2022	0 25 2475 0	15	On Industry's Own Land	2,135.00	-On Land for Irrigation
89	HOTEL ARYAAS	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 31/03/2019	-	0 7.5 0 0	7.5	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

90	BARANI HOTELS	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 9/30/2017	-	0 2 0 0	2	On Industry's Own Land	0	Does not Arise
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ANNEXURE - II

91	SRI JANAKIRAM HOTEL	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 31/03/2019	-	0 18 0 0	18	-Sewer	0	Does not Arise
92	HOTEL ARUNAGIRI	TIRUNELVELI	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 31/03/2019	-	0 9 0 0	9	On Industry's Own Land	0	Does not Arise
93	ARASAN ICE CREAM SWEETS AND BAKERY	TIRUNELVELI	ORANGE	Small	2002-Bakery and confectionery units with production capacity > 1 TPD (With ovens / furnaces)	Valid upto 9/30/2015	-	0 0.6 0 0	0.6	On Industry's Own Land	0.75	Does not Arise
94	JEYARATHNA HOSPITALS	TIRUNELVELI	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 30/06/2027	-	0 1.2 0 0	1.2	On Industry's Own Land	1.2	Public Sewer-After disinfection
95	Hotel Vasantham	Tirunelveli	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 9/30/2016	-	0 1.8 0 0	1.8	-Sewer	0	Does not Arise
96	The Tirunelveli Co-op Printing Works Ltd	Tirunelveli	ORANGE	Small	2059-Printing press	Valid upto 12/31/2016	-	0 2.25 0 0	2.25	On Industry's Own Land	0	Does not Arise
97	Sri Ram Blue Metals	Tirunelveli	ORANGE	Small	2064-Stone crushers	Valid upto 31.03.2011	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Does not Arise
98	THANTHI PRESS	TIRUNELVELI	GREEN	Large	2059-Printing press	Valid upto 12/31/2018	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Does not Arise
99	SUBAM PAPERS PRIVATE LTD	VADUGAMPATTI	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)	Valid upto 31/03/2020	-	150 13 2200 0	10.4	On Industry's Own Land	300	-Recycling to Process
100	Atlas Metal Processors Pvt Ltd	Vettuvankulam	GREEN	Medium	3001-Aluminium utensils from aluminium circles by pressing only (dry mechanical operation)	Valid upto 3/31/2017	-	0 5 0 0	5	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

Annexure-II

Ambasamudram Taluk (Areawise Details)

S.No	Industry Name & Address	Village	Category	Classification	Type	Consent Status	Authorization details	WATER WC-I WC-II WC-III WC-IV (KLD)	Sewage generated (KLD)	SEWAGE Disposal Type	TRADE EFFLUENT	TRADE EFFLUENT DISPOSAL
1	GOVERNMENT HOSPITAL CHERANMAHADEVI	CHERNMAHADEV I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 4 0 0	4	On Industry's Own Land	0	Public Sewer- After disinfection
2	FURZANA CLINIC	CHERNMAHADEV I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.15 0 0	0.15	On Industry's Own Land	0	Public Sewer- After disinfection
3	ALPHA MINERALS AND CHEMICALS	KALLIDAIKURICHI VADAKKU	RED	Small	2026-Dry coal processing, mineral processing, industries involving ore sintering, pelletising, grinding & pulverization	Valid upto 30/06/2018	-	0 1.6 0 0	1.6	On Industry's Own Land	0	Does not Arise
4	BASKAR TOWER LODGE	KALLIDAIKURICHI VADAKKU	ORANGE	Small	2038-Hotels (< 3 star) (or) hotels having > 20 rooms and less than 100 rooms (or) having waste water generation > 10 KLD and less than 100 KLD and having a coal/Oil fired Boiler	Valid upto 31/03/2019	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
5	RAJALAKSHMI HOSPITAL	KALLIDAIKURICHI VADAKKU	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.1 0 0	0.1	On Industry's Own Land	0	Public Sewer- After disinfection
6	COATS INDIA INTERLINING MANUFACTURING FACILITY	MELA AMBASAMUDRAM	ORANGE	Medium	1040-Yarn / Textile processing involving any effluent/ emission generating processes including bleaching, dyeing, printing and colouring	Valid upto 3/31/2017	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise

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7	THEERTHAPATHY GOVERNMENT HOSPITAL	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 6/30/2017	-	0 3 0 0	3	On Industry's Own Land	0	Public Sewer- After disinfection
8	RAMANUJAM HOSPITAL	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.35 0 0	0.35	On Industry's Own Land	0	Public Sewer- After disinfection
9	SEETHALAKSHMI NURSING HOME	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 2.75 0 0	2.75	On Industry's Own Land	0	Public Sewer- After disinfection
10	SUBAM NURSING HOME	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.35 0 0	0.35	On Industry's Own Land	0	Public Sewer- After disinfection
11	SANKARANARAYANAN CLINIC	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 30/06/2018	-	0 0.1 0 0	0.1	On Industry's Own Land	0	Public Sewer- After disinfection
12	MUTHULAKSHMI HOSPITAL	MELA AMBASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Public Sewer- After disinfection
13	OMEGA ZIPS	MELA AMBASAMUDRAM	WHITE	Large	4014-Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)	Valid upto 31/03/2019	-	0 4 0 0	4	On Industry's Own Land	0	Does not Arise

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14	OMEGA ZIPS UNIT II	MELA AMBASAMUDRAM	WHITE	Small	4014-Engineering and fabrication units (dry process without any heat treatment / metal surface finishing operations / painting)	Valid upto 3/31/2018	-	0 2.75 0 0	4	On Industry's Own Land	0	Does not Arise
15	GOVERNMENT PRIMARY HELATH CENTRE MUKKUDA	MUKKUDAL	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD		-	0 8 0 0	8	On Industry's Own Land	0	Public Sewer- After disinfection
16	KANNIMAR NURSING HOME	THERKKU KALLIDAIKURUCH I 1	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Public Sewer- After disinfection
17	SUN PAPER MILL LIMITED	VADAKKUARIYAN AYAGIPURAM 1	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)	Valid upto31-03- 2017	Valid upto 4/29/2009	600 30.8 0 0	24	On Industry's Own Land	1,138.00	-On Land for Irrigation
18	SESHASAYEE PAPER AND BOARDS LIMITED : UNIT TIRUNELVELI (CO-GEN PLANT)	VADAKKUARIYAN AYAGIPURAM-2	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)	Valid upto 31/03/2019	Valid upto 12/9/2019	0 0 600 2	1	On Industry's Own Land	440	-On Land for Irrigation
19	SESHASAYEE PAPER AND BOARDS LIMITED - UNIT : TIRUNELVELI	VADAKKUARIYAN AYAGIPURAM-2	RED	Large	1054-Pulp and Paper (waste paper based units with bleaching process to manufacture writing and printing paper)	Valid upto 31/03/2019	-	0 0 600 2	1	On Industry's Own Land	0	Does not Arise
20	TNSTC TIRUNELVELI LTD PAPANASAM BRANCH	VICKIRAMASINGA PURAM 1	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 31/03/2019	Valid upto 8/7/2017	0 0.3 0 0	3	On Industry's Own Land	0	Recycle to process
21	RAJAM NURSING HOME	VICKIRAMASINGA PURAM 1	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.15 0 1	0.15	On Industry's Own Land	0	Public Sewer- After disinfection

ANNEXURE - II

Annexure-II Palyamcottai Taluk												
SL.NO	Industry Name & Address	Village	Category	Classification	Type	Consent Status	Authorization details	WATER WC-I WC-II WC-III WC-IV (KLD)	Sewage generated (KLD)	SEWAGE Disposal Type	TRADE EFFLUENT	TRADE EFFLUENT DISPOSAL
1	SLAUGHTER HOUSE FOR SMALL ANIMALS	PALAYAMKOTTAI I	RED	Small	1049-Slaughter house (as per notification S.O.270(E)dated 26.03.2001)and meat processing industries, bone mill, processing of animal horn, hoofs and other body parts	Valid upto 6/30/2016	-	0 0.25 0 0	0.25	On Industry's Own Land	15	On Industry's Own Land
2	TNSTC LTD THAMIRABARANI BRANCH	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 9/30/2017	Valid upto 3/31/2009	0 25 35 0	20	On Industry's Own Land	30	On Land for Irrigation
3	NELLAI MOTOR VEHICLE AGENCY	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 3/31/2018	-	0 0.4 0 0	0.4	On Industry's Own Land	3	Recycle to process
4	VIJAY AUTO AGENCY	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 1.6 0 0	1.6	On Industry's Own Land	3	Recycle to process
5	ARASAN MACHINERY SERVICE	PALAYAMKOTTAI I	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 9/30/2017	Valid upto 4/29/2009	0 1.4 0.5 0	0.1	On Industry's Own Land	0.4	Recycle to process

ANNEXURE - II

6	M/S. RELIANCE PROLIFIC TRADERS PRIVATE LIMITED	PALAYAMKOTTAI I	ORANGE	Large	2021-Building and construction project more than 20,000 sq.m built up area and having waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 4 85 0	65.000	-Recycling to Process	0	Does not Arise
7	ESIC HOSPITAL	PALAYAMKOTTAI I	ORANGE	Large	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2018	-	0 20 0 0	16	On Industry's Own Land	3	Public Sewer-Afetr disinfection
8	PUSHPALATA MATERNITYANDSURGICAL NURSING HOME	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 4 85 0	0.7	On Industry's Own Land	0	public Sewer-Afetr disinfection
9	VASAN HEALTHCARE PVT LTD	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2017	-	0 0.7 0 0	0.7	On Industry's Own Land	0	Public Sewer-Afetr disinfection
10	SHREE SUDHARSON HOSPITALS	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 6/30/2016	-	0 8.2 0 0	8.2	On Industry's Own Land	0	Public Sewer-Afetr disinfection
11	LAKSHMI MADHAVAN HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 5.8 0 0	5.8	On Industry's Own Land	0	Public Sewer-Afetr disinfection
12	JOSEPH HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2018	-	0 4.8 0 0	4.8	On Industry's Own Land	0	Public Sewer-Afetr disinfection

ANNEXURE - II

13	ROSEMARY MISSION HOSPITALS AND RESEARCH CENTRE	PALAYAMKOTTAI I	ORANGE	Medium	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2019	-	0 2 0 0	2	On Industry's Own Land	0	Public Sewer-Afetr disinfection
14	VELAYUTHAN PILLAI NURSING HOME	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 3 0 0	3	On Industry's Own Land	0	Public Sewer-Afetr disinfection
15	VASAN DENTAL HOSPITALS PRIVATE LIMITED	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 1.6 0 0	1.6	On Industry's Own Land	0	Public Sewer-Afetr disinfection
16	NIVYA RESPIRATORY CLINIC AND ALLERGY CEN	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 2.5 0 0	2.5	On Industry's Own Land	0	Public Sewer-Afetr disinfection
17	SANKAR BRAIN AND NERVE CENTRE	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.7 0 0	0.7	On Industry's Own Land	0	Public Sewer-Afetr disinfection
18	DR ALAGESAN NEURO CENTRE	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2019	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Public Sewer-Afetr disinfection
19	CHENDHUR CARDIAC CENTER & HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Public Sewer-Afetr disinfection

ANNEXURE - II

20	GOLD CHILD & CHEST HOSPITAL	PALAYAMKOTTAI I	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Public Sewer-Afetr disinfection
21	St Andrews Motor Service P Ltd	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 9/30/2016	-	0 0.025 0 0	0.025	On Industry's Own Land	0	Recycle to process
22	TNSTC TIRUNELVELI LIMITED VM CHATRAM	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 3/31/2019	Valid upto 06/04/2021	0 1 3 0	0.8	2.5	0	Does not Arise
23	DHANAPAL MOTOR WORKS	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Recycle to process
24	S.G. JAYARAJ NADAR AND SONS	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 3/31/2018	-	0 2.75 0 0	2.75	On Industry's Own Land	0	Recycle to process
25	DR. AGARWAL HEALTH CARE LIMITED	PALAYAMKOTTAI II	ORANGE	Large	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2018	-	0 8 0 0	8	On Industry's Own Land	0	Public Sewer-Afetr disinfection
26	KRISHNA MATERNITY HOME PEDIATRIC CENTRE	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 4 0 0	4	On Industry's Own Land	0	Public Sewer-Afetr disinfection

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27	ANNAIVELANKANNI NURSING HOME	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2021	-	0 4 0 0	4	On Industry's Own Land	0	Public Sewer-Afetr disinfection
28	GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 6/30/2018	-	0 19 0 0	19	On Industry's Own Land	0	Public Sewer-Afetr disinfection
29	C.S.I. JAYARAJ ANNAPACKIAM MISSION HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 2.2 0 0	2.2	On Industry's Own Land	0	Public Sewer-Afetr disinfection
30	C.S.I. BELL PINS INDRANI CHELLADURAI HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 12 0 0	12	On Industry's Own Land	0	Public Sewer-Afetr disinfection
31	CHELLA SURIYA HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2027	-	0 3.6 0 0	3.6	On Industry's Own Land	0	Public Sewer-Afetr disinfection
32	CELIN HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Public Sewer-Afetr disinfection
33	P S HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Public Sewer-Afetr disinfection

ANNEXURE - II

34	MANGALA HOSPITAL	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2017	-	0 1.8 0 0	1.8	On Industry's Own Land	0	Public Sewer-Afetr disinfection
35	NAMBIYAPPAN HOSPITALS	PALAYAMKOTTAI II	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 3/31/2010	-	0 5.4 0 0	5.4	On Industry's Own Land	0	Public Sewer-Afetr disinfection
36	ST JOHNS COLLEGE OF EDUCATION	PALAYAMKOTTAI II	ORANGE	Small	2091-Infrastructure development projects including educational institutions, community hall, kalyanamandam, IT Park, Theme park (having waste water generation <100 KLD).	Valid upto 31/03/2020	-	0 1.2 0 0	1.2	On Industry's Own Land	0	Does not Arise
37	SELVI KALYANA MAHAL	PALAYAMKOTTAI II	ORANGE	Small	2091-Infrastructure development projects including educational institutions, community hall, kalyanamandam, IT Park, Theme park (having waste water generation <100 KLD).	Valid upto 31/03/2019	-	0 4.4 0 0	4.4	On Industry's Own Land	0	Does not Arise
38	THE BELL PRODUCTS PRIVATE LIMITED	PALAYAMKOTTAI II	WHITE	Small	4030-Paper pins and u clips	Valid upto 6/30/2017	-	0 4 0 0	4	On Industry's Own Land	0	Does not Arise
39	CHELSONS WIRE MILLS	PALAYAMKOTTAI II	WHITE	Small	4030-Paper pins and u clips	Valid upto 12/31/2016	-	0 1 0 0	1	On Industry's Own Land	0	Does not Arise
40	BELL PINS PRIVATE LIMITED	PALAYAMKOTTAI II	WHITE	Small	4030-Paper pins and u clips	Valid upto 12/31/2016	-	0 2 0 0	2	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

41	DARLING SONS WIRE FORMS P LTD	PALAYAMKOTTAI II	WHITE	Small	4999-Miscellaneous (White)	Valid upto 12/31/2016	-	0 0.6 0 0	0.6	On Industry's Own Land	0	Does not Arise
42	A.R.C. Retrading Company P Ltd	PALAYAMKOTTAI II	ORANGE	Small	2070-Tyres and tubes vulcanization/ hot retreating	Valid upto 9/30/2016	-	0 0.6 0 0	0.6	On Industry's Own Land	0	Does not Arise
43	TNSTC Mdu Div-II Ltd Body building	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 9/30/2016	-	0 2.5 0 0	2.5	On Industry's Own Land	0	Recycle to process
44	T.V. Sundaram Iyengar Sons Limited	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 3/31/2012	Valid upto 8/7/2017	0 5 0 0	5	On Industry's Own Land	0	Recycle to process
45	N. Mahalingam and Company	PALAYAMKOTTAI II	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 9/30/2016	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Recycle to process
46	LILLY PINS PRIVATE LIMITED	PALAYAMKOTTAI III	RED	Small	1044-Industry or process involving metal surface treatment or process such as pickling/ electroplating/ paint stripping/ heat treatment using cyanide bath/ phosphating or finishing and anodizing / enamellings/ galvanizing	Valid upto 3/31/2017	Valid upto 5/2/2009	0 2 0 0	2	On Industry's Own Land	0	Does not Arise

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47	T.V. SUNDRAM IYENGAR & SONS PRIVATE LIMITED	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	VALID UPTO 31/03/2018	Valid upto 3/17/2009	0 5 0 0	5	On Industry's Own Land	0	Does not Arise
48	ST. ANTONY SERVICE STATION	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 3 0 0	3	On Industry's Own Land	1	Recycle to process
49	SHRI SATHYASAYEE MOTOR WORKS	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 3/31/2018	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Recycle to process
50	ASHOK AUTO SERVICE	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 0.025 0 0	0.025	On Industry's Own Land	0	Recycle to process
51	SETC T.N. DIVISION - I LTD	PALAYAMKOTTAI III	ORANGE	Small	2018-Automobile servicing, repairing and painting (excluding only fuel dispensing) having waste water generation less than 100 KLD	Valid upto 3/31/2018	Valid upto 8/7/2017	0 2 0 0	2	On Industry's Own Land	0	Recycle to process
52	Kannan Treads	PALAYAMKOTTAI III	ORANGE	Small	2070-Tyres and tubes vulcanization/ hot retreating	Valid upto 9/30/2015	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
53	GALAXY HOSPITALS	PALAYAMKOTTAI III	ORANGE	Large	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 2.9 0 0	2.9	On Industry's Own Land	0	Public Sewer- After disinfection

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54	THANVANTHRI POLY CLINIC	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 2 0 0	2	On Industry's Own Land	0	Public Sewer- After disinfection
55	SUNDARARAJAN NURSING HOME	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 2/16/2001	-	0 0.8 0 0	0.8	On Industry's Own Land	0	Public Sewer- After disinfection
56	SRI VISHNU PRIYA HOSPITAL	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 3 0 0	3	On Industry's Own Land	0	Public Sewer- After disinfection
57	DEVI HOSPITAL	PALAYAMKOTTAI III	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less than 100 KLD	Valid upto 31/03/2019	-	0 11.8 0 0	11.8	On Industry's Own Land	0	Public Sewer- After disinfection
58	TIRUPATHI ENTERPRISES	PALAYAMKOTTAI III	GREEN	Small	3023-Gold and silver smithy (purification with acid smelting operation and sulphuric acid polishing operation) (using less or equal to 1 litre of sulphuric acid/ nitric acid per month)	Valid upto 12/31/2017	-	0 0.15 0 0	0.15	On Industry's Own Land	0	Does not Arise
59	MUTHU SELVAM BLUE METALS	THARUVAI	ORANGE	Small	1035-Mining and ore beneficiation	Valid upto 3/31/2017	-	0 0.18 0 0	0.18	On Industry's Own Land	0	Does not Arise
60	SUBBIAH STONE QUARRY	THARUVAI	RED	Small	1035-Mining and ore beneficiation	Valid upto 3/31/2018	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

61	MERCY MARY QUARRY	THARUVAI	RED	Small	1035-Mining and ore beneficiation	Valid upto 31/03/2019	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
62	MARIMUTHU STONE QUARRY	THARUVAI	RED	Small	1035-Mining and ore beneficiation	Valid upto 31/03/2023	-	0 0.3 0 0	0.2	On Industry's Own Land	0	Does not Arise
63	S SHANKAR ROUGH STONE AND GRAVEL QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries	Valid upto 31/03/2022	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
64	MERCY MARY ROUGH STONE QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries	Valid upto 3/31/2023	-	0 0.24 0 0	0.24	On Industry's Own Land	0	Does not Arise
65	SUBBIAH STONE QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries	Valid upto 31/03/2023	-	0 0.3 0 0	0.3	On Industry's Own Land	0	Does not Arise
66	SANKARANARAYAN AN SANKARAN STONE QUARRY	THARUVAI	RED	Small	1085-Stone/Savudu Quarries	Valid upto 3/31/2023	-	0 0.24 0 0	0.24	On Industry's Own Land	0	Does not Arise
67	RAJAN TAR MIXING PLANT	THARUVAI	ORANGE	Small	2037-Hot mix plants	Valid upto 31/03/2019	-	0 0.35 0 0	0.35	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

68	VENKATESWARA CRUSHERS	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2022	-	0 0.6 0 0	0.6	On Industry's Own Land	0	Does not Arise
69	RAJAN BLUE METALS	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 30/06/2024	-	0 0.6 0 0	0.6	On Industry's Own Land	0	Does not Arise
70	RS DEVELOPMENT AND CONSTRUCTIONS INDIA PRIVATE LIMITED.,	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 3/31/2007	-	0 0.4 0 0	0.4	On Industry's Own Land	0	Does not Arise
71	KULAYABAGAVALI STONE CRUSHER	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2019	-	0 0.75 0 0	0.75	On Industry's Own Land	0	Does not Arise
72	GRANT METAL INDUSTRIES	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2019	-	0 0.1 0 0	0.1	On Industry's Own Land	0	Does not Arise
73	JOYS METAL INDUSTRIES	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2019	-	0 0.75 0 0	0.75	On Industry's Own Land	0	Does not Arise
74	SRI DURKAMBIGA BLUE METAL	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 31/03/2019	-	0 0.25 0 0	0.25	On Industry's Own Land	0	Does not Arise

ANNEXURE - II

75	Sri Balaji Blue Metal Works	THARUVAI	ORANGE	Small	2064-Stone crushers	Valid upto 6/30/2017	-	0 0.6 0 0	0.6	On Industry's Own Land	0	Does not Arise
76	SRI CREATIONS	THARUVAI	ORANGE	Small	2999-Miscellaneous (Orange)	Valid upto 31/03/18	-	0 0.5 0 0	0.5	On Industry's Own Land	0	Does not Arise
77	KARUNYA HI-POWER BRICKS	THARUVAI	WHITE	Small	4016-Fly ash bricks/ block manufacturing	Valid upto 12/31/2018	-	0 0.7 0 0	0.7	On Industry's Own Land	0	Does not Arise

Annexure-II

ANNEXURE - II

Cheranmahadevi Taluk (Areawise Details)

S.No	Industry Name & Address	Village	Category	Classification	Type	Consent Status	Authorization details	WATER WC-I WC-II WC-III WC-IV (KLD)	Sewage generated (KLD)	SEWAGE Disposal Type	TRADE EFFLUENT	TRADE EFFLUENT DISPOSAL
1	INDIRA NURSING HOME	CHERNMAHADEVI	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less	Valid upto 31/03/2019	-	0 2.2 0 0	2.2	-On Industry's Own Land	0	Public Sewer-After disinfection
2	GNANAM CLINIC	GOBALASAMUDRAM	ORANGE	Small	2085-Health-care Establishment (as defined in BMW Rules) without Incinerator and having total waste water generation less	Closed/not in operation	-	0 0.8 0 0	0.8	-On Industry's Own Land	0	Public Sewer-After disinfection
3	L. HEDWIGE RAJ ROUGH STONE QUARRY	MUKKUDAL	RED	Small	1035-Mining and ore beneficiation	Valid upto 30/06/2018	-	0 0.3 0 0	0.3	-On Industry's Own Land	0	Does not Arise
4	R A SAM PLASTIC	MUKKUDAL	ORANGE	Small	2060-Reprocessing of waste plastic including PVC	Valid upto 3/31/2022	-	0 0.4 0 0	0.4	-On Industry's Own Land	0	Does not Arise
5	P.R.B POLY PRINT BAGS	VADAKKUARIYANAYA GIPURAM 1	GREEN	Small	3032-Polythene and plastic processed products manufacturing (virgin plastic)	Valid upto 3/31/2018	-	0 0.25 0 0	0.25	-On Industry's Own Land	0	Does not Arise
6	GRACE BLUE METALS	VADAKKUARIYANAYA GIPURAM-2	ORANGE	Small	2064-Stone crushers	Valid upto 30/06/2018	-	0 0.6 0 0	0.6	-On Industry's Own Land	0	Does not Arise

ANNEXURE-III

SAMPLE COLLECTION LOCATIONS AS PER HON'BLE NGT DIRECTIONS AT TAMIRABARANI RIVER STRETCH

TIRUNELVELI

a) Details of the Bore well samples collection location:-

SI.No	Name of Sampling point	Address	Physical Parameter	GPS coordinates		Date & Time of collection	Sample code Number
1	Manimuthar township	House of Mr. Sundarakaryalar, 16/8; Adivaram street, Manimuthar	Colour:-Colourless Odour:-Odourless Temp in deg:-: 23 ⁰ C	8 ⁰ 42'32" N	77 ⁰ 22'42" E	<u>02.01.2019</u> 13.30 Hrs	NGT TNV 03
2	Kallidaikurichi	Near Kallidaikuruchi Road Bridge, Ambai, Main Road, (Elayaraja Orthopeadic Hospital campus)	Colour:- Colourless Odour:- Odourless Temp in deg:-: 26 ⁰ C	8 ⁰ 41'29" N	77 ⁰ 27'45" E	<u>02.01.2019</u> 15.35 Hrs	NGT TNV 06
3	Ambasamduram	Ambai, Theerthapathy Government Hospital.	Colour:- Colourless Odour:- Odourless Temp in deg:-: 27 ⁰ C	8 ⁰ 42'10" N	77 ⁰ 27'27" E	<u>02.01.2019</u> 15.55 Hrs	NGT TNV 07
4	Mukkudal	Pappakudi Town Panchayat office Mukkudal	Colour:-Colourless Odour:-Odourless Temp in deg:-: 25 ⁰ C	8 ⁰ 44'8" N	77 ⁰ 31'11" E	<u>02.01.2019</u> 18.00 Hrs	NGT TNV 11

ANNEXURE - III

Sl.No	Name of Sampling point	Address	Physical Parameter	GPS coordinates		Date & Time of collection	Sample code Number
5.	North Ariyanakipuram	Pottal Colony, (Muppidathiamman koil) Govt. water supply unit. North Ariyanakipuram	Colour:- Colourless Odour:- Odourless Temp in deg:-: 23 ⁰ C	8 ⁰ 43'14" N	77 ⁰ 32'39" E	<u>02.01.2019</u> 18.30 Hrs	NGT TNV 12
6	Charenmahadevi	Gandhi Park (Bore well) ,Cheranmahadevi	Colour:- Colourless Odour:- Odourless Temp in deg: 23 ⁰ C	8 ⁰ 41'18" N	77 ⁰ 34'01" E	<u>02.01.2019</u> 19.10 Hrs	NGT TNV 13
7	Gopalsamudram	48, Perumalsanathi Street, Gopalsamudram, Cheranmahadevi Taluk	Colour: Colourless Odour: Odourless Temp in deg: 26 ⁰ C	8 ⁰ 40'59" N	77 ⁰ 38'38" E	<u>03.01.2019</u> 12.00 Hrs	NGT TNV 17
8	Meenakshipuram	House of Thiru. Ansar, Meenakshipuram	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 43'24" N	77 ⁰ 42'37" E	<u>03.01.2019</u> 15.00 Hrs	NGT TNV 21
9	CN Village (Tirunelveli Village)	Bore well, Tirunelveli Corportation, Ward No.7, Anna Nagar	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 43'19" N	77 ⁰ 42'18" E	<u>03.01.2019</u> 15.15 Hrs	NGT TNV 22
10	Sindupoothurai	Common Bore well, Selvi Nagar, Tirunelveli.	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 43'58" N	77 ⁰ 42'49" E	<u>03.01.2019</u> 15.45 Hrs	NGT TNV 24

ANNEXURE - III

SI.No	Name of Sampling point	Address	Physical Parameter	GPS coordinates		Date & Time of collection	Sample code Number
11	Vellakovil	House of Thiru. Raja, Opposite Santhamariamman Temple, Vellakovil.	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 42'102" N	77 ⁰ 23'49" E	<u>03.01.2019</u> 16.45 Hrs	NGT TNV 28

ANNEXURE-III

SAMPLE COLLECTION LOCATIONS AS PER HON'BLE NGT DIRECTIONS AT TAMIRABARANI RIVER STRETCH

- Details of the Drains/ Tributaries of River Tamirabharani sample collection location:-

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
1	Manimuthar, (Aladiyur)	Near Road Bridge, at Vairavikulam	Colour:-Colourless Odour:-Odourless Temp in deg:-: 27 ⁰ C	8 ⁰ 40'49 N	77 ⁰ 26'05 E	<u>02.01.2019</u> 15.10 Hrs	NGT TNV 05
2	Rama nathi River (Kizha Ambur)	Kizha Ambur, (Pattamudaiyar sastha kovil)	Colour:-Colourless Odour:-Odourless Temp in deg:-: 28 ⁰ C	8 ⁰ 46'21 N	77 ⁰ 24'38 E	<u>02.01.2019</u> 17.00 Hrs	NGT TNV 09
3	Gadananathi (Thirupudaimaruthur)	Kizha Ambur, (Pattamudaiyar nsastha kovil)	Colour:-Pale Yellow Odour:-Odourless Temp in deg:-: 28 ⁰ C	8 ⁰ 46'20N	77 ⁰ 24'36 E	<u>02.01.2019</u> 16.45 Hrs	NGT TNV 08
4	Pachaiyar River	Tharuvai	Colour: Colourless Odour: Odourless Temp in deg: 26 ⁰ C	8 ⁰ 36'51N	77 ⁰ 38'46 E	<u>03.01.2019</u> 12.45 Hrs	NGT TNV 18

ANNEXURE - III

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
5	Chittar River (Seevalaperi)	Opposite Sudalaimadasami Kovil, Seevalaperi	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 46' 3N	77 ⁰ 47' 50" E	<u>03.01.2019</u> 17.50 Hrs	NGT TNV 30

ANNEXURE-III

SAMPLE COLLECTION LOCATIONS AS PER HON'BLE NGT DIRECTIONS AT TAMIRABARANI RIVER STRECH

(SEWAGE CONFLUENCE POINTS IN THE RIVER TAMIRABHARANI)

- Details of the Sewage confluence point in River Tamirabharani sample collection location:-

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
1.	Kurukkuthurai	Near Murugankovil Road,	Colour: Colourless Odour: Odourless Temp in deg: 24 ⁰ C	8 ⁰ 43' 01N	77 ⁰ 41' 59" E	<u>03.01.2019</u> 13.30 Hrs	NGT TNV 19
2.	CN Village	Nearby Railway bridge	Colour: Colourless Odour: Odourless Temp in deg: 25 ⁰ C	8 ⁰ 42' 58" N	77 ⁰ 42' 25" E	<u>03.01.2019</u> 14.45 Hrs	NGT TNV 20
3.	Sinthupoonthurai	Sinthupoondurai, Nearby Tirunelveli Junctrion	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 43' 27N	77 ⁰ 43' 08" E	<u>03.01.2019</u> 16.00 Hrs	NGT TNV 25
4.	Kokkirakulam	Kokkirakulam, Nearby Tirunelveli Collectrote	Colour: Colourless Odour: Odourless Temp in deg: 24 ⁰ C	8 ⁰ 43' 33" N	77 ⁰ 42' 35" E	<u>03.01.2019</u> 18.50 Hrs	NGT TNV 32

ANNEXURE - III

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
5.	Manimortheeswaram	Manimortheeswaram , Opposite to sudalaimadan temple, Tirunelveli Junction.	Colour: Colourless Odour: Odourless Temp in deg: :27 ⁰ C	8 ⁰ 44' 16" N	77 ⁰ 42' 57" E	<u>03.01.2019</u> 16.15 Hrs	NGT TNV 26
6.	Meenakshipuram	Meenakshipuram, Tirunelveli Junction.	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 43' 27" N	77 ⁰ 42' 42" E	<u>03.01.2019</u> 15.30 Hrs	NGT TNV 23

ANNEXURE-III

SAMPLE COLLECTION LOCATIONS AS PER HON'BLE NGT DIRECTIONS AT TAMIRABARANI RIVER STRECH

- Details of the Industry sample collection location:-

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
1	M/s Madura Coats Ltd., Ambasamudram, (V. K. Puram)	M/s Madura Coats Ltd., Ambasamudram, (V. K. Puram)	Colour: Pale yellow Odour: Odourless Temp in deg: 25 ⁰ C	8 ⁰ 42' 43N	77 ⁰ 22'14" E	<u>02.01.2019</u> 12.30 Hrs	NGT TNV 14

ANNEXURE-III

SAMPLE COLLECTION LOCATIONS AS PER HON'BLE NGT DIRECTIONS AT TAMIRABARANI RIVER STRECH

Details of the River water sample collection location:-

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
1	Road Bridge near M/s Madura Coats Ltd., Ambasamudram, (V. K. Puram)	Road Bridge near M/s Madura Coats Ltd., V.K.Puram.	Colour: Colorless Odour: Odourless Temp in deg: 25 ⁰ C	8 ⁰ 42' 33 N	77 ⁰ 22'40" E	<u>02.01.2019</u> 11.00 hrs	NGT TNV 01
2	Thalayanai River	Pabanasam	Colour: Colourless Odour: Odourless Temp in deg: 25 ⁰ C	8 ⁰ 42' 37 N	77 ⁰ 22'01" E	<u>02.01.2019</u> 14.30 Hrs	NGT TNV 04
3	Kalidaikurichi	Kalidaikurichi, Ambasamudram Taluk	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 41' 29 N	77 ⁰ 27'45" E	<u>02.01.2019</u> 15.30 Hrs	NGT TNV 02
4	Thirupudaimarudhur	Near Thirupudaimarudhur temple	Colour: Colourless Odour: Odourless Temp in deg: 28 ⁰ C	8 ⁰ 43' 42 N	77 ⁰ 29'42" E	<u>02.01.2019</u> 17.30 Hrs	NGT TNV 10

ANNEXURE - III

S.No	Name of sampling point	Address	Physical Parameters	GPS coordinates		Date & Time of collection	Sample code number
5	Kondanagaram	Kondanagaram village, Tirunelveli	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 40' 53N	77 ⁰ 36' 56" E	<u>03.01.2019</u> 11.15 Hrs	NGT TNV 15
6	Gopalsamudram	Gopalsamudram, Tirunelveli	Colour: Colourless Odour: Odourless Temp in deg: 26 ⁰ C	8 ⁰ 41' 9N	77 ⁰ 38' 43" E	<u>03.01.2019</u> 11.30 Hrs	NGT TNV 16
7	Manpadaiveedu	Near online monitoring station	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 46' 58N	77 ⁰ 43' 49" E	<u>03.01.2019</u> 17.10 Hrs	NGT TNV 29
8.	Vellacoil	Vellokovil, near cremation area, Tirunelveli.	Colour: Colourless Odour: Odourless Temp in deg: 27 ⁰ C	8 ⁰ 44' 29N	77 ⁰ 42' 48" E	<u>03.01.2019</u> 16.30 Hrs	NGT TNV 27
9.	Sivalaperi	Near cremation area	Colour: Colourless Odour: Odourless Temp in deg: 26 ⁰ C	8 ⁰ 46' 3" N	77 ⁰ 47' 50" E	<u>03.01.2019</u> 18.00 Hrs	NGT TNV 31

ANNEXURE-III

SAMPLE COLLECTION LOCATIONS AS PER HON'BLE NGT DIRECTIONS AT TAMIRABARANI RIVER STRETCH

THOOTHUKUDI

Sl.No	Name of the Village	Address / Land Marks	Physical Parameters	GPS Co-ordinates	Temperature in deg	Remark
1.	Murapparnadu	Murapparnadu (upstream) Thoothukudi District Entry Point (11.00Hrs)	Colour:- Colourless Odour:- Odourless Temp in deg:-23°C Flow Rate	NL- 8°43'10" EL- 77°44'56"	23°C	Bathing & Washing of clothes observed
2.	Murapparnadu	Near Central Water Commission Office (11.25Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:- 23°C Flow Rate:-	NL – 8°42'56" EL – 77 ° 50'1"	23°C	Bathing & Washing of clothes observed
3.	Srivaikundam	Srivaikundam Padithurai (12.40 Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:- 25°C Flow Rate :-	NL – 8°37'38" EL - 77°54'43"	25°C	---
4.	Alwarthiru Nagar	Bharathi Primary School (Bore well) (13.00 Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:-25°C Flow Rate:-	NL- 8°36'27" EL- 77°56'10"	25°C	---

ANNEXURE - III

Sl.No	Name of the Village	Address / Land Marks	Physical Parameters	GPS Co-ordinates	Temperature in deg	Remark
5.	Punnakayal Village	Estuary -Sea-River confluence point near Fishing Harbor (14.51Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:-26°C Flow Rate	NL:- 8°38'15" EL :- 78°71'3"	26°C	---
6.	Authur	River Bed near Over Bridge (Sewage confluence point) (15.25Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:-25°C Flow Rate	NL:- 8°36'24" EL :- 78°4'40"	25°C	Bathing & Washing of clothes observed
7.	Aral Village	Vallivilan Tamiraparani River Backside of MSW Dumping Yard (Sewage confluence point)(15.25Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:-24°C Flow Rate	NL:- 8°37'18" EL :- 78°13'6"	24°C	---
8.	Aral Village	Near Charman Temple South side (16.52Hrs)	Colour:-Colourless Odour:- Odourless Temp in deg:-23°C Flow Rate	NL:- 8°37'6" EL :- 78°05'8"	23°C	Bathing & Washing of clothes observed

REPORT OF ANNALYSIS OF GROUND WATER SAMPLES ALONG THE RIVER STRETCH

ANNEXURE-IV

S.No	Drinking water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	1	2	3	4	5	
1.	Name of the Location	---	House of Sundarakariyalan, Manimuthar Township, Aladiyar Village	Alwarthiru Nagar, Bharathi Primary school	Near Kallidaikuruchi Road Bridge, Ambai Main Road, Elayaraja Orthopedic campus	Ambai, Theerthapathy Government Hospital.	Pappakudi Town Panchyat office, Mukkudal	
2.	District	---	Tirunelveli	Thoothukudi	Tirunelveli	Tirunelveli	Tirunelveli	
3.	Date of the Sample Collection	---	02.01.2019	03.01.2019	02.12.2019	02.01.2019	02.01.2019	
4.	Source of the GW	---	Borewell Water	Borewell water	Borewell water	Borewell water	Borewell water	
5.	Sample Code Number	---	NGT TNV 03	NGT TN 04	NGT TNV 06	NGT TNV 07	NGT TNV 11	
6.	GPS Coordinates	---	8° 42' 32"N, 77° 22' 42"E	8° 36' 27"N, 77° 56' 10"E	8° 41' 29"N, 77° 27' 45"E	8° 42' 10N, 77° 27' 27"E	8° 44' 8"N, 77° 31' 11E	
7.	Color	5	Hazen scale	Colorless	Colorless	Colorless	Colorless	Colorless
8.	Odor	Agreeable	----	Odorless	Odorless	Odorless	Odorless	Odorless
9.	Temperature		Celsius	23°C	25°C	26°C	27°C	25°C
10.	pH @ 25°	6.5-8.5	----	6.14	6.56	7.0	7.53	7.28
11.	Conductivity	---	µmhos/cm	143	1044	520	1325	1456
12.	Dissolved Oxygen	6	mg/ml	4.4	3.4	7.0	7.5	7.4
13.	Total Dissolves Solids	500	mg/L	98	730	360	1010	1048
14.	Sulphate	200	mg/L	18.3	61.6	31.4	80.5	139.2
15.	Chloride	250	mg/L	15	166	64	180	379
16.	Oil & Grease	0.5	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
17.	Fluoride as F	1.0	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
18.	Cadmium as Cd	0.003	mg/L	0.003	0.014	<0.001	0.001	<0.001
19.	Copper as Cu	0.05	mg/L	0.010	0.075	0.014	<0.001	<0.005
20.	Lead as Pb	0.01	mg/L	<0.001	0.023	<0.001	<0.001	<0.001
21.	Iron as Fe	0.3	mg/L	0.170	<0.001	<0.001	<0.001	<0.001
22.	Nickel as Ni	0.02	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
23.	Zinc as Zn	5	mg/L	0.118	0.030	<0.001	0.002	0.003
24.	Manganese as Mn	0.1	mg/L	0.024	0.376	0.002	0.003	<0.001
25.	Mercury as Mn	0.001	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
26.	Total Chromium as Cr	0.05	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001

ANNEXURE - IV

S.No	Drinking water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	6	7	8	9	10	
1 .	Name of the Location	---	---	Pottal Colony, Muppidthiamm anKoil Govt water supply unit, North Ariyanakipuram	Gandhi Park Borewell, Cheran -mahandevi.	48, Perumalsanathi Street, Gopalsamudram, Cheranmahadevi Taluk.	House of Thiru, Meenakshi -puram.	Borewell, Tirunelveli Corporation, Ward No.7, Anna Nagar.
2.	District	---	---	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	---	02.01.2019	02.01.2019	03.01.2019	03.01.2019	03.01.2019
4.	Source of the GW	---	---	Borewell water	Borewell water	Borewell water	Borewell water	Borewell water
5.	Sample Code Number	---	---	NGT TNV 12	NGT TNV 13	NGT TNV 17	NGT TNV 21	NGT TNV 22
6.	GPS Coordinates	---	---	8°43'14"N, 77°32'39"E	8°41'8"N, 77°34'01"E	8°40'59"N, 77°38'38"E	8°43'24"N, 77°42'37"E	8°43'19"N, 77°42', 18E
7.	Color	5	Hazen Units	Colorless	Colorless	Colorless	Colorless	Colorless
8.	Odor	Agreeable	----	Odorless	Odorless	Odorless	Odorless	Odorless
9.	Temperature		Celsius	23°	23°	26°	27°	27°
10.	pH @ 25°	6.5-8.5	----	7.70	6.83	6.70	6.78	7.28
11.	Conductivity		µmhos/cm	1667	1278	1862	999	1902
12.	Dissolved Oxygen	6	mg/ml	5.9	1.6	4.5	3.1	4.4
13.	Total Dissolves Solids	500	mg/L	1242	960	1160	666	98
14.	Sulphate	200	mg/L	72.9	72.1	108	51.9	18.3
15.	Chloride	250	mg/L	284	134	263	151	15
16.	Oil & Grease	0.5	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
17.	Fluoride as F	1.0	mg/L	0.24	<0.001	0.004	<0.01	<0.01
18.	Cadmium as Cd	0.003	mg/L	<0.001	0.001	0.034	0.004	0.003
19.	Copper as Cu	0.05	mg/L	0.008	0.019	0.036	0.047	0.010
20.	Lead as Pb	0.01	mg/L	0.049	0.038	<0.001	0.023	<0.001
21.	Iron as Fe	0.3	mg/L	<0.001	<0.001	<0.001	0.009	0.170
22.	Nickel as Ni	0.02	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
23.	Zinc as Zn	5	mg/L	<0.001	<0.001	<0.001	<0.037	0.118
24.	Manganese as Mn	0.1	mg/L	<0.001	<0.001	<0.001	0.028	0.024
25.	Mercury as Mn	0.001	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
26.	Total Chromium as Cr	0.05	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001

ANNEXURE - IV

S.no		Drinking water Specifications as per IS : 10500 - 2012 (Acceptable Limit) in mg/L	UNITS	11	12
1.	Name of the Location	---	---	Common Borewell, Selvi Nagar, Tirunelveli	House of Thiru Raja, Opposite Sanhamariamman Temple, Vellakovil.
2.	District	---	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	---	03.01.2019	03.01.2019
4.	Source of the GW	---	---	Borewell water	Borewell water
5.	Sample Code Number	---	---	NGT TNV 24	NGT TNV 28
6.	GPS Coordinates	---	---	8 ⁰ 43'58"N, 77 ⁰ 42'49"E	8 ⁰ 42'02"N, 77 ⁰ 23'49"E
7.	Color	5	Hazen Units	Colorless	Colorless
8.	Odor	Agreeable	----	Odorless	Odorless
9.	Temperature		Celsius	27 ⁰	27 ⁰
10.	pH @ 25 ⁰	6.5-8.5	----	6.54	7.21
11.	Conductivity		µmhos/cm	960	887
12.	Dissolved Oxygen	6	mg/ml	3.4	5.2
13.	Total Dissolves Solids	500	mg/L	566	602
14.	Sulphate	200	mg/L	42.0	47.0
15.	Chloride	250	mg/L	98	147
16.	Oil & Grease	0.5	mg/L	<1.0	<1.0
17.	Fluoride as F	1.0	mg/L	<0.01	<0.01
18.	Cadmium as Cd	0.003	mg/L	0.005	0.006
19.	Copper as Cu	0.05	mg/L	0.038	0.051
20.	Lead as Pb	0.01	mg/L	0.030	<0.001
21.	Iron as Fe	0.3	mg/L	0.094	0.153
22.	Nickel as Ni	0.02	mg/L	<0.001	<0.001
23.	Zinc as Zn	5	mg/L	0.040	0.062
24.	Manganese as Mn	0.1	mg/L	<0.001	0.013
25.	Mercury as Mn	0.001	µg/L	<0.001	<0.001
26.	Total Chromium as Cr	0.05	mg/L	<0.001	<0.001

ANNEXURE - V

ANNEXURE - V

M/s. MADURA COATS PRIVATE LIMITED, AMBASAMUDRAM

CONSOLIDATED REPORT OF ANALYSIS OF TREATED EFFLUENT SAMPLES COLLECTED FOR 2017 - 2018

Sl.No	Parameters	Unit	TNPCB's Norms	Apr 26.04.17	May 11.05.17	June 29.06.17	Jul 27.07.17	Aug 23.08.17	Sep 26.09.17	Oct 10.10.17	Nov 29.11.17	Dec 22.12.17	Jan 25.01.18	Feb 21.02.18	Mar 06.03.18	Jan 02.01.19
1	pH (negative logarithm of concentration of hydrogen ion) 7 is neutral) (above 7 is alkaline , below 7 is acidic)		5.5 to 9.0	7.65	8.3	7.86	7.81	8.49	8.35	8.67	8.62	8.58	8.39	8.28	8.45	7.58
2	Total Suspended Solids - TSS	mg/l	100	18	16	16	16	14	16	18	28	18	36	12	18	18
3	Total Dissolved Solids - TDS	mg/l	2,100	1014	1188	1238	968	1672	1198	1224	1274	1646	1478	144	1284	1720
4	Chlorides	mg/l	1,000	411	393	210	241	205	299	277	304	322	27	27	722	530
5	Sulphates	mg/l	1,000	73	282	342	150	244	55	31	21	91	55	13	481	406
6	Oil &Grease	mg/l	10	1.2	1.21	<1	<1	<1	1.2	<1	1.2	<1	<1	<1	<1	<1.0
7	BOD ,3 Days at 27°C (Biological Oxygen Demand)	mg/l	30	6	12	1	4.8	4.8	12.6	4.5	9.6	4	3.3	4.1	1.5	8.22
8	COD (Chemical Oxygen Demand)	mg/l	250	16	40	40	24	16	64	40	40	56	32	24	24	96
9	TKN	mg/l	100	-	-	-	-	-	-	-	-	-	-	15.68	2.24	-
10	Ammonical Nitrogen	mg/l	50	-	-	-	-	-	-	-	-	-	-	6.72	0.56	<0.56
11	Sulphide	mg/l	2	-	-	-	-	-	-	-	-	-	-	<2.0	<2.0	<2.0
12	Phenolic Compound	mg/l	1	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01
13	Percent Sodium	%	0	-	-	-	-	-	-	-	-	-	-	12	17	-

ANNEXTURE - V (Contd ..)

M/s. MADURA COATS PRIVATE LIMITED, AMBASAMUDRAM

**CONSOLIDATED REPORT OF ANALYSIS OF TREATED EFFLUENT SAMPLES
COLLECTED FOR 2018 - 2019**

Sl.No	Parameters	Unit	TNPCB's Norms	Apr 16.04.18	May 10.05.18	Jun 02.06.18	Aug 28.08.18
1	pH (negative logarithm of concentration of hydrogen ion) 7 is neutral) (above 7 is alkaline , below 7 is acidic)		5.5 to 9.0	8.58	8.74	8.37	8.84
2	Total Suspended Solids - TSS	mg/l	100	28	42	12	18
3	Total Dissolved Solids - TDS	mg/l	2,100	1202	984	912	906
4	Chlorides	mg/l	1,000	237	259	229	220
5	Sulphates	mg/l	1,000	186	152	120	251
6	Oil &Grease	mg/l	10	<1	2.4	2.4	2
7	BOD ,3 Days at 27 ⁰ C (Biological Oxygen Demand)	mg/l	30	7.5	3.1	2.13	15
8	COD (Chemical Oxygen Demand)	mg/l	250	32	16	40	80
9	TKN	mg/l	100	1.68	-	-	-
10	Ammonical Nitrogen	mg/l	50	0.56	-	-	-
11	Sulphide	mg/l	2	<2.0	-	-	-
12	Phenolic Compound	mg/l	1	<0.01	-	-	-
13	Percent Sodium	mg/l	0	64	-	-	-

Annexure-V

M/s. MADURA COATS PRIVATE LIMITED, AMBASAMUDRAM

CONSOLIDATED REPORT OF ANALYSIS OF TREATED SEWAGE SAMPLES COLLECTED FOR 2017 - 2018

Sl.No	Parameters	Unit	TNPCB's Norms	Apr 26.04.17	May 11.05.17	June 29.06.17	Jul 27.07.17	Aug 23.08.17	Sep 26.09.17	Oct 10.10.17	Nov 29.11.17	Dec 22.12.17	Jan 25.01.18	Feb 21.02.18	Mar 06.03.18
1	pH (negative logarithm of concentration of hydrogen ion) 7 is neutral) (above 7 is alkaline , below 7 is acidic)		5.5 to 9.0	7.13	6.6	7.92	7.54	6.75	7.84	7.55	8.19	8.07	7.71	8.37	8.34
2	Total Suspended Solids - TSS	mg/l	100	16	42	14	14	16	14	28	24	26	44	14	14
3	BOD ,3 Days at 27 ⁰ C (Biological Oxygen Demand)	mg/l	30	9	22	2.3	13.8	42	13.2	8	6.3	3.9	6.8	5.6	2.7

ANNEXURE - V

**CONSOLIDATED REPORT OF ANALYSIS OF TREATED SEWAGE SAMPLES COLLECTED FOR
2018 - 2019**

Sl.No	Parameters	Unit	TNPCB's Norms	Apr 16.04.18	May 10.05.18	Aug 28.08.18
1	pH (negative logarithm of concentration of hydrogen ion) 7 is neutral) (above 7 is alkaline , below 7 is acidic)		5.5 to 9.0	8.43	7.6	8.32
2	Total Suspended Solids - TSS	mg/l	100	36	26	16
3	BOD ,3 Days at 27 ⁰ C (Biological Oxygen Demand)	mg/l	30	3.6	6.6	11.25

ANNEXURE - V

ANNEXURE-V

M/s. SUN PAPER MILL, NORTH ARIYANAYAGIPURAM VILLAGE, TIRUNELVELI DISTRICT																			
CONSOLIDATED REPORT OF ANALYSIS OF TREATED EFFLUENT SAMPLES COLLECTED FOR 2017 - 2018																			
Sl.No	Parameters	Unit	TNPCB's Norms	20.04.17	05.05.17	01.06.17	19.07.17	02.08.17	11.09.17	10.10.17	15.11.17	01.12.17	10.01.18	19.02.18	13.03.18	16.04.18	31.05.18	12.06.18	20.09.18
1	pH (negative logarithm of concentration of hydrogen ion) 7 is neutral) (above 7 is alkaline , below 7 is acidic)		5.5 to 9.0	7.78	7.69	8.43	7.88	7.63	7.61	7.7	7.63	7.91	8.13	8.13	7.93	8.17	8.19	8.11	7.2
2	Total Suspended Solids - TSS	mg/l	100	12	1234	48	22	12	72	58	82	42	28	28	132	18	28	34	1348
3	Total Dissolved Solids - TDS	mg/l	2,100	136	562	160	192	104	232	326	276	308	172	172	468	268	178	128	416
4	Chlorides	mg/l	1,000	22	45	22	27	22	38	80	65	40	54	54	288	31	70	35	40
5	Sulphates	mg/l	1,000	13	20	24	18	10	74	28	24	33	21	21	175	24	11	13	224
6	Oil & Grease	mg/l	10	1.2	3.6	1.2	<1	<1	2.4	3.6	3.6	<1	1.2	1.2	<1	<1	<1.0	2	16
7	BOD ,3 Days at 27°C (Biological Oxygen Demand)	mg/l	30	6	165	9	7.71	2	31.5	33	13	4	1	1	90.3	3.3	14.5	6.12	52
8	COD (Chemical Oxygen Demand)	mg/l	250	24	240	48	24	32	136	80	80	16	16	16	280	32	72	24	264
9	Sulphide	mg/l	2.0	-	4.0	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	7.2	7.2	17.9	1.12	11.2	-	-
10	TKN	mg/l	-	-	8.9	22.4	0.56	0.56	3.24	1.12	13.44	3.36	14	14	7.8	< 0.56	1.12	-	-
11	Ammonical Nitrogen	mg/l	-	-	1.6	10.64	<0.56	<0.56	15.68	0.56	6.7	1.12	5.04	5.04	13.6	< 2.0	<2.0	-	-
12	Phenolic Compound	mg/l	5.0	-	<0.0005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
13	Percent Sodium	mg/l	60	-	2.88	3.61	62.32	69.3	65.5	67.5	69	23.4	80	80	47	28	12.5	-	-



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: ROAD BRIDGE NEAR MADURA COATS

Year : 2017-2018

ANNEXURE-VI ROA OF MINARS SAMPLING

S.N	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			*Class A	**Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.23	7.39	6.95	7.59	6.85	6.60	7.11	6.97	7.05	6.80	7.64	8.50
2	Conductivity	µmhos/cm			152	325	76.2	80.6	82.2	64	74	112.5	64	68	86	117.5
3	Dissolved Oxygen	mg/l	6	4	6.5	5.5	6.4	7.5	7.5	7	6.9	6.8	7.2	6.6	6.9	6.5
4	BOD	mg/l	2	3	3.0	3.0	2.0	1	1.8	1.8	3.2	2.8	2.0	1.3	1.8	2.5
5	Nitrite	mg/l			0.38	-	-	-	-	-	0.03	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.02	0.42	0.12	0.14	0.12	0.12	0.19	0.16	0.17	0.19	0.18	0.19
7	Fecal Coliform	Mpn/100			70	30	90	70	50	26	22	26	17	22	26	22
8	Total coliform	Mpn/100	50+	5000+	220	110	280	220	170	70	40	70	50	40	50	40
9	Turbidity	NTU			1.64	5.47	2.17	4.49	7.14	1.94	1.96	2.07	2.32	1.57	7.80	2.82
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			32	42	12	12	14	10	12	24	12	8.4	8.4	14.4
12	Chlorides	mg/l	250	600	18	44	13	11	15	13	13	12	11	12	9	16
13	COD	mg/l			16	32	24	16	32	32	24	24	24	16	16	32
14	Total Kjeldhal Nitrogen	mg/l			<0.28	<0.56	1.12	1.12	1.12	1.12	2.8	1.12	1.68	2.8	2.24	1.68
15	Ammoniacal Nitrogen	mg/l			<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	0.56	<0.56	<0.56	<0.56	<0.56	<0.56
16	Total Hardness	mg/l	300		54	68	20	16	16	12	16	26	16	16	30	64
17	Calcium (as CaCO ₃)	mg/l	200		14.4	17.6	6.4	4.8	4.8	3.2	4.8	8.8	4.8	4.8	4.8	21.6
18	Sulphate (as SO ₄)	mg/l	400	400	11.6	18	7.2	8.2	8.4	8.4	7.4	9.7	7.9	8.1	8.1	10.7
19	Sodium	mg/l			2	3	2	13.9	8.0	2	7	6.0	3	2	2	2
20	Potassium	mg/l			1.0	1	1	1	1.1	1	1.2	1.1	1	1	1	1
21	Total Dissolved Solids	mg/l	500	1500	102	214	54	58	60	46	52	78	46	48	62	82
22	Fixed Dissolved Solids	mg/l			92	198	48	52	54	42	44	72	40	42	56	76
23	Total Suspended Solids	mg/l			8	12	6	6	4	6	4	6	6	6	4	8
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		4.37	5.83	0.972	0.972	0.972	0.972	0.972	0.97	0.972	0.972	0.972	2.43
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection. **Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: RAILWAY BRIDGE NEAR AMBAS AMUDRAM

Year : 2017-2018

ANNEXURE-VI

Sl. No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.30	7.62	7.10	7.68	7.01	6.96	7.15	7.46	7.19	6.92	6.92	8.55
2	Conductivity	µmhos/cm			76.5	89.2	88.6	92.4	96	78	82	128	78	79	79	95.6
3	Dissolved Oxygen	mg/l	6	4	6.2	6.0	6.5	7.0	6.7	7.0	7.2	6.6	7.0	6.8	6.8	6.7
4	BOD	mg/l	2	3	2.8	2.4	2.0	1	1.4	2.0	2.2	2.1	2	2.8	2.8	2.3
5	Nitrite	mg/l			0.12	-	-	-	-	-	0.02	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.01	0.11	0.15	0.08	0.09	0.09	0.08	0.12	0.13	0.12	0.12	0.12
7	Fecal Coliform	Mpn/100			50	22	4	50	40	30	26	30	26	26	26	30
8	Total coliform	Mpn/100	50+	5000+	170	90	17	110	130	90	70	90	80	60	60	50
9	Turbidity	NTU			0.725	4.54	4.40	1.18	12.5	3.04	8.69	6.43	2.14	1.46	1.46	1.07
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			12	12	14	14	16	12	14	28	14	9.6	9.6	12
12	Chlorides	mg/l	250	600	11	16	15	12	19	15	15	15	12	14	10	11
13	COD	mg/l			24	24	32	32	16	16	32	16	32	24	24	24
14	Total Kjeldhal Nitrogen	mg/l			0.56	1.68	2.24	1.68	1.68	1.68	1.68	1.68	1.12	2.2	1.68	1.12
15	Ammoniacal Nitrogen	mg/l			<0.56	<0.56	<0.56	<0.56	<0.56	<0.56	1.12	<0.56	0.56	1.11.1	0.56	<0.56
16	Total Hardness	mg/l	300		18	16	24	20	20	16	20	32	20	20	32	32
17	Calcium (as CaCO ₃)	mg/l	200		5.6	4.8	7.2	5.6	5.6	4.0	5.6	10.4	5.6	5.6	5.6	11.2
18	Sulphate (as SO ₄)	mg/l	400	400	7.4	7.5	7.6	8.7	8.9	8.9	7.8	11.5	8.4	8.7	8.7	9.2
19	Sodium	mg/l			2	2	2	1	4.8	2	9	4.6	4	3	2	2
20	Potassium	mg/l			1	1	1	1.3	1.1	1	1.6	1.1	2	1	1	1
21	Total Dissolved Solids	mg/l	500	1500	52	58	62	64	68	54	58	92	56	56	70	68
22	Fixed Dissolved Solids	mg/l			48	52	54	58	62	48	48	84	48	48	62	62
23	Total Suspended Solids	mg/l			6	6	6	6	6	6	6	6	6	6	4	6
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		0.972	0.472	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	0.972
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection.

**Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: KALLIDAIKURICHI

Year : 2017-2018

ANNEXURE-VI

Sl. No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.33	7.60	7.12	7.61	7.03	6.97	7.22	7.65	7.28	7.11	7.70	8.46
2	Conductivity	µmhos/cm			84.6	96	97.4	98	108	89	96	139	89	88	1.9	79.3
3	Dissolved Oxygen	mg/l	6	4	6.7	6.3	6.7	7.2	6.5	6.9	7.4	6.7	6.8	6.7	6.4	6.6
4	BOD	mg/l	2	3	2.4	2.2	1.2	1	1.6	2.1	3.2	2.6	3	1.5	2.0	2.3
5	Nitrite	mg/l			0.014	-	-	-	-	-	0.02	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.02	0.13	0.17	0.17	0.16	0.15	0.14	0.09	0.10	0.11	0.11	0.11
7	Fecal Coliform	Mpn/100			40	26	2	40	34	34	30	22	30	30	40	34
8	Total coliform	Mpn/100	50+	5000+	130	70	12	130	110	110	80	40	90	80	80	90
9	Turbidity	NTU			0.814	3.89	4.08	1.20	9.76	2.81	4.12	6.88	2.78	2.01	5.89	0.72
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			14	14	18	16	18	14	16	32	18	10.8	10.8	8.4
12	Chlorides	mg/l	250	600	12	18	17	14	21	18	16	16	13	16	12	9
13	COD	mg/l			24	40	16	24	16	32	16	24	24	24	32	32
14	Total Kjeldhal Nitrogen	mg/l			0.56	1.12	1.68	1.12	1.12	1.12	0.56	1.12	2.24	1.6	2.8	1.68
15	Ammoniacal Nitrogen	mg/l			<0.56	<0.56	<0.56	<0.56	<0.56	0.56	<0.56	<0.56	1.12	<0.56	1.12	0.56
16	Total Hardness	mg/l	300		22	20	28	24	24	22	28	38	24	26	34	30
17	Calcium (as CaCO ₃)	mg/l	200		6.4	5.6	8	6.4	6.4	5.6	8.0	12	6.4	7.2	6.4	9.8
18	Sulphate (as SO ₄)	mg/l	400	400	7.8	7.8	7.9	9.3	9.5	9.2	8.4	12.6	8.7	9.4	9.2	8.6
19	Sodium	mg/l			2	3	2	2	7.0	3	10	7.0	6	3	3	2
20	Potassium	mg/l			1	1	1	1.4	1.2	1	1.6	1.1	2	2	1	1
21	Total Dissolved Solids	mg/l	500	1500	62	66	68	72	78	62	68	98	64	62	76	54
22	Fixed Dissolved Solids	mg/l			54	58	58	64	70	56	56	86	52	56	66	46
23	Total Suspended Solids	mg/l			6	6	6	6	5	6	6	6	6	6	6	6
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		1.45	1.45	1.94	1.4	1.94	1.64	1.94	1.94	1.94	1.94	1.94	1.45
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection.

**Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: THIRUPUDAIMARUDHUR TEMPLE BACKSIDE

Year : 2017-2018

ANNEXURE-VI

Sl. No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.40	7.84	7.20	7.53	7.07	7.12	7.37	7.80	7.30	7.13	7.71	8.23
2	Conductivity	µmhos/cm			96.3	102	104	106	117	106	106	167	106	102	116	97.4
3	Dissolved Oxygen	mg/l	6	4	6.8	5.2	7.1	6.8	6.8	6.4	6.8	6.9	6.9	6.5	6.8	6.8
4	BOD	mg/l	2	3	2.2	2.5	1.1	1	2.1	2.0	2.8	2.9	2	1.0	2.5	1.3
5	Nitrite	mg/l			0.17	-	-	-	-	-	0.03	-	-0	-	-	-
6	Nitrate NO3	mg/l	20	50	0.02	0.17	0.19	0.04	0.05	0.06	0.10	0.08	0.08	0.08	0.09	0.07
7	Fecal Coliform	Mpn/100			30	22	11	30	30	40	34	30	34	40	30	40
8	Total coliform	Mpn/100	50+	5000+	90	40	33	90	90	130	110	50	110	70	70	110
9	Turbidity	NTU			0.897	3.97	6.53	1.12	10.2	2.14	3.07	6.74	2.64	2.08	3.47	1.22
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			18	18	25	18	22	18	18	36	26	13.2	13.2	10.8
12	Chlorides	mg/l	250	600	14	20	19	16	23	21	17	22	15	18	16	12
13	COD	mg/l			16	32	32	32	24	40	24	32	24	16	32	24
14	Total Kjeldhal Nitrogen	mg/l			1.68	1.68	1.12	1.12	1.12	2.24	1.68	1.12	2.24	2.4	2.24	2.8
15	Ammoniacal Nitrogen	mg/l			<0.56	<0.56	<0.56	<0.56	<0.56	1.12	<0.56	0.56	1.12	0.56	0.561.1 2	0.56
16	Total Hardness	mg/l	300		26	24	34	28	28	26	42	44	30	38	38	42
17	Calcium (as CaCO ₃)	mg/l	200		7.2	6.4	9.6	7.2	7.2	6.4	12.8	13.6	8	11.2	7.2	13.3
18	Sulphate (as SO ₄)	mg/l	400	400	8.2	8.2	8.2	9.5	9.8	9.7	8.6	13.2	9.2	9.8	9.5	9.8
19	Sodium	mg/l			3	3	3	4.8	4.5	3	11	4.4	8	3	4	3
20	Potassium	mg/l			1	1	1	1.4	1.1	1	1.8	1	2	1	1	1
21	Total Dissolved Solids	mg/l	500	1500	66	72	74	76	84	76	76	118	74	72	82	66
22	Fixed Dissolved Solids	mg/l			58	64	66	68	76	64	64	106	60	62	72	58
23	Total Suspended Solids	mg/l			6	6	6	6	7	6	6	6	8	6	6	6
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		1.94	1.94	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	1.94
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: ROAD BRIDE NEAR M/s. SUN PAPER MILL

Year : 2017-2018

ANNEXURE-VI

Sl.No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.39	7.72	7.22	7.47	7.24	7.13	7.45	8.06	7.42	7.16	7.75	8.18
2	Conductivity	µmhos/cm			102.7	119	118	117	129	114	179	231	130	118	124	136.6
3	Dissolved Oxygen	mg/l	6	4	6.6	6.9	6.4	6.5	7.0	6.8	6.7	7.0	6.7	6.9	6.7	6.7
4	BOD	mg/l	2	3	2.8	1.5	1.0	1.4	1	2.2	3.4	2.4	2	1.1	2.4	2.5
5	Nitrite	mg/l			0.19	-	-	-	-	-	0.04	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.03	0.19	0.22	0.09	0.08	0.08	0.12	0.07	0.07	0.07	0.08	0.08
7	Fecal Coliform	Mpn/100			30	30	11	34	34	70	40	34	50	70	22	50
8	Total coliform	Mpn/100	50+	5000+	50	70	34	140	80	170	130	110	140	110	60	130
9	Turbidity	NTU			0.916	4.17	8.74	1.81	13.4	2.99	7.56	11.2	4.29	1.72	3.28	0.985
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			20	24	26	14.4	24	26	22	38	32	14.4	14.4	16.8
12	Chlorides	mg/l	250	600	16	22	21	18	25	23	19	26	16	21	19	21
13	COD	mg/l			32	24	40	24	16	24	40	24	32	32	24	40
14	Total Kjeldhal Nitrogen	mg/l			2.68	2.24	2.8	2.24	2.24	1.68	2.8	2.24	3.36	2.4	3.36	2.8
15	Ammoniacal Nitrogen	mg/l			<0.56	1.12	1.12	1.12	1.12	1.12	<0.56	1.12	1.12	1.1	1.68	0.56
16	Total Hardness	mg/l	300		30	28	40	34	32	30	56	52	38	46	40	48
17	Calcium (as CaCO ₃)	mg/l	200		8.0	7.2	11.2	8	8	7.2	17.6	16	10.4	13.6	10.4	14.4
18	Sulphate (as SO ₄)	mg/l	400	400	8.9	9.6	8.4	10.4	10.6	10.5	11.5	19.4	9.5	10.5	10.4	12.3
19	Sodium	mg/l			3	4	3	1.4	5.9	4	26.2	5.8	10	4	6	2
20	Potassium	mg/l			1.0	1	1	1	1.3	1	3.9	1.9	2	1	2	1
21	Total Dissolved Solids	mg/l	500	1500	74	78	88	80	92	82	124	162	92	84	88	88
22	Fixed Dissolved Solids	mg/l			66	72	74	72	84	76	112	154	82	74	74	76
23	Total Suspended Solids	mg/l			8	8	8	8	8	8	8	8	8	8	8	8
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		2.43	2.43	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91	2.91
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection. **Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: ROAD BRIDGE NEAR TIRUNELVELI COLLECTORATE

Year : 2017-2018

ANNEXURE-VI

Sl.No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.18	7.73	7.16	7.61	7.26	7.15	7.58	8.18	7.53	7.28	7.82	8.21
2	Conductivity	µmhos/cm			116.5	134.5	129	33	136	127	236	247	159	130	132	159.7
3	Dissolved Oxygen	mg/l	6	4	7.1	6.1	6.8	7.2	6.0	6.9	6.9	7.1	6.8	6.7	6.5	6.6
4	BOD	mg/l	2	3	2.2	2.2	1.4	1	1.9	2.1	3.3	2.2	1	1.1	2.2	2.8
5	Nitrite	mg/l			0.023	-	-	-	-	-	0.06	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.02	0.23	0.24	0.02	0.05	0.05	0.09	0.06	0.06	0.13	0.05	0.13
7	Fecal Coliform	Mpn/100			34	30	22	26	26	50	70	40	70	60	30	60
8	Total coliform	Mpn/100	50+	5000+	80	50	90	70	70	140	220	130	220	130	110	170
9	Turbidity	NTU			0.327	3.75	5.02	1.87	3.37	1.94	1.87	11.6	2.75	1.25	1.23	0.892
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			24	28	30	16.8	26	28	24	42	36	15.6	16.8	19.2
12	Chlorides	mg/l	250	600	18	24	23	20	27	27	21	29	21	23	21	26
13	COD	mg/l			24	40	32	32	24	32	32	16	16	24	32	40
14	Total Kjeldhal Nitrogen	mg/l			3.36	2.24	3.36	2.24	2.24	2.24	3.3	2.24	2.8	3.3	2.8	3.3
15	Ammoniacal Nitrogen	mg/l			1.12	<0.56	<0.56	<0.56	<0.56	<0.56	1.12	<0.56	1.68	1.6	1.68	1.68
16	Total Hardness	mg/l	300		36	32	46	36	38	34	68	58	42	58	42	56
17	Calcium (as CaCO ₃)	mg/l	200		9.6	8	12.8	8.8	8.8	8	21.5	17.6	11.2	17.6	13.6	16.8
18	Sulphate (as SO ₄)	mg/l	400	400	9.4	10.4	8.7	11.2	11.7	11.3	13.6	22.5	10.3	11.2	11.2	13.7
19	Sodium	mg/l			9	8	3	13.9	14.0	4	27.1	14.2	11	5	8	3
20	Potassium	mg/l			1.3	2.1	1	1.9	1.9	1	6.3	1.6	3	2	2	2
21	Total Dissolved Solids	mg/l	500	1500	86	92	92	94	98	88	162	174	108	92	92	106
22	Fixed Dissolved Solids	mg/l			78	84	82	82	88	80	148	162	94	84	82	94
23	Total Suspended Solids	mg/l			8	8	8	8	5	8	8	8	8	8	6	8
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		2.91	2.91	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection. **Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.

MONITORING STATION: VELLAKOVIL

ANNEXURE-VI

Year : 2017-2018

Sl.No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.22	7.75	7.23	7.5	7.30	7.18	7.65	8.20	7.74	7.39	7.93	8.20
2	Conductivity	µmhos/cm			124.2	164.7	142	145	142	138	249	252	202	163	146	185
3	Dissolved Oxygen	mg/l	6	4	6.9	7.2	6.9	7.2	6.1	6.5	7.0	6.9	6.6	6.4	6.6	6.8
4	BOD	mg/l	2	3	2.6	4.0	2	2.1	2.0	1.9	3.4	2.7	3	1.0	2.6	3.1
5	Nitrite	mg/l			0.025	-	-	-	-	-	0.05	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.02	0.26	0.26	0.04	0.06	0.07	0.13	0.18	0.19	0.17	0.24	0.15
7	Fecal Coliform	Mpn/100			26	22	14	34	17	70	60	50	60	50	50	70
8	Total coliform	Mpn/100	50+	5000+	70	90	34	90	40	220	170	170	170	170	130	220
9	Turbidity	NTU			0.468	5.28	3.87	1.92	1.94	4.45	3.80	10.9	3.46	1.63	1.63	0.395
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			26	32	32	20.4	28	32	26	46	42	16.8	20.4	21.6
12	Chlorides	mg/l	250	600	20	26	26	24	29	30	24	31	28	25	25	32
13	COD	mg/l			24	40	24	40	32	24	24	24	24	32	40	24
14	Total Kjeldhal Nitrogen	mg/l			2.24	1.16	2.8	3.36	3.36	2.8	3.3	3.36	3.36	3.3	3.92	3.3
15	Ammoniacal Nitrogen	mg/l			1.12	0.56	1.12	<0.56	<0.56	1.12	1.12	<0.56	1.68	1.1	2.24	1.2
16	Total Hardness	mg/l	300		40	36	50	42	42	42	76	64	48	64	42	64
17	Calcium (as CaCO ₃)	mg/l	200		10.4	8.8	13.6	10.4	10.4	10.4	24	19.2	12.8	19.2	20.6	19.2
18	Sulphate (as SO ₄)	mg/l	400	400	10.2	11.7	9.4	11.8	12.3	12.6	15.2	24.3	18.6	13.3	12.3	16.4
19	Sodium	mg/l			13	15	2	13.8	14.8	3	28.7	12.4	15	5	10	4
20	Potassium	mg/l			2.8	3	1	2.3	1.8	2	7.2	1.3	3	2	3	2
21	Total Dissolved Solids	mg/l	500	1500	98	112	104	102	102	102	174	182	136	116	102	124
22	Fixed Dissolved Solids	mg/l			88	104	96	96	92	92	162	168	122	102	94	116
23	Total Suspended Solids	mg/l			8	8	8	8	4	8	8	8	8	8	6	8
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		3.40	3.40	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection. **Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.



Tamil Nadu Pollution Control Board
O/o. District Environmental Engineer, Tirunelveli.
ANNEXURE-VI

MONITORING STATION: CREMATION GROUND SEEVALAPERI

Year : 2017-2018

Sl.No	Parameters	Units	Standards		April 17	May 17	June 17	July 17	Aug 17	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18
			Class A	Class C												
1	pH	Value	6.5-8.5	6.5-8.5	7.26	7.69	7.27	7.53	7.43	7.25	7.68	8.29	7.76	7.53	7.97	8.17
2	Conductivity	µmhos/cm			146.8	198	159	162	154	152	258	264	224	176	177	192.7
3	Dissolved Oxygen	mg/l	6	4	7.2	6.0	6.6	7.3	6.0	6.0	7.1	6.8	6.7	6.8	6.8	6.9
4	BOD	mg/l	2	3	2.2	3.5	3.0	1.4	1.3	1.6	2.3	2.9	1	1.3	2.5	2.5
5	Nitrite	mg/l			0.27	-	-	-	-	-	0.06	-	-	-	-	-
6	Nitrate NO3	mg/l	20	50	0.03	0.29	0.28	0.21	0.18	0.17	0.17	0.21	0.23	0.21	0.29	0.22
7	Fecal Coliform	Mpn/100			17	17	4	17	30	60	50	70	90	80	70	90
8	Total coliform	Mpn/100	50+	5000+	50	40	17	50	50	170	140	220	280	220	170	280
9	Turbidity	NTU			0.409	2.63	2.83	1.43	1.68	1.47	1.24	8.83	5.11	1.59	1.04	0.304
10	Phenolphthalein Alkalinity	mg/l			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	Total Alkalinity	mg/l			28	34	34	25.2	30	36	32	52	48	18	21.6	22
12	Chlorides	mg/l	250	600	22	32	29	27	31.2	34	28	34	34	27	29	34
13	COD	mg/l			16	32	40	32	24	32	16	24	16	16	32	24
14	Total Kjeldhal Nitrogen	mg/l			2.8	2.24	2.24	1.68	2.8	3.36	2.8	2.8	3.36	2.8	4.48	2.8
15	Ammoniacal Nitrogen	mg/l			1.12	1.12	<0.56	<0.56	1.12	1.68	<0.56	1.12	2.24	1.7	2.8	1.2
16	Total Hardness	mg/l	300		48	42	56	48	46	48	84	68	56	68	60	70
17	Calcium (as CaCO ₃)	mg/l	200		12.8	10.4	15.2	12	11.2	12	26.4	20.8	15.2	20	21.6	20.8
18	Sulphate (as SO ₄)	mg/l	400	400	11.5	12.3	9.8	12.6	13.2	13.4	16.3	26.1	22.7	15.6	14.8	18.5
19	Sodium	mg/l			18	19	4	13.8	15.3	3	22.0	15.6	17	6	13	5
20	Potassium	mg/l			3.2	3.5	1	2.2	1.8	2	7.7	1.5	3	3	2	2
21	Total Dissolved Solids	mg/l	500	1500	108	136	116	116	112	112	178	188	154	118	124	132
22	Fixed Dissolved Solids	mg/l			102	124	108	104	102	102	164	174	146	108	112	122
23	Total Suspended Solids	mg/l			8	8	8	8	6	8	8	8	8	8	6	8
24	Phosphate	mg/l			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
25	Boron	mg/l			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
26	Magnesium	mg/l	100		3.88	3.88	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37
27	Fluoride	mg/l	1.5	1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

*Class A – Drinking Water source without Conventional Treatment but after Disinfection. **Class C – Drinking Water Source with Conventional Treatment followed by Disinfection.

REPORT OF ANALYSIS OF RIVER WATER AND DRAIN SAMPLES ALONG THE RIVER STRETCH

ANNEXURE-VII

S.No		Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	1	2
1.	Name of the Location	---	---	Manimuthar, Near roof Bridge at Vairavikulam. Major Tributary. Originates on Eastern slopes of Western ghats. Length of the River is 9Km	Ramanathi River (Kizha Ambur), (Pattamudaiyarsasthakovil), Trajectory of Tamirabarani river.
2.	District	---	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	---	02.01.2019	02.01.2019
4.	Nature of sample	---	---	River water	River water & Drains
5.	Sample Code Number	---	---	NGT TNV 05	NGT TNV09
6.	GPS Coordinates	---	---	8°40'9", 77°26'05"E	8°46'21"N, 77°24'38"E
7.	Color	10	Hazen scale	Colorless	Colorless
8.	Odor	Agreeable	---	Odorless	Odorless
9.	Temperature	<5°C above receiving water temperature	Celsius	27° C	28° C
10.	pH @ 25 ⁰	6.5 – 8.5	---	6.29	7.15
11.	Conductivity	---	µmhos/cm	78	344
12.	Dissolved Oxygen	5	mg/L	4.5	5.3
13.	Total suspended Solids	100	mg/L	50	6
14.	Total Dissolved Solids		mg/L	3.14	238
15.	BOD for 3days @ 27 ⁰ C	30	mg/L	32	3.54
16.	COD	250	mg/L	<0.56	56
17.	Ammonical Nitrogen	50	mg/L	<2.0	<0.56
18.	Sulphides	2.0	mg/L	12	<2.0
19.	Total Coliform	500/ less	MPN/100mL	4	6
20.	Fecal Coliform		MPN/100mL	<0.001	2
21.	Cadmium as Cd	2.0	mg/L	<0.001	<0.001
22.	Total Chromium as Cr	2.0	mg/L	0.110	<0.001
23.	Copper as Cu	3.0	mg/L	0.024	0.003
24.	Iron as Fe	3	mg/L	<0.001	0.075
25.	Manganese as Mn	2	mg/L	<0.001	<0.001
26.	Nickel as Ni	3.0	mg/L	<0.001	<0.001
27.	Lead as Pb	0.1	mg/L	<0.001	<0.001
28.	Zinc as Zn	5.0	mg/L	<0.001	0.002

ANNEXURE-VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	3	4
1.	Name of the Location	---	GadananathiKizha Ambur, (PettamudaiyarNsasthakovil), Gadananthi originates from Agasthyamalai Biosphere Reserve, Trajectory of Tamirabarani River.	Pachaiyar River, Trajectory of Tamirabarani River. Collected from Dam outlet as flow was very less.
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	02.01.2019	03.01.2019
4.	Nature of sample	---	River water & Drains	River water & Drains
5.	Sample Code Number	---	NGT TNV 08	NGT TNV 18
6.	GPS Coordinates	---	8 ⁰ 46'20"N, 77 ⁰ 24'36"	8 ⁰ 36'51"n, 77 ⁰ 38'46"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ⁰ C above receiving water temperature	Celsius	28 ⁰ C
10.	pH @ 25 ⁰	6.5 – 8.5	---	7.52
11.	Conductivity	---	µmhos/cm	121
12.	Dissolved Oxygen	5	mg/L	6.8
13.	Total suspended Solids	100	mg/L	10
14.	Total Dissolved Solids		mg/L	78
15.	BOD for 3days @ 27 ⁰ C	30	mg/L	3.14
16.	COD	250	mg/L	40
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	12
20.	Fecal Coliform		MPN/100mL	4
21.	Cadmium as Cd	2.0	mg/L	0.001
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.001
24.	Iron as Fe	3	mg/L	0.234
25.	Manganese as Mn	2	mg/L	0.042
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	<0.001
28.	Zinc as Zn	5.0	mg/L	0.003

ANNEXURE-VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	5	6
1.	Name of the Location	---	Chittar River, Opposite SundalaimadasamiKovil, Seevalaperi. Major trajectory of River Tamirabarani originating from Courtallam hills	Kurukkuthurai, Near Murugankovil Road.
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019
4.	Nature of sample	---	River water & Drains	River water & Drains (Sewage confluence point)
5.	Sample Code Number	---	NGT TNV 30	NGT TNV 19
6.	GPS Coordinates	---	8°46'3"N, 77°47'50"E	8°43'01"N, 77°41'59"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5°C above receiving water temperature	Celsius	27° C
10.	pH @ 25°	6.5 – 8.5	---	6.67
11.	Conductivity	---	µmhos/cm	302
12.	Dissolved Oxygen	5	mg/L	4.2
13.	Total suspended Solids	100	mg/L	8
14.	Total Dissolved Solids	---	mg/L	210
15.	BOD for 3days @ 27°C	30	mg/L	3.07
16.	COD	250	mg/L	32
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	6
20.	Fecal Coliform	---	MPN/100mL	4
21.	Cadmium as Cd	2.0	mg/L	0.007
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.040
24.	Iron as Fe	3	mg/L	0.139
25.	Manganese as Mn	2	mg/L	0.016
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	<0.001
28.	Zinc as Zn	5.0	mg/L	0.040

ANNEXURE-VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	7	8
1.	Name of the Location	---	CN Village, Near Railway Bridge	Sinthupoonthurai, Nearby Tirunelveli Junction
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019
4.	Nature of sample	---	River water & Drains (Sewage Confluence point)	River water & Drains (Sewage Confluence point)
5.	Sample Code Number	---	NGT TNV 20	NGT TNV 25
6.	GPS Coordinates	---	8 ⁰ 42'58"N, 77 ⁰ 42'25"E	8 ⁰ 43'27"N, 77 ⁰ 43'08"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ⁰ C above receiving water temperature	Celsius	25 ⁰ C
10.	pH @ 25 ⁰	6.5 – 8.5	---	7.22
11.	Conductivity	---	µmhos/cm	170
12.	Dissolved Oxygen	5	mg/L	8.3
13.	Total suspended Solids	100	mg/L	4
14.	Total Dissolved Solids		mg/L	124
15.	BOD for 3days @ 27 ⁰ C	30	mg/L	3.94
16.	COD	250	mg/L	40
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	17
20.	Fecal Coliform		MPN/100mL	6
21.	Cadmium as Cd	2.0	mg/L	0.004
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.020
24.	Iron as Fe	3	mg/L	<0.001
25.	Manganese as Mn	2	mg/L	0.016
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	0.025
28.	Zinc as Zn	5.0	mg/L	<0.001

ANNEXURE-VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	9	10
1.	Name of the Location	---	Kokkirakulam, Nearby Tirunelveli Collectorate.	Manimoortheeshwaram, Opposite to sudalaimadan temple, Tirunelveli Junction
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019
4.	Nature of sample	---	River water & Drains (Sewage confluence point)	River water & Drains (Sewage confluence point)
5.	Sample Code Number	---	NGT TNV 32	NGT TNV 26
6.	GPS Coordinates	---	8 ^o 43'33"N, 77 ^o 42'35"E	8 ^o 44'16"N, 77 ^o 42'57"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ^o C above receiving water temperature	Celsius	24 ^o C
10.	pH @ 25 ^o	6.5 – 8.5	---	7.01
11.	Conductivity	---	µmhos/cm	144
12.	Dissolved Oxygen	5	mg/L	6.4
13.	Total suspended Solids	100	mg/L	14
14.	Total Dissolved Solids		mg/L	94
15.	BOD for 3days @ 27 ^o C	30	mg/L	5.94
16.	COD	250	mg/L	32
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	6
20.	Fecal Coliform		MPN/100mL	4
21.	Cadmium as Cd	2.0	mg/L	0.008
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.068
24.	Iron as Fe	3	mg/L	0.138
25.	Manganese as Mn	2	mg/L	<0.001
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	<0.001
28.	Zinc as Zn	5.0	mg/L	<0.001

ANNEXURE-VII					
S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	11	12	
1.	Name of the Location	---	---	Meenakshipuram, Tirunelveli Junction	Road Bridge, near M/s Madura Coats Ltd., V.K Puram.
2.	District	---	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	---	03.01.2019	02.01.2019
4.	Nature of sample	---	---	River water & Drains (Sewage confluence point)	River Water
5.	Sample Code Number	---	---	NGT TNV 23	NGT TNV 01
6.	GPS Coordinates	---	---	8 ⁰ 43'27"N, 77 ⁰ 42'42"E	8 ⁰ 42'33"N, 77 ⁰ 22'40"E
7.	Color	10	Hazen scale	Colorless	Colorless
8.	Odor	Agreeable	---	Odorless	Odorless
9.	Temperature	<5 ⁰ C above receiving water temperature	Celsius	27 ⁰ C	25 ⁰ C
10.	pH @ 25⁰	6.5 – 8.5	---	6.77	7.22
11.	Conductivity	---	µmhos/cm	132	30.3
12.	Dissolved Oxygen	5	mg/L	8.0	8.0
13.	Total suspended Solids	100	mg/L	4	4
14.	Total Dissolved Solids		mg/L	90	20
15.	BOD for 3days @ 27⁰C	30	mg/L	5.74	<2.0
16.	COD	250	mg/L	32	16
17.	Ammonical Nitrogen	50	mg/L	<0.56	<0.56
18.	Sulphides	2.0	mg/L	,2.0	<2.0
19.	Total Coliform	500/ less	MPN/100mL	9	6
20.	Fecal Coliform		MPN/100mL	4	2
21.	Cadmium as Cd	2.0	mg/L	0.007	<0.001
22.	Total Chromium as Cr	2.0	mg/L	<0.001	<0.001
23.	Copper as Cu	3.0	mg/L	0.085	0.001
24.	Iron as Fe	3	mg/L	0.017	0.192
25.	Manganese as Mn	2	mg/L	<0.001	0.030
26.	Nickel as Ni	3.0	mg/L	<0.001	<0.001
27.	Lead as Pb	0.1	mg/L	0.025	0.007
28.	Zinc as Zn	5.0	mg/L	0.118	<0.001

ANNEXURE - VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	13	14
1.	Name of the Location	---	Thalayanai River, Pabansam	Kalidaikurichi, Ambasumadram Taluk.
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	02.01.2019	02.01.2019
4.	Nature of sample	---	River water	River water
5.	Sample Code Number	---	NGT TNV 04	NGT TNV 02
6.	GPS Coordinates	---	8 ⁰ 42'37"N, 77 ⁰ 22'01"E	8 ⁰ 41'29"N, 77 ⁰ 27'45"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ⁰ C above receiving water temperature	Celsius	25 ⁰ C
10.	pH @ 25 ⁰	6.5 – 8.5	---	6.58
11.	Conductivity	---	µmhos/cm	33.6
12.	Dissolved Oxygen	5	mg/L	7 9
13.	Total suspended Solids	100	mg/L	4
14.	Total Dissolved Solids		mg/L	22
15.	BOD for 3days @ 27 ⁰ C	30	mg/L	<2.0
16.	COD	250	mg/L	16
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	9
20.	Fecal Coliform		MPN/100mL	4
21.	Cadmium as Cd	2.0	mg/L	<0.001
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	<0.001
24.	Iron as Fe	3	mg/L	0.189
25.	Manganese as Mn	2	mg/L	0.042
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	<0.001
28.	Zinc as Zn	5.0	mg/L	<0.001

ANNEXURE - VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	15	16
1.	Name of the Location	---	Thirupudaimarudhur, Near Thirupudaimarudhur temple.	Kondanagaram Village, Tirunelveli.
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	02.01.2019	03.01.2019
4.	Nature of sample	---	River water	River water
5.	Sample Code Number	---	NGT TNV 10	NGT TNV 15
6.	GPS Coordinates	---	8 ^o 43'42"N, 77 ^o 29'42"E	8 ^o 40'53"N, 77 ^o 36'56"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ^o C above receiving water temperature	Celsius	28 ^o C
10.	pH @ 25 ^o	6.5 – 8.5	---	7.12
11.	Conductivity	---	µmhos/cm	252
12.	Dissolved Oxygen	5	mg/L	5.8
13.	Total suspended Solids	100	mg/L	4
14.	Total Dissolved Solids		mg/L	160
15.	BOD for 3days @ 27 ^o C	30	mg/L	2.54
16.	COD	250	mg/L	48
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	6
20.	Fecal Coliform		MPN/100mL	4
21.	Cadmium as Cd	2.0	mg/L	0.001
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.005
24.	Iron as Fe	3	mg/L	0.062
25.	Manganese as Mn	2	mg/L	<0.001
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	<0.001
28.	Zinc as Zn	5.0	mg/L	<0.001

ANNEXURE - VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	17	18
1.	Name of the Location	---	Gopalsamudram, Tirunelveli	Manpadaiveedu, Near Online monitoring station.
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019
4.	Nature of sample	---	River water	River water
5.	Sample Code Number	---	NGT TNV 16	NGT TNV 29
6.	GPS Coordinates	---	8 ⁰ 41'9"N, 77 ⁰ 38'43"E	8 ⁰ 46'58"N, 77 ⁰ 43'49"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ⁰ C above receiving water temperature	Celsius	27 ⁰ C
10.	pH @ 25 ⁰	6.5 – 8.5	---	6.83
11.	Conductivity	---	µmhos/cm	116
12.	Dissolved Oxygen	5	mg/L	7.6
13.	Total suspended Solids	100	mg/L	8
14.	Total Dissolved Solids		mg/L	84
15.	BOD for 3days @ 27 ⁰ C	30	mg/L	2.07
16.	COD	250	mg/L	36
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	4
20.	Fecal Coliform		MPN/100mL	2
21.	Cadmium as Cd	2.0	mg/L	0.002
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	<0.001
24.	Iron as Fe	3	mg/L	<0.001
25.	Manganese as Mn	2	mg/L	<0.001
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	0.030
28.	Zinc as Zn	5.0	mg/L	0.002

ANNEXURE - VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	19	20
1.	Name of the Location	---	Vellokovil, near cremation area, Tirunelveli	Seevalaperi, near cremation ground.
2.	District	---	Tirunelveli	Tirunelveli
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019
4.	Nature of sample	---	River water & Drains	River water & Drains
5.	Sample Code Number	---	NGT TNV 27	NGT TNV 31
6.	GPS Coordinates	---	8 ^o 44'29"N, 77 ^o 42'48"E	8 ^o 46'3"N, 77 ^o 47'50"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ^o C above receiving water temperature	Celsius	27 ^o C
10.	pH @ 25 ^o	6.5 – 8.5	---	6.75
11.	Conductivity	---	µmhos/cm	143
12.	Dissolved Oxygen	5	mg/L	7.5
13.	Total suspended Solids	100	mg/L	4
14.	Total Dissolved Solids		mg/L	110
15.	BOD for 3days @ 27 ^o C	30	mg/L	5.34
16.	COD	250	mg/L	40
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	4
20.	Fecal Coliform		MPN/100mL	2
21.	Cadmium as Cd	2.0	mg/L	0.008
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.052
24.	Iron as Fe	3	mg/L	0.050
25.	Manganese as Mn	2	mg/L	<>0.001
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	0.021
28.	Zinc as Zn	5.0	mg/L	0.043

ANNEXURE - VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	21	22	23
1.	Name of the Location	---	Murapparnadu (upstream), Thoothukudi district entry point.	Murapparnadu, Near Central Water Commission Office	Srivaikundam, Padithurai.
2.	District	---	Thoothukudi	Thoothukudi	Thoothukudi
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019	03.01.2019
4.	Nature of sample	---	River water	River water	River water
5.	Sample Code Number	---	NGT TN 1	NGT TN 2	NGT TN 3
6.	GPS Coordinates	---	8 ^o 43'10"N, 77 ^o 44'56"E	8 ^o 42'56"N, 77 ^o 50'1"E	8 ^o 37'38"N, 77 ^o 54'43"E
7.	Color	10	Hazen scale	Colorless	Colorless
8.	Odor	Agreeable	---	Odorless	Odorless
9.	Temperature	<5 ^o C above receiving water temperature	Celsius	23 ^o C	23 ^o C
10.	pH @ 25 ^o	6.5 – 8.5	---	7.27	7.13
11.	Conductivity	---	µmhos/cm	182	187
12.	Dissolved Oxygen	5	mg/L	6.4	7.1
13.	Total suspended Solids	100	mg/L	8	8
14.	Total Dissolved Solids		mg/L	108	112
15.	BOD for 3days @ 27 ^o C	30	mg/L	2.37	4.34
16.	COD	250	mg/L	28	28
17.	Ammonical Nitrogen	50	mg/L	<0.56	<0.56
18.	Sulphides	2.0	mg/L	<2.0	<2.0
19.	Total Coliform	500/ less	MPN/100mL	14	17
20.	Fecal Coliform		MPN/100mL	7	6
21.	Cadmium as Cd	2.0	mg/L	0.010	0.008
22.	Total Chromium as Cr	2.0	mg/L	<0.001	<0.001
23.	Copper as Cu	3.0	mg/L	0.062	0.062
24.	Iron as Fe	3	mg/L	0.056	0.047
25.	Manganese as Mn	2	mg/L	<0.001	0.052
26.	Nickel as Ni	3.0	mg/L	<0.001	<0.001
27.	Lead as Pb	0.1	mg/L	0.018	0.032
28.	Zinc as Zn	5.0	mg/L	0.035	0.023

ANNEXURE - VII

S.No	Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	24	25	26	
1.	Name of the Location	---	Punnakayal Village, Estuary – Sea River Confluence point near Fishing harbor.	Authoor, Rover Bed near over bridge (Sewage confluence point)	Aral Village, VallivilanTamirabarani River Backside of MSV Dumping yard (Sewage confluence point)	
2.	District	---	Thoothukudi	Thoothukudi	Thoothukudi	
3.	Date of the Sample Collection	---	03.01.2019	03.01.2019	03.01.2019	
4.	Nature of sample	---	River water	River water	River water	
5.	Sample Code Number	---	NGT TN 05	NGT TN 06	NGT TN 07	
6.	GPS Coordinates	---	8 ⁰ 38'15"N, 78 ⁰ 71'3"E	8 ⁰ 36'24"N, 78 ⁰ 4'40"E	8 ⁰ 37'18"N, 78 ⁰ 13'6"E	
7.	Color	10	Hazen scale	Colorless	Colorless	
8.	Odor	Agreeable	---	Odorless	Odorless	
9.	Temperature	<5 ⁰ C above receiving water temperature	Celsius	26 ⁰ C	25 ⁰ C	24 ⁰ C
10.	pH @ 25 ⁰	6.5 – 8.5	---	7.50	8.21	7.18
11.	Conductivity	---	µmhos/cm	29400	508	510
12.	Dissolved Oxygen	5	mg/L	4.1	7.0	1.5
13.	Total suspended Solids	100	mg/L	60	20	4
14.	Total Dissolved Solids		mg/L	20580	372	334
15.	BOD for 3days @ 27 ⁰ C	30	mg/L	18.35	6.34	7.41
16.	COD	250	mg/L	80	32	60
17.	Ammonical Nitrogen	50	mg/L	<0.56	<0.56	<0.56
18.	Sulphides	2.0	mg/L	<2.0	<2.0	<2.0
19.	Total Coliform	500/ less	MPN/100mL	90	33	34
20.	Fecal Coliform		MPN/100mL	14	9	9
21.	Cadmium as Cd	2.0	mg/L	0.015	0.013	0.013
22.	Total Chromium as Cr	2.0	mg/L	<0.001	<0.001	<0.001
23.	Copper as Cu	3.0	mg/L	0.075	0.086	0.071
24.	Iron as Fe	3	mg/L	<0.001	<0.001	<0.001
25.	Manganese as Mn	2	mg/L	<0.001	<0.001	<0.001
26.	Nickel as Ni	3.0	mg/L	<0.001	<0.001	<0.001
27.	Lead as Pb	0.1	mg/L	0.02	0.014	0.010

ANNEXURE - VII

28.	Zinc as Zn	5.0	mg/L	0.008	<0.001	<0.001
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S.No		Bathing water Specifications as per IS : 10500 -2012 (Acceptable Limit) in mg/L	UNITS	27
1.	Name of the Location	---	---	Aral Village, Near Charman Temple, Southside.
2.	District	---	---	Thoothukudi
3.	Date of the Sample Collection	---	---	03.01.2019
4.	Nature of sample	---	---	River water
5.	Sample Code Number	---	---	NGT TN 08
6.	GPS Coordinates	---	---	8 ^o 37'6"N, 78 ^o 05'8"E
7.	Color	10	Hazen scale	Colorless
8.	Odor	Agreeable	---	Odorless
9.	Temperature	<5 ^o C above receiving water temperature	Celsius	23 ^o C
10.	pH @ 25 ^o	6.5 – 8.5	---	7.52
11.	Conductivity	---	µmhos/cm	330
12.	Dissolved Oxygen	5	mg/L	5.3
13.	Total suspended Solids	100	mg/L	4
14.	Total Dissolved Solids		mg/L	252
15.	BOD for 3days @ 27 ^o C	30	mg/L	3.94
16.	COD	250	mg/L	32
17.	Ammonical Nitrogen	50	mg/L	<0.56
18.	Sulphides	2.0	mg/L	<2.0
19.	Total Coliform	500/ less	MPN/100mL	70
20.	Fecal Coliform		MPN/100mL	14
21.	Cadmium as Cd	2.0	mg/L	0.012
22.	Total Chromium as Cr	2.0	mg/L	<0.001
23.	Copper as Cu	3.0	mg/L	0.092
24.	Iron as Fe	3	mg/L	<0.001
25.	Manganese as Mn	2	mg/L	<0.001
26.	Nickel as Ni	3.0	mg/L	<0.001
27.	Lead as Pb	0.1	mg/L	0.019
28.	Zinc as Zn	5.0	mg/L	<0.001

ANNEXURE - VIII

Annexure-VIII Status of installation of and operation status of online continuous Effluent Monitoring Systems (OCEMS)						
S. No	Name of the unit	Stack attached to	Online stack parameters	CAAAQ parameters	Source	Water Quality parameters
1	ATC Tires Private Limited, Plot A-2, SIPCOT Industrial Growth Centre, Gangaikondan, Tirunelveli District	Boiler- 14 TPH	PM, NOX, SO2, CO	Nil		Nil
2	M/s. The India Cements Limited, Captive Power Plant, Naranammalpuram Village, Sankar Nagar, Tirunelveli District	1.Raw Mil kiln	PM, NOX, SO2,	2 AAQ stations for PM10 and PM 2.5	ETP outlet	pH, TSS, Temp
		2.Coal Mill	PM			
		3.Cement Mill	PM			
		4.Cooler stack	PM			
		5. Captive Power Boiler	PM, NOX, SO2,			
3	NOVA CARBONS INDIA PRIVATE LIMITED B48, B49 & B-47 Sipcot Industrial Growth Centre, Gangaikondn, Tirunelveli-627352	1. Rotary Kiln - 4 stacks	PM each			
		2. WHRB stacks -6 Nos (2TPH -3Nos) and 3TPH - 3 Nos)	PM each			
		3. Rotary drier stack	PM			
		4. rotary Kiln stack -8 T/day (2 Nos)	PM each			
4	M/s. Dharani Sugars and Chemicals Ltd Sugar Division Unit I, Vasudevanallur, Aathuvazhi, Dharani Nagar, Sivagiri Taluk, Tirunelveli	Boiler stack	PM		Outlet of ETP	Flow, BOD COD, TSS pH
					Inlet of ETP	Flow
5	M/s. Dharani Sugars and	Boiler stack	PM		Outlet of ETP	Flow

ANNEXURE - VIII

	Chemicals Ltd Distillery Division Unit I, Vasudevanallur, Aathuvazhi, Dharani Nagar, Sivagiri Taluk,				Inlet of ETP	Flow
6	M/s. Sun Paper Mill Limited, Vadaku Ariyanayapuram Village, Cheranmahadevi Taluk, Tirunelveli	Boiler- 32 TPH	PM, NOX, SO2,		Outlet of ETP	Flow, BOD COD, TSS pH
7	M/s. Nuclear Power Corporation of India Limited, Kudankulam Power Project, (Unit I &II) Kudankulam & Vijayapatty Villages, Radhapuram Taluk, Tirunelveli	-	-	-	Sea water intake and Cooling water outflow	Temp

ANNEXURE - IX

Map Showing the Sewage out-fall points in Tirunelveli District



SI. NO	LOCATION OF SEWAGE OUT-FALL POINTS	GPS CO-ORDINATES
1	Kurukkuthurai (SOF1)	08° 42' 01'' N, 77° 41' 59'' E
2	C.N Village (SOF2)	08° 42' 58'' N, 77° 42' 42'' E
3	Meenakshipuram (SOF3)	08° 43' 27'' N, 77° 42' 42'' E
4	Kokkirakulam (SOF4)	08° 43' 33'' N, 77° 42' 35'' E
5	Sindupoothurai (SOF5)	08° 43' 36'' N, 77° 43' 8'' E
6	Manimoortheeswaram (SOF6)	08° 44' 16'' N, 77° 42' 57'' E

ANNEXURE - X

Map Showing the MINARS sampling points in Tirunelveli District



SI. NO	LOCATION OF MINARS SAMPLING POINTS	GPS CO-ORDINATES
1	Road Bridge Near M/s. Madura Coats Ltd (M1)	08° 42' 34.74" N, 77° 22' 42.28" E
2	Near Railway bridge, Ambasamudram (M2)	08° 41' 38.96" N, 77° 27' 03.45" E
3	Road Bridge near Kallidaikurichi (M3)	08° 41' 39.09" N, 77° 27' 44.73" E
4	Thirupudaimaruthur Temple Back side (M4)	08° 43' 38.70" N, 77° 29' 46.54" E
5	Road Bridge near M/s. Sun Paper Ltd, Charenmahadevi (M5)	08° 42' 04.04" N, 77° 33' 57.57" E
6	Road Bridge at Kokkirakulam near Tirunelveli Collectorate (M6)	08° 43' 39.96" N, 77° 42' 54.75" E
7	Vellakovil (M7)	08° 45' 19.15" N, 77° 44' 18.65" E
8	Road bridge near Seevalaperi (M8)	08° 46' 51.17" N, 77° 48' 18.26" E

ANNEXURE - XI

Map Showing the Sewage out-fall points in Thoothukudi District



SI. NO	LOCATION OF SEWAGE OUT-FALL POINTS	GPS CO-ORDINATES
1	Punnakayal Village (SOF1)	08° 48' 23.49" N, 78° 05' 07.25" E
2	Authoor (SOF2)	08° 35' 31.79" N, 77° 58' 34.72" E
3	Eral Village (SOF3)	08° 37' 21.90" N, 78° 01' 31.58" E
4	Srivaikundam – Vadakal (SOF4)	08° 37' 41.30" N, 77° 54' 51.41" E
5	Alwarthirunagari (SOF5)	08° 39' 37.21" N, 77° 51' 13.17" E
6	Murappanadu (SOF6)	08° 43' 10.12" N, 77° 49' 54.26" E

ANNEXURE-XII

Map Showing the Solid Waste Dumping points in Thoothukudi District



SI. NO	LOCATION OF SOLID WASTE DUMPING POINTS	GPS CO-ORDINATES
1	Authoor Village (SW1)	08° 37' 27.21" N, 78° 04' 07.28" E
2	Eral Village (SW2)	08° 37' 21.82" N, 78° 01' 31.21" E
3	Arampannai Village (SW3)	08° 47' 14.96" N, 77° 07' 56.76" E

ANNEXURE-XIII

Map Showing the MINARS sampling points in Thoothukudi District



SI. NO	LOCATION OF MINARS SAMPLING POINTS	GPS CO-ORDINATES
1	Authoor (Near Bridge) - (M1)	08° 36' 24" N, 78° 04' 40" E
2	Eral (Near Arulmigu Cherman Kovil) - (M2)	08° 37' 18" N, 78° 13' 06" E
3	Srivaikundam (Near Bridge) – (M3)	08° 37' 38" N, 77° 54' 43" E
4	Murappanadu (Near Central Water Commission Office) – (M4)	08° 42' 56" N, 77° 50' 01" E

SCHEDULE-VI: ENVIRONMENT (PROTECTION) RULES, 1986

(See rule 3A of E (P) Rules, 1986)

**GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS PART-A:
EFFLUENTS**

Sl. No.	Parameter	Standards			
		Inland Surface Water	Public Sewers	Land for Irrigation	Marine coastal areas
1	2	3(a)	3(b)	3 (c)	3 (d)
1	Colour and odour	See 6 of Annexure-I	-	See 6 of Annexure-I	See 6 of Annexure-I
2	Suspended solids mg/l Max.	100	600	200	(a) For process waste water -100 (b) For cooling water effluent 10 % above total suspended matter of influent
3	Particle size of suspended solids	shall pass 850 micron IS Sieve	-		(a) Floatable solids, max 3 mm. (b) Settleable solids, max 850 microns
4	[*Omitted*]				
5	pH value	5.5 to 9	5.5 to 9	5.5 to 9	5.5 to 9
6	Temperature	Shall not exceed 5°C above the receiving water temperature	-	-	Shall not exceed 5°C above the receiving water temperature
7	Oil and grease mg/l, Max	10	20	10	20
8	Total residual chlorine mg/l, Max	1.0	-	-	1.0
9	Ammonical nitrogen (as N) mg/l, Max	50	50	-	50
10	Total Kjeldahl nitrogen (as NH ₃) mg/l, Max	100	-	-	100
11	Free ammonia [as NH ₃] mg/l, Max	5.0	-	-	5.0
12	Biochemical Oxygen Demand (3 days at 27°C) mg/l, Max	30	350	100	100
13	Chemical Oxygen Demand, mg/l Max	250	-	-	250
14	Arsenic (as As) mg/l, Max	0.2	0.2	0.2	0.2
15	Mercury (as Hg), mg/l, Max	0.01	0.01	-	0.01
16	Lead (as Pb) mg/l Max	0.1	1.0	-	2.0
17	Cadmium (as Cd) mg/l, Max	2.0	1.0	-	2.0
18	Hexavalent Chromium (as Cr ⁺⁶) mg/l, Max	0.1	2.0	-	1.0
19	Total chromium (as Cr) mg/l, Max	2.0	2.0	-	2.0

Sl. No.	Parameter	Standards			
		Inland Surface Water	Public Sewers	Land for Irrigation	Marine coastal areas
20	Copper (as Cu) mg/l Max	3.0	3.0	-	3.0
21	Zinc (as Zn) mg/l, Max	5.0	15	-	15
22	Selenium (as Se) mg/l Max	0.05	0.05	-	0.05
23	Nickel (as Ni) mg/l, Max	3.0	3.0	-	5.0
24	Omitted	*	*	*	*
25	Omitted	*	*	*	*
26	Omitted	*	*	*	*
27	Cyanide (as CN) mg/l ,Max	0.2	2.0	0.2	0.2
28	Omitted	*	*	*	*
29	Fluoride (as F) mg/l, Max	2.0	15	-	15
30	Dissolved Phosphates (as P) mg/l, Max	5.0	-	-	-
31	Omitted	*	*	*	*
32	Sulphide (as S) mg/l Max	2.0	-	-	5.0
33	Phenolic compounds [as C ₆ H ₅ OH] mg/l, Max	1.0	5.0	-	5.0
34	Radioactive materials				
	(a) Alpha emitters [Micro curie/ml] max	10 ⁻⁷	10 ⁻⁷	10 ⁻⁸	10 ⁻⁷
	(b) Beta emitters [Micro curie/ml] Max	10 ⁻⁶	10 ⁻⁶	10 ⁻⁷	10 ⁻⁶
35	Bio-assay test	90 % survival of fish after 96 hours in 100 % effluent	90 % survival of fish after 96 hours in 100 % effluent	90 % survival of fish after 96 hours in 100 % effluent	90 % survival of fish after 96 hours in 100 % effluent
36	Manganese (as Mn)	2 mg/l	2 mg/l	-	2 mg/l
37	Iron (as Fe)	3 mg/l	3 mg/l	-	3 mg/l
38	Vanadium (as V)	0.2 mg/l	0.2 mg/l	-	0.2 mg/l
39	Nitrate Nitrogen	10 mg/l	-	-	20 mg/l
40	Omitted	*	*	*	*

* Omitted by Rule 2 (d) (i) of the Environment (Protection) Third Amendment Rules, 1993 vide Notification No. G.S.R 801 (E), dated 31.12.1993

Water Quality Criteria -Designated Best Uses of Water

Designated Best Use	Class	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	1.Total Coliforms Organism MPN/100ml shall be 50 or less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 6mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C, 2mg/l or less
Outdoor bathing (Organised)	B	1.Total Coliforms Organism MPN/100ml shall be 500 or less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 5mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C, 3mg/l or less
Drinking water source after conventional treatment and disinfection	C	1.Total Coliforms Organism MPN/100ml shall be 5000 or less 2. pH between 6 and 9 3. Dissolved Oxygen 4mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C, 3mg/l or less
Propagation of Wild life and Fisheries	D	1. pH between 6.5 and 8.5 2. Dissolved Oxygen 4mg/l or more 3. Free Ammonia (as N)-1.2 mg/l or less 4. Biochemical Oxygen Demand 5 days 20 °C, 2mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	E	1. pH between 6.0 and 8.5 2. Electrical Conductivity at 25 °C micro mhos/cm, maximum 2250 3. Sodium absorption Ratio Max. 26 4. Boron Max. 2mg/l
	Below-E	Not meeting any of the A, B, C, D & E Criteria