

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI

Original Application No.107 of 2023 (SZ)

I.A. No. 151 of 2024 (SZ)
WITH
Original Application No. 24 of 2024 (SZ)

Suo Motu based on the news item published in
The New Indian Express, dt. 09.08.2023, under the
caption "Huge pollution risk in 8 Km around NLC"
and in The Times of India, Chennai Edition dt. 09.08.2023
under the caption "Water near NLC full of Mercury".

Vs.

The Managing Director NLC India Limited,
Chennai and Ors.

....Respondents

With

News Item in South First Dt. 19.09.2023 titled
"Wages of mining Neyveli turns ashtray,
leaving farmers with broken promises and uncertain future"

Vs

CPCB & ors

...Respondents

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Filed by
Thiru.S. Sai Sathya Jith,
Advocate, Chennai.

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

Original Application No. 107 of 2023 (SZ) &

I.A. No. 151 of 2024 (SZ)

WITH

Original Application No. 24 of 2024 (SZ)

IN THE MATTER OF

Tribunal on its own motion
Suo Motu based on the news item
published in The New Indian
Express, dt. 09.08.2023, under the
caption **"Huge pollution risk in 8
Km around NLC"** and in The
Times of India, Chennai Edition dt.
09.08.2023 under the caption
**"Water near NLC full of
Mercury"**.

And

The Managing Director
NLC India Limited,
Chennai and Ors.

...Respondents

WITH

Tribunal on its own motion SUO
MOTU based on the News Item in
South First Dt. 19.09.2023 titled
**"Wages of mining Neyveli turns
ashtray, leaving farmers with
broken promises and uncertain
future"**.

And

Central Pollution Control Board,
Through its Member Secretary,
New Delhi and Ors.

...Respondents

**ADDITIONAL REPORT FILED ON BEHALF OF THE TAMIL NADU
POLLUTION CONTROL BOARD**

I, M.Vijayalakshmi, D/o. Muthiah, aged about 59 years, having office at No.,
76, Mount Salai, Guindy, Chennai – 32, do hereby solemnly affirm and
sincerely state as follows:-

M. Vijayalakshmi 17/2/2025
ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.

1. I submit that I am working as the Additional Chief Environmental Engineer, Tamil Nadu Pollution Control Board, Chennai - 600032 and I am authorized to file this Additional report on behalf of the Tamil Nadu Pollution Control Board and as such I am well acquainted with the facts of the case from the available office records.
2. It is respectfully submitted that based on the news published in the Dinamalar dated 31.5.2024, surface water samples were taken from the Veeram lake on 31.5.2024 at the following places:
 - i. Entrance point of Vadavaru River at Nadukanjankollai, Kattumannar Koil Taluk Cuddalaore District
 - ii. Vadavaru River at Poovizhunthanallur, Nadukanjankollai, Kattumannar Koil Taluk Cuddalaore District
 - iii. Entry Point (Mouth) of Veeranam Lake near PWD office at Lalpettai Nadukanjankollai, Kattumannar Koil Taluk Cuddalaore District.
 - iv. End point of Veeranam Lake near Metro Water Pumping Station Boothanam Village.
 - v. Veeranam Lake View Pint at Kandakumaran Village.
 - vi. End point of Veeranam Lake near Metro Water Pumping Station Boothanam Village.
3. It is respectfully submitted that the Report of analysis (ROA) of the surface water sample taken on 31.05.2024 shows that, all parameters are within the limit as per standards IS: 2296:1982 (Class E: Water for Irrigation) (ROA are enclosed as Annexure - I).
4. It is respectfully submitted that as per the direction passed by the Hon'ble Tribunal, (SZ) on 01.07.2024, inspection was conducted on 24.7.2024 by the O/o. DEE, Cuddalore and during the time of inspection it was observed that there is no flow of water from River Kollidam to Veeranam Lake. Hence the surface water samples were taken from the Veeranam lake on 24.7.2024 at the following places:

 17/2/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No.76, MOUNT SALAI, GUINDY,
 CHENNAI-600 032.

- i. Near Nathamalai Bus stop
- ii. Near Kanthakumaran Bus stop
- iii. Near Thenpathi Bus stop
- iv. Near Paripoorananatham Sluice at Veyyalur

5. It is respectfully submitted that the report of analysis for the samples taken on 24.7.2024 shows that, all parameters are within the limit except BOD (Biological Oxygen Demand) as per standards IS: 2296:1982 (Class E: Water for Irrigation) (ROA is enclosed as Annexure II).

6. It is respectfully submitted that as per the Order passed by the Hon'ble Tribunal, (SZ) dated 23.9.2024, the followings are the source of water and its distance are submitted herein.

- i. The Source of water for Veeranam lake is from the River Kollidam.
- ii. The source of Water for Walaja Lake is from overflow of the Veeranam lake, Mine water from NLC.
- iii. The distance between the Veeranam Lake and Walaja Lake is around 15 Km.

7. It is respectfully submitted that the Vellankulam (Ground Water) station is located from the Mine I, Mine I A and Mine II are located at distance of 2.35, 7.13 and 8.45 Km respectively in the downstream of mining operation (Map is enclosed as Annexure III).

8. It is respectfully submitted that, the samples of water, soil and ash samples were collected on 17.12.2024 in and around the NLC and handed over to the Advanced Environmental Laboratory, Chennai and IIT Cube, Taramani Chennai.

	Surface water	Ground Water	Soil samples	Fly ash	Total
Total samples	17	9	5	1	22

M. Vijayalakshmi 17/12/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No.76, MOUNT SALAI, GUINDY,
 CHENNAI-600 032.

9. It is respectfully submitted that the Observation of samples collected on 17.12.2024 are as follows:

I. The Reports of M/s. IIT Cube, Taramani Chennai

- a. The parameters Mercury and selenium were below the limit of quantification (BLQ) in the 17 number of surface water samples collected.
- b. The parameters Mercury and selenium were below the limit of quantification (BLQ) in the 09 number of ground water samples collected.
- c. The parameters Mercury, Selenium and Arsenic were below the limit of quantification (BLQ) in the 05 number of soil samples collected.
- d. The parameters Mercury, Selenium and Arsenic were below the limit of quantification (BLQ) in the one number of ash samples collected.
- e. The parameters Zinc, Nickel and Total Chromium were within in the limit in the 05 number of soil samples collected.
- f. The parameters Zinc, Nickel and Total Chromium were within in the limit in one number of ash samples collected.

II. The Reports of The TNPCB Lab

- a. The parameter Mercury is present in the 15 places out of 17 numbers of surface water collected in the range of 0.0012 mg/l to 0.115 mg/l. As per Surface Water Standard (IS 2296 Class E) there is no limit for mercury. In 2 locations the mercury is below the limit of quantification. However, the selenium is not analysed for water samples and soil samples by the TNPCB.
- b. The parameter Mercury is below the limit of quantification (BLQ) in the 02 number of ground water samples collected and in the one ground water sample, the mercury is within the limit.
- c. The parameter Mercury is present in the range 0.0025 mg/l to 0.0626 mg/l (against the value of 0.001 mg/l) in the 06

M. Udayakumar 17/12/2024

ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.

number of ground water samples collected.

- d. The parameters Zinc, Mercury and Nickel were within the limit for 5 numbers of soil samples collected.
- e. The parameters Zinc, Mercury and Nickel were within the limit in one number of ash samples collected.
- f. The parameter Total Chromium is below the limit of quantification (BLQ) for 5 number of soil samples collected.
- g. The parameter Total Chromium is below the limit of quantification (BLQ) in one number of ash samples collected.

10. It is humbly submitted that the Comparison of samples collected on 17.12.2024 is enclosed as Annexure – IV.

11. It is humbly submitted that as per the direction issued by the Hon'ble NGT (SZ) Chennai in its order dated 10.08.2023 Tamil Nadu Pollution Control Board (TNPCB) to inspect the area, study the water quality of the water bodies near NLC and also to ascertain whether the news is correct or not . Based on that, the Board has formed a committee on 10.08.2023 to inspect the area and collect Water and soil samples in the area referred in the study report. Based on that, the TNPCB committee inspected study area on 11.08.2023, 16.08.2023, 17.08.2023, 23.08.2023 29.08.2023 and 28.09.2023. In addition to the above, TNPCB has also appointed Thiru. N.K Kuttiappan, Ex. Deputy Director, National Productivity Council as an external committee member and study area was again inspected on 31.10.2023, 01.11.2023 and 02.11.2023. Overall recommendation has been already submitted before the Hon'ble NGT(SZ) Chennai in the report filed on 29.11.2023

Therefore, it is humbly prayed that this Hon'ble National Green Tribunal(SZ), may be pleased to pass such further order or other orders as this Hon'ble Tribunal may deem fit and proper in the facts and circumstance of this case and thus render justice.

M. Vijayalakshmi 17/12/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No.76, MOUNT SALAI, GUINDY,
 CHENNAI-600 032.

VERIFICATION

I, M.Vijayalakshmi, D/o. Muthiah, working as Additional Chief Environmental Engineer, Tamil Nadu Pollution Control Board, Chennai, do hereby verify that the contents of above report are true to the best of my knowledge through records.

M. Vijayalakshmi 17/12/2024
ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.



TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE
REPORT OF ANALYSIS

ROA NO: 05/411, 05/412 & 05/413 Dt : 28/06/2024

Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.	Date of Analysis	31.05.2024
Nature & Number of samples.	:	03 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container
Date & Time of sample collection		31.05.2024 at 10.50, 11.25 & 12.05 Hrs	Date & Time of sample receipt at the lab	31.05.2024 at 17:30 Hrs
Point of Collection	1. 2. 3.	Entrance point of Vadavaru river a Nadukanjankollai, Katumannarkoil Taluk, Cuddalore District. Vadavaru river at Poovizhunthanallur, Nadukanjankollai, Katumannarkoil Taluk, Cuddalore District. Mouth of Veeranam Lake near PWD Office at Lalpettai, Nadukanjankollai, Katumannarkoil Taluk, Cuddalore District.	Page No 1 of 1	

Sl. No.	DEE Code No.	Unit	1	2	3	Test Method
	Lab Code No.		411	412	413	
	Parameters					
1.	pH @ 25°C	-	6.61	6.79	6.71	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	12	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	540	530	535	APHA 23rd Edn 2017, 2540-C
4.	Chloride as Cl	mg/L	160	170	165	APHA 23rd Edn 2017, 4500-Cl B
5.	Sulphate as SO ₄	mg/L	60	64	60	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
6.	BOD (3 days @ 27°C)	mg/L	10	12	10	IS 3025 (Part - 44) :1993, Reaff: 2009
7.	COD	mg/L	72	72	80	IS 3025 (Part - 58), Reaff 2006
8.	Total Kjeldahl Nitrogen	mg/L	8.9	7.28	8.4	APHA 23rd Edn 2017-4500-N-B
9.	Sulphide	mg/L	<2	<2	<2	APHA 23rd Edn 2017-4500-NH ₃ C
10.	Potassium	mg/L	7.9	8.6	7.7	APHA 23rd Edn 2017-3500-K B
11.	Percent Sodium	%	21	21	20	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
12.	Phosphates	mg/L	1.10	1.09	1.35	APHA 23rd Edn 2017-4500-P-E
13.	Ammonical Nitrogen	mg/L	5.6	4.48	5.6	APHA 23rd Edn 2017, 4500-NH3
14.	Dissolved Oxygen	mg/L	5.2	5.1	5.2	APHA 23rd Edn 2017, 2540-DO

Note: <MDL indicates Less than minimum detectable limit.

Statement to the effect that the results relate only to the items tested.

ES

Chief Scientific Officer,
TNPCC/AEL/CUDDALORE



TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE
REPORT OF ANALYSIS

ROA NO: 05/414 & 05/415 Dt : 28/06/2024


Name & Address of the sender		District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.	Date of Analysis	31.05.2024
Nature & Number of samples.	:	02 Number of Trade Effluent samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container
Date & Time of sample collection		31.05.2024 at 12.20 & 12.30Hrs	Date & Time of sample receipt at the lab	31.05.2024 at 17:30 Hrs
Point of Collection	1. 2.	Veeranam Lake View Point at Kandakumaran Village. End point of Veeranam Lake near Metro water pumping station at Boothanam village	Page No 1 of 1	

Sl. No.	DEE Code No.	Unit	4	5	Test Method
	Lab Code No.		414	415	
	Parameters				
1.	pH @ 25°C	-	6.17	6.27	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	550	530	APHA 23rd Edn 2017, 2540-C
4.	Chloride as Cl	mg/L	176	140	APHA 23rd Edn 2017, 4500-Cl B
5.	Sulphate as SO ₄	mg/L	60	52	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
6.	BOD (3 days @ 27°C)	mg/L	12	10	IS 3025 (Part - 44) :1993, Reaff: 2009
7.	COD	mg/L	72	64	IS 3025 (Part - 58), Reaff 2006
8.	Total Kjeldahl Nitrogen	mg/L	7.84	6.72	APHA 23rd Edn 2017-4500-N-B
9.	Sulphide	mg/L	<1	<1	APHA 23rd Edn 2017-4500-NH ₃ C
10.	Potassium	mg/L	7.7	10.1	APHA 23rd Edn 2017-3500-K B
11.	Percent Sodium	%	21	22	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
12.	Phosphates	mg/L	0.931	1.18	APHA 23rd Edn 2017-4500-P-E
13.	Ammonical Nitrogen	mg/L	4.48	4.48	APHA 23rd Edn 2017, 4500-NH ₃
14.	Dissolved Oxygen	mg/L	5.2	5.2	APHA 23rd Edn 2017, 2540-DO

Note: <MDL indicates Less than minimum detectable limit.

Statement to the effect that the results relate only to the items tested.


ES


Chief Scientific Officer,
TNPCB/AEL/CUDDALORE



TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE
REPORT OF ANALYSIS

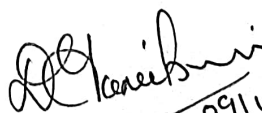
ROA NO: 07/763, 07/764, Dt : 23/08/2024

Name & Address of the sender	District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.	Date of Analysis	25.07.2024
Nature & Number of samples.	02 Number of veeranam lake water samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container
Date & Time of sample collection	24.07.2024 at 12:20Hrs	Date & Time of sample receipt at the lab	24.07.2024 at 18:00 Hrs
Point of Collection	1. Near Nathamalai bus stop 2. Near Kanthakumaran bus stop	Page No 1 of 1	

Sl. No.	DEE Code No.	Unit	1	2	Test Method
	Lab Code No.		753	754	
	Parameters				
1.	pH @ 25°C	Number	7.69	7.65	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	540	530	APHA 23rd Edn 2017, 2540-C
4.	BOD (3 days @ 27°C)	mg/L	05	06	IS 3025 (Part – 44) :1993, Reaff: 2009
5.	COD	mg/L	40	40	IS 3025 (Part – 58), Reaff 2006
6.	Chloride as Cl	mg/L	250	240	APHA 23rd Edn 2017, 4500-Cl B
7.	Sulphate as SO ₄	mg/L	65	60	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
8.	Dissolved Oxygen	mg/L	5.9	6.0	APHA 23rd Edn 2017, 2540-DO
9.	Sulphide	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH ₃ C
10.	Total Kjeldhal Nitrogen	mg/L	<2	<2	APHA 23rd Edn 2017-4500-N-B
11.	Phosphates	mg/L	<0.5	<0.5	APHA 23rd Edn 2017-4500-P-E
12.	Potassium	mg/L	3.8	4.2	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
13.	Percent Sodium	%	21	23	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
14.	Ammonical Nitrogen	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH3

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

ES 09/10/24


09/10/24
Chief Scientific Officer,
TNPB/AEL/CUDDALORE



TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE
REPORT OF ANALYSIS

ROA NO: 07/755, 07/756, Dt : 23/08/2024

Name & Address of the sender	District Environmental Engineer, Tamilnadu Pollution Control Board, Cuddalore.	Date of Analysis	25.07.2024
Nature & Number of samples.	02 Number of veeranam lake water samples	Sample Quantity	Sealed and Fastened in 2.5 L polythene container
Date & Time of sample collection	24.07.2024 at 12:20Hrs	Date & Time of sample receipt at the lab	24.07.2024 at 18:00 Hrs
Point of Collection	1. Near Thenpathi bus stop 2. Near Paripoorananatham sluice at Veyyalur.	Page No 1 of 1	

Sl. No.	DEE Code No.	Unit	3	4	Test Method
	Lab Code No.		755	756	
	Parameters				
1.	pH @ 25°C	Number	7.67	7.78	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	538	520	APHA 23rd Edn 2017, 2540-C
4.	BOD (3 days @ 27°C)	mg/L	06	04	IS 3025 (Part – 44) :1993, Reaff: 2009
5.	COD	mg/L	48	32	IS 3025 (Part – 58), Reaff 2006
6.	Chloride as Cl	mg/L	220	210	APHA 23rd Edn 2017, 4500-Cl B
7.	Sulphate as SO ₄	mg/L	55	85	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
8.	Dissolved Oxygen	mg/L	5.9	6.1	APHA 23rd Edn 2017, 2540-DO
9.	Sulphide	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH ₃ C
10.	Total Kjeldhal Nitrogen	mg/L	<2	<2	APHA 23rd Edn 2017-4500-N-B
11.	Phosphates	mg/L	<0.5	<0.5	APHA 23rd Edn 2017-4500-P-E
12.	Potassium	mg/L	4.2	4.8	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
13.	Percent Sodium	%	22	21	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
14.	Ammonical Nitrogen	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH3

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

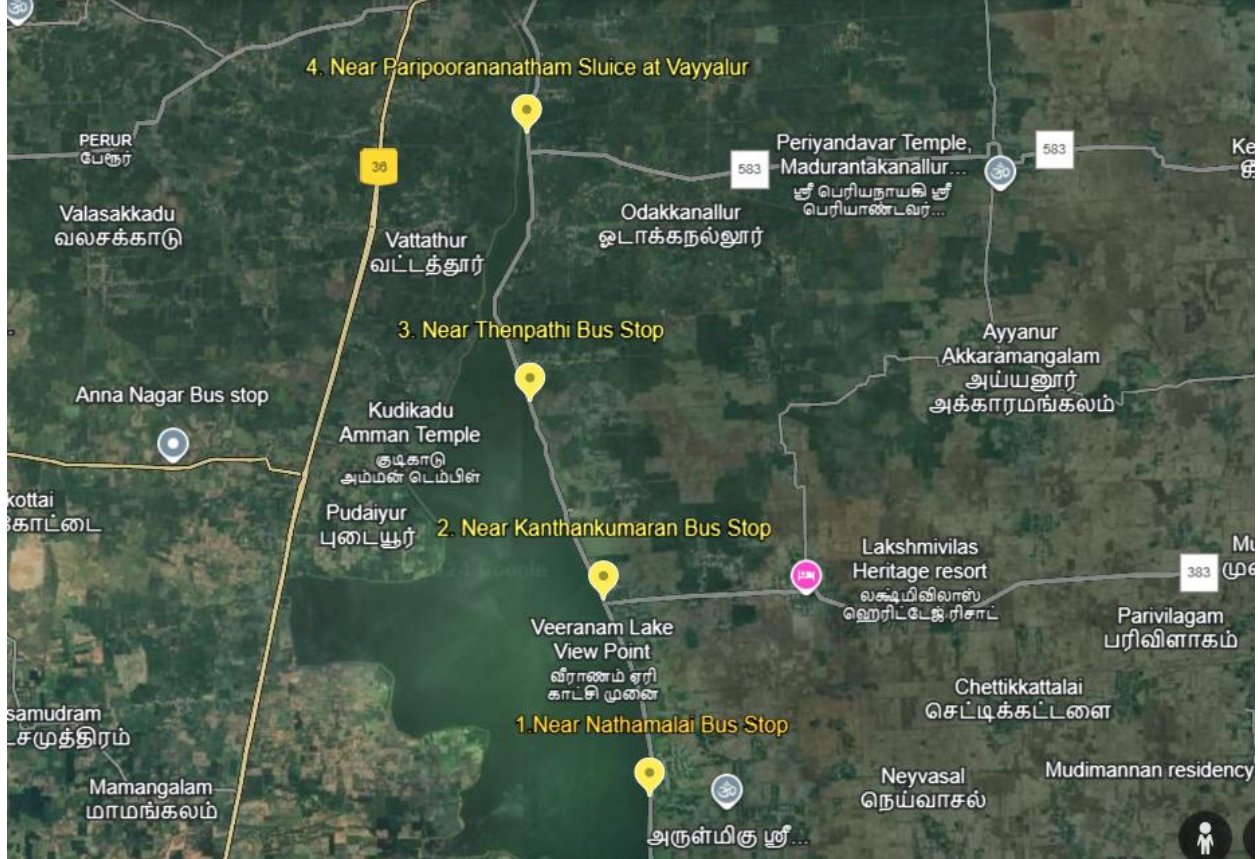
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09/10/24
Chief Scientific Officer,
TNPCB/AEL/CUDDALORE

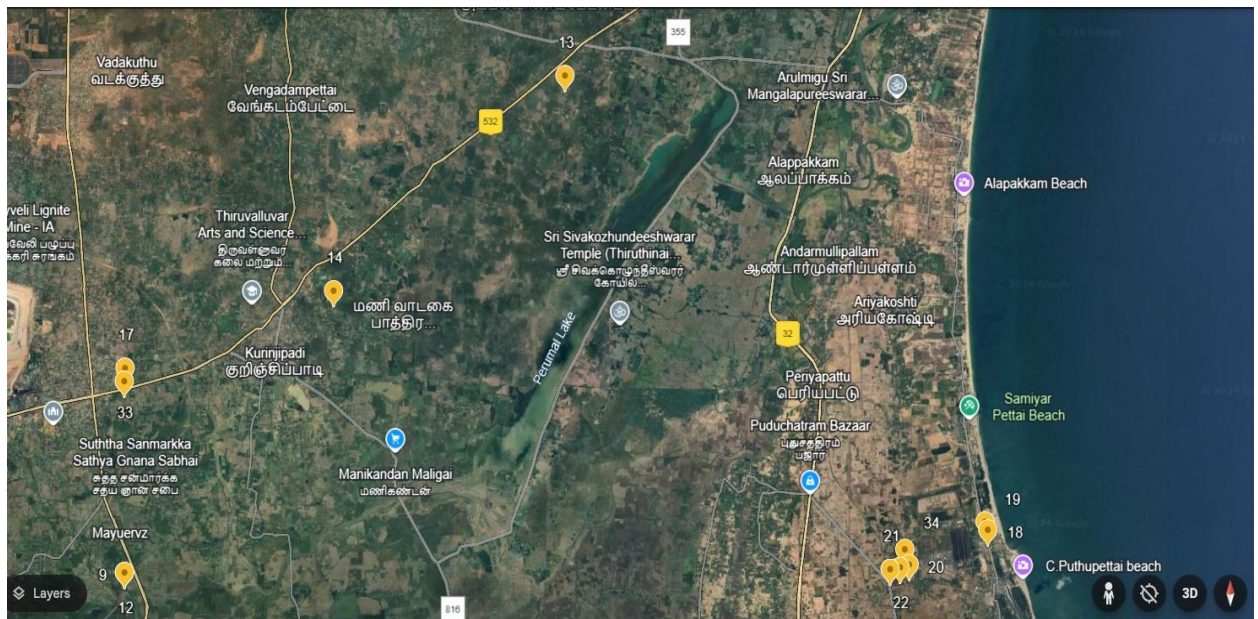
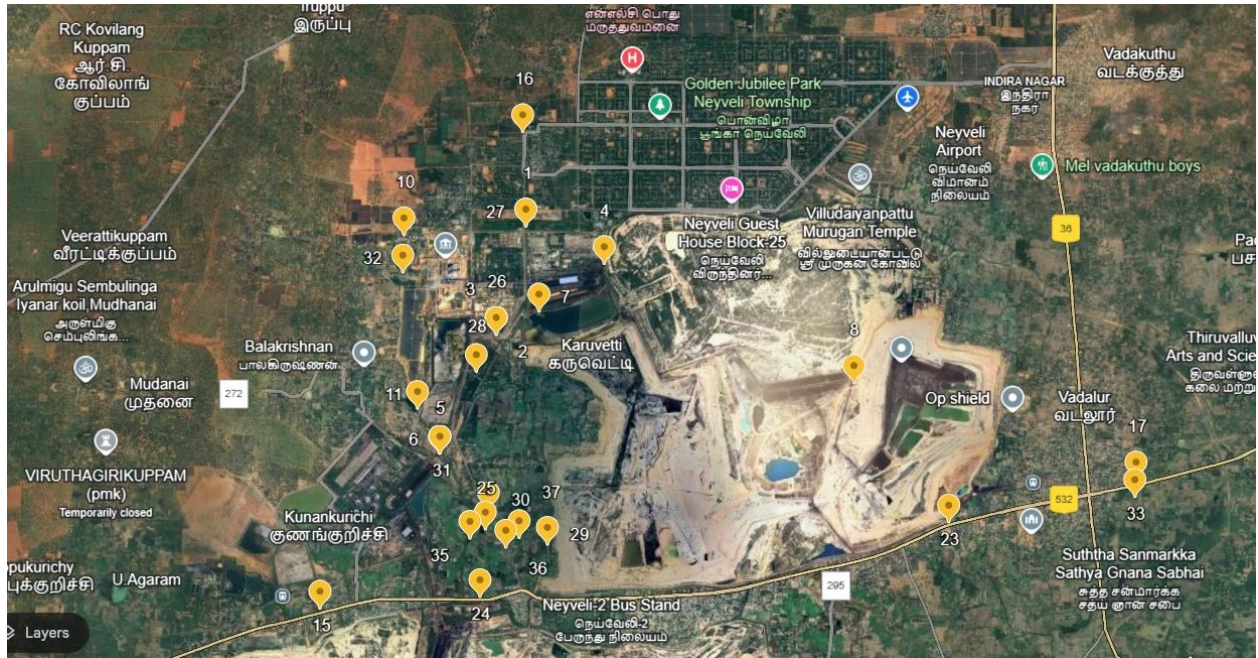
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Suo Motu based on news item published in the New Indian Express, dt 09.08.2023, under the caption “Huge pollution risk in 8 Km around NLC” and in The Times of India, Chennai Edition dt.09.08.2023 under the caption“ Water near NLC full of Mercury”

Map Showing the Point of Sample Collection at Veeranam Lake on 24.07.2024



Maps showing the location of sample collection points, in and around M/s. NLC India Ltd



The locations of point of collection of water samples, where presence of Mercury was observed and their respective distance from all three mines pertaining to M/s. NLC India Ltd:

Water Sample Location	Location with respect to Mines	Distance (in Km) from			Mercury content (in mg/L) sample taken on 03.04.2024
		Mine I	Mine IA	Mine II	
Vellankulam (Ground Water)	u/s	2.35	7.13	8.45	0.005
Vadakuvellore - Ammeri (Surface Water)	d/s	1.22	6.58	1.84	0.019
Ayyan lake (Surface Water)	d/s	5.40	2.56	6.46	0.010
Discharge from TS II (Surface Water)	u/s	2.00	6.93	2.85	0.027
Kootu Kudineer (Valayamadevi - Surface Water)	u/s	5.52	5.75	0.23	0.014
Walajah Lake (Surface Water)	d/s	6.69	5.30	4.99	0.018

The map indicating direction & distance of each sample location:

1. **Vellankullam** : Ground water source located to the u/s direction of the NLCIL Mines.



2. **Vadakuvellore Ammeri** - Surface water source located to the d/s direction of the NLCIL Mine I and u/s of Mine II



3. **Iyyan Lake Ammeri** - Surface water source located to the d/s direction of the NLCIL Mines.



4. **Discharge from TPS II** - Surface water source located at the u/s direction of



the NLCIL Mines

5. **Kootu Kudineer Thittam : Valayamadevi** - Surface water source located to



the u/s direction of the NLCIL Mines

6.

Mines

Walajah Lake : Surface water source located to the d/s direction of the NLCIL

**COMPARISON OF HEAVY METALS IN SURFACE WATER SAMPLES
COLLECTED BY TNPCB WITH CUBE ENVIRONMENT LABORATORY REPORT**

Name of the location : Neyveli PCS store Discharge				
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	0.1272	0.02
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.02
4.	Lead as Pb	-	BDL [DL 0.5]	0.03
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	BLQ [LOQ:0.05]
7.	Mercury as Hg	-	0.0047	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	31	36.1
10.	Magnesium as Mg	-	8	15.3
11.	Manganese as Mn	--	0.1966	BDL [DL:0.01]
12.	Iron as Fe	-	1.0684	1.8
Name of the location : Discharge from NNTPS				
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.10
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.08
4.	Lead as Pb	-	BDL [DL 0.5]	0.052
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	BLQ [LOQ:0.05]
7.	Mercury as Hg	-	0.0014	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	64	72.0
10.	Magnesium as Mg	-	31	21.9
11.	Manganese as Mn	--	10.2328	0.733
12.	Iron as Fe	-	3.1226	3.0
Name of the location : Direct Discharge from TPS-I				
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.10
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.07
4.	Lead as Pb	-	BDL [DL 0.5]	0.08
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	BLQ [LOQ:0.05]

7.	Mercury as Hg	-	0.0034	BDL [DL: 0.001]
8.	Selenium as Se	- 18	-	BDL [DL:0.01]
9.	Calcium as Ca	-	48	54.8
10.	Magnesium as Mg	-	14	12.4
11.	Manganese as Mn	--	0.1486	BDL [DL:0.01]
12.	Iron as Fe	-	BDL [DL 0.05]	0.6

Name of the location : Discharge from Neyveli TPS II

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.12
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.2093	0.12
4.	Lead as Pb	-	BDL [DL 0.5]	0.092
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	BLQ [LOQ:0.05]
7.	Mercury as Hg	-	0.0015	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	88	97.2
10.	Magnesium as Mg	-	29	24.8
11.	Manganese as Mn	--	11.9337	0.655
12.	Iron as Fe	-	2.6516	5.0

**Name of the location : Opposite to Main Gate of Mine II –
KootuKudineer Thittam near Valayamadevi**

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.09
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.1]	0.09
4.	Lead as Pb	-	BDL [DL 0.5]	0.11
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.07
7.	Mercury as Hg	-	0.0012	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	48	54.8
10.	Magnesium as Mg	-	14	17.3
11.	Manganese as Mn	--	1.1125	BDL [DL:0.01]
12.	Iron as Fe	-	2.5348	0.40

Name of the location : Coal Mine Discharge from Mine –I

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.02
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.07
4.	Lead as Pb	-	BDL [DL 0.5]	0.08

5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	BDL [DL:0.05]
7.	Mercury as Hg	-	0.0032	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	14	15.7
10.	Magnesium as Mg	-	4	5.71
11.	Manganese as Mn	--	BDL [DL 0.01]	BDL [DL:0.01]
12.	Iron as Fe	-	BDL [DL 0.05]	BLQ [LOQ:0.05]

Name of the location : Paravanar River Carrying NLC Mine-II Discharge

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.07
2.	Cadmium as Cd	-	0.1234	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.09
4.	Lead as Pb	-	BDL [DL 0.5]	0.13
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.072
7.	Mercury as Hg	-	0.0034	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	64	72
10.	Magnesium as Mg	-	14	19.2
11.	Manganese as Mn	--	1.3658	BDL [DL:0.01]
12.	Iron as Fe	-	3.1241	8

Name of the location : Walaja Lake

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	0.1173	0.13
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.2307	0.14
4.	Lead as Pb	-	BDL [DL 0.5]	0.13
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.05
7.	Mercury as Hg	-	0.0045	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	58	59.6
10.	Magnesium as Mg	-	17	22.8
11.	Manganese as Mn	--	5.1957	0.281
12.	Iron as Fe	-	0.5815	0.2

Name of the location : Artificial Lake located at North side of TS-II, South side of NNTPS, west side of abandoned ash pond

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.06
2.	Cadmium as Cd	-	0.1063	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL	0.10

4.	Lead as Pb	-20	[DL 0.2] BDL [DL 0.5]	0.13
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.05
7.	Mercury as Hg	-	BDL [DL 0.001]	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	49	50
10.	Magnesium as Mg	-	4	9.72
11.	Manganese as Mn	--	3.7870	0.262
12.	Iron as Fe	-	0.3350	0.4

Name of the location : Kanjamanadanpettai pond water

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.039
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.08
4.	Lead as Pb	-	BDL [DL 0.5]	0.24
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.05]	0.06
7.	Mercury as Hg	-	0.0029	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	6	6.28
10.	Magnesium as Mg	-	3	39.2
11.	Manganese as Mn	--	0.0659	BDL [DL:0.1]
12.	Iron as Fe	-	BDL [DL 0.05]	0.6

Name of the location : Iyyan Lake

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	0.741	0.47
2.	Cadmium as Cd	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.2371	0.11
4.	Lead as Pb	-	BDL [DL 0.5]	0.054
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.052
7.	Mercury as Hg	-	0.0027	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	34	39.7
10.	Magnesium as Mg	-	11	10.1
11.	Manganese as Mn	--	6.7046	0.357
12.	Iron as Fe	-	0.7310	0.61

Name of the location : Karikuppam Village Fish Pond

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
2.	Cadmium as Cd	-	0.1597	BLQ [LOQ:0.02]

3.	Nickel as Ni	-	BDL [DL 0.2]	0.027
4.	Lead as Pb	-	BDL [DL 0.5]	0.076
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.08
7.	Mercury as Hg	-	0.0042	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	43	90.5
10.	Magnesium as Mg	-	32	3.85
11.	Manganese as Mn	--	0.3662	BDL [DL:0.01]
12.	Iron as Fe	-	BDL [DL 0.05]	BLQ [LOQ:0.05]

Name of the location : Buckingham Canal near the Thermal Power Plant

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
2.	Cadmium as Cd	-	0.1890	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.033
4.	Lead as Pb	-	BDL [DL 0.5]	0.085
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.07
7.	Mercury as Hg	-	0.115	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	43	81.7
10.	Magnesium as Mg	-	28	6.74
11.	Manganese as Mn	--	0.4425	BDL [DL:0.01]
12.	Iron as Fe	-	BDL [DL 0.05]	0.08

Name of the location : Mine I Outlet Veenageni

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	0.5063	0.36
2.	Cadmium as Cd	-	0.2638	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.4725	0.25
4.	Lead as Pb	-	BDL [DL 0.5]	0.12
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.18
7.	Mercury as Hg	-	0.0091	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	101	72.2
10.	Magnesium as Mg	-	30	7.22
11.	Manganese as Mn	--	4.6750	0.495
12.	Iron as Fe	-	4.8477	0.24

Name of the location : Romapuri Matharakuppamvadakkuvellur

S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL	0.04

			[DL 0.1]	
2.	Cadmium as Cd	22	0.1660	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.2679	0.087
4.	Lead as Pb	-	BDL [DL 0.5]	0.12
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.14
7.	Mercury as Hg	-	0.0018	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	96	92.0
10.	Magnesium as Mg	-	24	26.9
11.	Manganese as Mn	--	5.2186	0.307
12.	Iron as Fe	-	1.1413	BLQ [LOQ:0.05]
Name of the location : Vadakkuvellur Pond near Sivan koil				
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
2.	Cadmium as Cd	-	0.2015	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.2260	0.035
4.	Lead as Pb	-	BDL [DL 0.5]	0.13
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.13
7.	Mercury as Hg	-	0.0030	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	69	42.8
10.	Magnesium as Mg	-	15	11.0
11.	Manganese as Mn	--	0.6189	BDL [DL:0.01]
12.	Iron as Fe	-	1.0398	BLQ [LOQ:0.05]
Name of the location : Muappaneri Village				
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
2.	Cadmium as Cd	-	0.1812	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.039
4.	Lead as Pb	-	BDL [DL 0.5]	0.14
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.15
7.	Mercury as Hg	-	BDL [DL 0.224]	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca	-	74	44.4
10.	Magnesium as Mg	-	16	6.26
11.	Manganese as Mn	--	0.3690	BDL [DL:0.01]
12.	Iron as Fe	-	0.8580	BLQ [LOQ:0.05]

**COMPARISON OF HEAVY METALS IN GROUND WATER SAMPLES
COLLECTED BY TNPCB WITH CUBE ENVIRONMENT LABORATORY REPORT**

Name of the location : Bore well Located near OHT, ThandapaniKoil Street, Kaikalarkuppam				
S.N O	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	5.91	6.60
2.	Electrical Conductivity	-	144	198
3.	Total Dissolved Solids at 180 °C	500	104	132
4.	Turbidity	1	23.3	29.8
5.	Total Suspended Solids at 105 °C	--	24	BLQ [LOQ:2.0]
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	0.965	0.20
8.	Chloride as Cl	250	15	27.7
9.	Sulphates as SO ₄	200	10	5.49
10	Zinc as Zn	5	BDL [DL 0.1]	0.04
11	Cadmium as Cd	0.003	0.1045	BLQ [LOQ:0.02]
12	Nickel as Ni	0.02	BDL [DL 0.2]	0.07
13	Lead as Pb	0.01	BDL [DL 0.5]	0.13
14	Arsenic as As	0.01	-	BDL [DL:0.1]
15	Chromium as Cr	0.05	BDL [DL 0.5]	BLQ [LOQ:0.05]
16	Mercury as Hg	0.001	BDL [DL 0.001]	BDL [DL:0.1]
17	Selenium as Se	0.01	-	BDL [DL:0.5]
18	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19	Total Hardness as CaCO ₃	200	52	82.3
20	Calcium as Ca	75	14	17.2
21	Magnesium as Mg	30	4	39.2
22	Manganese as Mn	0.1	0.0268	BDL [DL:0.01]
23	Sulphide as S	0.05	2.4	BLQ [LOQ:1.0]
24	Aluminium as Al	0.03	-	BDL [DL:0.5]
25	Total Alkalinity as CaCO ₃	200	52	44.9
26	Iron as Fe	0.3	0.0797	BLQ [LOQ:0.05]
27	Sodium as Na	-	11	4.88
28	Potassium as K	-	1	0.97
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30	Chemical Oxygen Demand (COD)	-	8	4
Name of the location : Located at Vanadhirayapuram Village				

S.N O	Parameters	Drinking water 24 Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	5.47	6.15
2.	Electrical Conductivity	-	139	158
3.	Total Dissolved Solids at 180 °C	500	96	102
4.	Turbidity	1	0.32	BLQ [LOQ:0.01]
5.	Total Suspended Solids at 105 °C	--	6	BLQ [LOQ:2.0]
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	0.830	0.14
8.	Chloride as Cl	250	26	28.1
9.	Sulphates as SO4	200	9	7.55
10	Zinc as Zn	5	BDL [DL 0.1]	0.04
11	Cadmium as Cd	0.003	BDL [DL 0.1]	BLQ [LOQ:0.02]
12	Nickel as Ni	0.02	BDL [DL 0.2]	0.10
13	Lead as Pb	0.01	BDL [DL 0.5]	0.15
14	Arsenic as As	0.01	-	BDL [DL:0.1]
15	Chromium as Cr	0.05	BDL [DL 0.5]	0.05
16	Mercury as Hg	0.001	0.0626	BDL [DL:0.1]
17	Selenium as Se	0.01	-	BDL [DL:0.5]
18	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19	Total Hardness as CaCO3	200	38	70.6
20	Calcium as Ca	75	10	14.1
21	Magnesium as Mg	30	3	39.2
22	Manganese as Mn	0.1	BDL [DL 0.01]	BDL [DL:0.01]
23	Sulphide as S	0.05	4	BLQ [LOQ:1.0]
24	Aluminium as Al	0.03	-	BDL [DL:0.5]
25	Total Alkalinity as CaCO3	200	20	18.7
26	Iron as Fe	0.3	BDL [DL 0.1]	0.16
27	Sodium as Na	-	13	9.06
28	Potassium as K	-	1	5.97
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30	Chemical Oxygen Demand (COD)	-	16	4

Name of the location : Mariyamman Temple, Ayikuppam Village

S.NO	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	5.68	6.23
2.	Electrical Conductivity	-	534	543

3.	Total Dissolved Solids at 180 °C	500	382	318
4.	Turbidity	1	0.8	0.9
5.	Total Suspended Solids at 105 °C	--	4	BLQ [LOQ:2.0]
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	0.672	0.14
8.	Chloride as Cl	250	50	55.3
9.	Sulphates as SO ₄	200	155	81.4
10.	Zinc as Zn	5	BDL [DL 0.1]	0.02
11.	Cadmium as Cd	0.003	BDL [DL 0.1]	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	BDL [DL 0.2]	0.09
13.	Lead as Pb	0.01	BDL [DL 0.5]	0.21
14.	Arsenic as As	0.01	-	BDL [DL:0.1]
15.	Chromium as Cr	0.05	BDL [DL 0.5]	0.06
16.	Mercury as Hg	0.001	0.0010	BDL [DL:0.1]
17.	Selenium as Se	0.01	-	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO ₃	200	184	212
20.	Calcium as Ca	75	61	59.6
21.	Magnesium as Mg	30	8	15.3
22.	Manganese as Mn	0.1	1.713	0.13
23.	Sulphide as S	0.05	BDL [DL 1]	BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	-	BDL [DL:0.5]
25.	Total Alkalinity as CaCO ₃	200	40	44.9
26.	Iron as Fe	0.3	BDL [DL 0.05]	BLQ [LOQ:0.05]
27.	Sodium as Na	-	33	27.00
28.	Potassium as K	-	3	15.09
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30.	Chemical Oxygen Demand (COD)	-	16	4

Name of the location: NLC Supplied Water at U.Mangalam Tank

S.NO	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	6.09	6.7
2.	Electrical Conductivity	-	280	301
3.	Total Dissolved Solids at 180 °C	500	192	172
4.	Turbidity	1	0.1	0.1
5.	Total Suspended Solids at 105 °C	--	4	BLQ [LOQ:2.0]

6.	Oil & Grease	-- 26	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	0.94	0.15
8.	Chloride as Cl	250	29	25.8
9.	Sulphates as SO ₄	200	49	25.1
10.	Zinc as Zn	5	BDL [DL 0.1]	BLQ [LOQ:0.02]
11.	Cadmium as Cd	0.003	0.1109	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	BDL [DL 0.2]	BLQ [LOQ:0.02]
13.	Lead as Pb	0.01	BDL [DL 0.5]	0.021
14.	Arsenic as As	0.01	-	BDL [DL:0.1]
15.	Chromium as Cr	0.05	BDL [DL 0.05]	BLQ [LOQ:0.05]
16.	Mercury as Hg	0.001	0.0025	BDL [DL:0.1]
17.	Selenium as Se	0.01	-	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO ₃	200	96	101.5
20.	Calcium as Ca	75	25	28.6
21.	Magnesium as Mg	30	8	7.22
22.	Manganese as Mn	0.1	0.1445	BDL [DL:0.01]
23.	Sulphide as S	0.05	3.2	BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	-	BDL [DL:0.5]
25.	Total Alkalinity as CaCO ₃	200	52	50.8
26.	Iron as Fe	0.3	0.2072	0.28
27.	Sodium as Na	-	17	11.2
28.	Potassium as K	-	1	6
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	3	BLQ [LOQ:2.0]
30.	Chemical Oxygen Demand (COD)	-	40	BLQ [LOQ:4.0]

Name of the location: At Block-22 Pump House(Jawahar College)

S.NO	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	6.31	6.84
2.	Electrical Conductivity	-	105	157
3.	Total Dissolved Solids at 180 °C	500	72	95
4.	Turbidity	1	3.6	9.0
5.	Total Suspended Solids at 105 °C	--	4	4.2
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	0.62	0.33
8.	Chloride as Cl	250	15	12.9
9.	Sulphates as SO ₄	200	6	2.04
10.	Zinc as Zn	5	BDL [DL 0.1]	BLQ [LOQ:0.02]

11.	Cadmium as Cd	0.003	BDL [DL 0.1]	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	BDL [DL 0.2]	BLQ [LOQ:0.02]
13.	Lead as Pb	0.01	BDL [DL 0.5]	0.035
14.	Arsenic as As	0.01	-	BDL [DL:0.1]
15.	Chromium as Cr	0.05	BDL [DL 0.05]	BLQ [LOQ:0.05]
16.	Mercury as Hg	0.001	0.0041	BDL [DL:0.1]
17.	Selenium as Se	0.01	-	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO ₃	200	34	33.8
20.	Calcium as Ca	75	9	12.7
21.	Magnesium as Mg	30	3	BLQ [LOQ:1.0]
22.	Manganese as Mn	0.1	0.2060	BDL [DL:0.01]
23.	Sulphide as S	0.05	5.6	BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	-	BDL [DL:0.5]
25.	Total Alkalinity as CaCO ₃	200	32	43.5
26.	Iron as Fe	0.3	1.2206	BLQ [LOQ:0.05]
27.	Sodium as Na	-	19	11.2
28.	Potassium as K	-	0.12	10.9
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30.	Chemical Oxygen Demand (COD)	-	16	12.2

Name of the location : Vedhavan House, Pudukuppam Village

S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	7.43	7.90
2.	Electrical Conductivity	-	1058	1177
3.	Total Dissolved Solids at 180 °C	500	692	720
4.	Turbidity	1	2.78	4.0
5.	Total Suspended Solids at 105 °C	--	12	BLQ [LOQ:2.0]
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	1.361	0.55
8.	Chloride as Cl	250	178	173.3
9.	Sulphates as SO ₄	200	94	68.6
10.	Zinc as Zn	5	0.3077	0.15
11.	Cadmium as Cd	0.003	BDL [DL 0.1]	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	BDL [DL 0.2]	BLQ [LOQ:0.02]
13.	Lead as Pb	0.01	BDL [DL 0.5]	0.059
14.	Arsenic as As	0.01	-	BDL [DL:0.1]

15.	Chromium as Cr	0.05 28	BDL [DL 0.05]	0.06
16.	Mercury as Hg	0.001	0.0044	BDL [DL:0.1]
17.	Selenium as Se	0.01	-	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO ₃	200	228	246.8
20.	Calcium as Ca	75	53	92.8
21.	Magnesium as Mg	30	23	3.37
22.	Manganese as Mn	0.1	1.5137	0.094
23.	Sulphide as S	0.05	BDL [DL 1]	BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	-	BDL [DL:0.5]
25.	Total Alkalinity as CaCO ₃	200	188	244.4
26.	Iron as Fe	0.3	BDL [DL 0.05]	0.17
27.	Sodium as Na	-	173	134
28.	Potassium as K	-	12	28
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30.	Chemical Oxygen Demand (COD)	-	32	12.2

Name of the location : Pudukuppam Village

S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	8.04	8.75
2.	Electrical Conductivity	-	718	771
3.	Total Dissolved Solids at 180 °C	500	464	468
4.	Turbidity	1	6.49	0.89
5.	Total Suspended Solids at 105 °C	--	6	BLQ [LOQ:2.0]
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	2.646	0.35
8.	Chloride as Cl	250	94	90.3
9.	Sulphates as SO ₄	200	79	56.0
10.	Zinc as Zn	5	0.1283	BLQ [LOQ:0.02]
11.	Cadmium as Cd	0.003	0.1354	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	BDL [DL 0.2]	0.029
13.	Lead as Pb	0.01	BDL [DL 0.5]	0.06
14.	Arsenic as As	0.01	-	BDL [DL:0.1]
15.	Chromium as Cr	0.05	BDL [DL 0.5]	0.06
16.	Mercury as Hg	0.001	0.0054	BDL [DL:0.1]
17.	Selenium as Se	0.01	-	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO ₃	200	220	272.6

20	Calcium as Ca	75	66	88
21	Magnesium as Mg	30	14	13.5
22	Manganese as Mn	0.1	0.2768	BDL [DL:0.01]
23	Sulphide as S	0.05	4.8	BLQ [LOQ:1.0]
24	Aluminium as Al	0.03	-	BDL [DL:0.5]
25	Total Alkalinity as CaCO ₃	200	188	230
26	Iron as Fe	0.3	BDL [DL 0.05]	0.16
27	Sodium as Na	-	66	56.2
28	Potassium as K	-	5	10.5
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30	Chemical Oxygen Demand (COD)	-	16	12.2

Name of the location : Karikuppam Village

S.N	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	7.35	7.94
2.	Electrical Conductivity	-	514	588
3.	Total Dissolved Solids at 180 °C	500	324	346
4.	Turbidity	1	0.5	1.0
5.	Total Suspended Solids at 105 °C	--	4	BLQ [LOQ:2.0]
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	1.817	0.28
8.	Chloride as Cl	250	74	82.9
9.	Sulphates as SO ₄	200	71	40.2
10	Zinc as Zn	5	0.2550	BLQ [LOQ:0.02]
11	Cadmium as Cd	0.003	0.2393	BLQ [LOQ:0.02]
12	Nickel as Ni	0.02	BDL [DL 0.2]	0.025
13	Lead as Pb	0.01	BDL [DL 0.5]	0.07
14	Arsenic as As	0.01	-	BDL [DL:0.1]
15	Chromium as Cr	0.05	BDL [DL 0.5]	0.07
16	Mercury as Hg	0.001	0.0029	BDL [DL:0.1]
17	Selenium as Se	0.01	-	BDL [DL:0.5]
18	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19	Total Hardness as CaCO ₃	200	392	212.9
20	Calcium as Ca	75	98	73.8
21	Magnesium as Mg	30	36	6.74
22	Manganese as Mn	0.1	1.5196	0.043
23	Sulphide as S	0.05	8	BLQ [LOQ:1]
24	Aluminium as Al	0.03	-	BDL [DL:0.5]
25	Total Alkalinity as CaCO ₃	200	80	113.7

26	Iron as Fe	0.3 30	BDL [DL 0.05]	BLQ [LOQ:0.05]
27	Sodium as Na	-	29	25.9
28	Potassium as K	-	1	11.0
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	3	BLQ [LOQ:2.0]
30	Chemical Oxygen Demand (COD)	-	40	BLQ [LOQ:4.0]

Name of the location: Tholkappaiar Nagar

S.N	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	6.13	6.71
2.	Electrical Conductivity	-	414	460
3.	Total Dissolved Solids at 180 °C	500	304	252
4.	Turbidity	1	16	17
5.	Total Suspended Solids at 105 °C	--	6	14.0
6.	Oil & Grease	--	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	1.44	0.42
8.	Chloride as Cl	250	54	41.5
9.	Sulphates as SO4	200	93	52.9
10	Zinc as Zn	5	BDL [DL 0.1]	BLQ [LOQ:0.02]
11	Cadmium as Cd	0.003	0.1665	BLQ [LOQ:0.02]
12	Nickel as Ni	0.02	0.2232	0.05
13	Lead as Pb	0.01	BDL [DL 0.5]	0.12
14	Arsenic as As	0.01	-	BDL [DL:0.1]
15	Chromium as Cr	0.05	BDL [DL 0.5]	0.14
16	Mercury as Hg	0.001	BDL [DL 0.119]	BDL [DL:0.1]
17	Selenium as Se	0.01	-	BDL [DL:0.5]
18	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19	Total Hardness as CaCO3	200	292	123
20	Calcium as Ca	75	72	38.0
21	Magnesium as Mg	30	27	6.73
22	Manganese as Mn	0.1	0.2028	BDL [DL:0.01]
23	Sulphide as S	0.05	BDL[DL 1]	BLQ [LOQ:1]
24	Aluminium as Al	0.03	-	BDL [DL:0.5]
25	Total Alkalinity as CaCO3	200	72	87.1
26	Iron as Fe	0.3	8441	0.36
27	Sodium as Na	-	25	28
28	Potassium as K	-	2	11.7
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30	Chemical Oxygen Demand (COD)	-	8	BLQ [LOQ:4.0]

**COMPARISON OF HEAVY METALS IN SOIL SAMPLES COLLECTED BY
TNPCB WITH CUBE ENVIRONMENT LABORATORY REPORT**

Name of the Location: Paddy Filed within one kilometer from NNTPS Stack				
Sl.No.	Parameters	Soil standards mg/kg	TNPCB committee Results	M/s. CUBE Environment Laboratory
1	Zinc as Zn	250	15.394	20.5
2	Nickel as Ni	45	6.142	3.75
3	Cadmium as Cd	1.4	6.1980	BLQ [LOQ:1.0]
4	Lead as Pb	70	BDL [DL:0.5]	8.85
5	Arsenic as As	12	-	BDL [DL:0.1]
6	Total Chromium as Cr	64	BDL [DL:0.05]	14.7
7	Mercury as Hg	6.6	0.31	BDL [DL:0.1]
8	Selenium as Se	1.0	-	BDL [DL:0.5]
Name of the Location: Agriculture land near Ayyan Lake				
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	250	8.878	15.0
2.	Nickel as Ni	45	5.452	2.45
3.	Cadmium as Cd	1.4	5.618	BLQ [LOQ:1.0]
4.	Lead as Pb	70	BDL [DL:0.5]	4.69
5.	Arsenic as As	12	-	BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.05]	17.2
7.	Mercury as Hg	6.6	0.16	BDL [DL:0.1]
8.	Selenium as Se	1.0	-	BDL [DL:0.5]
Name of the Location: Karrikuppam Village Agriculture Land near Thermal Power Plant				
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	250	2.744	10.30
2.	Nickel as Ni	45	4.596	1.79
3.	Cadmium as Cd	1.4	6.178	BLQ [LOQ:1.0]
4.	Lead as Pb	70	BDL [DL:0.5]	BLQ [LOQ:1.0]
5.	Arsenic as As	12	-	BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.05]	10.6
7.	Mercury as Hg	6.6	0.06	BDL [DL:0.1]
8.	Selenium as Se	1.0	-	BDL [DL:0.5]
Name of the Location: KarumbuThottam Vadakkuvellur				
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	250	42	147
2.	Nickel as Ni	45	9.318	14.8
3.	Cadmium as Cd	1.4	8.11	BLQ [LOQ:1.0]
4.	Lead as Pb	70	BDL [DL:0.5]	5.41
5.	Arsenic as As	12	-	BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.5]	18.4
7.	Mercury as Hg	6.6	0.056	BDL [DL:0.1]
8.	Selenium as Se	1.0	-	BDL [DL:0.5]
Name of the Location: Vadakkuvellur by pass				
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	250	41.164	155

2.	Nickel as Ni	45	9.92	18.4
3.	Cadmium as Cd	1.42	6.298	BLQ [LOQ:1.0]
4.	Lead as Pb	70	BDL [DL:0.5]	6.18
5.	Arsenic as As	12	-	BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.5]	19.2
7.	Mercury as Hg	6.6	0.065	BDL [DL:0.1]
8.	Selenium as Se	1.0	-	BDL [DL:0.5]

Name of the Location: Pallitheru Vadakku Vellore (ash)

Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	250	11.528	22.9
2.	Nickel as Ni	45	7.274	8.89
3.	Cadmium as Cd	1.4	2.958	BLQ [LOQ:1.0]
4.	Lead as Pb	70	BDL [DL:0.5]	5.23
5.	Arsenic as As	12	-	BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.5]	14.8
7.	Mercury as Hg	6.6	0.18	BDL [DL:0.1]
8.	Selenium as Se	1.0	-	BDL [DL:0.5]

Joint Chief Environmental Engineer (M)
Tamil Nadu Pollution Control Board
Cuddalore

12/2/25

**BEFORE THE HON'BLE NATIONAL
GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

Original Application No.107 of 2023 (SZ)
I.A. No. 151 of 2024 (SZ)

WITH

Original Application No. 24 of 2024 (SZ)

Suo Motu based on the news item published in The New Indian Express, dt. 09.08.2023, under the caption "Huge pollution risk in 8 Km around NLC" and in The Times of India, Chennai Edition dt. 09.08.2023 under the caption "Water near NLC full of Mercury".

Vs.

The Managing Director NLC India Limited,
Chennai and Ors.

With

News Item in South First Dt. 19.09.2023 titled
"Wages of mining Neyveli turns ashtray,
leaving farmers with broken promises and
uncertain future"

Vs

CPCB & ors

...Respondents

**ADDITIONAL REPORT FILED ON BEHALF
OF THE FIFTH TAMIL NADU POLLUTION
CONTROL BOARD**

**Advocate for Respondent: TNPCB
Thiru.Sai Sathya Jith,
Advocate, Chennai.**

Date:17.02.2025.

Date of hearing on:17.02.2025.