BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH AT KOLKATA
ORIGINAL APPLICATION NO.129 OF 2026

IN THE MATTER OF:-

PRATIK SHARMA …APPLICANT

VERSUS

STATE OF JHARKHAND & OTHERS …RESPONDENTS

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Place:- New Delhi
Dated: 23.04.2026

SYNOPSIS

The present Application is being filed under Sections 14, 15 and 20 of the National Green Tribunal Act, 2010 highlighting a substantial question relating to environment i.e. widespread pollution in the water of river Subarnrekha. Recently, on 01,04,2026 (Wednesday) when the local community members reached the banks of river Subarnrekha near Babudih Lal Bhatta, Jamshedpur huge number of fishes were found dead in the Subarnrekha river and there was foul smell everywhere which also became a concern of Public Health.

According to media reports the main cause of death of these fish is water pollution believed to be caused by hypoxia (lack of oxygen). It is submitted that when industrial waste and sewage-contaminate the water having high load of biological oxygen demand (BOD) and Chemical Oxygen Demand (COD) enter the river without treatment it reduces the Dissolved Oxygen (DO) level in receiving water bodies. When the level of dissolved oxygen in the water falls below 4 mg/L, aquatic life starts suffocating. At the same time, the increased level of ammonia from industrial chemicals makes it even more deadly.

In 2010 Jamshedpur Notified Area Committee (JNAC) had made a plan to make Subarnrekha river pollution-free but this is far from being done. Despite the strict instructions of the Jharkhand High Court and NGT to set up a Sewage Treatment Plant (STP), the river remains in the same condition on the ground.

The river Subarnrekha originates 15 kms south of Ranchi on Chhotanagpur plateau and passes through Ranchi, Seraikela-Kharsawan, East Singhbhum in Jharkhand; Paschim Medinipur in West Bengal and Balasore districts in Odisha where finally it drains into Bay of Bengal. This is 395 km-long smallest seasonal river of India’s inter-state river basins having total catchment area of 19,296 sq. km out of which

68.4 % (13,193 sq. km) falls in Jharkhand. However, the river faces numerous challenges due to urbanization, industrial pollution, and habitat degradation which has led to significant pollution levels, affecting both the river's ecosystem and the health of communities relying on its waters.

It is submitted that after the Chandil reservoir the flow of river from Jamshedpur city is inadequate to maintain ecological flow in spite meeting of major tributaries i.e river Kharkhai. Several industrial units including red category industries e.g. Integrated Steel Plants, Thermal Power Plants are situated in the Jamshedpur city and its adjoining industrial areas i.e. Adityapur and Kandra not only withdraw the water of river Subernrekha but also discharge their effluents in it.

Three major urban bodies i.e., Jamshedpur Notified Area Committee, Mango Municipal Corporation, Jugsalai Nagarpalika and Adityapur Municipal Corporation failed to establish any sewage treatment plant to deal with domestic sewage. According to a report titled "National Inventory of Sewage Treatment Plants" published by the CPCB in March 2021, estimated sewage generation for the State of Jharkhand is 1510 MLD and total capacity (including proposed) is 639 MLD (12 STPs).

> 1. Installed capacity is 22 MLD (1.45 %) against sewage generation of 1510 MLD. It shows that there is a gap of 1488 MLD (98.55 %) in treatment capacity.
>
> 2. Installed STPs can be operated at 100% of capacity. However, actual utilized capacity is only 15 MLD and meeting the consented norms."

Further, a newspaper article published in the daily newspaper "Prabhat Khabar" dated 30th March 2026 disclosed that river Subarnrekha which is a lifeline of Jamshedpur city is being polluted due to discharge of polluted water from nine drains and will continue to be polluted due unavailability of Rs. 72 crores to construct a Sewage Treatment Plant (STP) of 31.5 MLD.

It is submitted that polluted water poses a number of risks such as:

- **Health Risks**: Contaminated water increases risk of gastrointestinal diseases, skin infections, and long-term exposure to toxins.
- **Ecological Damage**: Aquatic biodiversity has collapsed in stretches of the river Subarnrekha, with dissolved oxygen levels often near zero.
- **Urban Crisis**: Jamshedpur, where river Subarnrekha flows, faces severe air and water pollution, compounding public health emergencies.

It is submitted that as per Section 24 of the Water (Prevention) and Control of Pollution) Act, 1974:-

> "(a) no person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any 21[Stream or well or sewer or on land]; or
>
> (b) no person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences."

The Water (Prevention) and Control of Pollution) Act, 1974 Act applies to streams, which term includes rivers, flowing or dry watercourses, natural or artificial inland waters, subterranean waters and sea or tidal waters, as well as wells. It applies to industries, operations or processes and treatment and disposal systems; 'all persons', that is, individuals, industries and municipal authorities; and to trade effluents as well as sewage effluents.

The Directive Principles of State Policy, included in Part IV of the Constitution, provide that the State shall endeavour (a) to improve public health (Article 47); and (b) to protect and improve the environment (Article 48-A), are also important in this regard. Further, protection and improvement of the natural environment, including lakes

and rivers, has been identified as a fundamental duty of every citizen in the Constitution (Article 51-A(g).

In ***MC Mehta v. Union of India (Municipalities case), AIR 1988 SC 1115***, a public interest litigation was filed seeking the enforcement of the statutory provisions which impose duties on municipal authorities and the SPCB constituted under the Water Act.. The Supreme Court observed that the municipal authorities have the statutory duty to prevent public nuisance caused by pollution of the river Ganga and therefore, the municipal corporation of Kanpur has to bear the major responsibility for river pollution near the city. The Court also took note of the fact that many of the provisions of the Water Act and the municipal laws for prevention and control of water pollution have just remained on paper without any adequate action being taken pursuant thereto.

In another case, ***Vellore Citizens Welfare Forum v Union of India and Others , AIR 1996 SC 2715,*** the petitioner organization was concerned about water pollution resulting from the discharge of untreated effluents by tanneries and other industries into river Palar in the State of Tamil Nadu, which was a source of drinking water supply. The Supreme Court directed the constitution of an authority under the Environment Act to deal with the situation created by the tanneries and other polluting industries in the State. The authority was also directed to frame and execute scheme(s) for reversing ecological/environmental damage caused by pollution in the State. It also imposed pollution fine on all the tanneries, and ordered the closure of tanneries that fail to pay the fine.

Section 17 of the NGT Act, 2010 imposes absolute liability in cases where death of, or injury to, any person (other than a workman) or damage to any property or environment has resulted from an accident or the adverse impact of an activity or operation or process, under any

enactment specified in Schedule I, then in such a case the person responsible shall be liable to pay such relief or compensation for such death, injury or damage, under all or any of the heads specified in Schedule II, as may be determined by the Tribunal.

In ***Indian Council for Enviro-Legal Action v Union of India and Others , AIR 1996 SC 1446***, among other claims, it was alleged that water in wells and streams in village Bichhri in Udaipur district in the State of Rajasthan had become unfit for consumption as a result of disposal of untreated toxic sludge from an industrial complex located within the limits of the village. The Supreme Court held that the respondents were absolutely liable to pay compensation for the harm caused by them to the villagers in the affected area and surrounding areas as well as to the environment. According to the Court, the power to levy costs required for carrying out remedial measures is implicit in the Environment Act.

There is violation of Section 24 of the Water (Prevention and Control of Pollution) Act, 1974 and provisions of Environment (Protection) Act/Rules,1986. The violators are also liable to be saddled with imposition of Environmental Compensation/liability in terms of ‘Polluter Pays Principle’.

Hence, the present Application.

List of Dates and Events

Date	Event
23.03.1974	Water (Prevention and Control of Pollution) Act, 1974 was enacted to provide for the prevention and control of water pollution, and for the maintaining or restoring of wholesomeness of water in the country. There is widespread pollution in the water of river Subarnrekha in and around Jamshedpur owing to the acts and omissions by Respondent State authorities like discharging of industrial and residential waste in river Subarnrekha. This act is in violation of Section 24 of the Water (Prevention and Control of Pollution) Act, 1974 that prohibits the use of stream or any other water body for dumping of polluting matter. Any violation of Section 24 of Water (Prevention and Control of Pollution) Act, 1974 is punishable under Section 43 of the Water (Prevention and Control of Pollution) Act, 1974 and Environment (Protection) Act, 1986.
1986	Environment (Protection) Act, 1986 was enacted. This Act provided for a robust mechanism legal framework for Environmental governance in India. It inter-alia, provides for a safeguards for prevention of environmental accidents and damages. The Environment (Protection) Rules, 1986 also enacted which set legally enforceable limits on the concentration of pollutants in waste water (effluent) that industrial units are permitted to discharge to different receiving environments. These standards are detailed in Schedule I and VI of the rules and are mandatory for all industrial units in India. Compliance with the Standards

	is crucial to protect and improve the quality of the environment and prevent environmental pollution.
2010	In 2010 Jamshedpur Notified Area Committee (JNAC) had made a plan to make Subarnrekha river pollution-free but this is far from being done. Despite the strict instructions of the Jharkhand High Court to set up a Sewage Treatment Plant (STP), the river remains in the same condition on the ground.
01.04.2026	On 01,04,2026 (Wednesday) when the local community members reached the banks of river Subarnrekha near Babudih Lal Bhatta, Jamshedpur huge number of fishes were found dead in the Subarnrekha river and there was foul smell everywhere which also became a concern of Public Health. According to media reports the main cause of death of these fish is water pollution believed to be caused by hypoxia (lack of oxygen). It is submitted that when industrial waste and sewage-contaminated water having high load of biological oxygen demand (BOD) and Chemical Oxygen Demand (COD) enter the river without treatment reduces the Dissolved Oxygen (DO) level in receiving water bodies. When the level of dissolved oxygen in the water falls below 4 mg/L, aquatic life starts suffocating. At the same time, the increased level of ammonia from industrial chemicals makes it even more deadly.
23.04.2026	Hence this Application

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IN THE MATTER OF:-

PRATIK SHARMA …APPLICANT

VERSUS

STATE OF JHARKHAND & OTHERS …RESPONDENTS

MEMO OF PARTIES

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VERSUS

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2. **DEPUTY COMMISSIONER, EAST SINGHBHUM**
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3. **JAMSHEDPUR NOTIFIED AREA COMMITTEE (JNAC)**
   through it's Executive Officer
   Sakchi, Jamshedpur-831001
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4. **MANGO MUNICIPAL CORPORATION,**
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5. **JUGSALAI MUNICIPALITY**
   through it's Executive Officer
   Station Road Jugsalai, Jamshedpur 06
   Email: jugsalaimunicipality@gmail.com
6. **ADITYAPUR MUNICIPAL CORPORATION**
   through it's Executive Officer
   Kalpanapuri, Near S-Type Chowk,
   Adityapur, Jharkhand
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7. **JHARKHAND STATE POLLUTION CONTROL BOARD**
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8. **WATER RESOURCE DEPARTMENT**
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9. **CENTRAL POLLUTION CONTROL BOARD**
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...RESPONDENTS

MOST RESPECTFULLY SHOWETH:

I. The address of the Applicant's counsel is given below for the service of notices of this application.

II. The addresses of the Respondents are given above for the service of notices of this application.

III. The present Application is being filed under Sections 14, 15 and 20 of the National Green Tribunal Act, 2010 highlighting a substantial question relating to environment relating to widespread pollution in the water of river Subarnrekha. On 01,04,2026, when the local community members reached the banks of river Subarnrekha near Babudih Lal Bhatta, Jamshedpur huge number of fishes were found dead in the Subarnrekha river and there was foul smell everywhere which also became a concern of Public Health.

IV. There is widespread pollution in the water of river Subarnrekha in and around Jamshedpur owing to the acts and omissions by Respondent State authorities like discharging of industrial and residential waste in river Subarnrekha. This act is in violation of Section 24 of the Water (Prevention and Control of Pollution) Act, 1974 that prohibits the use of stream or any other water body for dumping of polluting matter. Any violation of Section 24 of Water (Prevention and Control of Pollution) Act, 1974 is punishable under Section 43 of the Water (Prevention and Control of Pollution) Act, 1974, Environment (Protection) Act, 1986 and Polluter's Pay Principle. As there is violation of a Schedule I enactment under the NGT Act, 2010 the Applicant has no other remedy except approaching this Hon'ble Tribunal.

ARRAY OF PARTIES:

1. That the Applicant is an environmentally concerned citizen and resident of Jamshedpur, East Singhbhum, State of Jharkhand. He is

a lawyer and also having concern on environmental issues who has been involved in various activities pertaining to good governance and environmental conservation in Jharkhand.

2. That the Respondent No. 1 is the State of Jharkhand represented by its Chief Secretary, responsible for overall supervision of environmental issues in the State. Respondent No.2 is the Deputy Commissioner of East Singhbhum who is in-charge of the local administration. Respondent No. 3 to 6 are the municipal authorities of the area from where the Subarnrekha river passes and gets polluted due to act and omissions of these municipal authorities. Respondent No.7 is the Pollution Control Board of the State, represented by its Member Secretary, responsible for ensuring that steps are taken to abate and control pollution in the said State of Jharkhand. Respondent No.8 is responsible for the sustainable development, management, and optimal utilization of the state's surface and groundwater resources. Respondent No.9 is the Central Pollution Control Board (CPCB) plays a crucial role in monitoring and controlling pollution and advising the Government, and setting standards for air and water quality

FACTS LEADING TO THE FILING OF PRESENT APPLICATION:

3. That the river Subarnrekha originates 15 kms south of Ranchi on Chhotanagpur plateau and passes through Ranchi, Seraikela-Kharsawan, East Singhbhum in Jharkhand; Paschim Medinipur in West Bengal and Balasore districts in Odisha where finally it enters into Bay of Bengal. It is a 395 km-long smallest seasonal river of India's inter-state river basins having total catchment area of 19,296 sq. km out of which 68.4 % (13,193 sq. km) falls in Jharkhand. However, the river faces numerous challenges due to urbanization, industrial pollution, and habitat degradation have led to significant

pollution levels, affecting both the river's ecosystem and the health of communities relying on its waters.

4. That after the Chandil reservoir the flow of river from Jamshedpur city is inadequate to maintain ecological flow in spite meeting of a major tributaries i.e river Kharkhai. Several industrial units situated in the Jamshedpur city and its adjoining industrial areas i.e. Adityapur and Kandra not only withdraw the water of river Subernrekha but also discharge their effluents in it. Three major urban bodies i.e., Jamshedpur Notified Area Committee, Mango Municipal Corporation, Jugsalai Nagarpalika and Adityapur Municipal Corporation have failed to establish any sewage treatment plant to deal with domestic sewage.

CPCB REPORT TITLED "NATIONAL INVENTORY OF SEWAGE TREATMENT PLANTS"

5. That according to a report titled "National Inventory of Sewage Treatment Plants" published by the CPCB in March 2021, estimated sewage generation for the State of Jharkhand is 1510 MLD and total capacity (including proposed) is 639 MLD (12 STPs). The CPCB report further states that

> "Figure 4.11 depicts sewage generation, treatment capacity, operational capacity, actual utilization, complied capacity, capacities of non operational STPs, under construction STPs and proposed STPs. Based on the data analysis, following observations are made:
>
> 1. Installed capacity is 22 MLD (1.45 %) against sewage generation of 1510 MLD. It shows that there is a gap of 1488 MLD (98.55 %) in treatment capacity.
> 2. Installed STPs can be operated at 100 % of capacity. However, actual utilized capacity is only 15 MLD and meeting the consented norms."

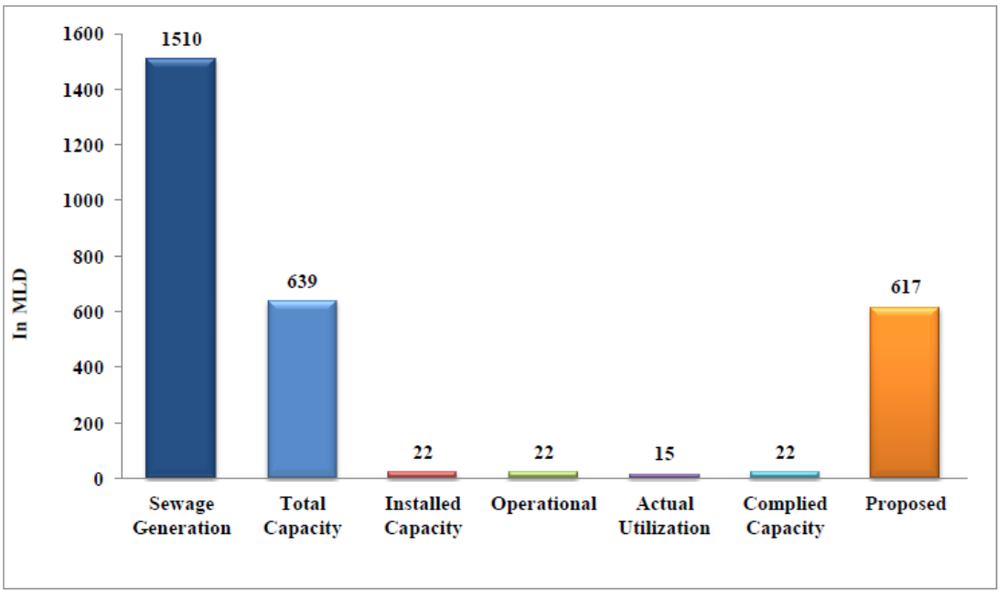

Figure 4.11: Sewage Generation and Treatment Capacity (MLD) - Jharkhand

Copy of the National Inventory of Sewage Treatment Plants" published by the CPCB in March 2021 is annexed herewith as **ANNEXURE-A1**

National Water Quality Monitoring Network (NWMP)

6. That further, a newspaper article titled ***"Pollution Chokes Subarnarekha river in Jamshedpur: ₹72 Crore Sewage Project Stalled"*** published in the daily newspaper Avenue Mail dated 30th March 2026 disclosed that river Subarnrekha which is a lifeline of Jamshedpur city is being polluted due to discharge of polluted water from nine drains and will continue to be polluted due unavailability of Rs. 72 crores to construct a Sewage Treatment Plant (STP) of 31.5 MLD.

Copy of the newspaper article titled ***"Pollution Chokes Subarnarekha river in Jamshedpur: ₹72 Crore Sewage Project Stalled"*** published in the newspaper Avenue Mail dated 30th March 2026 is annexed herewith as **ANNEXURE-A2**

7. That the Central Pollution Control Board (CPCB) in collaboration with State Pollution Control Boards (SPCBs) in the States and Pollution Control Committees (PCCs) in Union Territories has established a National Water Quality Monitoring Network (NWMP) in order to assess status of water quality of water resources and to facilitate for

prevention and control of pollution in water bodies. Under the NWMP, water samples are analyzed for 9 core parameters, 19 general parameters, 9 trace metals and set of pesticides as per Guidelines on Water Quality Monitoring, 2017 issued by Ministry of Environment, Forest and Climate Change (MoEF&CC) analyzed water quality parameters are compared with the designated best use water quality criteria recommended by CPCB or primary water quality criteria for outdoor bathing notified under the Environment (Protection) Rules, 1986 or BIS Drinking Water Specifications i.e. IS:10500-2012 or water quality standards for coastal water depending on the use of water bodies. The sampling location established under NWMP in the upstream and downstream of Subarnrekha river and its tributary (Kharkhai river) at Jamshedpur city is shown below:

8. That from the data published by CPCB for water quality of river Subarnrekha in 2024 shows that SPCB, Jharkhand has not monitored level of Nitrate+Nitrite Nitrogen, Faecal Coliform, Total Coliform and Fecal Streprococci on the water samples collected at all the four sampling locations shown above on the google map whereas other SPCB have analysed the water samples for these four

parameters apart from Temperature, DO, pH, Conductivity and BOD. Even the SPCB, Jharkhand has failed to upload result of monthly water quality report of any sampling locations established under NWMP or published any reports on status of air, water or noise. This clearly shows about slackness of SPCB, Jharkhand to discharge their primary duty to control pollution

in the state.

Copy of the data published by CPCB for water quality of river Subarnrekha in 2024 is annexed herewith as **ANNEXURE-A3**

9. That it is submitted that the undermentioned table is developed from discharge guidelines given Schdeule I of the Environmental (Protection) Rules, 1986 but the SPCB has failed not setup any credential monitoring system to monitor level of these pollutants in Subarnrekha and Kharkhai river.

	Integrated Steel Plant					**Thermal Power Plant**			
Parameters	**Coke Oven**	**Sintering Plant**	**Blast Furnace**	**Steel Making Shop (Basic Oxygen Furnace)**	**Rolling Mill**	**Condenser**	**Boiler blow down**	**Colling Tower blow down**	**Ash pond effluent**
Temperature						not more than 5^0 higher than intake water temp			
pH	6.8-8.5	6.8-8.5	6.8-8.5	6.8-8.5	6.0-9.0	6.5-8.5			6.5-8.5
Suspended Solids	100.0	100.0	50.0	100.0	100.0		100.0		100.0
BOD	30.0								
COD	250.0								
Oil and Grease	10.0	10.0	10.0	10.0	10.0		20.0		20.0
Amonnical N	50.0		50.0						
Cyanide	0.2		0.2						
Phenol	1.0								
Copper (Total)							1.0		
Iron (Total							1.0		
Zinc								1.0	
Chromium (Total)								0.2	
Phosphate								5.0	
Free available Chlorine								0.5	

10. That it is important to consider that Ammonical N is very toxic in nature and a slight increase in receiving water causes gill tissue damage in fishes which leads to rapid breathing, gasping at surface. Similarly, Cyanide restricts the cells to use oxygen, even if it's present in water at low concentration leading to internal suffocation (histotoxic hypoxia) in fish. Cyanide acts very quickly due to which fish can die within minutes to hours particularly in closed or slow-moving waters.

11. That it is submitted that CPCB has developed an Online Automated Alerts Generation Protocol for OCEMS (Emission & Effluent) in July 2025 which shows that this protocol not yet functional as no information in this regard is available in public domain.

    Copy of the Online Automated Alerts Generation Protocol for OCEMS (Emission & Effluent) in July 2025 developed by CPCB is annexed herewith as **ANNEXURE-A4**

PRESENT ISSUE

12. That an article published in daily newspaper "Dainik Bhaskar" dated 1st April 2026 quoting that more than 4 quintal fishes died in river Subarnrekha at Jamshedpur. Again, an article published in daily newspaper "Dainik Bhaskar" dated 4th April 2026 cover the reasons for death of more than 6 quintals of fishes quoted by Mr. Jitendra Kumar Singh, Regional Officer, State Pollution Control Board, Jharkhand. According to Mr. Singh the reasons for death of fishes was due to low DO level caused by increase of runoff in drains due to rain fall. The reasons given by Mr. Singh for low DO level is unscientific as increase in runoff due to rain can primarily bring only suspended materials and debris which cannot lower the DO level unless there is increase in the organic load. The daily rainfall data available on NASA Website (annexed as Annexure-A5) shows that total rainfall between 09-12 March, 2026 was only 0.26 mm, 15-22 March, 2026 was 23.77 mm and 26-31 March 13.09 mm. Hence, if

increase of runoff in drains due to rain fall is sole factor for lowering the DO then fish mortality would also have been observed on 23rd March 2026. He completely overlooked the characteristics of effluent released from red category industries such as iron & steel industries and thermal power plants located in the Jamsedpur city.

Copy of the daily rainfall data available on NASA Website is annexed herewith as **ANNEXURE-A5.**

13. That Mr. Jitendra Kumar Singh, Regional Officer, State Pollution Control Board, Jharkhand is also quoted that flow in river is almost nil and water is stagnant which means that there is no minimum ecological flow maintained in the river due to impounding of water in Subarnrekha river at Chandi by the authority of Water Recourse Department, Govt. of Jharkhand for the Subarnrekha Multipurpose Project in spite draining of water from Kharkhai riverat Jamshedpur city. The daily newspaper article published in "Prabhat Khabar" dated 11th April 2026 reported that water of river Subarnrekha and its tributary Kharkhai is highly polluted and even not fit for bathing purpose based on a detailed investigation undertaken by the SPCB, Jharkhand. Surprisingly, the SPCB, Jharkhand again in the report remained silent on identification of industrial unit or drains responsible for making the river water unfit even for bathing purpose at Jamshedpur city.

Copy of the Photograph and Media Reports highlighting the death of large number of fishes due to pollution in river Subarnrekha are annexed herewith as **ANNEXURE-A6 (COLLY)**

14. That the SPCB has not made the report public or acted upon to erect proper signage along the Subarnrekha river warning the local inhabitant particularly underprivileged communities depend solely on the use the river water even for bathing purpose.

15. That although the Applicant does not have any personal grouse/complaint against any individual officer but does not have any trust on findings to be obtained from SPCB in instant matter as it is important to mention here that the very fact that post of Chairman and Member Secretary of SPCB is headed by non qualified persons in accordance with observation made in order of principal bench of NGT in Original Application 318 of 2013. Most surprising is about officer who is still holding the post of Member Secretary against whom this Hon'ble Tribunal has given adverse findings. This Hon'ble Tribunal vide order dated 05.12.2019 in OA No. 23 of 2017 has already questioned the Chief Secretary, Jharkhand not to continue a particular officer as Member Secretary of the SPCB, Jharkhand.

> *"The Member Secretary instead of answering the questions upfront chose to hedge around to deflect the questions posed to him. Considering the obvious ineptitude of the Member Secretary, option before this Tribunal is either to take coercive measures for failure and negligence of the Member Secretary or to require the Chief Secretary to look into the matter and take decision whether such important office as Member Secretary, State PCB should be headed by any other suitable, technically sound person with the ability of effective environmental governance. Such decision may be taken at the earliest so that public service functions assigned to such high office are discharged in a responsible manner."*

Copy of the Order dated 05.12.2019 in OA No. 23 of 2017 is annexed herewith as **ANNEXURE-A7**

16. That this Hon'ble Tribunal has issued directions, among others, for ensuring water quality and e-flow in the rivers, vide order/judgement dated 10.12.2015 and 13.07.2017 in Original Application (OA) 200 of 2014 and vide order dated 20.09.2018 in OA No. 673 of 2018.

17. That it is submitted that CPCB along with IIT-Roorkee needs to suggest minimum eflow to be maintained in river Subarrekha and it's tributaries. Based on report, authority of Subarnrekha Multipurpose Project needs to be directed to release sufficient water to maintain minimum ecological flow suggested by the CPCB.

GROUNDS

18. That the instant Application is being filed on the following grounds amongst others that the Applicant may take up at the time of hearing:

    A. Because the present Application is filed before the Hon'ble Tribunal highlighting a substantial question relating to environment .i.e. widespread pollution in the water of river Subarnrekha.

    B. Because recently, on 01,04,2026 when the local community members reached the banks of river Subarnrekha near Babudih Lal Bhatta, Jamshedpur huge number of fishes were found dead in the Subarnrekha river and there was foul smell everywhere which also became a concern of Public Health.

    C. Because On 01,04,2026 (Wednesday) when the local community members reached the banks of river Subarnrekha near Babudih Lal Bhatta, Jamshedpur huge number of fishes were found dead in the Subarnrekha river and there was foul smell everywhere which also became a concern of Public Health.

    D. According to media reports the main cause of death of these fish is water pollution believed to be caused by hypoxia (lack of oxygen). It is submitted that when industrial waste and sewage-contaminated water having high load of biological oxygen demand (BOD) and Chemical Oxygen Demand (COD) enter

the river without treatment reduces the Dissolved Oxygen (DO) level in receiving water bodies. When the level of dissolved oxygen in the water falls below 4 mg/L, aquatic life starts suffocating. At the same time, the increased level of ammonia from industrial chemicals makes it even more deadly.

E. Because in 2010 Jamshedpur Notified Area Committee (JNAC) had made a plan to make Subarnrekha river pollution-free but this is far from being done. Despite the strict instructions of the Jharkhand High Court to set up a Sewage Treatment Plant (STP), the river remains in the same condition on the ground.

F. Because It is submitted that polluted water poses a number of risks such as:

- **Health Risks**: Contaminated water increases risk of gastrointestinal diseases, skin infections, and long-term exposure to toxins.
- **Ecological Damage**: Aquatic biodiversity has collapsed in stretches of the river Subarnrekha, with dissolved oxygen levels often near zero.
- **Urban Crisis**: Jamshedpur, where river Subarnrekha flows, faces severe air and water pollution, compounding public health emergencies.

G. Because from the data published by CPCB for water quality of river in 2024 (annexed as Annexure-A3) says that SPCB, Jharkhand has not monitored level of Nitrate+Nitrite Nitrogen, Faecal Coliform, Total Coliform and Fecal Streprococci on the water samples collected at all the four sampling locations shown above on the google map whereas other SPCB have analysed the water samples for these four parameters apart from Temperature, DO, pH, Conductivity and BOD. Even the

SPCB, Jharkhand has failed to upload result of monthly water quality report of any sampling locations established under NWMP or published any reports on status of air, water or noise. This clearly shows about slackness of SPCB, Jharkhand to discharge their primary duty to control pollution in the state.

H. Because Ammonical N is very toxic in nature and a slight increase in receiving water causes gill tissue damage in fishes which leads to rapid breathing, gasping at surface. Similarly, Cyanide restricts the cells to use oxygen, even if it's present in water at low concentration leading to internal suffocation (histotoxic hypoxia) in fish. Cyanide acts very quickly due to which fish can die within minutes to hours particularly in closed or slow-moving waters.

I. Because an article published in daily newspaper "Dainik Bhaskar" dated 1st April 2026 quoting that more than 4 quintal fishes died in river Suberrekha at Jamshedpur. Again, an article published in daily newspaper "Dainik Bhaskar" dated 4th April 2026 cover the reasons for death of more than 6 quintals of fishes quoted by Mr. Jitendra Kumar Singh, Regional Officer, State Pollution Control Board, Jharkhand. According to Mr. Singh the reasons for death of fishes was due to low DO level caused by increase of runoff in drains due to rain fall. The reasons given by Mr. Singh for low DO level is unscientific as increase in runoff due to rain can bring only suspended materials and debris which cannot lower the DO level unless there is increase in the organic load. The daily rainfall data available on NASA Website (annexed as Annexure-A5) shows that total rainfall between 09-12 March, 2026 was only 0.26 mm, 15-22 March, 2026 was 23.77 mm and 26-31 March 13.09 mm. Hence, if increase of runoff in drains due to rain fall is

sole factor for lowering the DO then fish mortality would also have been observed on 23rd March 2026. He completely overlooked the characteristics of effluent released from any iron & steel industries and thermal power plants located in the Jamshedpur city.

J. Because Mr. Jitendra Kumar Singh, Regional Officer, State Pollution Control Board, Jharkhand has also quoted that flow in river is almost nil and water is stagnant which means that there is no minimum ecological flow maintained in the river due to impounding of water in Subarnrekha and Kharkhai river by the authority of Subarnrekha Multipurpose Project. The daily newspaper article published in “Prabhat Khabar” dated 11th April 2026 reported that water of river Subarnrekha and its tributary Kharkhai is highly polluted and even not fit for bathing purpose based on a detailed investigation undertaken by the SPCB, Jharkhand. Surprisingly, the SPCB, Jharkhand again in the report remained silent on identification of industrial unit or drains responsible for making the river water unfit even for bathing purpose at Jamshedpur city.

K. Because the SPCB has not made the report public or acted upon to erect proper signage along the Subarnrekha river warning the local inhabitant not to use the river water even for bathing purpose. Such act of SPCB is quite obvious and even the NGT vide order dated 05.12.2019 in OA No. 23 of 2017 has already questioned the Chief Secretary, Jharkhand not to continue the then officer as Member Secretary of the SPCB, Jharkhand.

> *“The Member Secretary instead of answering the questions upfront chose to hedge around to deflect the questions posed to him. Considering the obvious ineptitude of the Member Secretary, option before this Tribunal is either to take coercive measures for failure and negligence of the*

Member Secretary or to require the Chief Secretary to look into the matter and take decision whether such important office as Member Secretary, State PCB should be headed by any other suitable, technically sound person with the ability of effective environmental governance. Such decision may be taken at the earliest so that public service functions assigned to such high office are discharged in a responsible manner."

L. Because it is submitted that as per Section 24 of the Water (Prevention) and Control of Pollution) Act, 1974:-

> "(a) no person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any 21[Stream or well or sewer or on land]; or
>
> (b) no person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences."

M. Because there is violation of Section 24 of the Water (Prevention and Control of Pollution) Act, 1974 and provisions of Environment (Protection) Act/Rules, 1986. The violators are also liable to be saddled with imposition of Environmental Compensation/liabilty in terms of 'Polluter Pays Principle'.

N. Because the Water (Prevention) and Control of Pollution) Act, 1974 Act applies to streams, which term includes rivers, flowing or dry watercourses, natural or artificial inland waters, subterranean waters and sea or tidal waters, as well as wells. It applies to industries, operations or processes and treatment and disposal systems; 'all persons', that is, individuals, industries and municipal authorities; and to trade effluents as well as sewage effluents.

O. Because The Environment (Protection) Rules, 1986 have set legally enforceable limits on the concentration of pollutants in wastewater (effluent) that industrial units are permitted to discharge to different receiving environments. These standards

are detailed in Schedule I and Schedule VI of the rules and are mandatory for all industrial units in India. Compliance with the standards is crucial to protect and improve the quality of Environment and prevent environmental pollution.

P. Because the Directive Principles of State Policy, included in Part IV of the Constitution, provide that the State shall endeavour (a) to improve public health (Article 47); and (b) to protect and improve the environment (Article 48-A), are also important in this regard. Further, protection and improvement of the natural environment, including lakes and rivers, has been identified as a fundamental duty of every citizen in the Constitution (Article 51-A(g).

Q. Because in ***MC Mehta v. Union of India (Municipalities case), AIR 1988 SC 1115***, a public interest litigation was filed seeking the enforcement of the statutory provisions which impose duties on municipal authorities and the SPCB constituted under the Water Act.. The Supreme Court observed that the municipal authorities have the statutory duty to prevent public nuisance caused by pollution of the river Ganga and therefore, the municipal corporation of Kanpur has to bear the major responsibility for river pollution near the city. The Court also took note of the fact that many of the provisions of the Water Act and the municipal laws for prevention and control of water pollution have just remained on paper without any adequate action being taken pursuant thereto.

R. Because in another case, ***Vellore Citizens Welfare Forum v Union of India and Others , AIR 1996 SC 2715,*** the petitioner organization was concerned about water pollution resulting from the discharge of untreated effluents by tanneries and other industries into river Palar in the State of Tamil Nadu, which was

a source of drinking water supply. The Supreme Court directed the constitution of an authority under the Environment Act to deal with the situation created by the tanneries and other polluting industries in the State. The authority was also directed to frame and execute scheme(s) for reversing ecological/environmental damage caused by pollution in the State. It also imposed pollution fine on all the tanneries, and ordered the closure of tanneries that fail to pay the fine.

S. Because Section 17 of the NGT Act, 2010 imposes absolute liability in cases where death of, or injury to, any person (other than a workman) or damage to any property or environment has resulted from an accident or the adverse impact of an activity or operation or process, under any enactment specified in Schedule I, then in such a case the person responsible shall be liable to pay such relief or compensation for such death, injury or damage, under all or any of the heads specified in Schedule II, as may be determined by the Tribunal.

T. Because in ***Indian Council for Enviro-Legal Action v Union of India and Others , AIR 1996 SC 1446***, among other claims, it was alleged that water in wells and streams in village Bichhri in Udaipur district in the State of Rajasthan had become unfit for consumption as a result of disposal of untreated toxic sludge from an industrial complex located within the limits of the village. The Supreme Court held that the respondents were absolutely liable to pay compensation for the harm caused by them to the villagers in the affected area and surrounding areas as well as to the environment. According to the Court, the power to levy costs required for carrying out remedial measures is implicit in the Environment Act.

U. Because the State agencies who are the Respondents herein have failed in stop the water pollution of river Subarnrekha.

V. Because the State agencies who are the Respondents herein have failed ensure that E-Flow in the river Subarnrekha is maintained.

W. Because the latest photographs and media reports of April, 2026 shows death of large number of fishes owing to water pollution in river Subarnrekha owing to industrial and residential waste discharged in it and the SPCB, Jharkhand has miserably failed in keeping in check the said water pollution.

X. Because this Hon'ble Tribunal has issued directions, among others, for ensuring water quality and e-flow in the rivers, vide order/judgement dated 10.12.2015 and 13.07.2017 in Original Application (OA) 200 of 2014 and vide order dated 20.09.2018 in OA No. 673 of 2018.

Y. Because in this case the violators are liable to be saddled with imposition of Environmental Compensation/liability in terms of 'Polluter Pays Principle'.

Z. Because as held by the Hon'ble Supreme Court in ***Indian Council for Enviro Legal Action vs. Union of India (1996) 5 SCC 281*** that:

> "26. Enactment of a law, but tolerating its infringement, is worse than not enacting a law at all. The continued infringement of law, over a period of time, is made possible by 32 adoption of such means which are best known to the violators of law. Continued tolerance of such violations of law not only renders legal provisions nugatory but such tolerance by the enforcement authorities encourages lawlessness and adoption of means which cannot, or ought not to, be tolerated in any civilized society. Law should not only be meant for the law-abiding but is meant to be obeyed by all for whom it has been enacted. A law is usually enacted because the legislature feels that it is necessary. It is with a view to protect and preserve the environment and save it for the future generations and to ensure good quality

> of life that Parliament enacted the anti-pollution laws, namely, the Water Act, Air Act and the Environment (Protection) Act, 1986. These Acts and Rules framed and notification issued thereunder contain provisions which prohibit and/or regulate certain activities with a view to protect and preserve the environment. When a law is enacted containing some provisions which prohibit certain types of activities, then, it is of utmost importance that such legal provisions are effectively enforced. If a law is enacted but is not being voluntarily obeyed, then, it has to be enforced. Otherwise, infringement of law, which is actively or passively condoned for personal gain, will be encouraged which will in turn lead to a lawless society. Violation of anti pollution laws not only adversely affects the existing quality of life but the non-enforcement of the legal provisions often results in ecological imbalance and degradation of environment, the adverse effect of which will have to be borne by the future generations."

AA. Because in the case of in the cases of ***Research Foundation For Science Technology National Resource Policy v. Union of India and Anr*** and ***Vellore Citizens' Welfare Forum v. Union of India and Ors***. the Hon'ble Supreme Court respectively ended up with the conclusion that principles such as the precautionary principle, the polluter pays principle form an intrinsic part of the laws of the environmental laws of India.

BB. Because the Hon'ble Supreme Court in ***A.P. Pollution Control Board v. Prof. M.V. Nayudu (Retd.) and Ors.*** case enabled the courts, tribunals and other environmental organisations to apply these principles when cases are registered in the tribunals or organisation.

CC. Because Article 21 of the Indian Constitution emphasises on the basic right of every Indian inhabitant. The basic right mentioned in Article 21 is right to life and personal liberty. As simple as it can be put, polluting the surroundings of a locality would take away the basic right from the inhabitant. Pollution being the inevitable part of industrialisation,

community participation for protection of the environment is a duty of every citizen. Hence, the right to community participation for protection of the environment is considered to flow from **Article 21 of the Constitution of India.**

DD. Because according to ***Section 20 of National Green Tribunal Act,*** the tribunal can apply the principles of sustainable development, the polluter pays principles and precautionary principle while passing any order, award or decision.

EE. Because it the duty of every citizen under ***Article 51-A(g) of the Constitution of India*** to protect and improve the natural environment including plants, species, forests, lakes, rivers and wildlife, and to have compassion for living creatures.

FF. Because ***Article 48-A of the Constitution of India*** mandates that the State is under a Constitutional obligation to protect and improve the environment and to safeguard the forest and wild life in the country.

GG. Because the violators are liable to be saddled with imposition of Environmental Compensation/liability in terms of 'Polluter Pays Principle'.

LIMITATION

The death of a large number of fishes in river Subarnrekha has happened on 01.04.2026. The relief prayed is under Sections 14 and 15, limitation for which is 6 months and 5 years respectively when cause of action first arose. As the damage being caused to the Environment is recent and also the same is continuous and

recurring one due to water pollution prevalent in river Subarnekha. Hence, the present Application is within limitation of Section 14 and 15 of the NGT Act, 2010.

PRAYER

In light of the above facts and circumstances, the Hon'ble Tribunal may be pleased to pass the following orders/ directions:

i. Direct setting up of a Joint Committee led by CPCB to find out exact reasons for death of such large number of fishes and CPCB may be also asked to identify all the drains and outlet leading to river Subarnrekha and its tributary carrying treated/untreated industrial effluent and domestic swage and/or waste water and initiate action against these violators and/or

ii. Direct setting up of a Joint Committee led by CPCB to identify drains and outlet leading to river Subarnrekha and its tributary carrying treated/untreated industrial effluent without installing OCEMS. Analyse and submit a report based the OCEM data of industries releasing industrial effluent into Subarnrekha and its tributary for the period between 22nd March 2026 to 5th April 2026 to which will facilitate to identify violating industries.

iii. CPCB has developed an Online Automated Alerts Generation Protocol for OCEMS (Emission & Effluent) in July 2025 (annexed as Annexure-A4) which is yet not functional as no information in this regard is available in public domain. Hence, CPCB shall be directed to implement said protocol within stipulated time frame and data shall be also made available in public domain so that effective enforcement of environmental laws against violating industries can be ensured.

iv. Direct imposition of environmental compensation on the culprits/violators for causing damage to the Subarnrekha river and/or

v. Direct imposition of environmental compensation/liability on Respondents-State Parties for failure on their part to stop pollution of river Subarnrekha and/or

vi. Direct Respondent-SPCB to identify all the industrial units discharging their treated/untreated effluent into the river Subarnrekha and install OCEMS and alert system. The historical and current data of OCEMS along with alert generated must be available in public domain. Facility to be provided on SPCB portal to retrieve historical data for a defined period as presently it can be retrieved for day to day basis and./or

vii. Direct SPCB to install online continuous monitoring system for water quality for all the locations established under NWMP and facility to be provided on SPCB portal to retrieve historical data for a defined period as well as current data by public.

viii. Direct Respondents to stop any industry/process forthwith from discharging any polluted/waste water into the river Subarnrekha, and/or

ix. Direct CPCB along with IIT-Roorkee to suggest minimum e-flow to be maintained in river Subarrekha and it’s tributaries. Based on report, authority of Subarnrekha Multipurpose Project shall be directed to release sufficient water to maintain minimum ecological flow suggested by the CPCB

x. Direct Water Resource Department, Jharkhand to release sufficient water from Chandil Reservoir so that minimum e-flow shall be maintained in downstream

Any other or further relief may also be granted in favour of the applicant.

Jyatika Sharma

APPLICANT

NOTARY
Akhilesh Kumar Singh
JAMSHEDPUR
Reg. No.-35980
GOVT. OF INDIA

THROUGH

(SAURABH SHARMA)
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Counsel for Applicant
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New Delhi-110003
E-mail: saurabh.envirolawyer@gmail.com
(M): 9810983559

Place:- New Delhi
Dated: 15.4.2026

VERIFICATION: Verified today on this 15th April 2026 at Jamshedpur do hereby verify and declare that the facts mentioned above are true and correct nothing material has been concealed therefrom and no part of it is false.

Jyatika Sharma

APPLICANT

Attested the Signature of the
Executants / Executants who Signed
in my presence of Sri
Raju Kumar Gupta Advocate
District Court, Jamshedpur and also
identified by him

Akhilesh Kumar Singh
NOTARY Govt of India
Singhbhum SP
15/04/26

IDENTIFIED BY ME AND SIGNED/
PUT IN MY PRESENCE

Advocate
15.04.2026

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH AT KOLKATA

ORIGINAL APPLICATION NO. OF 2026

IN THE MATTER OF:-

PRATIK SHARMA ...APPLICANT

VERSUS

STATE OF JHARKHAND & OTHERS ...RESPONDENTS

AFFIDAVIT

I, Pratik Sharma, aged about 32 years, son of Shri Kamlesh Sharma, resident of H.No. 73, Dimna Road, Jamshedpur, Near Food Canvas, Mango, East Singhbhum, Jharkhand-831012, do hereby solemnly affirm and declare as under:-

1. That I am the Applicant in the abovementioned Original Application and therefore competent to swear the present Affidavit.
2. That the abovementioned Original Application has been drafted by my counsel on my instructions and the contents of the same are true and correct to my knowledge.

Sl. No. 01
Dt. 15/04/26

Pratik Sharma
DEPONENT

VERIFICATION: Verified today on this 15th April, 2026 at Jamshedpur do hereby verify and declare that the facts mentioned above are true and correct nothing material has been concealed therefrom and no part of it is false.

Pratik Sharma
DEPONENT

IDENTIFIED BY ME AND SIGNED/AFFIXED HIS THUMB IMPRESSION IN MY PRESENCE

Advocate
15.04.26

Annexure A-1

National Inventory of Sewage Treatment Plants

March 2021

Central Pollution Control Board
Parivesh Bhawan
East Arjun Nagar , Delhi

शिव दास मीना, भा.प्र.से.
अध्यक्ष
Shiv Das Meena, I. A. S.
Chairman

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
CENTRAL POLLUTION CONTROL BOARD
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

FOREWORD

India is passing through a phase of rapid urbanisation. In some States, urban population has either already overtaken or about to overtake the rural population. Rapid urbanisation on one hand has offered vast opportunities for economic development and on the other hand it has posed several challenges before the urban planners / local governments. One such challenge is of scientific management of the waste.

The creation of infrastructure for waste management such as sewerage network and sewage treatment facilities have not kept pace with the burgeoning population leading to a huge gap in sewage generation and treatment capacity across the States. It is resulting in discharge of partially treated or untreated sewage in to the environment, causing serious damage to the environment including surface and ground water sources.

In past 5 years since the last report on inventorisation of STPs was released in 2015, substantial sewage treatment capacities have been added. However, still a vast gap remains in sewage generation and treatment capacities. Through this Report on "National Inventory of Sewage Treatment Plants in India – 2021", attempts have been made to analyse the quantum of sewage generated, treatment capacity, sewage actually treated and treatment capacity complying to discharge norms in various States / Union Territories.

This Report has been prepared based on the data provided by State Pollution Control Boards (SPCBs) / Pollution Control Committees (PCCs) and Local Bodies (LBs). The focus of the Report is to analyse the time-series trends of generation of sewage and practices being adopted by the States for sewage disposal. The Report evaluates the current practices prevalent in the Country including technological options for sewage management.

There is a need of paradigm shift in the way wastewater (sewage) is handled/managed in the Country. Considering that water is a scarce commodity, it is imperative to manage the already used water (wastewater) in an environment friendly and economically sustainable manner. These twin objectives can be achieved by recycling / reusing the used water. The Report has tried to highlight this by demonstrating a few success stories of recycling/reuse of water – waste to wealth.

I am sure, this Report will serve as a reference book for Regulators, Local Bodies, Policy makers, Academicians and all other stakeholders.

I appreciate the efforts of my colleagues Shri N.K. Gupta, Scientist 'E' and Shri Vishal Gandhi, Scientist 'D' in bringing out this Report. I also acknowledge the valuable inputs and guidance provided by Dr. Prashant Gargava, Member Secretary, CPCB, to the team associated with this project. Timely response from SPCBs and PCCs as well as the efforts of the Regional Directorates of CPCB in coordinating with SPCBs/PCCs/LBs in getting the information is also highly acknowledged.

(Shiv Das Meena)

March, 2021

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CONTENTS

Chapter 1
Introduction

1.1 Background

Sewage, or domestic/municipal wastewater, is a type of wastewater that is produced by a community of people. It is characterized by volume or rate of flow, physical condition, chemical and toxic constituents, and its bacteriological status. Assessment of quantities of sewage generation is necessary to ensure its proper collection, conveyance, treatment, disposal and reuse.

Assessment of quantities of sewage generation and its treatment is being carried out by Central Pollution Control Board (CPCB) from time to time with the help of State Pollution Control Boards / Pollution Control Committees and Local Bodies. Questionnaires were circulated among the concerned stakeholders for collection of information regarding water supply, sewage generation and treatment capacity. Population is the very basic independent and dominant factor governing estimation of volume of sewage, size of sewer network and capacity of sewage treatmen. Based on the information received from local bodies, status reports were prepared. First such exercise was undertaken during the year of 1978-79.

During last four decades, estimations of domestic waste water generation are made by CPCB based on the Census Populaton data pertaining to the years 1971, 1981, 1991 and 2001. Gist of the assessment carried out by CPCB is as follows:

- As per census of 1971, 142 class I cities and 190 class II towns were identified. Accordingly, sewage generation for the year 1978 for class I cities was estimated as 7,006 MLD whereas treatment capacity was 2,755 MLD. In case of class II towns, treatment capacity was only 5 % of the total wastewater generation of 61 MLD.

- In 1988-89, the assessment was carried out based on the census data of year 1981. The sewage generation from 212 class-I cities was estimated as 12,145 MLD whereas treatment capacity was only 2,633 MLD. Similarly, in 241 class II towns, treatment capacity was 21 MLD against sewage generation of 1,279 MLD.
- During the assessment period 1999-2000, the number of class I cities went up to 299 and the sewage generation increased to 16,662 MLD against the treatment capacity of 4,037 MLD. In 345 class II towns, treatment capacity was 61 MLD against the sewage generation of 1,649 MLD.
- In 2008-09, it was estimated by CPCB that out of 38,254 MLD of sewage generated in class I cities and class II towns, only 11,787 MLD was treated. As per Census of 2001 and projection of population to 2008, 498 class-I cities and 410 class-II towns were classified.

Decadal assessment revealed increasing trend in urban population, sewage generation and treatment capacity as depicted in **figure 1.1**. Since 1971, the urban population of India increased 3 times thereby impacting sewage generation which also increased at a rapid pace. However, rate of development of treatment facilities happened to be much slower as compared to sewage generation and urban growth. The sewage generation increased from 7,067 MLD in 1978 -79 to 62,000 MLD in 2014-15 whereas treatment capacity augmented from 2,758 MLD to 23,277 MLD only.

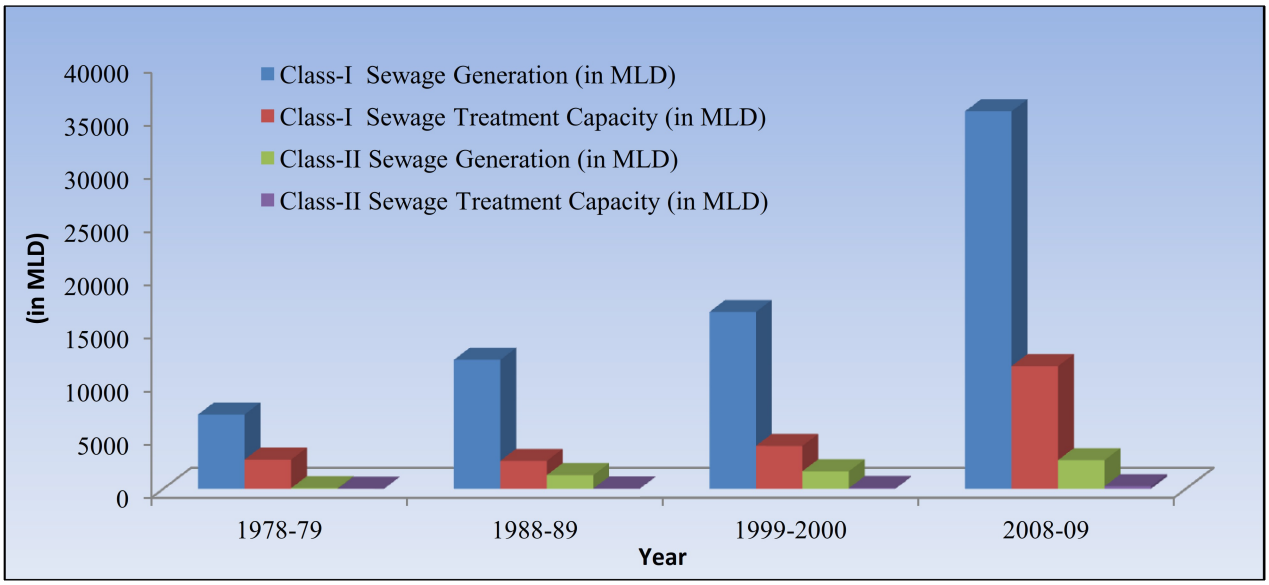

Figure 1.1: Decadal trend of sewage generation and treatment capacity in Class-I cities and Class-II towns.

1.2 Impacts of Urbanization

The growth of cities into meteropolitian cities exerts pressure on water resources in two ways. The increasing need for water to meet the domestic requirements and impact of resultant wastewater discharge on the receiving waters have cummuative effect in deteriorating quality of receiving water.

Water Supply and Sanitation are the basic neccesities of urban centers and various schemes are devised by Government of India to provide these basic amenties. Over the last few decades, rapid urbanization essentially lead to rise in water demand and adequate sanitation as illustrated in **Figure 1.2** and summarized in **Table 1.0**.

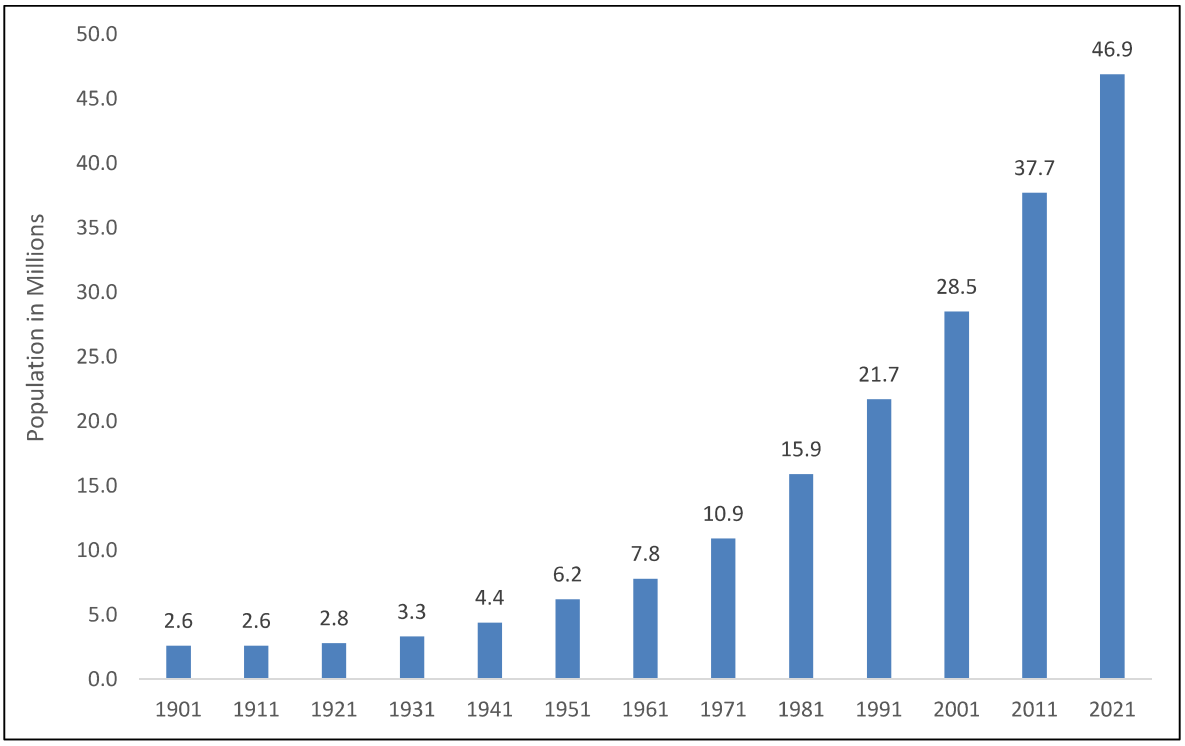

Figure 1.2: Bar diagram shows growth of urban population 1901-2021(E)

Table 1.0: Decadal Urban Population Growth Since 1901

Year	Total	Rural	Urban	Urban, as % of total	Decadal % increase in urban population
1901	23,83,96,327	21,25,44,454	2,58,51,873	10.84	-
1911	25,20,93,390	22,61,51,757	2,59,41,633	10.29	0.35
1921	25,13,21,213	22,32,35,043	2,80,86,170	11.18	8.3
1931	27,89,77,238	24,55,21,249	3,34,55,989	11.99	19.1
1941	31,86,60,580	27,45,07,283	4,41,53,297	13.86	32.0
1951	36,10,88,090	29,86,44,381	6,24,43,709	17.29	41.4
1961	43,92,34,771	36,02,98,168	7,89,36,603	17.97	26.4
1971	54,81,59,652	43,90,45,675	10,91,13, 977	19.91	38.2
1981	68,33,29,097	52,38,66,550	15,94,62,547	23.34	46.1
1991	84,63,02,688	62,86,91,676	21,76,11,012	25.71	36.5
2001	1,02,70,15,247	74,16,60,293	28,53,54,954	27.78	31.1
2011	1,21,01,93,422	83,30,87,662	37,71,05,760	31.16	32.2
2021	1,31,63,43,000	84,64,16,000	46,99,27,000	35.69	24.6
Source : Population Census Website (censusindia.gov.in)					

In order to meet the water demand, water is tapped for domestic and industrial uses from rivers, streams, wells and lakes and groundwater resources are also explored. Approximately 80% of the water supplied for domestic uses, comes out as wastewater. In different regions of urban centers, wastewater is let out untreated due to the lack/unavailability of sewerage network and discharged into the natural drainage system causing pollution in downstream areas.

As on date, emphasis are made on creating facilities for collection, convyenace and treatment of domestic wastewater. There is also need to think domestic wastewater as a resource which can be utilized after treatment for meeting the non-potable requirements. It will help in conserving raw water resources like groundwater and surface water.

As per Census 2011, population of urban agglomeration increased from 28 crores in 2001 to 37 crores in 2011. During 2014, Central Pollution Control Board (CPCB) carried out inventorization of Sewage Treatment Plants (STPs) of the country and as per information received from State Pollution Control Boards and Pollution Control Committees, 816 STPs were installed in different States/UTs in the country and sewage treatment capacity developed during that period was only 23,277 MLD.

Nowadays, STPs are designed on conventional technologies which can treat the wastewater to meet the non-potable requirement. Sequential Batch Reactor (SBR) and Activated Sludge Process (ASP) are the prevalent and adopted technologies all across the country. Oxidation Ponds are used for treatment of sewage in the areas especially where adequate lands are available for their installation.

1.3 Present Study

A need was felt to upgrade the statistics on sewage generation and its treatment to chalk-out future strategies. In view of this, CPCB attempted to assess latest status on domestic wastewater generation by urban population of India and available treatment capacity. Findings and Wayforward are presented in subsequent sections. It is hoped that this document shall be helpful for the Policy makers, Regulators, Academicians and all other concerned.

Chapter 2
Important Definitions

Definitions of important terms / parameters used in this report are as follows:

a) **Biochemical Oxygen Demand (BOD)**

Biochemical Oxygen Demand (BOD) – A measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified period of time period (usually 5 days at 20^0 C or 3 days at 27^0 C) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater.

b) **Chemical Oxygen Demand (COD)**

Chemical Oxygen Demand (COD) – A measure of the oxygen-consuming capacity of inorganic and organic matter present in wastewater. COD is expressed as the amount of oxygen consumed in mg/l. Results do not necessarily correlate to the biochemical oxygen demand (BOD) because the chemical oxidant may react with substances that bacteria do not stabilize.

c) **Water Pollution**

Water pollution is defined as, 'Any direct or indirect alteration of the physical, thermal, chemical, biological, radioactive properties of any part of the environment by, discharge, emission or deposit of wastes so as to affect any beneficial use adversely or to cause a condition, which is hazardous to public health, safety or welfare of animals, birds, wildlife, aquatic life or to plants of every description' (Environment Act of 1980).

d) "***prescribed***" means prescribed by rules made under the Act by the Central Government or, as the case may be, the State Government;

Or

It means prescribed by the Act in which the word occurs or by any regulations made thereunder, and, in relation to any regulations, where no other authority is empowered in that behalf in the Act.

e) "***sewage effluent***" means effluent from any sewerage system or sewage disposal works and includes sullage from open drains.

Or

It is 99% water carrying domestic wastes originating in kitchen, bathing, laundry, urine and night soil.

f) "***sewer***" are pipe or conduits meant for carrying sewage and are laid along the roads and flow by gravity.

Or

A pipe or conduit (sewer) intended to carry wastewater or water-borne wastes from homes, business, and industries to the Publicly Owned Treatment Works.

g) "***Operational Capacity***" means capacity of STPs operating at rated Capacity.

h) "***Non-operational Capacity***" means capacity of STPs which are not operating

i) "***Under Construction Capacity***" means capacity of STPs which are under construction stage

j) "***Proposed Capacity***" means capacity of STPs which are under the stage of proposal

k) "***Installed Capacity*** "means sum of Operational Capacity, Non – Operational Capacity and Under Construction Capacity

l) "***Total Treatment Capacity***" means sum of Installed Capacity and Proposed Capacity

Chapter 3
National Inventory of Sewage Treatment Plants

3.1 OBJECTIVE

Previous assessment of inventory of Sewage Treatment Plants in India was carried out by Central Pollution Control Board (CPCB) during 2014-15 in association with State Pollution Control Boards and Pollution Control Committees. Based on the information provided by SPCBs /PCCs, it was assessed that there were 816 STPs with total capacity of 23,277 MLD in 28 States/UTs of India. Out of theses 816 STPs, 522 STPs were operational, 79 STPs were non-operational, 145 STPs were under construction and 70 STPs had been proposed for construction.

There was/is need to update these information as the country is urbanizing at a rapid pace and it is imperative to assess availability of sewage treatment facility. In view of this, an attempt is made by CPCB to assess latest status on domestic wastewater generation by urban population of India and take sock of available treatment capacity.

3.2 METHODOLOGY

A format was designed by CPCB for collection of data on STPs and the same was circulated to all State Pollution Control Boards and Pollution Control Committees. The format is attached at *Annexure-I*. CPCB has collected the requisite information in the prescribed format through SPCBs / PCCs. The information so collected were shared with the Urban Development / Municipal Administration / Local Self Government Department of the States / Union territories for their comments / confirmation. No comments have been received by the scheduled date / time and accordingly, it is decided to finalize the inventory.

Earlier, CPCB had estimated sewage generation to the tune of 62000 MLD for the year 2014. Estimation was made considering rate of population growth for the year 2001 to 2011 and Water supply @185 lpcd. The average figure of Water Supply for 185 lpcd

was considered based on CPCB's report on Class I Cities and Class II towns for the year 2008. Water supply per lpcd was provided by concerned ULBs and accordingly average 185 lpcd considered with respect to Sewage Generation estimated for the year 2008 and urban population of 2008.

Accordingly, CPCB has assessed present sewage generation based on urban population of India and projecting the population for the year 2020 considering rate of growth for the year 2001 to 2011 and Water supply @185lpcd. Rate of sewage generation is taken as 80 % of the water supply.

3.3 OBSERVATIONS

CPCB has received the data from SPCBs and PCCs on the inventorization of Sewage Treatment Plants (STPs) located in India in the year 2020-21. Brief observations are as follows:

i. There are 1,631 STPs (including proposed STPs) with a total capacity of 36,668MLD covering 35 States/UTs. Out of 1,631 STPs, 1,093 STPs are operational, 102 are Non-perational, 274 are under construction and 162 STPs are proposed for construction.

ii. Out of 1,093 operational STPs, compliance status of 900 STPs is available and only 578 STPs having a combined capacity of 12,200 MLD are found complying with the consented norms prescribed by the SPCBs / PCCs.

iii. Sewage generation from urban centers estimated as 72,368 MLD.

iv. State-wise sewage generation and treatment capacity are presented in **Table 3.1, 3.2** and **Figure 3.1**.

Table 3.1: State-wise Sewage Generation and Treatment Capacity of Urban Centers-India

States / UTs	Sewage Generation (in MLD)	Installed Capacity (in MLD)	Proposed Capacity (in MLD)	Total Treatment Capacity (in MLD) including planned / proposed	Operational Treatment Capacity (in MLD)
Andaman & Nicobar Islands	23	0	0	0	0
Andhra Pradesh	2882	833	20	853	443
Arunachal Pradesh	62	0	0	0	0
Assam	809	0	0	0	0
Bihar	2276	10	621	631	0
Chandigarh	188	293	0	293	271
Chhattisgarh	1203	73	0	73	73
Dadra & Nagar Haveli	67	24	0	24	24
Goa	176	66	38	104	44
Gujarat	5013	3378	0	3378	3358
Haryana	1816	1880	0	1880	1880
Himachal Pradesh	116	136	19	155	99
Jammu & Kashmir	665	218	4	222	93
Jharkhand	1510	22	617	639	22
Karnataka	4458	2712	0	2712	1922
Kerala	4256	120	0	120	114
Lakshadweep	13	0	0	0	0
Madhya Pradesh	3646	1839	85	1924	684
Maharashtra	9107	6890	2929	9819	6366
Manipur	168	0	0	0	0
Meghalaya	112	0	0	0	0
Mizoram	103	10	0	10	0
Nagaland	135	0	0	0	0
NCT of Delhi	3330	2896	0	2896	2715
Orissa	1282	378	0	378	55
Pondicherry	161	56	3	59	56
Punjab	1889	1781	0	1781	1601
Rajasthan	3185	1086	109	1195	783
Sikkim	52	20	10	30	18
Tamil Nadu	6421	1492	0	1492	1492
Telangana	2660	901	0	901	842
Tripura	237	8	0	8	8
Uttar Pradesh	8263	3374	0	3374	3224
Uttarakhand	627	448	67	515	345
West Bengal	5457	897	305	1202	337
Total	**72368**	**31841**	**4827**	**36668**	**26869**

Note:

i) Sewage Generation is estimated based on Water supply @ 185lpcd and rate of sewage generation as 80 %.

ii) Sewage generation for NCT of Delhi is estimated based on their 80 % of water supply of 925 MGD

Table 3.2: State-wise Sewage Generation, Installed Treatment Capacity and Actual Treatment (As on 30.06.2020)

S.No.	State	Total sewage generation (MLD)	Installed capacity		Actual quantity treated / capacity utilised		
			(MLD)	As % age of sewage generated	(MLD)	As % of total sewage generated	As %age of installed capacity
1.	A & N Islands	23	0	0	0	0	0
2.	Andhra Pradesh	2882	833	29	309	11	37
3.	Arunachal Pradesh	62	0	0	0	0	0
4.	Assam	809	0	0	0	0	0
5.	Bihar	2276	10	0	0	0	0
6.	Chandigarh	188	293	156	235	125	80
7.	Chhattisgarh	1203	73	6	6	0	8
8.	Daman Diu	67	24	36	7	10	29
9.	Goa	176	66	38	25	14	38
10.	Gujarat	5013	3378	67	2687	54	80
11.	Haryana	1816	1880	104	1284	71	68
12.	Himachal Pradesh	116	136	117	51	44	38
13.	Jammu & Kashmir	665	218	33	49	7	22
14.	Jharkhand	1510	22	1	15	1	68
15.	Karnataka	4458	2712	61	1786	40	66
16.	Kerala	4256	120	3	47	1	39
17.	Lakshadweep	13	0	0	0	0	0
18.	Madhya Pradesh	3646	1839	50	536	15	29
19.	Maharashtra	9107	6890	76	4242	47	62
20.	Manipur	168	0	0	0	0	0
21.	Meghalaya	112	0	0	0	0	0
22.	Mizoram	103	10	10	0	0	0
23.	Nagaland	135	0	0	0	0	0
24.	NCT Delhi	3330	2896	87	2412	72	83
25.	Odisha	1282	378	29	50	4	13
26.	Puducherry	161	56	35	30	19	54
27.	Punjab	1889	1781	94	1360	72	76
28.	Rajasthan	3185	1086	34	478	15	44
29.	Sikkim	52	20	38	14	27	70
30.	Tamil Nadu	6421	1492	23	995	15	67
31.	Telangana	2660	901	34	706	27	78
32.	Tripura	237	8	3	1.5	1	19
33.	Uttar Pradesh	8263	3374	41	2510	30	74
34.	Uttarakhand	627	448	71	187	30	42
35.	West Bengal	5457	897	16	213	4	24
Total		72368	31841	44	20236	28	64

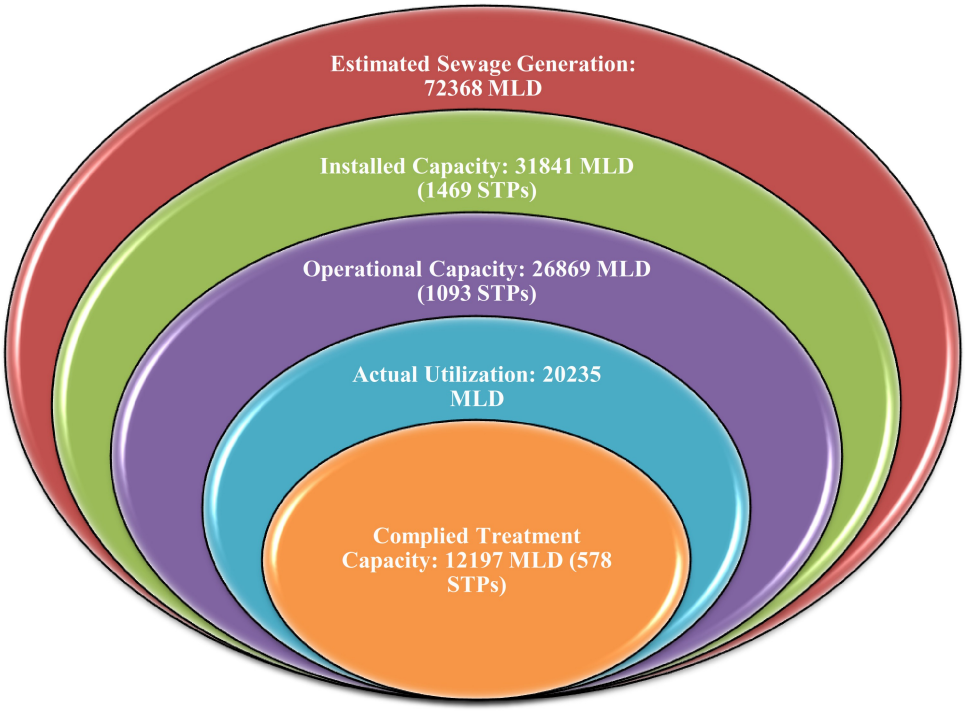

Figure 3.1: Venn diagram depicting Sewage generation, Installed treatment capacity, Operational Capacity, Actual Utilization and Complied Treatment Capacity

v. Comparison with previous inventory of STPs (2014) is made and it is observed that sewage treatment capacity has enhanced by 50 %. Comparative statistics pertaining to the years 2014 and 2020 are presented in Table 3.3 and graphically also in Figure-3.2.

Table 3.3: Comparative Statistics on the Inventory for the years 2014 and 2020

Sl. No.	STP Status	2014		2020	
		Nos. Of STPs	Capacity (MLD)	Nos. Of STPs	Capacity (MLD)
1.	Operational	522	18883	1093	26869
2.	Actual Utilization	-	-	1093	20235
3.	Compliance	-	-	578	12197
4.	Non-operational	79	1237	102	1406
5.	Under Construction	145	2528	274	3566
Total (Sl. No. 1+4+5)		**746**	**22648**	**1469**	**31841**
6.	Proposed	70	628	162	4827

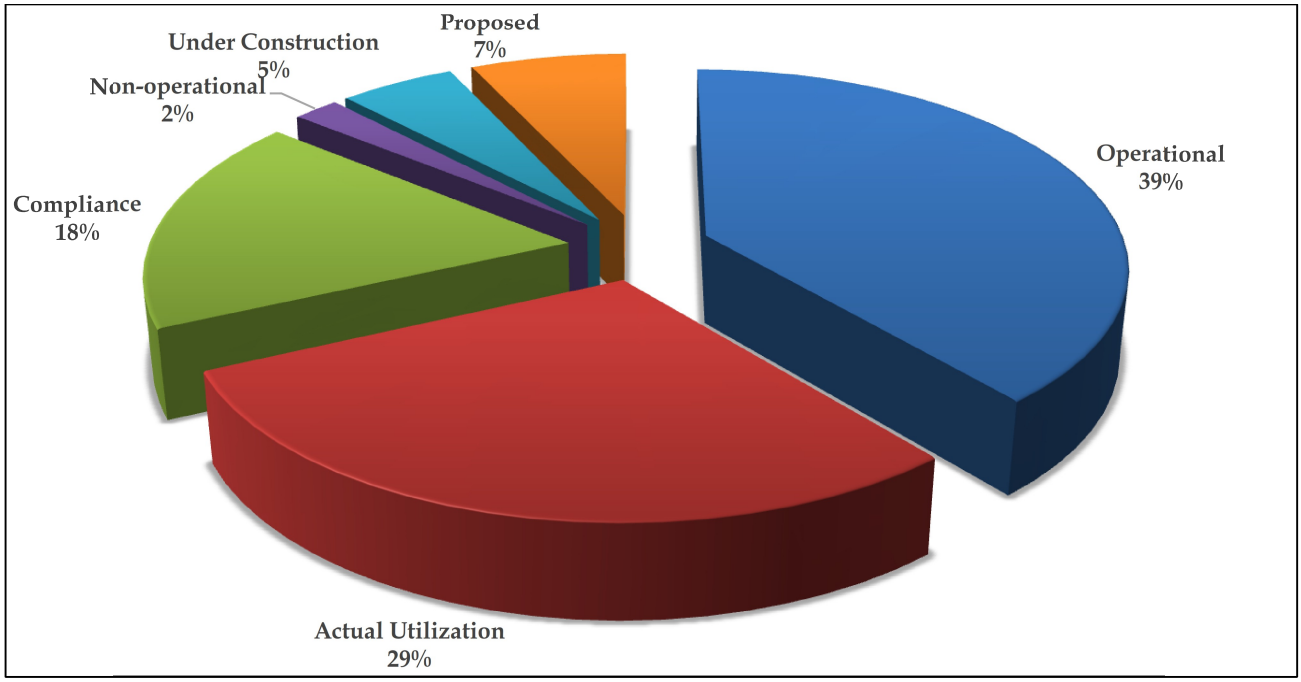

Figure 3.2 :Status-wise Capacity of STPs

vi. Information on State-wise installed capacity is arranged in decreasing order and presented in following Table 3.4

Table 3.4: State-wise Installed Treatment Capacity and STPs

State-wise Installed capacity In Descending Order		
State	**Installed Capacity (In MLD)**	**Number of STPs Installed**
Maharashtra	6890	154
Gujarat	3378	70
Uttar Pradesh	3374	107
NCT Delhi	2896	38
Karnataka	2712	140
Haryana	1880	153
Madhya Pradesh	1839	126
Punjab	1781	119
Tamil Nadu	1492	63
Rajasthan	1086	114
Telangana	901	37
West Bengal	897	50
Andhra Pradesh	833	66
Uttrakhand	448.18	71
Odisha	378	14
Chandigarh	293	7

State-wise Installed capacity In Descending Order		
State	**Installed Capacity (In MLD)**	**Number of STPs Installed**
Jammu & Kashmir	218	24
Himachal Pradesh	136	78
Kerala	120	7
Chhattisgarh	73	3
Goa	66	11
Puducherry	56	3
Daman, Diu & Dadra Nagar Haveli	24	3
Jharkhand	22	2
Sikkim	20	6
Bihar	10	1
Mizoram	10	1
Tripura	8	1
Total	**31841**	**1469**

vii. Table 3.5 show status of Compliance with respect to consented norms of SPCBs / PCCs.

Table 3.5: Status of Compliance with respect to consented norms of SPCBs / PCCs

State-wise Compliance capacity (in MLD) (In Decreasing Order)		
States	**Compliance Capacity**	**No. of STPs**
Maharashtra	3598	105
Uttar Pradesh	2114	65
Haryana	1746	144
Tamil Nadu	1368	51
Karnataka	1168	31
Telangana	637	23
Punjab	441	46
Uttarakhand	345	51
Rajasthan	224	16
Andhra Pradesh	154	13
West Bengal	126	8
NCT of Delhi	90	1
Jammu & Kashmir	88	9
Goa	44	9
Dadra & Nagar Haveli	24	3
Jharkhand	22	2
Tripura	8	1
Note:		

State-wise Compliance capacity (in MLD) (In Decreasing Order)		
States	**Compliance Capacity**	**No. of STPs**
i. *08 States / UTs (Gujarat, Himachal Pradesh, Kerala, Pondicherry, Sikkim, Chandigarh, Chhattisgarh, Madhya Pradesh) has not provided the status of compliance.*		
ii. *Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Lakshadweep, Manipur do not have any treatment capacity*		

viii. Break–up of State-wise STPs details are summarized in Table 3.6. Figure 4 depicts Treatment capacity distribution in percentage among State.

Table 3.6: Status-wise Break-Up of STPs Located in Different States/UTs

Sl. No.	State	Number / Capacity In MLD	Installed	Proposed	Total Capacity	Operational	Non Operational	Under Construction	Actual Utilization	Compliance
1	Andhra Pradesh	Δ	66	1	67	37	5	24	37	13
		♦	833	20	853	443	13	377	309	154
2	Bihar	Δ	1	24	25	0	0	1	0	0
		♦	10	621	631	0	0	10	0	0
3	Chandigarh	Δ	7	0	7	6	1	0	6	0
		♦	293	0	293	271	22	0	235	0
4	Chhattisgarh	Δ	3	0	3	3	0	0	3	0
		♦	73	0	73	73	0	0	6	0
5	Daman, Diu & Dadra Nagar Haveli	Δ	3	0	3	3	0	0	3	3
		♦	24	0	24	24	0	0	7	24
6	Goa	Δ	11	3	14	9	0	2	9	9
		♦	66	38	104	44	0	22	25	44
7	Gujarat	Δ	70	0	70	69	1	0	69	
		♦	3378	0	3378	3358	20	0	2687	NA
8	Haryana	Δ	153	0	153	153	0	0	153	144
		♦	1880	0	1880	1880	0	0	1284	1746
9	Himachal Pradesh	Δ	78	8	86	59	0	19	59	NA
		♦	136	19	155	99	0	37	51	NA
10	Jammu & Kashmir	Δ	24	2	26	12	6	6	12	9
		♦	218	4	222	93	24	101	49	88
11	Jharkhand	Δ	2	10	12	2	0	0	2	2
		♦	22	617	639	22	0	0	15	22
12	Karnataka	Δ	140	0	140	97	32	11	97	31
		♦	2712	0	2712	1922	323	467	1786	1168
13	Kerala	Δ	7	0	7	3	4	0	3	NA
		♦	120	0	120	114	6	0	47	NA

Sl. No.	State	Number / Capacity In MLD	Installed	Proposed	Total Capacity	Operational	Non Operational	Under Construction	Actual Utilization	Compliance
14	Madhya Pradesh	Δ	126	16	142	45	3	78	45	NA
		♦	1839	85	1924	684	22	1133	536	NA
15	Maharashtra	Δ	154	41	195	130	7	17	130	105
		♦	6890	2929	9819	6366	243	281	4242	3598
16	Mizoram	Δ	1	0	1	0	1	0	0	NA
		♦	10	0	10	0	10	0	0	NA
17	NCT Delhi	Δ	38	0	38	35	3	0	35	1
		♦	2896	0	2896	2715	181	0	2412	90
18	Odisha	Δ	14	0	14	4	0	10	4	0
		♦	378	0	378	55	0	323	50	0
19	Puducherry	Δ	3	1	4	3	0	0	3	NA
		♦	56	3	59	56	0	0	30	NA
20	Punjab	Δ	119	0	119	95	1	23	95	46
		♦	1781	0	1781	1601	3	177	1360	441
21	Rajasthan	Δ	114	26	140	57	10	47	57	16
		♦	1086	109	1195	783	41	262	478	224
22	Sikkim	Δ	6	5	11	5	0	1	5	
		♦	20	10	30	18	0	2	14	NA
23	Tamil Nadu	Δ	63	0	63	63	0	0	63	51
		♦	1492	0	1492	1492	0	0	995	1368
24	Telangana	Δ	37	0	37	27	5	5	27	23
		♦	901	0	901	842	24	35	706	637
25	Tripura	Δ	1	0	1	1	0	0	1	1
		♦	8	0	8	8	0	0	1.5	8
26	Uttar Pradesh	Δ	107	0	107	99	8	0	99	65
		♦	3374	0	3374	3224	150	0	2510	2114
27	Uttrakhand	Δ	71	10	81	52	2	17	52	51
		♦	448.18	67	515.18	345	0.18	103	187	345
28	West Bengal	Δ	50	15	65	24	13	13	24	8
		♦	897	305	1202	337	324	236	213	126
Total		Δ	**1469**	**162**	**1631**	**1093**	**102**	**274**	**1093**	**578**
		♦	**31841**	**4827**	**36668**	**26869**	**1406**	**3566**	**20235**	**12197**

Note:

Δ = Number of STPs, ♦ = Capacity (In MLD)

- States /UTs having no STP are namely Andaman Nicobar & Islands, Arunachal Pradesh, Assam, Lakshadweep, Manipur, Meghalaya and Nagaland.
- Installed Capacity is sum of Operational Capacity, Non – Operational Capacity and Under Construction Capacity
- Total Treatment Capacity is sum of Installed Capacity and Proposed Capacity.

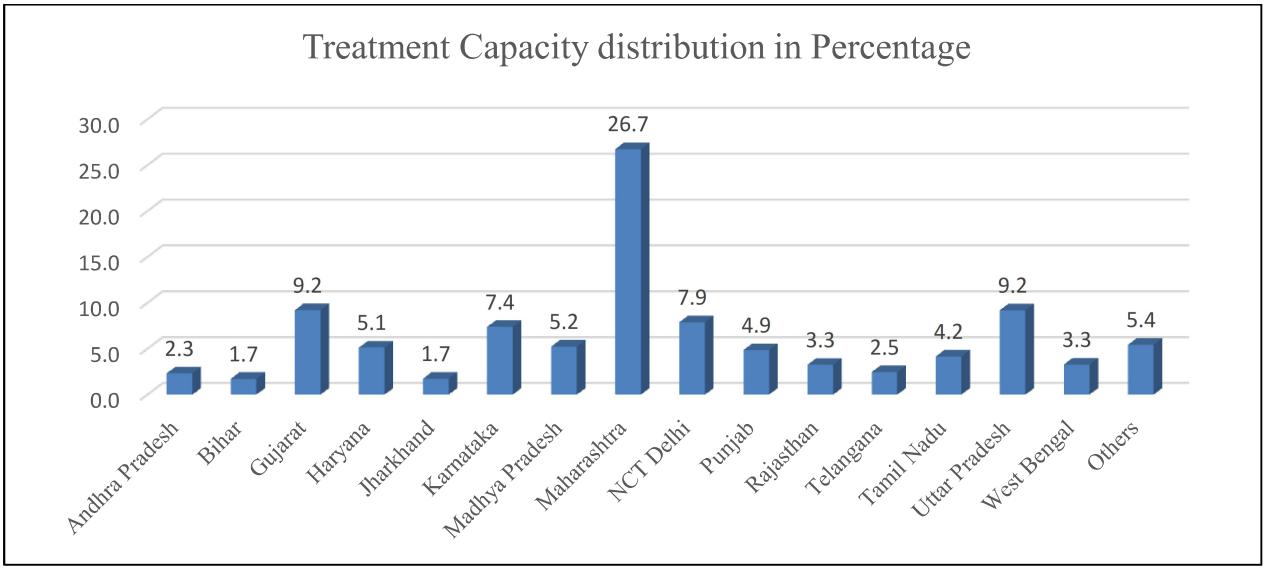

Figure 3.3 : Sewage Treatment Capacity Distribution in Percentage

ix. Various technolgies are employed for treatment of domestic wastewater. It is observed that Sequential Batch Reactor (SBR) and Activated Sludge Process (ASP) are the most prevailing technology adopted by ULBs. Technolgical distribution with respect to number and capacity of STPs are shown in Table 3.7 and Figure 3.4. State-wise Technological distribution of STPs (On installed Capacity) is placed in Table 3.8 and State-wise Technological distribution of STPs (on operational Capacity) is placed in Table 3.9.

Table 3.7: Technolgical distribution with respect to number and capacity of STPs

Sl.No.	Technology	Capacity in MLD	Number of STPs
1.	ASP	9486	321
2.	EA	474	30
3.	SBR	10638	490
4.	MBBR	2032	201
5.	FAB	242	21
6.	UASB	3562	76
7.	WSP	789	67
8.	OP	460	61
9.	Any Other	8497	364

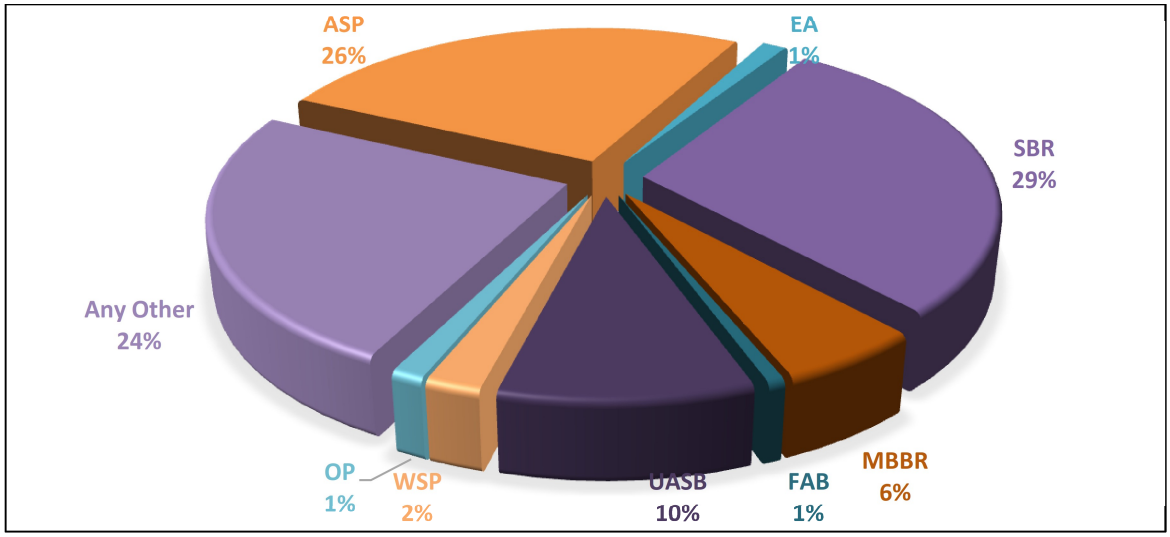

Figure 3.4: Technologywise Capacity Distribution of STPs

Table 3.8: Technology-wise Break-up of STPs in various States

Sl. No.	States / UTs	Number / Capacity (In MLD)	Technologies								
			ASP	EA	FAB	MBBR	OP	SBR	UASB	WSP	Any Other
1	Andhra Pradesh	Δ	12	2	2	12	3	4	5	3	24
		♦	321	20	3	39	57	17	130	31	235
2	Bihar	Δ	2	0	0	0	0	13	0	0	10
		♦	150	0	0	0	0	327	0	0	154
3	Chandigarh	Δ	1	0	0	1	0	3	2	0	0
		♦	5	0	0	136	0	107	45	0	0
4	Chhattisgarh	Δ	3	0	0	0	0	0	0	0	0
		♦	73	0	0	0	0	0	0	0	0
5	Daman, Diu & Dadra NH	Δ	0	0	0	0	0	3	0	0	0
		♦	0	0	0	0	0	24	0	0	0
6	Goa	Δ	0	0	0	0	0	10	0	0	4
		♦	0	0	0	0	0	103	0	0	1
7	Gujarat	Δ	14	4	0	5	8	24	7	0	8
		♦	1254	60	0	175	46	1285	491	0	67
8	Haryana	Δ	7	0	0	83	4	49	10	0	0
		♦	297	0	0	447	14	754	368	0	0
9	Himachal Pradesh	Δ	86	0	0	0	0	0	0	0	0
		♦	155	0	0	0	0	0	0	0	0
10	Jammu & Kashmir	Δ	9	0	3	3	0	10	1	0	0
		♦	113	0	15	32	0	52	10	0	0
11	Jharkhand	Δ	0	0	0	0	0	1	0	0	11

Sl. No.	States / UTs	Number / Capacity (In MLD)	Technologies								
			ASP	EA	FAB	MBBR	OP	SBR	UASB	WSP	Any Other
		♦	0	0	0	0	0	12	0	0	627
12	Karnataka	Δ	12	9	2	2	14	43	2	10	46
		♦	667	166	20	35	85	1079	63	61	536
13	Kerala	Δ	4	0	0	0	0	0	0	0	3
		♦	112	0	0	0	0	0	0	0	8
14	Madhya Pradesh	Δ	4	0	0	0	0	6	0	7	125
		♦	120	0	0	0	0	358	0	178	1268
15	Maharashtra	Δ	24	7	1	35	2	75	6	0	45
		♦	930	146	1	826	36	2452	240	0	5188
16	Mizoram	Δ	0	0	0	0	0	1	0	0	0
		♦	0	0	0	0	0	10	0	0	0
17	NCT Delhi	Δ	28	4	1	0	0	4	0	0	1
		♦	2575	69	3	0	0	245	0	0	4
18	Odisha	Δ	3	0	0	0	0	6	0	2	3
		♦	100	0	0	0	0	183	0	35	60
19	Puducherry	Δ	0	0	0	0	0	1	2	0	1
		♦	0	0	0	0	0	20	36	0	3
20	Punjab	Δ	5	0	1	27	0	61	7	17	1
		♦	207	0	13	165	0	838	501	54	3
21	Rajasthan	Δ	15	0	0	11	2	79	5	15	13
		♦	445	0	0	10	30	428	33	137	112
22	Sikkim	Δ	0	0	4	2	0	1	0	0	4
		♦	0	0	20	2	0	2	0	0	6
23	Telangana	Δ	13	4	0	9	4	4	3	0	0
		♦	85	13	0	133	24	105	541	0	0
24	Tamil Nadu	Δ	49	0	1	0	1	5	1	2	4
		♦	1011	0	6	0	6	319	9	112	29
25	Tripura	Δ	0	0	0	0	0	1	0	0	0
		♦	0	0	0	0	0	8	0	0	0
26	Uttar Pradesh	Δ	20	0	4	3	14	31	24	3	8
		♦	681	0	122	14	101	1176	1095	27	158
27	Uttrakhand	Δ	0	0	0	8	0	34	1	0	38
		♦	0	0	0	20	0	351	1	0	143
28	West Bengal	Δ	10	0	2	0	9	21	0	8	15
		♦	191	0	41	0	63	392	0	160	355
Total		Δ	**321**	**30**	**21**	**201**	**61**	**490**	**76**	**67**	**364**
		♦	**9492**	**474**	**244**	**2034**	**462**	**10647**	**3563**	**795**	**8957**
Note:											

Sl. No.	States / UTs	Number / Capacity (In MLD)	Technologies								
			ASP	EA	FAB	MBBR	OP	SBR	UASB	WSP	Any Other

Δ = Number of STPs, ♦ = Capacity (In MLD)

- Activated Sludge Process (ASP), Extended Aeration (EA), Fluidized Aerobic Bed Reactor (FAB), Moving Bed Biofilm Reactor (MBBR), Oxidation Pond (OP), Sequencing Batch Reactors (SBR), Upflow Anaerobic Sludge Blanket (UASB)and Waste Stabilization Pond (WSP).
- Technologies included in Any Other are Aerated Lagoon (AL), Trickling Filter (TF), Bio-Tower, Electro Coagulation (EC), MBR, FMBR and Root Zone etc.
- States /UTs not installed any STP are Andaman Nicobar & Islands, Arunachal Pradesh, Assam, Lakshadweep, Manipur, Meghalaya and Nagaland.

Table 3.9: Technology-wise Break up of STPs with respct to Operational Capacity

Sl.No.	States / Uts	Number / Capacity (In MLD)	Technologies								
			ASP	EA	FAB	MBBR	OP	SBR	UASB	WSP	Any Other
1	Andhra Pradesh	Δ	7	2	2	10	2	2	5	3	4
		♦	166	20	3	28	56	0.4	130	31.5	8
2	Chandigarh	Δ	1	0	0	1	0	3	1	0	0
		♦	6	0	0	136	0	106	23	0	0
3	Chhattisgarh	Δ	3	0	0	0	0	0	0	0	0
		♦	73	0	0	0	0	0	0	0	0
4	Daman, Diu & Dadra Nagar Haveli	Δ	0	0	0	0	0	3	0	0	0
		♦	0	0	0	0	0	24	0	0	0
5	Goa	Δ	0	0	0	0	0	5	0	0	4
		♦	0	0	0	0	0	43	0	0	1
6	Gujarat	Δ	14	3	0	5	8	24	7	0	8
		♦	1254	40	0	175	46	1285	491	0	67
7	Haryana	Δ	7	0	0	83	4	49	10	0	0
		♦	297	0	0	447	14	754	368	0	0
8	Himachal Pradesh	Δ	59	0	0	0	0	0	0	0	0
		♦	99	0	0	0	0	0	0	0	0
9	Jammu & Kashmir	Δ	4	0	3	1	0	4	0	0	0
		♦	21	0	15	30	0	27	0	0	0
10	Jharkhand	Δ	0	0	0	0	0	1	0	0	1
		♦	0	0	0	0	0	12	0	0	10
11	Karnataka	Δ	12	9	1	1	10	24	2	8	30
		♦	667	167	15	15	68	447	64	47	432
12	Kerala	Δ	2	0	0	0	0	0	0	0	1
		♦	111	0	0	0	0	0	0	0	3
13	Madhya	Δ	4	0	0	0	0	6	0	7	28

Sl.No.	States / Uts	Number / Capacity (In MLD)	Technologies								
			ASP	EA	FAB	MBBR	OP	SBR	UASB	WSP	Any Other
	Pradesh	♦	120	0	0	0	0	358	0	178	28
14	Maharashtra	Δ	18	2	1	24	2	52	6	0	25
		♦	792	34	1	508	36	2024	240	0	2731
15	NCT Delhi	Δ	25	4	1	0	0	4	0	0	1
		♦	2393	69	3	0	0	245	0	0	5
16	Odisha	Δ	0	0	0	0	0	0	0	2	2
		♦	0	0	0	0	0	0	0	35	20
17	Puducherry	Δ	0	0	0	0	0	1	2	0	0
		♦	0	0	0	0	0	20	36	0	0
18	Punjab	Δ	4	0	1	24	0	42	7	16	1
		♦	203	0	13	152	0	677	501	52	3
19	Rajasthan	Δ	13	0		2	2	22	4	9	5
		♦	399	0	0	2	30	156	25	88	83
20	Sikkim	Δ	0	0	3	0	0	0	0	0	2
		♦	0	0	16	0	0	0	0	0	2
21	Telangana	Δ	10	3	0	8	0	3	3	0	0
		♦	66	13	0	128	0	94	541	0	0
22	Tamil Nadu	Δ	49	0	1	0	1	5	1	2	4
		♦	1011	0	6	0	6	318	9	113	29
23	Tripura	Δ	0	0	0	0	0	1	0	0	0
		♦	0	0	0	0	0	8	0	0	0
24	Uttar Pradesh	Δ	19	0	3	3	11	31	24	2	6
		♦	614	0	113	14	91	1177	1094	13	108
25	Uttrakhand	Δ	0	0	0	6	0	32	1	0	13
		♦	0	0	0	8	0	324	2	0	11
26	West Bengal	Δ	8	0	2	0	6	1	0	2	5
		♦	130	0	41	0	50	8	0	20	88
Total		Δ	**259**	**23**	**18**	**168**	**46**	**315**	**73**	**51**	**140**
		♦	**8422**	**343**	**226**	**1643**	**397**	**8107.4**	**3524**	**577.5**	**3629**

Note:
Δ = Number of STPs, ♦ = Capacity (In MLD)

- Activated Sludge Process (ASP), Extended Aeration (EA), Fluidized Aerobic Bed Reactor (FAB), Moving Bed Biofilm Reactor (MBBR), Oxidation Pond (OP), Sequencing Batch Reactors (SBR), Upflow Anaerobic Sludge Blanket (UASB)and Waste Stabilization Pond (WSP).
- Technologies included in Any Other are Aerated Lagoon (AL), Trickling Filter (TF), Bio-Tower, Electro Coagulation (EC), MBR, FMBR and Root Zone etc.
- States /UTs not installed Operational STPs are Andaman Nicobar & Islands, Arunachal Pradesh, Assam, Bihar, Lakshadweep, Manipur, Mizoram, Meghalaya, and Nagaland.

3.4 RE-USE OF SEWAGE

As mentioned earlier, sewage generation is estimated as 72,368 MLD and capacity utilization is only 20,235 MLD and remaining quantity of 52,133 MLD is let-out as untreated sewage. Considering such gap of untreated sewage, there is need to realize sewage as a resource which can be treated as per requirement and utilized for non-potable purposes and industrial utilities. Utilization of sewage has following positive impacts:

- Re-use of treated sewage will allow to decrease the water demand from aquatic sources like river, ponds, lakes and also groundwater resources.
- Less consumption of raw water will help in conserving natural water resources.

In recent past, different ULBs and concerned authorities focused on reuse of treated sewage and initiated reuse of treated sewage in horticulture, irrigation, non-contact impoundments and washing and utilization for industrial activities. Central Public Health and Environmental Engineering Organisation (CPHEEO) has prescribed standards for re-use of treated sewage for different purposes like horticulture, irrigation, non-contact impoundments and washing and same is attached as ***Annexure-II.***

In compliance with the directions of Hon'ble NGT in the matter of OA no. 148 of 2015 titled Mahesh ChanderSaxena Vs South Delhi Municipal Coorporation, all the States / UTs have prepared action plans on utilization of treated sewage. Salient features of the action plans are mentioned below:

- In 07 States /UTs namely Delhi -405 MLD (12.5 %), Gujarat-60 MLD (1.55 %), Haryana-192 MLD (16 %), Madhya Pradesh-84 MLD (4 %), Tamil Nadu -211 MLD (6.6 %), Chandigarh- 27-40 MLD (10-16 %) and Puducherry – 15.3 MLD (26 %), domestic wastewater treated and re-used for different purposes like horticulture, irrigation, non-contact impoundments, washing (Roads, Vehicles, Trains), Construction and Industrial Actvities.
- Percentage of reuse of treated sewage is maximum in Haryana (80 %) followed by Puducherry (55 %), Delhi (50 %), Chandigarh (35 %), Tamil Nadu (25%), Madhya Pradesh (20 %), Andhra Pradesh (5 %).
- NCT of Delhi has set target to increase their re usage from 12.5 % to 60 %. In future, utilization of 341 MGD treated sewage are proposed for drinking purpose (197 MGD), Irrigation (112 MGD) and 10 MGD in rejuvenation of water bodies

Apart from above, case studies of ***Chennai Metropolitan Water Supply and Sewerage Board*** and ***Surat Municpal Corporation*** on reuse of treated sewage via Tertiary Treatment Reverse Osmosis (TTRO) Plant for industrial activity are presented below:

3.4.1 Case study of Chennai Metropolitan Water Supply and Sewerage Board

Chennai Metropolitan Water Supply and Sewerage Board has installed 02 TTRO plants at Koyambedu and Kodungaiyur of capacity 45 MLD each to meet the raw water requirement of Industrial areas. Details of TTRO plant at Koyambedu and Kodungaiyur are mentioned below:

i. 45 MLD Capacity TTRO Plant at Koyambedu

- **Work Awarded**
  M/s WABAG – IDE Consortium, Chennai- Rs 396.50 Crore towards construction cost and Rs 197.59 Crore towards Operation and Maintenance cost for 15 years.

- **Project Plan**
  Construction of TTRO plant of capacity 45 MLD and MS Tranmission main for conveying product water including construction of Intermediate storage tanks at Pillaipakkam, VallamVadagal and Oragadam for onward supply to the SIPCOT industries located at Irungattukottai, Sriperumbudur and Oragadam by SIPCOT.

  The TTRO product water from TTRO plant at Koyambedu is being supplied to the SIPCOT industries located at Irungattukottai viz. Hyundai, Schwingstetter, Hwwin, etc., at Sriperumbudur viz. Saint Gobain, Capro, Samsung Mobiles, etc., and at Oragadamviz, Apollo tyres, Nissan Kone Elevators, Mando, Yamaha & Enfield, etc., and to all other small scale industries located at Pillaipakkam and VallamVadagal from 18.12.2019 onwards.

  - **Details of TTRO Plant** treatment stage: Pre-chlorination, Rapid Sand Gravity Filters
  - Secondary treatment stage: Basket strainers, Ultrafiltration system
  - Tertiary treatment stage: Cartridge filters, Reverse Osmosis system and Ozonation.

- **Benefits**
  - Saving of Fresh Water-Due to the commencement of the supply of TTRO water to SIPCOT industries, the quantity of fresh water of around 20MLD which was being supplied to them for industrial use from Chembarambakkam has now been diverted for drinking water purpose of the Chennai city people
  - Revenue- The rate / tariff for the supply of TTRO water to the SIPCOT industries from TTRO plant at Koyambedu is fixed as Rs.65/- per KL. The total Revenue Generated is Rs 19.67 Crores.

ii. 45 MLD Capacity TTRO Plant at Kodugaiyur

- **Work Awarded**
  M/s BGR Energy Systems Limited, Chennai- Rs235 Crores towards construction cost and Rs205 Crore towards Operation and Maintenance cost for 15 years

  Project Plan
  Construction of TTRO plant of capacity 45 MLD and laying DI conveying main to supply product water to the industries at Manali – Ennore Corridor and Manali – Minjur Corridor, Chennai.

- **Details of TTRO Plant**
  - Pre-treatment stage: Pre-chlorination, Rapid Sand Gravity Filters
  - Secondary treatment stage: Basket strainers, Ultrafiltration system
  - Tertiary treatment stage: Cartridge filters, Reverse Osmosis system and Ozonation
- **Benefits**
  - Saving of Fresh Water-Due to the commencement of the supply of TTRO water to the industries, the quantity of fresh water / desalination waterof around 20MLD which was being supplied to them for industrial use has now been diverted for the drinking water purpose of the Chennai city people
  - Revenue- The rate / tariff for the supply of TTRO water to the SIPCOT industries from TTRO plant at Koyambedu is fixed as Rs.80/- per KL. The total Revenue Generated is Rs48.17 Crores.

3.4.2 Case study of Surat Municpal Corporation

Surat Municipal Corporation (SMC) is supplying an average of 55 MLD of water to Pandesara GIDC Industrial area since 1998. Water demand of Pandesara industries is approximately 90-100 MLD comprising 80-85 MLD of process water requirement and 10-15 MLD of potable quality water demand.

SMC has constructed 40 MLD TTRO plant to treat secondary treated water from Bamroli STPs and recycle, generate and supply Industrial grade water for Pandesara Industrial Estate. Details of project are mentioned below:

- **Work Awarded**
  M/s Enviro Control Associates (I) Pvt. Ltd, Surat- Rs 85.10 Crore towards construction cost and Rs 80 Crore towards Operation and Maintenance cost for 10 years

- **Details of TTRO Plant**
  - Sand Filtration
  - Ultra Filtration
  - Reverse Osmosis (RO)
  - Activated Carbon Filteration (ACF)

- **Benefits**
  - Saving of Fresh Water-SMC is now able to sapre 40 MLD of potable water, which was earlier supplied to Pandesara industries.
  - Revenue- The rate / tariff for the supply of TTRO water to the Pandesaraindustriesfrom TTRO plant is fixed as Rs.23/- per KL. The total Revenue Generated is Rs 48.17 Crores

- **Replicability**
  - 35 MLD capacity at Bamroli (Phase-II) to cater need of Sachin Industrial Estate
  - 40 MLD capacity at Dindoli to cater additional need of Pandesara Industrial Estate
  - To explore further use of Tertiary Treated Sewage Wate for Gardening, Lake Development, One TTP of 01 MLD capacity is completed as pilot project at KaviKalapi Garden, West Zone of Surat
  - Reuse of Secondary Treated Sewage Water for plants on Road Divider
  - For new proposed 06 EWS Housing Scheme having more than 3000 units under SMART City Mission, SMC has initiated to establish TTP to treat the Domestic Sewage and Re-use it for Toilet flushing and Gardening.

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4.14 STPs AT JHARKHAND

Estimated sewage generation for the State of Jharkhand is 1510 MLD and total capacity (including proposed) is 639 MLD (12 STPs). Figure 4.11 depicts sewage generation, treatment capacity, operational capacity, actual utilization, complied capacity, capacities of non operational STPs, under construction STPs and proposed STPs. Based on the data analysis, following observations are made:

1. Installed capacity is 22 MLD (1.45 %) against sewage generation of 1510 MLD. It shows that there is a gap of 1488 MLD (98.55 %) in treatment capacity.
2. Installed STPs can be operated at 100 % of capacity. However, actual utilized capacity is only 15 MLD and meeting the consented norms.

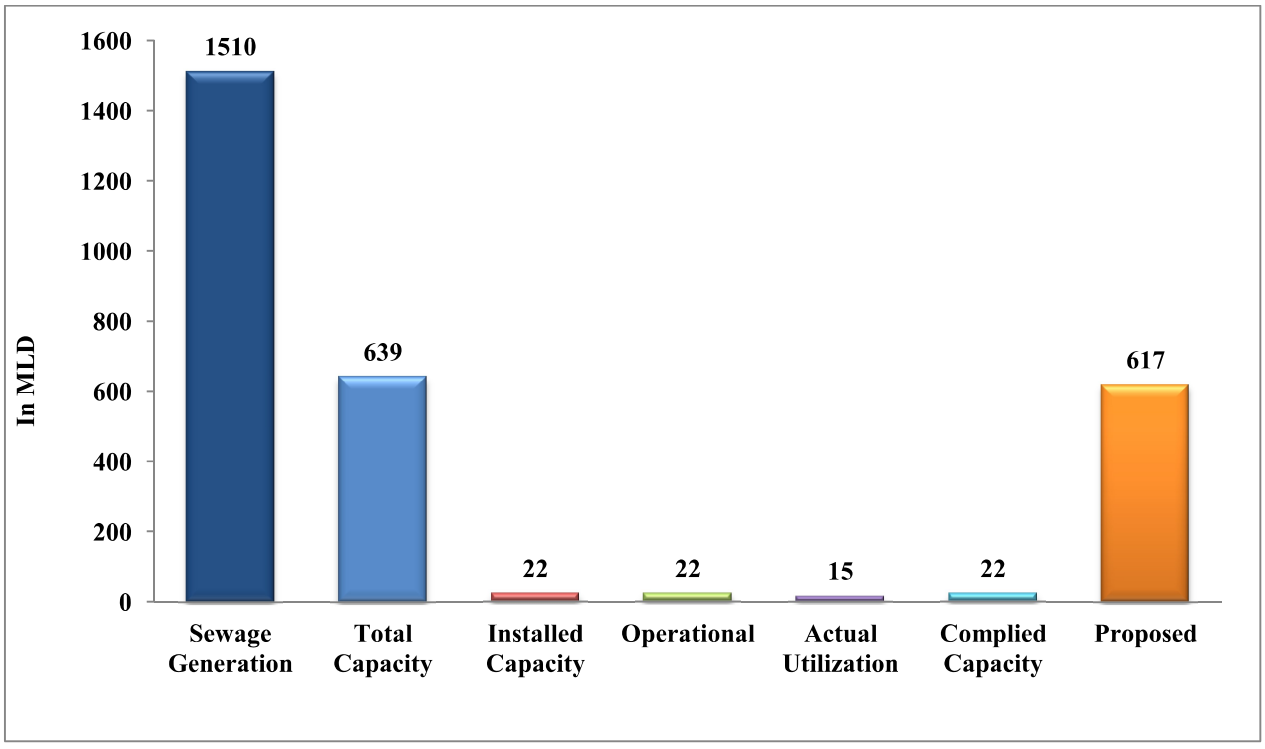

Figure 4.11: Sewage Generation and Treatment Capacity (MLD) - Jharkhand

JHARKHAND

Sl. No.	Town	Existing STP Capacity (MLD)	Capacity Being Utilized (MLD)	Status (DPR/ tendering/ under construction/ ETC etc.)	Technology	Remarks	Whether Complying or not
1	Ranchi	10	10	Operational	phytorid technology		complying
2	Ranchi (Zone -1)	37	0	Under Construction		Jumar (kanke dam to kadal) Priority V	
3	Ranchi (Zone 2,3,4)	269	0	Proposed		Subernarekha (Hatia dam to Jamshedpur) Priority IV	
4	Sahibganj	12	5	Operational	SBR		complying
5	Rajmahal	3.5	0	Under Construction			
6	Adityapur	36	0	Under Construction		Subernarekha (Hatia dam to Jamshedpur) Priority IV	
7	Dhanbad	144	0	Proposed		Damodar Phusro road bdg to turio Priority V	
8	Phusro	15	0	Proposed		Damodar Phusro road bdg to turio Priority V	
9	Ramgarh	40	0	Proposed		Damodar Phusro road bdg to turio Priority V	
10	Mango	43	0	Proposed		Subernarekha (Hatia dam to Jamshedpur) Priority IV	
11	Jamshedpur	20	0	Proposed		Subernarekha (Hatia dam to Jamshedpur) Priority IV	
12	Jugsalai	9	0	Proposed		Subernarekha (Hatia dam to Jamshedpur) Priority IV	

Annexure A-2

Pollution Chokes Subarnarekha river in Jamshedpur: ₹72 Crore Sewage Project Stalled

avenuemail.in/subarnarekha-river-pollution-mango-stp-project-delay/

March 30, 2026

Nine drains are polluting Jamshedpur's Subarnarekha River as a ₹72 crore sewage treatment project stalls due to lack of funds

Jamshedpur: Nine major drains continue to discharge untreated waste into the Subarnarekha River—the lifeline of Jamshedpur—as a critical ₹72 crore Sewage Treatment Plant (STP) project remains stuck in bureaucratic limbo. While the Urban Development Department has granted technical approval for the scheme, the lack of budget allocation has halted progress on the ground.

Project Scope and Land Allocation

The project requires 4.5 acres of land across three specific locations in the Mango Municipal Corporation area. Authorities have already identified the sites:

- **Chanakyapuri:** 1 acre
- **Lakshman Nagar:** 3 acres
- **Baikunth Nagar:** 0.5 acres

Once operational, the plants will treat **31.5 million liters (MLD)** of sewage daily before releasing clean water into the Subarnarekha River.

Budgetary Delays and Missed Deadlines

The consultancy firm NJS prepared the detailed project report (DPR) during the 2023-24 financial year. Despite an initial “green light” from the department, the project has failed to reach the tendering stage because the government has not yet released the funds. Consequently, the Mango Municipal Corporation recently sent a reminder to the department, urgently requesting the budget to address the city’s sanitation crisis.

Official Statement

Krishna Kumar, Deputy Municipal Commissioner of Mango Municipal Corporation, confirmed the deadlock. “We have obtained technical approval for the STP project, but we lack the funds to begin construction,” Kumar stated. “We have written to the Urban Development Department again requesting the budget. We will prioritize the work as soon as we receive the allocation.”

10043	RIVER COOUM AT POONAMALLE	TAMIL NADU	28	34	0.3	2.5	6.8	7.3	750	2380	8.0	24.0	0.32	10.06	200	1880	1400	10300		
10044	RIVER COOUM AT COLLAGE ROAD	TAMIL NADU	27	33	0.3	2.8	6.8	7.3	681	2200	6.0	42.0	0.32	13.64	330	1462	1700	14830		
10045	RIVER COOUM NEAR CENTRAL JAIL	TAMIL NADU	27	31	0.3	0.3	6.8	7.2	864	2020	15.0	54.0	0.32	11.48	390	1887	2100	15210		
10046	RIVER COOUM AT NAPIER BRIDGE	TAMIL NADU	27	34	0.3	1.8	6.6	7.1	900	15820	11.0	38.0	0.32	16.60	330	3430	1700	18890		
10057	RIVER VENNAR AT THANJAVUR U/S	TAMIL NADU	25	28	6.8	8.8	7.4	8.8	216	1055	1.0	2.3	1.28	1.78	4	36	11	91		
10058	RIVER VENNAR AT THANJAVUR D/S	TAMIL NADU	25	28	6.8	7.6	7.4	8.2	217	1040	1.3	2.2	0.68	1.51	4	48	14	112		
5578	River Shimsha Downstream OfÂ Maddur Near Vydyanatheswara Temple Road Bridge,Maydya	KARNATAKA	23	29	5.1	6.6	7.3	8.0	400	681	2.6	4.0	2.12	3.22	120	400	1500	2700		
4501	RIVER ARKAVATHI AT MANCHANBELE RESERVOIR, MANCHANABALE DAM	KARNATAKA	22	38	4.3	6.9	6.9	8.7	695	1178	4.0	8.0	3.02	5.00	5	4300	43	16000	2	5400
1208	RIVER BHAVANI AT ELACHIVAZHY, PALAKKAD	KERALA	24	31	4.1	8.0	7.7	8.2	72	365	1.0	3.4	0.30	0.44	2	1300	200	1500	2	200
5228	RIVER KABANI AT MUTHANGA,WAYANAD	KERALA	22	32	4.2	7.7	6.0	8.2	60	210	1.0	5.2	0.30	0.30	2	94	24	160	4	70
5229	RIVER KABANI AT BANASURA SAGAR DAM AT KALPETTA,WAYANAD	KERALA	23	32	6.1	8.6	6.0	7.9	23	124	1.0	2.5	0.30	0.30	2	34	10	84	2	11
5227	RIVER KALINDI AT BAVALI, WAYANAD	KERALA	24	32	3.6	7.7	6.1	8.0	50	177	1.0	1.8	0.30	0.30	2	49	2	79	2	41
5226	RIVER PAPANASINI AT THIRUNELLY, WAYANAD	KERALA	23	32	5.5	8.4	5.8	8.1	45	170	1.0	3.0	0.30	0.30	2	52	10	112	2	50
10059	RIVER VAIGAI AT MADURAI U/S	TAMIL NADU	25	31	5.2	7.1	6.0	8.7	299	934	1.0	5.0	0.32	1.03	5	27	19	49		
10060	RIVER VAIGAI AT MADURAI D/S	TAMIL NADU	25	32	4.0	6.2	6.6	9.1	338	1494	1.4	7.0	0.33	1.59	9	34	17	63		

Station Code	Name of the monitoring Location	State	Temperature (°C)		Dissolved Oxygen (mg/L)		pH		Conductivity (µmho/cm)		BOD (mg/L)		NitrateN + NitriteN(mg/L)		Fecal Coliform (MPN/100ml)		Total Coliform (MPN/100ml)		Fecal Streptococci (MPN/100ml)	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					> 5.0 mg/ L		6.5 - 8.5				< 3.0 mg/ L				< 2500 MPN/ 100 Ml				< 500 MPN/ 100 Ml	
23	RIVER SUBARNAREKHA AT RANCHI, (TATISILWAI)	JHARKHAND	18	29	5.0	7.4	6.5	6.7			1.4	2.4								
24	RIVER SUBARNAREKHA AT JAMSHEDPUR	JHARKHAND	20	40	6.0	7.7	6.8	7.6	246	286	1.3	4.0								

48	RIVER SUBARNAREKHA AT CHANDIL BRIDGE	JHARKHAND	19	37	7.4	8.0	7.2	7.6	162	204	1.0	1.8								
49	RIVER SUBARNAREKHA AT D/S JAMSHEDPUR, (TATA NAGAR)	JHARKHAND	18	34	5.1	7.5	6.5	7.8	212	282	2.0	3.0								
1641	RIVER SUBARNAREKHA AT RAJGHAT (THENGUDIA)	ODISHA	24	32	6.0	9.1	7.3	8.5	160	530	1.1	1.4	0.32	0.78	170	1700	490	4900		
2385	RIVER SUBARNAREKHA AT NAMKUM ROAD BRIDGE	JHARKHAND	11	30	5.4	7.7	6.6	7.6			2.0	2.4								
2386	RIVER SUBARNAREKHA AT MURI ROAD BRIDGE	JHARKHAND	10	28	6.6	7.8	6.5	7.6			1.4	3.2								
2387	RIVER SUBARNAREKHA AT GHATISLA ROAD BRIDGE	JHARKHAND	19	40	7.2	8.3	7.2	7.7	168	236	1.0	1.8								
2395	RIVER SUBARNAREKHA AT HATIA DAM	JHARKHAND	8	23	7.8	8.2	7.2	7.4			2.0	2.8								
2397	RIVER SUBARNAREKHA AT GATALSUD DAM	JHARKHAND	9	26	7.8	8.0	6.6	7.9			2.0	2.6								
2399	RIVER SUBARNAREKHA AT CHANDIL DAM	JHARKHAND	19	37	7.2	8.2	7.2	7.7	174	208	1.0	1.8								
4743	RIVER SUBARNAREKHA U/S HCL GHATSHILA, E.S	JHARKHAND	19	40	7.2	8.2	7.2	7.6	172	212	1.0	2.4								
4744	RIVER SUBARNAREKHA BEFORE MEETING KHARKAI RIVER	JHARKHAND	18	36	6.8	8.1	7.3	7.9	194	284	1.0	2.2								
4746	RIVER SUBARNAREKHA AFTER CONFLUENCE OF KHARKAI RIVER	JHARKHAND	9	36	6.2	8.0	7.1	7.7	174	204	1.0	3.0								
4748	RIVER SUBARNAREKHA AT BAHARAGORA ROAD BRIDGE, P.O- BAHARAGORA, E.S	JHARKHAND	15	38	7.4	8.0	7.4	7.8	198	252	1.0	1.4								
4749	RIVER SUBARNAREKHA, NEAR RING ROAD BRIDGE SEMBO, NAGRI, RANCHI	JHARKHAND	12	32	4.2	7.8	6.6	7.5			2.0	3.2								
4750	RIVER SUBARNAREKHA NEAR INTAKE WELL HATIA RAILWAY	JHARKHAND	11	32	3.5	4.5	6.3	7.6			2.0	2.6								
4752	RIVER SUBARNAREKHA NEAR OBERIA ROAD BRIDGE, HATIA RANCH	JHARKHAND	11	30	3.0	4.1	6.5	7.6			2.0	2.8								
4084	RIVER SURBARNREKHA AT HATIA ROAD BRIDGE, RANCHI	JHARKHAND	8	23	2.9	3.4	6.5	6.6			2.0	2.8								
4086	RIVER SUBARNAREKHA U/S HINDALCO IND LTD, MURLI WORKS, CHHOTAMURI, RANCHI	JHARKHAND	12	32	7.7	8.0	6.5	7.5			2.0	2.6								
30067	RIVER SUBARNAREKHA AT BEHRAGORA ODISHA-JHARKHAND	JHARKHAND	28	33	6.4	8.5	7.1	8.7	195	346	1.0	1.0	0.32	0.41	45	2200	1400	92000	2	790
30068	RIVER SUBARNAREKHA AT GOPIBALLAVPUR (WEST BENGAL)	WEST BENGAL	27	33	6.4	9.5	7.1	7.9	194	336	1.0	3.0	0.32	0.33	45	4900	1100	28000	2	490

30069	RIVER SUBARNAREKHA AT LAKHANNATH (ORISSA)	ODISHA	27	31	6.3	8.5	7.0	7.8	163	342	1.0	1.0	0.32	0.32	140	920000	1700	16000000	45	1100
4753	RIVER HARMU NEAR HARMU BRIDGE, HARMU, RANCHI	JHARKHAND	10	28	3.2	4.3	6.5	6.6			6.8	8.4								
4754	RIVER HARMU BEFORE METTING TO SWARNREKHA RIVER	JHARKHAND	11	29	4.0	4.6	6.5	6.7			8.6	9.6								
4756	RIVER SUBARNAREKHA AT RUCCA DAM, RUCCA, RANCHI	JHARKHAND	12	25	7.8	8.0	7.3	7.4			2.1	2.8								

Annexure A-4

Online Automated Alerts Generation Protocol for OCEMS (Emission & Effluent)

Central Pollution Control Board

Delhi

July 2025

Online SMS Alerts Mechanism

- Online effluent/emission monitoring equipment are connected to Data Loggers/IoT Devices to transmit data to CPCB Servers.

- CPCB Server receives data at 15 min intervals through Data Loggers/IoT Devices. Server generates auto SMS Alerts to the registered mobile numbers.

- SMS Alerts: System would receive 15-min average values from the analyzers, based on which, the hourly SMS alerts may be transmitted when one-hour average value exceeds the prescribed limit, thereafter the next SMS alert may get generated if the average hourly value exceeds the limit. The yellow alerts may be assessed according to the number of such hourly SMS alerts.

Proposed Framework for Monitoring Compliance through OCEMS

- Hourly SMS alerts will be sent to industries for exceedances, as outlined in Online SMS Alerts Mechanism Section.
- Online data transmission categorized as – live, delay (no data transmission since last four hours), and offline (no data transmission since last 48 hours)
- Considering the online monitoring data, this monitoring protocol is being devised to enhance compliance level.
- Alerts to be generated based on exceedances, consistent and stable value, and connectivity status.
- These alerts are used for grading compliance by industries based on color coded scale as given below. The objective is to ensure proper operation & maintenance of Effluent/Emission Monitoring System.

Yellow Alert	**->**	**Orange Alert**	**->**	**Red Alert**

Alert Trigger	Alert Code	Action
ETP Parameters ❑ **Exceedance:** For every 02 SMS Alerts (consecutive or non-consecutive) generated in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Connectivity Failure:** When there is connectivity failure due to Internet / power connectivity /sensor error / equipment failure, for four hours (consecutive or non-consecutive), in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Consistent and Stable Values:** When parameter values, excluding pH, are consistent and stable, without any deviation (of +/- 5%) for 48 hours continuously.	 Yellow (Level-I)	➢ Corrective measures must be taken by industry immediately. ➢ Industry to record the incidence and maintain the record for reference for SPCB / CPCB.

Alert Trigger	Alert Code	Action
Stack Parameters ❑ **Exceedance:** For every 02 SMS Alerts (consecutive or non-consecutive) generated in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. Alerts for exceedance due to plant, boiler or equipment's start or stop must be excluded (logs must be recorded and special note to be sent to SPCB / CPCB in this regard after generation of yellow alert) ❑ **Connectivity Failure:** When there is connectivity failure due to Internet / power connectivity /sensor error / equipment failure, for four hours (consecutive or non-consecutive), in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Consistent and Stable Values:** When parameter values, are consistent and stable, without any deviation (of +/- 5%) for 48 hours continuously.	 Yellow (Level-I)	➢ Corrective measures must be taken by industry immediately. ➢ Industry to record the incidence and maintain the record for reference for SPCB / CPCB.

Alert Trigger	Alert Code	Action
ETP Parameters ❑ **Exceedances (Continuous):** For every 04 consecutive SMS Alerts generated in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Exceedances (Discrete):** For every 27 Yellow Alerts (For Exceedance) generated during any 30-day moving period (7.5% of maximum possible yellow alerts in 30 days, i.e. 360). ❑ **Connectivity Failure (Continuous):** When there is Internet / power connectivity /sensor error / equipment failure continuously for 48 hours. ❑ **Connectivity Failure (Discrete)**: When Internet / power connectivity /sensor error / equipment failure results in 12 Yellow Alerts (For Connectivity Failure) during any 30-day moving period. ❑ **Consistent and Stable Values:** When parameter values, excluding pH, are consistent and stable, without any deviation (of +/- 5%) for 72 hours continuously.	 Orange (Level-II)	➢ Corrective measures must be taken by industry immediately. ➢ Industry to record the incidence and maintain the record for reference for SPCB / CPCB. ➢ Industry to notify SPCB /CPCB about the incidence and corrective measures taken.

Alert Trigger	Alert Code	Action
Stack Parameters ❑ **Exceedances (Continuous):** For every 04 consecutive SMS Alerts generated in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Exceedances (Discrete):** For every 27 Yellow Alerts (For Exceedance) generated during any 30-day moving period (7.5% of maximum possible yellow alerts in 30 days, i.e. 360). ❑ **Connectivity Failure (Continuous):** When there is Internet / power connectivity /sensor error / equipment failure continuously for 48 hours. ❑ **Connectivity Failure (Discrete)**: When Internet / power connectivity /sensor error / equipment failure results in 12 Yellow Alerts (For Connectivity Failure) during any 30-day moving period. ❑ **Consistent and Stable Values:** When parameter values, are consistent and stable, without any deviation (of +/- 5%) for 72 hours continuously.	 Orange (Level-II)	➢ Corrective measures must be taken by industry immediately. ➢ Industry to record the incidence and maintain the record for reference for SPCB / CPCB. ➢ Industry to notify SPCB /CPCB about the incidence and corrective measures taken.

Alert Trigger	Alert Code	Action
ETP Parameters ❑ **Exceedances (Continuous):** For every 08 consecutive SMS Alerts generated in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Exceedances (Discrete):** For every 54 Yellow Alerts (For Exceedance) generated during any 30-day moving period (15% of maximum possible yellow alerts in 30 days, i.e. 360). ❑ **Connectivity Failure (Continuous):** When there is Internet / power connectivity /sensor error / equipment failure continuously for 96 hours. ❑ **Connectivity Failure (Discrete)**: When Internet / power connectivity /sensor error / equipment failure results in 18 Yellow Alerts (For Connectivity Failure) during any 30-day moving period. ❑ **Consistent and Stable Values:** When parameter values, excluding pH, are consistent and stable, without any deviation (of +/- 5%) for 144 hours continuously.	 Red (Level-III)	➢ Industry must immediately impound any further discharge of effluents and corrective measures must be taken immediately by industry. ➢ Industry to record the incidence and maintain the record for reference for SPCB / CPCB. ➢ Industry to notify SPCB /CPCB about the incidence and corrective measures taken. ➢ Record the observations on the effluent characteristics during the past 24 hours and submit a report along with reasons for deviation in the ETP/Processes. ➢ Industry may be prioritized for inspection by SPCB. CPCB may also prioritize the industry for inspection.

Alert Trigger	Alert Code	Action
Stack Parameters ❑ **Exceedances (Continuous):** For every 08 consecutive SMS Alerts generated in a day (between 00:00 Hrs to 24:00 Hrs) for the registered parameters. ❑ **Exceedances (Discrete):** For every 54 Yellow Alerts (For Exceedance) generated during any 30-day moving period (15% of maximum possible yellow alerts in 30 days, i.e. 360). ❑ **Connectivity Failure (Continuous):** When there is Internet / power connectivity /sensor error / equipment failure continuously for 96 hours. ❑ **Connectivity Failure (Discrete)**: When Internet / power connectivity /sensor error / equipment failure results in 18 Yellow Alerts (For Connectivity Failure) during any 30-day moving period. ❑ **Consistent and Stable Values:** When parameter values, are consistent and stable, without any deviation (of +/- 5%) for 144 hours continuously.	 Red (Level-III)	➢ Industry must immediately impound any further emission and corrective measures must be taken immediately by industry. ➢ Industry to record the incidence and maintain the record for reference for SPCB / CPCB. ➢ Industry to notify SPCB /CPCB about the incidence and corrective measures taken. ➢ Record the observations on the emission characteristics during the past 24 hours and submit a report alongwith reasons for deviation in the APCDs/Processes. ➢ Industry may be prioritised for inspection by SPCB. CPCB may also prioritize the industry for inspection.

Annexure A-5

Source: https://power.larc.nasa.gov/data-access-viewer/
-BEGIN HEADER-
NASA/POWER Source Native Resolution Daily Data
Dates (month/day/year): 03/01/2026 through 03/31/2026 in LST
Location: latitude 22.8187 longitude 86.2087
elevation from MERRA-2: Average for 0.5 x 0.625 degree lat/lon region = 233.1 meters
The value for missing source data that cannot be computed or is outside of the sources availability range: -99
parameter(s):
PRECTOTCORR MERRA-2 Precipitation Corrected (mm/day)
-END HEADER-

YEAR	DOY	PRECTOTCORR
2026	60	0
2026	61	0
2026	62	0
2026	63	0
2026	64	0
2026	65	0
2026	66	0
2026	67	0
2026	68	**0.06**
2026	69	**0.08**
2026	70	**0.11**
2026	71	**0.01**
2026	72	0
2026	73	0
2026	74	**1.51**
2026	75	**5.35**
2026	76	**2.95**
2026	77	**0.07**
2026	78	**0.66**
2026	79	**3.95**
2026	80	**9.19**
2026	81	**0.09**
2026	82	0
2026	83	0
2026	84	0
2026	85	**0.02**
2026	86	**0.5**
2026	87	**3.31**
2026	88	0
2026	89	**3.94**
2026	90	**5.32**

Annexure A-6

फाइलों में सफाई, हकीकत में गंदगी: जमशेदपुर में टनों मछलियां मरीं, जेएनएसी के दावों की खुली पोल

www.jagran.com/jharkhand/jamshedpur-jamshedpur-swarnarekha-river-pollution-kills-tons-of-fish-40191498.html

April 1, 2026

By Jitendra Singh Edited By: **Sanjeev Kumar**

Updated: Wed, 01 Apr 2026 07:38 PM (IST)

जमशेदपुर की स्वर्णरेखा नदी में बाबूडीह लाल भट्ठा के पास भारी संख्या में मरी हुई मछलियां मिलीं, जिससे इलाके में दुर्गंध फैल गई और स्थानीय निवासियों का ...और पढ़ें

स्वर्णरेखा नदी किनारे मृत पड़ीं मछलियां।

जागरण संवाददाता, जमशेदपुर। लौहनगरी की जीवनरेखा कही जाने वाली स्वर्णरेखा नदी का पानी प्रदूषित हो गया है। बुधवार को शहर के बाबूडीह लाल भट्ठा इलाके में नदी किनारे भारी संख्या में मरी हुई मछलियां मिलने से हड़कंप मच गया।

प्रदूषण की मार से तड़पकर मरी इन मछलियों के कारण पूरे क्षेत्र में दुर्गंध फैल गई है। जिससे स्थानीय निवासियों का स्वास्थ्य खतरे में पड़ गया है।

भयावह दृश्य: खतरे की आहट

बुधवार सुबह जब स्थानीय लोग घाट पर पहुंचे, तो वहां का नजारा विचलित करने वाला था। कई क्विंटल मछलियां पानी की सतह पर उतरा रही थीं।
चिंताजनक बात यह रही कि खतरे से अनजान कुछ लोग इन जहरीली मछलियों को खाने के लिए बटोरकर ले गए। चिकित्सा विशेषज्ञों ने कड़ी चेतावनी जारी की है कि रसायनों के कारण मरी इन मछलियों का सेवन फूड पॉइजनिंग और त्वचा रोगों का कारण बन सकता है।

वैज्ञानिक कारण: क्यों मर रही हैं मछलियां?

पर्यावरणविदों के अनुसार, मछलियों की इस सामूहिक मृत्यु का मुख्य कारण हाइपोक्सिया (ऑक्सीजन की कमी) है। जब औद्योगिक कचरा और सीवरेज का गंदा पानी बिना ट्रीटमेंट के नदी में गिरता है, तो पानी में बायोलॉजिकल ऑक्सीजन डिमांड (BOD) बढ़ जाती है। पर्यावरणविद मनोज कुमार के अनुसार जब पानी में घुली हुई ऑक्सीजन का स्तर 4 mg/L से नीचे गिर जाता है, तो जलीय जीवों का दम घुटने लगता है। इसके साथ ही औद्योगिक रसायनों से बढ़ता अमोनिया का स्तर इसे और अधिक जानलेवा बना देता है।

14 साल से फाइलों में दबी योजना

इस घटना ने जमशेदपुर अधिसूचित क्षेत्र समिति (JNAC) की कार्यप्रणाली पर गंभीर सवाल खड़े कर दिए हैं। जेएनएसी ने वर्ष 2010 में स्वर्णरेखा को प्रदूषण मुक्त करने का जो प्लान बनाया था।
वह आज भी फाइलों से बाहर नहीं निकल सका है। सीवरेज ट्रीटमेंट प्लांट (STP) लगाने के झारखंड हाईकोर्ट के सख्त निर्देशों के बावजूद धरातल पर स्थिति जस की तस है।

जनता का आक्रोश

स्थानीय लोगों का सीधा आरोप है कि आदित्यपुर औद्योगिक क्षेत्र और शहर की बड़ी कंपनियों का दूषित पानी अवैध रूप से सीधे नदी में बहाया जा रहा है। प्रशासनिक सुस्ती और निगरानी के अभाव ने स्वर्णरेखा को 'जहरीली नदी' में तब्दील कर दिया है।
बाबूडीह घाट की यह घटना न केवल पर्यावरणीय लापरवाही का प्रमाण है, बल्कि प्रशासन के लिए एक चेतावनी भी है। यदि समय रहते कदम नहीं उठाए गए, तो स्वर्णरेखा का अस्तित्व इतिहास के पन्नों तक सिमट कर रह जाएगा।

Jharkhand JD(U) MLA demands probe into mass fish deaths in Swarnarekha River

theprint.in/india/jharkhand-jdu-mla-demands-probe-into-mass-fish-deaths-in-swarnarekha-river/2895370/

April 2, 2026

Jamshedpur, Apr 2 (PTI) JD(U) legislator Saryu Roy on Thursday demanded a high-level inquiry into the death of hundreds of fish in the Swarnarekha River here, alleging water pollution from residential areas and industrial effluents.

Roy inspected the Babudih and Lal Bhata river ghats, noting that the river banks remained littered with dead fish three days after the incident, with many infested with worms and emitting a foul odour. He claimed that water had also turned black.

Accusing the State Pollution Control Board of inaction, Roy said data on pollutant discharge was unavailable online.

Annexure A-7

Item Nos. 01 to 05 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 23/2017 (EZ)

WITH

Original Application No. 776/2018

WITH

Original Application No. 373/2019

WITH

Original Application No. 162/2019

WITH

Original Application No. 164/2019

Syed Arshad Nasar Applicant(s)

Versus

Union of India & Ors. Respondent(s)

With

Ramchandra Chaurasia Applicant(s)

Versus

State of Jharkhand Respondent(s)

With

Pradeep Kumar Singh Applicant(s)

Versus

State of Jharkhand Respondent(s)

With

Anwar Hussain Ansari, Vice President, Jhamumo Applicant(s)

Versus

State of Jharkhand Respondent(s)

With

Residents of Pichhari Panchayat,
District Bokaro Applicant(s)

Versus

State of Jharkhand Respondent(s)

Heard on : 21.11.2019
Uploaded on : 05.12.2019

CORAM: **HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER
HON'BLE MR. SAIBAL DASGUPTA, EXPERT MEMBER

For Applicant(s): -

For Respondent(s): Mr. Kumar Anurag Singh, Advocate for JSPCB with Mr. R.L. Bakshi, Member Secretary, JSPCB.
Mr. Mukesh Kumar, Advocate for CPCB
Mr. Jayesh Gaurav, Advocate

ORDER

1. Original Application No. 23/2017 (WZ) was initially filed before the NGT, Eastern Zone Bench at Kolkata as it pertains to the Sahebganj District of the State of Jharkhand, where severe damage caused to the environment by operation of quarrying and crushing units had been alleged in the Rajmahal hills of the Vindhya Mountains. The District of Sahebganj is stated to be situated on the southern bank of river Ganga, Sahebganj District (Santhal Parganas), Jharkhand stretching till the boundary of Bhirbhum, West Bengal.

2. The region is stated to be unique in its geological features with rich biodiversity, flora and fauna inhabited by the indigenous Santhal Tribe and is a treasure trove of plant fossils dating

between 68 and 145 million years and a source of mineral resources like quartz, coal, mica, iron-ore, etc. including China clay and fire clay due to which the area had also been listed under the Mines and Minerals (Development and Regulation) Act, 1957. It is stated that the private companies to whom areas have been lease out have been indulging in indiscriminate mining and operating crusher units in the process have practically blown-up the hills. The Applicant states that request made to the concerned authorities of the State Government to look into the matter has not been responded to. Even the letters and representations submitted to those authorities including the Prime Minister of India have not borne any result.

3. The other concern expressed by the Applicant is construction of a bridge proposed by the Ministry of Central Land Transportation, Government of India on the river Ganga between Sahebganj and Manihari in the Sahebganj District, Jharkhand as it was apprehended that it would cause threat and danger to the hills which is the home of the Santhal Tribe.

4. On 23.02.2017, which was the very first day when the matter came up before the Tribunal, the State of Jharkhand, the Jharkhand Pollution Control Board, the District Land & Land Reforms Officer, Sahebganj and the Mines & Geology Department, Government of Jharkhand, respectively appeared through their counsel and waived off notices.

5. It may be relevant to note that as earlier, two O.As being O.A. No. 44/2015/EZ and O.A. No. 88/2015/EZ which also dealt with illegal stone crushing units in the District of Dumka and Pakur were being considered, the Respondent Nos. 4, 6, 7 & 8 were directed to verify as to whether the stone crushing units involved in the present case were also included in the orders passed in the said two O.As.

6. On 08.05.2017, the State PCB clarified that the present case did not involve the areas involved in O.A. No. 44/2015/EZ and O.A. No. 88/2015/EZ. It was also stated that the State PCB had granted Consent to Operate to 156 stone crusher units and 110 stone mines and 74 had been identified as illegal units against which closure orders had been issued and are accordingly closed. List containing stone crusher units and stone mines to whom Consent to Operate had been granted was also filed. The list contained three tables, first of which listed out 110, second containing 36 stone crusher and stone mining units and the third containing 74 units but without information as to whether those 74 were either stone mines or stone crushing units except to mention the name of the units. Further no information was provided as to whether any environmental compensation had been recovered from the illegal mines which had been closed. There was also no information as to whether any steps were taken to remedy the environmental damage caused by the illegal operation of the mines. Obviously, therefore, the list provided was found to be quite vague. By order dated 08.05.2017, we had indicated so

and, had accordingly directed that a supplementary affidavit should be filed giving the necessary particulars before the next date.

7. On 06.07.2017 time was sought for by the State PCB which was allowed and by order of the same date all stone quarries and stone crushing units operating illegally in the district of Sahibganj were prohibited from further operation until further orders granting liberty to the owners of the stone quarries and crusher units to approach the Tribunal for modification, variation and the recall of the order in case they were in possession of necessary clearances. This order was passed despite the fact that they were not parties to the proceedings and was passed keeping in view the principal of natural justice. The District Magistrate (DM), the Superintendent of Police (SP), Sahibganj and the District Mining Officer (DMO) were directed to ensure compliance of the order and to submit action taken report before the next date. However, no report was filed by them and by order dated 09.08.2017 the order of prohibition issued on 06.07.2017 was reiterated. On 03.10.2017 neither were the Respondent Nos. 4, 7 & 8 represented nor report filed by them. Thus notices were issued upon them to show cause as to why appropriate action in accordance with law should not be taken against them. On 08.11.2017 instead of filing show cause further time was sought for by these respondents. Direction was issued upon the DM and the DMO to also file report on the question as to whether 30 stone crushing units against whom closure notices said to have been issued had indeed been closed.

8. At this stage, we may note that in an additional supplementary affidavit filed on behalf of the State of Jharkhand in terms of order dated 06.07.2017. The number of stone crusher units and stone mines to whom Consent to Operate had been granted were 156 and 110 respectively, a list of which was filed with the supplementary affidavit. Again on 08.11.2017, further supplementary counter affidavit was filed by the State PCB stating that Consent to Establish had been granted to 28 stone crushers and stone mines. Further 89 stone crushers with stone mine units and 39 stone mine units had been granted Consent to Operate. Also that 30 additional number of stone crusher units in Sabhibganj District had been issued with the closure directions.

9. Strong exception was taken by the Tribunal when even as on 17.04.2018 orders dated 06.07.2017 had not been complied with despite notices to show cause issued against the Respondent Nos. 4, 6, 7 & 8. Time was granted to do so on payment of cost of ₹25,000/- by each of them. When it was found that the Respondents had still not complied with the orders including the payment of cost of ₹25,000/-, bailable warrants of arrest were issued against them with further direction to pay penalty of ₹1,00,000/- each. On 22.01.2019 when the infractions continued, the cost of ₹25,000/- was enhanced to ₹50,000/- and of ₹1,00,000/- to ₹2,00,000/- against each of them to be deposited before the next date apart from the officers being present in person. By the said order, a Committee was also constituted comprising of (a) Senior Scientist/ Engineer form

CPCB; (b) Regional Office, EZ, MoEF&CC, Bhubneswar and, (c) Experts from SEIAA and Jharkhand State PCB to undertake a detailed study to address the serious environmental concerns in the area. The terms of reference referred to the Committee were as follows:

> ***"i) Undertake Carrying Capacity Assessment of the area viz-a-viz stone mines and stone crushing units.***
>
> ***ii) Undertake Ambient Air Quality Assessment in atleast 10 representative locations of the area.***
>
> ***iii) Assess (a) the pollution control devices of the stone mining and stone crushing units in the area and the environmental damage caused and (b) the cost of restoration of such damage.***
>
> ***iv) Any other relevant studies cognate to the above.***
>
> ***In undertaking the task, the Committee may co-opt expert/experts from any institution identified by it."***

10. The State PCB on its part was directed to submit report on the action taken against the non-compliant units within three months. On 19.02.2019 the DM/Dy. Commissioner, the Superintendent of Police and the DMO, Sahibganj appeared in person in compliance of the earlier orders. Application for review to the dated 22.01.2019 directing them to pay costs was heard and dismissed. On 07.05.2019 it was clarified that cost shall be deposited with the CPCB. The report filed by the DMO was also taken on record and it was noted that the action taken by the authorities and the State PCB were apparently lacking and inadequate in many aspects having regard to the undeniable fact that a large number of illegal stone mines and crusher units were operating in the area which had either been reported to have been closed or at the stages of compliance of the pollution norms.

Thus, environmental compensation was directed to be assessed against such units by the Committee on the following parameters:

> ***"i. The quantum of minerals extracted and crushed.***
>
> ***ii. Damage on account of Net Present Value (NPV) against the ecological loss forgone forever.***
>
> ***iii. The ecological damage caused on account of the operation of the illegal unit.***
>
> ***iv. Cost against restoration of the environment."***

11. O.A. No. 23/2017 (EZ) was directed to be listed before the NGT, Principal Bench with O.A. No. 776/2018 and O.A. No. 373/2019 as the questions involved were the very same.

12. O.A. No. 776/2018 had been taken up for the first time on 04.12.2018 when the Jharkhand Pollution Control Board and the Divisional Forest Officer, Sahebganj were directed to jointly look into the matter and take appropriate action in accordance with law. Even in that case the Jharkhand Pollution Control Board failed to submit its report as directed on 24.07.2019, i.e., after a long period of almost seven months leading to the Tribunal directing the personal presence of the Member Secretary, Jharkhand Pollution Control Board on the next date making it clear that in the case of default, non-bailable warrant may be issued against him. A copy of the order was also sent to the Chief Secretary, State of Jharkhand for compliance. On 11.09.019 the facts emerging in O.A. No. 23/2017(EZ) had been recorded with which we have already referred to earlier and need not be repeated again for the sake of brevity.

13. The recommendations of the Committee constituted *vide* order dated 22.01.2019 in O.A. No. 23/2017(EZ) were noted which clearly show wide scale flouting of the norms by stone crushing and stone mine units. The Committee clearly noted that while the mines were run un-systemically and unscientifically, the crushing units did follow the environmental protection norms and, therefore, could not be allowed to continue and opined that the State could have granted only a few mining leases in the Rajmahal hills which was a unique place for biodiversity.

14. During the course of the hearing on 11.09.2019, the Member Secretary, State Pollution Control Board informed that there were 407 stone crushers and 300 stone mines and according to him many of those were compliant with the environmental norms but, no data was provided regarding this. It was noted that the joint Committee had also not given specific particulars about compliance of the environmental norms by the individual stone crushers and mines. Thus, further report was called for from the Committee containing specific details of non-conforming stone crushers and mines and the State PCB directed to take action against such non-conforming stone crushers and mines which would include prohibition of polluting activities, prosecuting the polluters and assessing and recovering compensation for damage to the environment on 'Polluter Pays' principle.

15. O.A. No. 23/2017(EZ) was also deferred to 08.11.2019 along with O.A. No. 776/2018 and O.A. No. 373/2019. The Member

Secretary, Jharkhand Pollution Control Board who was present in person was also directed to remain present on the next date.

16. The State PCB filed a fact sheet in terms of the order dated 11.09.2019 indicating the following:

a. The Committee had visited 21 stone crusher units and 11 stone mining units and action had been initiated against them.

b. There were 402 sand mines, out of which 212 had valid mining lease and 282 were not operational.

c. 111 stone mines had applied for Consent to Operate, out of which 87 had been granted Consent to Operate and in case of 14, it had been rejected and in respect of 10 stone mines Consent to Operate was pending consideration.

17. As regards stone crusher units, there were 508 which had applied for Consent to Operate out of which 445 had been granted and the case of 24 had been rejected, while in the case of 39, applications for grant of Consent to Operate were under consideration. 293 stone crusher units and stone mining units had been found to be non-compliant during the inspections between 11.11.2019 to 17.11.2019 and, therefore, show cause notices had been issued. 106 units had been imposed with interim environmental compensations. Total environmental compensation of ₹6,33,57,000/- had been imposed by the State PCB cumulatively

on the stone mines and stone crusher units out of which ₹2,36,25,000/- was upon 55 stone mines and ₹3,97,32,000/- against 141 stone crushing units. The District Task Force had demolished 34 illegal crusher units and sealed and demolished another 107 where illegal storage, processing and dispatch of minerals were being indulged in. 70 such illegal processing units (stone crushers) had been sealed and demolished. Apart from lodging FIRs, further 47 numbers of illegal stone crushers were also sealed and demolished as observed during the inspection undertaken on January, 2019. It is stated that Consent to Operate has been granted to those units which had satisfactorily complied with environmental norms.

18. Upon consideration of the entire facts and circumstances borne out of the record of O.A. No. 23/2017/EZ and O.A. No. 776/2018, it is more than evident that the State machinery and the regulatory authorities had allowed a free run to the operation of mines and crusher units resulting in the present sordid condition. Even after the present cases were filed, they had been reluctant in dealing with the matters as directed by the Tribunal. They had to be perforce made to discharge their responsibilities and perform the duties. The actions taken by them are as a result of repeated orders passed by the Tribunal from time to time. The reports filed by the regulatory authorities are found to be far from satisfactory, mutually conflicting, bereft of clarity and inconsistent. The Member Secretary, State PCB who had appeared before the Tribunal was unable to answer questions put by the Tribunal and

chose to be adamant in not furnishing the requisite information with clarity. As would be quite apparent from what had been noted earlier, the State PCB and the District authorities including the District Mining Officer did not appear to be clear as to how many stone mines and stone crusher units are in operation. The Member Secretary was also unable to answer on the distance maintained between the stone crusher units as well as the individual leases granted for stone mines. Taking the figure provided by the Member Secretary on 11.09.2019, there are more than 407 stone crushers and 300 stone mines operating in the area notwithstanding the fact that actual figures have not been provided as admittedly detailed inventorization of all such units have not been undertaken thus far.

19. The photographs placed before us by the Applicant demonstrate an alarming situation where hills had been found to have been flattened due to mining out of the stones. The terms of reference which had been referred to the Committee *vide* order dated 19.01.2019 have also not been considered by the Committee so far except to give general recommendations in the report filed through the CPCB on 30.04.2019.

20. As regards undertaking carrying capacity assessment, ambient air quality assessment and effectiveness of pollution control devices, it has been stated in a note of the Committee as follows:

> "***Regarding Carrying Capacity Assessment, Ambient Air Quality Assessment and effectiveness of Pollution Control Devices is a study of one year to arrive at a certain conclusion. This in-depth study requires 'Secondary Data Base' of at least last five years and one 'Primary Data***

> ***Base' to arrive at a meaningful conclusion through 'Time Series' analysis. Already in the World Bank project-National Ganga River Basin Authority (NGRBA) a project on industrial monitoring and assessment is given to Jadavpur University. Considering the gravity, similar study may be awarded to Department of Environmental Engineering, Jadavpur University or any other reputed Institute."***

We find the observation of the Committee to be unreasonable and an attempt to delay the entire process.

21. The Member Secretary instead of answering the questions upfront chose to hedge around to deflect the questions posed to him. Considering the obvious ineptitude of the Member Secretary, option before this Tribunal is either to take coercive measures for failure and negligence of the Member Secretary or to require the Chief Secretary to look into the matter and take decision whether such important office as Member Secretary, State PCB should be headed by any other suitable, technically sound person with the ability of effective environmental governance. Such decision may be taken at the earliest so that public service functions assigned to such high office are discharged in a responsible manner.

22. In the case of *Techi Tagi Tara v. Rajendra Singh Bhandari*[1] Hon'ble Supreme Court had directed as follows:

> "***24. On the second grievance relating to the issue of guidelines by the NGT, the meat of the matter concerns the appointment of officials who are experts in their field and are otherwise professional. This is for each State Government to consider and decide what is the right thing to do under the circumstances–Should an unqualified or inexperienced person be appointed or should the SPCB be a representative but expert body? The Water Act and the Air Act as well as the Constitution give ample guidance in this regard. We have already adverted to the provisions of the Constitution including Article 48-A, Article 51-A(g) and Article***

[1] (2018) 11 SCC 734

21 of the Constitution. So, the entire scheme of the various provisions of the Constitution adverted to above, including the principles that have been accepted and adopted internationally as well as by this Court such as the principles of sustainable development, public trust and intergenerational equity are a clear indication that in matters relating to the protection and preservation of the environment (through the appointment of officials to the SPCBs) the Central Government as well as the State Governments have to walk the extra mile. Unfortunately, many of the State Governments have not even taken the first step in that direction – hence the present problem.

25. While it is beyond the jurisdiction of the NGT and also beyond our jurisdiction to lay down specific rules and guidelines for recruitment of the Chairperson and members of the SPCBs, we are of opinion that there should be considerable deliberation before an appointment is made and only the best should be appointed to the SPCB. It is necessary in this regard for the Executive to consider and frame appropriate rules for the appointment of such persons who would add lustre and value to the SPCB. In this connection we refer to the State of Punjab v. Salil Sabhlok[2] in which it was observed with reference to appointments to the Public Service Commission that besides express restrictions in a statute or the Constitution, there can be implied restrictions in a statute or the Constitution and the statutory or constitutional authority cannot, in breach of such implied restrictions, exercise its discretionary power. In our opinion this would be equally applicable to an appointment to a statutory body such as the SPCB - the State Government does not have unlimited discretion or power to appoint anybody that it chooses to do.

26. to 32. ----xxxx----

33. Unfortunately, notwithstanding all these suggestions, recommendations and guidelines the SPCBs continue to be manned by persons who do not necessarily have the necessary expertise or professional experience to address the issues for which the SPCBs were established by law. The Tata Institute of Social Sciences in a Report published quite recently in 2013 titled "Environmental Regulatory Authorities in India: An Assessment of State Pollution Control Boards" had this to say about some of the appointments to the SPCBs:

> ***"An analysis of data collected from State Pollution Control Boards, however, gives a contrasting picture. It has been observed that time and again across state governments have not been able to choose a qualified, impartial, and politically neutral person of high standing to this crucial regulatory post. The recent appointments of chairpersons of various State Pollution Control Boards like Karnataka (A a senior BJP leader), Himachal Pradesh (B a Congress party leader and former MLA), Uttar***

[2] (2013) 5 SCC 1 : (2013) 2 SCC (L7S) 1

Pradesh (C appointed on the recommendation of SP leader X), Arunachal Pradesh (D a sitting NCP party MLA), Manipur Pollution Control Board (E a sitting MLA), Maharashtra Pollution Control Board (F a former bureaucrat) are in blatant violation of the apex court guidelines. The apex court has recommended that the appointees should be qualified in the field of environment or should have special knowledge of the subject. It is unfortunate that in a democratic set up, key enterprises and boards are headed by bureaucrats for over a decade. In this connection, it is very important for State Governments to understand that filling a key regulatory post with the primary intention to reward an ex-official through his or her appointment upon retirement, to a position for which he or she may not possess the essential overall qualifications, does not do justice to the people of their own states and also staffs working in the State Pollution Control Boards. The primary lacuna with this kind of appointment was that it did not evoke any trust in the people that decisions taken by an ex-official of the State or a former political leader, appointed to this regulatory post through what appeared to be a totally non-transparent unilateral decision. Many senior environmental scientists and other officers of various State Pollution Control Boards have expressed their concern for appointing bureaucrats and political leader as Chairpersons who they feel not able to create a favourable atmosphere and an effective work culture in the functioning of the board. It has also been argued by various environmental groups that if the government is unable to find a competent person, then it should advertise the post, as has been done recently by states like Odisha. However, State Governments have been defending their decision to appoint bureaucrats to the post of Chairperson as they believe that the vast experience of IAS officers in handling responsibilities would be easy. Another major challenge has been appointing people without having any knowledge in this field. For example, the appointment of G with maximum qualification of Class X as Chairperson of State Pollution Control Board of Sikkim was clear violation of Water Pollution and Prevention Act, 1974."[3]

34. ----xxxx----

[3] The names have been deliberately left out by us.

> ***35. Keeping the above in mind, we are of the view that it would be appropriate, while setting aside the judgment and order of the NGT, to direct the Executive in all the States to frame appropriate guidelines or recruitment rules within six months, considering the institutional requirements of the SPCBs and the law laid down by statute, by this Court and as per the reports of various committees and authorities and ensure that suitable professionals and experts are appointed to the SPCBs. Any damage to the environment could be permanent and irreversible or at least long-lasting. Unless corrective measures are taken at the earliest, the State Governments should not be surprised if petitions are filed against the State for the issuance of a writ of quo warranto in respect of the appointment of the Chairperson and members of the SPCBs. We make it clear that it is left open to public spirited individuals to move the appropriate High Court for the issuance of a writ of quo warranto if any person who does not meet the statutory or constitutional requirements is appointed as a Chairperson or a member of any SPCB or is presently continuing as such."***

23. We are of the view that the direction requires to be complied with urgently by the State if the environmental laws are to be effectively enforced in the State of Jharkhand.

24. In O.A. No. 606/2018, the Chief Secretaries of each State have been directed *inter alia* to look into all cases of mining in view of the rampant illegal units operating in the States.

25. In view of the above, we direct the Chief Secretary to take appropriate measures to ensure that the orders of the Tribunal are complied with strictly.

26. We direct the Committee constituted *vide* order dated 22.01.2019 to place before us a table giving the details of the stone mines and the stone crushers separately containing the following particulars:

a) Name of the mines and crusher units and its locational depiction on the map of appropriate scale.

b) Dates of grant of Consent to Establish, Consent to Operate and, also Environmental Clearance (EC) in respect of stone mines. The area of stone mines and distance with adjoining mine(s) may clearly be stated.

c) Adequacy of pollution control devices of stone cruising units.

d) Details of individual violations of conditions of EC/Consent to Operate w.r.t. mining units and details of violation of Consent to Operate w.r.t. Stone Crushing units.

e) Action taken against those which do not have EC and Consent to Operate and against those which have violated the conditions of EC/Consent to Operate w.r.t. mining units.

f) The amount of environmental compensation assessed and recovered along with the individual computation sheets indicating period of default.

27. The report shall be filed before the next date.

28. A copy of this order be transmitted to the Chief Secretary for compliance.

29. List on 30.01.2020.

O.A. No. 162/2019 & O.A. No. 164/2019

30. The State Pollution Control Board shall file action taken report in terms of report dated 19.11.2019 before the next date.

31. List on 30.01.2020.

Adarsh Kumar Goel, CP

S.P. Wangdi, JM

K. Ramakrishnan, JM

Dr. Nagin Nanda, EM

Saibal Dasgupta, EM

5th December, 2019
O.A. No. 23/2017 (EZ) & other connected matters
avt

ADVOCATES WELFARE FUND DELHI Rs.10 TEN RUPEES

ADVOCATES WELFARE FUND DELHI Rs.10 TEN RUPEES

NATIONAL GREEN TRIBUNAL

VAKALATNAMA

_____ _____Suit Appeal No.
_____ Jurisdiction of 2026

In re:
Pratik Sharma _____Piff./Applt./Petitioner/Complaint

VERSUS

State of Jharkhand & Ors. _____Defnt./Respdt./Accused

KNOW'ALL to whom these present shall come that I/We Pratik Sharma
Applicant the above named
do hereby appoint (herein after called the advocated/s) be my/our Advocate in the above-noted case authorize him:

Saurabh Sharma, Advocate (D-2329/1999)
(M): 9810983559

To act, appear and plead in the above-noted case in ths Court or in any other Court in Which the same may be tried or heard and also in the appellate Court including High Court Subject to payment of fee separately for each by me/us. To sign, file verify and present pleading appeals cross-objections or petitions for execution re-view, revision, withdrawal, compromise or other petitions or affidavits or other documents as may be deemed necessary or proper for the prosecution of the said case in all its stages.

To file and take back documents to admit and/or deny documents of opposite party.

To withdraw or compromise the said case or submit to arbitration any difference or disputes that may arise touching or in any manner relating to the said case.

To take execution proceedings. To deposit draw and receive money cheque, cash and grant receipts hereof and to do all others acts and things which may be necessary to be done for the progress and in the course of the prosecution of the said case.

To appoint and instruct and other Legal Practitioner authorizing him to exercise the power and authority hereby conferred upon the advocate whenever he may think fit to do so and to sign the power of attorney on our behalf.

And I/We the undersigned do hereby agree to ratify and confirm all acts done by the Advocate or his substitute in the matter as my/our acts, as if done by me/us all intents and purposes.

And I/We undertake that I/We or my/our duly authorized agent would appear in the court on all hearing and will inform the Advocate for appearance when the case is called.

And I/We undersigned do hereby agree that in the event of the whole or part of the fee-agreed by me/us to be paid to the advocate remaining unpaid he shall be entitled to withdraw from the prosecution of the said case until the same is paid up. The fee settled is only for the above case and above court. I/We hereby agree that once the fee is paid. I/We will not be entitled for the refund of the same in any case whatsoever.

IN WITNESSS WHEROF I/We do hereunto set my/our hand to these present the content or which have been understand by me/us on this .....15.....day of ..04...2026

Accepted subject to the terms of fees.

Saurabh Sharma
Advocate

NOTARY
Akhilesh Kumar Singh
JAMSHEDPUR
Reg. No.-35980
GOVT. OF INDIA

Pratik Sharma
Client

IDENTIFIED BY ME AND SIGNED/PUT IN MY PRESENCE

Advocate

Attested the Signature of executants which is identified by Sri Rajeev Gupta Advocate JSR.

Akhilesh Kumar Singh
NOTARY Govt of India
Singhbhum SP
15/04/26

15.04.26