

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

Original Application No. 162 of 2016 (SZ)

**K. Nagappa,
Son of Koneetappa,
3/84, Dasarapalli,
Hosur Taluk,
Krishnagiri District.**

...Applicant

Vs

**The Union of India,
Rep. by its Secretary,
The Ministry of Environment, Forest,
New Delhi – 110 003
& 7 others**

...Respondents

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**Filed by
Thiru.C. Kasirajan,
Advocate, Chennai.**

**STATUS REPORT IN THE MATTER OF
APPLICATION No. 162 of 2016 (SZ) SUBMITTED
BEFORE THE HON'BLE NATIONAL GREEN
TRIBUNAL, SOUTERN ZONE, CHENNAI**

Submitted by

**District Environmental Engineer
Tamilnadu Pollution Control Board
Hosur, Krishnagiri District**

Date: 25.03.2021

STATUS REPORT OF TAMIL NADU POLLUTION CONTROL BOARD IN THE MATTER OF APPLICATION No. 162 of 2016 (SZ) SUBMITTED BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, SOUTHERN ZONE, CHENNAI.

The applicant namely **Thiru. K.Nagappa S/o. Goneetappa, 3/84, Dasarapalli village, Muthali Po, Hosur Taluk, Krishnagiri District** has filed the application dated 14.7.2016 before the Hon'ble NGT, Chennai in O.A. No. 162 of 2016 (SZ) against the Union of India and 7 others seeking the following reliefs i) For bearing the respondent authorities from constructing the Bio Gas plant without prior environmental clearance in the lands situated at SF No.45, Dasarapalli village, Muthali Panchayat, Hosur Taluk, Krishnagiri District. ii) Forbearing the respondent authorities from dumping and burning of garbage and waste in the said land situated at SF No.45, Dasarapalli village, Muthali Panchayat, Hosur Taluk, Krishnagiri District and direct the respondent authorities to remove the garbage and wastes in respect of the land situated at SF No.45, Dasarapalli village, Muthali Panchayat, Hosur Taluk, Krishnagiri District.

After having gone through the earlier reports submitted by the respondent authorities, the National Green Tribunal, Southern Zone, Chennai in its order dated 3.1.2020 has issued the following directions to submit the present status report regarding the above matter.

“Hosur Municipality and Tamil Nadu Pollution Control Board (TNPCB) are directed to submit the present status of dumping ground as well as functioning of Bio-Methanation plant.

The Tamil Nadu Pollution Control Board (TNPCB) is also directed to assess the extent of legacy waste available in the dumping ground and steps taken by the Municipality to clear the same and they are also directed to report as to whether any steps have been taken by the Municipality to apply the bio-mining process as directed by the National Green tribunal, Principal Bench, New Delhi in O.A. No.606 of 2018 on the basis of Indore Model wherever it is practicable or any alternate method by which the legacy waste is being scientifically disposed off.

The Hosur Municipality as well as Tamil Nadu Pollution Control Board (TNPCB) is directed to submit their status report on the directions given above within a period of two months.

Tamil Nadu Pollution Control Board (TNPCB) is directed to consider the question of suitability of site for establishment of Bio-Methanization scheme and whether the place is suitable and whether any remedial measure can be taken even if there is possibility of some pollution and what is remedial measures taken to minimize the pollution and make it eco friendly.”

Subsequently, based on the orders of the Hon'ble NGT, Chennai, the location was inspected by the officials of TNPC Board on 25.03.2021 along with the officials from the Hosur Corporation, Hosur.

It is submitted that based on the inspection carried out in the location, the following Status Report is submitted to the Hon'ble NGT, Chennai.

Bio Methanaisation cum Bio-CNG Bottling Plant:

1. The Bio Methanaisation cum Bio-CNG Bottling Plant owned by the Hosur Corporation is located in an extent of 0.36 Hectares at SF No.45/3 (pt), Dasapalli village, Hosur Taluk, Krishnagiri District on the western side of the existing MSW dumping site and the same is separated by a public road leads to Dasapalle village.
2. It is stated that the said plant is surrounded by dry Agricultural lands on northern and western sides, existing windrow composting yard on southern side followed by dry Agricultural lands and existing village road to Dasapalle village and existing MSW dumping site (SF No.45/5) on eastern side.
3. It was observed that no habitations, schools and Religious places are located within 500 m radius of the location of this Bio Methanaisation plant at SF No.45/3 (pt), Dasapalli village, Hosur Taluk, Krishnagiri District.
4. It is stated that the location of the plant namely SF No.45/3 (pt), Dasapalli village, Hosur Taluk, Krishnagiri District which comes under the local body jurisdiction of Hosur Panchayat Union, Hosur Taluk, Krishnagiri District.
5. It is stated that the location of SF.No. 45/3 of Dasapalli village, Hosur Taluk, Krishnagiri District has been classified as 'Non-Planned area' under land use classification by the Directorate of Town and Country Planning, Government of Tamil Nadu. The copy of the Land use classification certificate obtained online from the DTCP is enclosed **vide Annexure-1.**
6. In view of the above, it was ascertained that the location was found suitable for the establishment of Bio Methanaisation plant and hence Consent for Establishment (CTE) for setting up of the plant was issued from TNPC Board under the Water (Prevention & Control of Pollution) Act, 1974 as amended (Water Act) and under the Air (Prevention & Control of Pollution) Act, 1981 as amended (Air Act) on 9.12.2016 valid upto 8.12.2021 for the production of Bio-CNG Bottling in 10 Kg Capacity Cylinder -40 Nos/day and captive power generation (Natural Gas Gen set- 10 KVA/ day subject to the conditions to comply with. The copy of the CTE issued from the TNPCB dated 9.12.2016 is enclosed **vide Annexure-2.**
7. Subsequently, the CTO was issued to the plant under Water Act on 25.06.2020 subject to the condition among other conditions that *the unit shall operate and maintain the Effluent Treatment Plant for the treatment of dewatering of digested sludge and shall ensure that the filtrate is completely recycled back into the process.* It is stated that CTO was issued to the plant under Air Act on 25.06.2020 subject to the condition among other conditions that *the unit shall operate the Air Pollution Control measures effectively and continuously so as to achieve the NAAQ/Emission standards prescribed by the Board.* The copy of the CTO issued from the TNPCB dated 25.06.2020 is enclosed **vide Annexure-3.**

9. It is stated that the Bio Methanisation cum Bio-CNG Bottling Plant has also obtained the license to fill the Bio-CNG in cylinders from the Petroleum & Explosives Safety Organization (PESO), Nagpur on 3.10.2019. The copy of the certificate obtained from the PESO is enclosed vide **Annexure-4**.

11. The process in the Bio-Methanisation plant consists of receipt of bio-decomposable waste of 10 T/Day from the 11 Micro Composting centres, feeding the wastes in the screw conveyor, shredding in the Shredder with hopper, pouring the wastes in the digester, collecting the gas and passing it through enricher to segregate CO₂, utilizing the segregated CO₂ in the Digester to increase the Methane value, Collecting the Bio-Gas (CH₄) and storing in storage balloon, Passing it in the High pressure Compressor, Filling in the Bio-CNG Cylinders of 10 Kg and loading the cylinders for dispatch for utilizing it as fuel.

12. It was stated by the Hosur Corporation authorities that the Bio- methanation cum Bio-CNG bottling plant was established at a cost of Rs. 190 Lakhs which is under operation on DBFOT basis including operation and maintenance for 20 years.

13. During inspection on 25.03.2021, it was observed that the Biomethanation plant, ETP was not under operation and it was informed by the Hosur Municipal Corporation Authorities that the Bio-methanation plant was stopped due to contractor – partnership legal issues and will be resumed once the legal issues solved (Hosur Municipal Corporation letter enclosed vide **Annexure-5**).

The status report submitted by the Commissioner, Hosur City Municipal Corporation vide letter dated 25.03.2021 (copy enclosed vide **Annexure-6**) and stated that they have processed 71500 m³ of legacy waste as on date 21.03.2021, deployed totally 4 Nos. of Bio-mining machines for processing the legacy waste at the rate of 600 m³/day and they have stated that the balance quantity of legacy waste (31468 m³) will be cleared on or before 31.07.2021.

Municipal Solid Waste (Legacy waste) - Dumping site at Dasepalli village.

1. Hosur City Municipal Corporation located in the Krishnagiri district of Tamil Nadu. It is located at a distance of about 40 km from Bangalore with a population of 2,45,354 as per Census India 2011 at an Extent of 72.41 Sq.Km. It is an industrial hub for several automobile and manufacturing industries. The Hosur Corporation generates about 72 tons of municipal solid wastes (MSW) per day. The solid waste dumping Yard is situated at Dasepalli Village of Hosur Taluk which is located at about 15Km East of Hosur Town.

2. It was ascertained that the Hosur Corporation has taken steps to apply the bio mining process as directed by the Hon'ble NGT, Principal Bench, New Delhi in O.A.No.606 /2018 on the basis of Indore model to dispose the dumped solid wastes in a scientific manner.

3. It was ascertained that the Hosur Corporation has engaged the Centre for Environmental Studies (CES), Anna University, Chennai as Project Management Consultant which has estimated the **total quantity of legacy waste available at the MSW dumping site at Dasepalli was 1,28,196 Cum** as on 27.11.2017 which was subsequently endorsed by Government of Tamil Nadu vide its G.O.No.21, Municipal Administration and water Supply (MA.IV) Department dated 14.3.2018. The copy of the GO is enclosed herewith **vide Annexure-7**.

4. It was ascertained that based on the subsequent approval of the Commissioner of Municipal Administration, Government of Tamil Nadu on 14.3.2018 under Swachh Bharath Mission scheme, the Hosur Corporation has tendered and engaged M/s. Essarams Biotech, Namakkal for the **partial removal of the quantity of legacy waste of 1,02,968 Cum** dumped in the Dasepalli **MSW dumping site** at an Estimated Cost of Rs.665.00 Lakhs through bio-mining process on Design, Build, Own and Operate (DBOO) basis.

5. The Hosur Corporation has engaged the Centre for Environmental Studies (CES), Anna University, Chennai as Project Management Consultant to assess the progress of work by periodic site visits, observations at the site and review of records and the team of Anna University visited the site latest to assess the progress of bio mining operations on 3.2.2020.

6. Further, as per the orders of the Hon'ble NGT (SZ), Chennai in O.A.No.162 of 2016 dated 05.08.2020, the Hosur City Municipal Corporation has furnished a performance Guarantee vide No. 8173I PEBG 200001, Dated: 20.10.2020, through Bank of India, Hosur in the prescribed format obtained from Bank of India, Hosur for sum of **Rs. 25,00,000/- (Twenty Five Lakhs only)** and the same has been submitted to the TNPC Board vide T.O letter dated 22.10.2020 (copy enclosed **Annexure-8**).

7. During inspection on 25.03.2021, it was observed a portion of dumped solid waste of about **55% (71500 m³)** has been processed and removed as on 21.03.2021 from the huge heap at present through bio mining process and the remaining **45%** of solid wastes (**56696 m³**) are yet to be processed through bio mining activity. Not much of odour and fly nuisance was noticed in the vicinity of the dumping site. No burning of the municipal solid wastes was observed to be carried out in the said MSW dumping site.

9. The process of bio mining activity consists of the following steps. The removed garbage from the existing dump of solid waste is fed into conveyor belt to segregate the recoverable fractions such as recyclables (metal and glass), fine fraction (soil/compost), incinerable fractions (such as plastics, textile, tyre, rubber, etc), inerts (stone, bricks and construction debris) and hazardous wastes (batteries, containers of toxic materials, tube lights, etc). The recyclables are to be sold to authorized scrap dealers. The coarse fine fraction and inerts are to be used for land filling in low lying areas and the fine fraction to

be used as compost or soil cover for landfills. The incinerables to be used as refuse drive fuel (RDF) in waste to Energy plant or Cement plant. The hazardous wastes to be disposed at the nearby centralized Hazardous wastes treatment storage facility.

10. During inspection on 25.03.2021, it was observed that the removal of the dumped wastes from the Dasepalli site was under progress and bio mining works were being carried out in the bio mining facility by screening through 4 Nos. of Trommels of screen size of 30 mm and 5 mm in series continuously.

11. The Hosur Corporation authorities have stated that the incinerables obtained as >30mm (RDF) are being sent to the Cement plants at Kadappa and Sankari. The coarse fine fraction > 5 mm and inerts are being used for land filling in low lying areas and the fine fraction < 5 mm are being used as compost or soil cover for landfills.

12. The Hosur Corporation authorities have requested vide their letter dated 25.03.2021 that the balance dumped legacy wastes at Dasepalli dumpsite would be cleared through the bio mining process by speeding the action and complete before 31.07.2021.

13. It was stated by the Hosur Corporation authorities that all the total garbage wastes generated daily of about 72 T / Day from Hosur Corporation limits are now being sent to the 11 numbers of the Micro Composting Centres (MCC) provided in the Corporation area for segregation and disposal. It is submitted that TNPCB has already granted authorization under Solid waste Management Rules, 2016 to the Hosur Corporation on 10.4.2019 to operate the SWM facility of 11 Micro Composting Centres for processing, recycling, treatment and disposal of Municipal Solid wastes of 72 T/day. The copy of the MSW Authorisation issued from the TNPCB dated 10.4.2019 is enclosed vide **Annexure-9**. It is submitted that all the 11 Micro Composting Centres are under operation at present processing the solid wastes of Hosur Corporation area.

14. It was stated by the Hosur Corporation authorities that after having provided the 11 Micro Composting Centers in the Corporation area, no solid wastes are now being sent for dumping in the Dasepalli MSW dumping site.

15. In the meantime, the Hon'ble National Green Tribunal, Southern Zone, Chennai in its order dated: 18.01.2021 in O.A. No.162/2016 (SZ) directed as follows:

" Page No. 7 (Para No. 8): Pollution Control Board to conduct soil test as well as the water quality test from the nearby wells and water resources which are situated near the dumping ground so as to ascertain as to whether this has affected the water and soil quality in the nearby area. If that be the case, what is the nature of restoration of work to be done for rectifying such contamination, if any caused?."

Page No. 7. (Para No. 10): *The Pollution Control Board to submit a further report, incorporating the things mentioned above so as to enable this Tribunal to analyze the situation and give further directions so as to implement the Solid Waste Management Rules, 2016 in that area in a proper way.*"

In this regard, water and soil sampling points were identified for collecting groundwater & soil samples based on the reconnaissance survey conducted on 15.02.2021. The details of locations for water and soil samples were collected in and around the dump site on 25.02.2021 are depicted in the Table 1.0 and Table 2.0.

TABLE-1.0: WATER SAMPLING LOCATIONS

S. No.	Point of Collection	Code No.	GPS-Coordinates		Distance/ Direction
			Latitude	Longitude	
1.	Legacy waste processing facility premises @ Dasapally village	HSR-NGT-GW-01/2021	12.73663	77.91876	28 m / W
2.	Mr Prathap Chowdhry K V	HSR-NGT-GW-02/2021	12.73836	77.91880	97 m / N
3.	Mr. Venkataswamy's Agri. land premises	HSR-NGT-GW-03/2021	12.74266	77.92201	635 m / N
4	Dump site western side – Agri. Land	HSR-NGT-GW-04/2021	12.73943	77.91162	850 m / NW
5	Mr. Krishnappa's land premises	HSR-NGT-GW-05/2021	12.73617	77.91409	523 m / W
6	Mr. Chinnallappan land premises	HSR-NGT-GW-06/2021	12.73889	77.91716	260 m / NW
7	South side of legacy waste dumpsite (Chennai mines Land)	HSR-NGT-GW-07/2021	12.73116	77.91756	431 m / S
8	Mr Gopalappa's Land premises	HSR-NGT-GW-08/2021	12.72750	77.92176	886 m/ SE

Table-2.0: SOIL SAMPLING LOCATIONS

S. No.	Point of Collection	Code No.	GPS Coordinates		Distance/ Direction
			Latitude	Longitude	
1.	Mr. Moorthy's land	HSR-NGT-S1/2021	12.73765	77.92047	76 m / NE
2.	Mr. Venkataswamy's Land	HSR-NGT-S2/2021	12.73731	77.92041	46 m / NE
3.	Near M/s. Mars Abrasive unit	HSR-NGT-S3/2021	12.73789	77.91925	36 m / N
4	Mr. Venkataswamy's Land	HSR-NGT-S4/2021	12.74266	77.92201	625 m / N
5	Mr Lakshminarayanan's Land	HSR-NGT-S5/2021	12.74141	77.91496	625 m/ NW
6	Mr. Krishnappa's land	HSR-NGT-S6/2021	12.73916	77.911490	853 m/ W
7	Municipal Waste dumpsite western side	HSR-NGT-S7/2021	12.73763	77.91290	670 m
8	Mr. Krishnappa's Land	HSR-NGT-S8/2021	12.73617	77.91409	500 m/ W
9	South side of legacy waste dump Site	HSR-NGT-S9/2021	12.73155	77.91810	364 m /S
10	South East side of legacy Waste Dump Site	HSR-NGT-S10/2021	12.73492	77.91950	67 m/ SE
11	Inside the premises of legacy waste dumpsite	HSR-NGT-S11/2021	12.73707	77.91948	Northern portion of dump site

The map showing the locations of water and soil samples collected on 25.02.2021 are given in **Figure-1 & Figure-2;**

The consolidated Report of Analysis (ROA) of Water & Soil samples are given in the Table-3.0 & Table- 4.0:



Figure: 1- Sampling Locations – Ground Water



Figure: 2- Sampling Locations – Soil

SITE PHOTOGRAPHS TAKEN DURING WATER AND SOIL SAMPLING:



PHOTOGRAPHS SHOWING THE LEGACY WASTE DUMP SITE &
PROCESSING FACILITY:



TABLE: 3.0: DETAILS OF WATER SAMPLING LOCATIONS – REPORT OF ANALYSIS - IN O.A.NO.162/2016 (SZ), CHENNAI

Sl. No	Parameters	Units	IS 10500:2012, Edition 2.2 (2003-09) acceptable limit (mg/l except for pH)	Legacy waste processing facility premises at Dasapally Village	Mr. Prathap Chowdhry K V	Mr. Venkataswamy's Agri. Land Premises	Dumpsite western Side-Agri land
				Lat: 12.73663 Long:77.91876	Lat: 12.73836 Long:77.91880	Lat: 12.74266 Long: 77.92201	Lat: 12.73943 Long: 77.91162
				HSR-NGT-GW-01/2021	HSR-NGT-GW-02/2021	HSR-NGT-GW-03/2021	HSR-NGT-GW-04/2021
1	Conductivity at 25°C	µmhos/cm	-	4100	4250	1307	1152
2	pH at 25°C	Number	6.5 – 8.5	6.65	6.64	6.79	6.83
3	Total Dissolved Solids at 180°C	mg/l	500	2592	2728	836	748
4	Chloride as Cl	mg/l	250	800	930	125	140
5	Sulphates as SO ₄	mg/l	200	150	90	120	68
6	Total Hardness as CaCO ₃	mg/l	200	1240	1360	290	360
7	Iron Total as Fe	mg/l	0.3	0.120	0.111	0.055	0.065
8	Nitrate Nitrogen as NO ₃	mg/l	45	0.164	0.221	0.285	0.150
9	Phenolic Compounds	mg/l	0.001	<0.05	<0.05	<0.05	<0.05
10	Hexavalent Chromium	mg/l	-	<0.05	<0.05	<0.05	<0.05
11	Total Chromium	mg/l	0.05	<0.05	<0.05	<0.05	<0.05
12	Copper	mg/l	0.05	<0.0015	<0.0015	<0.0015	<0.0015

Sl. No	Parameters	Units	IS 10500:2012, Edition 2.2 (2003-09) acceptable limit (mg/l except for pH)	Legacy waste processing facility premises at Dasapally Village	Mr. Prathap Chowdhry K V	Mr. Venkataswamy's Agri. Land Premises	Dumpsite western Side-Agri land
				Lat: 12.73683 Long:77.91876	Lat: 12.73836 Long:77.91880	Lat: 12.74266 Long: 77.92201	Lat: 12.73943 Long: 77.91162
				HSR-NGT-GW-01/2021	HSR-NGT-GW-02/2021	HSR-NGT-GW-03/2021	HSR-NGT-GW-04/2021
13	Zinc*	mg/l	5	<0.0015	<0.0015	<0.0015	0.061
14	Lead*	mg/l	0.01	<0.015	<0.015	<0.015	<0.015
15	Cadmium*	mg/l	0.003	<0.0008	<0.0008	<0.0008	<0.0008
16	Nickel*	mg/l	0.02	<0.006	<0.006	<0.006	<0.006
17	Cyanide	mg/l	0.05	<0.05	<0.05	<0.05	<0.05
18	Arsenic*	mg/l	0.01	<0.01	<0.01	<0.01	<0.01
19	Mercury*	mg/l	0.001	<0.003	<0.003	<0.003	<0.003
20	Phosphate as PO ₄	mg/l	-	0.078	0.097	0.143	0.185
21	Fluoride as F	mg/l	1.0	0.617	0.553	0.421	0.588
22	SAR*	mg/l	-	3.2	2.7	2.9	1.7
23	Manganese*	mg/l	0.1	0.024	0.052	<0.1	<0.1

TABLE: 3.0 (Contd....): DETAILS OF WATER SAMPLING LOCATIONS – REPORT OF ANALYSIS - IN O.A.NO.162/2016 (SZ), CHENNAI

Sl. No	Parameters	Units	IS 10500:2012, Edition 2.2(2003-09) acceptable limit (mg/l except for pH)	Mr.Krishnaapa's land premises	Mr.Chinnallappan land premises	South side of legacy waste Dumpsite (Chennai Mines land)	Mr. Gopalappa's land premises
	GPS Co-ordinates	→		Lat: 12.73617 Long: 77.91409	Lat: 12.73889 Long:77.91716	Lat: 12.73116 Long: 77.91756	Lat: 12.72750 Long: 77.92176
	Sample Code	→		HSR-NGT-GW-05/2021	HSR-NGT-GW-06/2021	HSR-NGT-GW-07/2021	HSR-NGT-GW-08/2021
1	Conductivity at 25°C	µmhos/cm	-	1127	1037	1443	1271
2	pH at 25°C	Number	6.5 – 8.5	7.10	6.56	6.26	6.50
3	Total Dissolved Solids at 180°C	mg/l	500	728	656	900	804
4	Chloride as Cl	mg/l	250	115	140	170	180
5	Sulphates as SO ₄	mg/l	200	21	43	32	131
6	Total Hardness as CaCO ₃	mg/l	200	280	320	370	310
7	Iron Total as Fe	mg/l	0.3	0.213	0.139	0.093	0.065
8	Nitrate Nitrogen as NO ₃	mg/l	45	0.242	0.085	0.092	0.107
9	Phenolic Compounds	mg/l	0.001	<0.05	<0.05	<0.05	<0.05
10	Hexavalent Chromium	mg/l	-	<0.05	<0.05	<0.05	<0.05
11	Total Chromium	mg/l	0.05	<0.05	<0.05	<0.05	<0.05
12	Copper	mg/l	0.05	0.023	<0.0015	<0.0015	<0.0015
13	Zinc*	mg/l	5	<0.0015	0.418	<0.0015	0.010
14	Lead*	mg/l	0.01	<0.015	<0.015	<0.015	<0.015

Sl. No	Parameters	Units	IS 10500:2012, Edition 2.2(2003-09) acceptable limit (mg/l except for pH)	Mr.Krishnaapa's land premises	Mr.Chinnallappan land premises	South side of legacy waste Dumpsite (Chennai Mines land)	Mr. Gopalappa's land premises
	GPS Co-ordinates	→		Lat: 12.73617 Long: 77.91409	Lat: 12.73889 Long:77.91716	Lat: 12.73116 Long: 77.91756	Lat: 12.72750 Long: 77.92176
	Sample Code	→		HSR-NGT-GW-05/2021	HSR-NGT-GW-06/2021	HSR-NGT-GW-07/2021	HSR-NGT-GW-08/2021
15	Cadmium*	mg/l	0.003	<0.0008	<0.0008	<0.0008	0.010
16	Nickel*	mg/l	0.02	<0.006	<0.006	<0.006	<0.006
17	Cyanide	mg/l	0.05	<0.05	<0.05	<0.05	<0.05
18	Arsenic*	mg/l	0.01	<0.01	<0.01	<0.01	<0.01
19	Mercury*	mg/l	0.001	<0.003	<0.003	<0.003	<0.003
20	Phosphate as PO ₄	mg/l	-	0.125	0.083	0.087	0.097
21	Fluoride as F	mg/l	1.0	0.282	0.369	0.594	0.461
22	SAR*	mg/l	-	2.3	2.1	2.4	2.1
23	Manganese*	mg/l	0.1	<0.1	<0.1	<0.1	<0.1

TABLE-4.0: DETAILS OF SOIL SAMPLING LOCATIONS AND ROA OF THE SOIL SAMPLES - IN O.A.NO.162/2016 (SZ), CHENNAI

Sl. No	Parameters	Units	Point of Sample Location				
			Mr. Moorthy's Land	Mr.Venkataswamy's Land	Near Mars Abrasive Unit	Mr.Venkataswamy's Land	Mr.Lakshminarayanan's Land
			GPS Co-ordinates →	GPS Co-ordinates →	GPS Co-ordinates →	GPS Co-ordinates →	GPS Co-ordinates →
	Sample Code →		HSR-NGT-S1/2021	HSR-NGT-S2/2021	HSR-NGT-S3/2021	HSR-NGT-S4/2021	HSR-NGT-S5/2021
1	Calcium as Ca	mg/kg	1221	807	1213	1137	979
2	Cation Exchange Capacity	meq/100g	8.7	5.7	8.2	17.6	14.0
3	Hexavalent Chromium as Cr6+	mg/kg	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)
4	Iron as Fe	mg/kg	5938	8563	8624	9632	5101
5	Magnesium as Mg	mg/kg	346	245	490	443	173
6	Moisture	%	4.5	3.5	7.0	8.4	3.2
7	pH at 25°C	-	6.43	6.91	5.54	5.79	5.73
8	Potassium as K	mg/kg	87	28	30	31	46
9	Sodium as Na	mg/kg	124	132	60.3	119	134
10	Total Organic matter	%	0.99	0.72	BDL(DL:0.5)	BDL(DL:0.5)	BDL(DL:0.5)
11	Antimony as Sb	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
12	Arsenic as As	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
13	Boron as B	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
14	Cadmium as Cd	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)

Sl. No	Parameters	Units	Point of Sample Location				
			Mr. Moorthy's Land	Mr.Venkataswamy's Land	Near Mars Abrasive Unit	Mr.Venkataswamy's Land	Mr.Lakshminarayanan's Land
			GPS Co-ordinates →	12.73765 N/ 77.92047 E	12.73731 N/ 77.92041 E	12.73789 N / 77.91925 E	12.74266 N/ 77.92201 E
Sample Code →	HSR-NGT-S1/2021	HSR-NGT-S2/2021	HSR-NGT-S3/2021	HSR-NGT-S4/2021	HSR-NGT-S5/2021		
15	Chromium as Cr	mg/kg	6.80	6.76	11.46	11.28	4.66
16	Copper as Cu	mg/kg	3.38	6.94	4.44	3.38	4.02
17	Lead as Pb	mg/kg	4.44	3.59	4.69	BLQ (LOQ:2.0)	2.31
18	Manganese as Mn	mg/kg	59.82	105.56	101.03	140.07	98.01
19	Mercury as Hg	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
20	Molybdenum as Mo	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
21	Nickel as Ni	mg/kg	3.64	3.98	7.26	8.94	3.00
22	Zinc as Zn	mg/kg	15.66	19.02	22.46	25.62	11.45
23	Cobalt as Co*	mg/kg	2.14	3.64	3.87	4.47	3.03

TABLE-4.0 (Contd.....) : DETAILS OF SOIL SAMPLING LOCATIONS & ROA OF THE SOIL SAMPLES - IN O.A.NO.162/2016 (SZ), CHENNAI

Sl. No	Parameters	Units	Point of Sample Location					
			Mr.Krishnappa's Land	Legacy waste dumpsite western side	Mr.Krishnappa's Land	South side of legacy waste dump site	South East side of legacy waste dump site	Inside the Premises of legacy waste dumpsite
	GPS Co-ordinates	→	12.73916 N / 77.911490 E	12.73763 N / 77.91290 E	12.73617 N / 77.91409 E	12.73155 N / 77.91810 E	12.73492 N / 77.91950 E	12.73707 N / 77.91948 E
	Sample Code	→	HSR-NGT-S6/2021	HSR-NGT-S7/2021	HSR-NGT-S8/2021	HSR-NGT-S9/2021	HSR-NGT-S10/2021	HSR-NGT-S11/2021
1	Calcium as Ca	mg/kg	8.14	972	1182	971	1144	1019
2	Cation Exchange Capacity	meq/100g	8.2	11.7	22.8	20	18.2	10.8
3	Hexavalent Chromium as Cr6+	mg/kg	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:5.0)
4	Iron as Fe	mg/kg	5566	6318	7075	9168	9992	4285
5	Magnesium as Mg	mg/kg	445	147	609	393	327	608
6	Moisture	%	10.2	9.3	10.3	8.1	7.0	9.7
7	pH at 25°C	-	6.30	4.56	6.36	5.45	5.58	8.3
8	Potassium as K	mg/kg	54	41	66	39	39	86
9	Sodium as Na	mg/kg	78	90	110	57	75	165
10	Total Organic matter	%	BDL(DL:0.5)	BDL(DL:0.5)	2.25	2.24	2.81	1.72
11	Antimony as Sb	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
12	Arsenic as As	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
13	Boron as B	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
14	Cadmium as Cd	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
15	Chromium as Cr	mg/kg	4.29	5.95	9.11	13.58	14.75	4.42
16	Copper as Cu	mg/kg	2.87	3.56	4.92	8.36	14.47	2.58
17	Lead as Pb	mg/kg	5.10	4.50	3.90	3.09	4.645	2.73
18	Manganese as Mn	mg/kg	50.00	56.59	89.60	107.23	115.29	51.41

Sl. No	Parameters	Units	Point of Sample Location					
			Mr. Krishnappa's Land	Legacy waste dumpsite western side	Mr. Krishnappa's Land	South side of legacy waste dump site	South East side of legacy waste dump site	Inside the Premises of legacy waste dumpsite
	GPS Co-ordinates	→	12.73916 N / 77.911490 E	12.73763 N / 77.91290 E	12.73617 N / 77.91409 E	12.73155 N / 77.91810 E	12.73492 N / 77.91950 E	12.73707 N / 77.91948 E
	Sample Code	→	HSR-NGT-S6/2021	HSR-NGT-S7/2021	HSR-NGT-S8/2021	HSR-NGT-S9/2021	HSR-NGT-S10/2021	HSR-NGT-S11/2021
19	Mercury as Hg	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
20	Molybdenum as Mo	mg/kg	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)	BLQ(LOQ:2.0)
21	Nickel as Ni	mg/kg	2.80	3.47	5.91	6.87	6.65	3.16
22	Zinc as Zn	mg/kg	15.38	13.98	23.46	9.12	15.55	12.60
23	Cobalt as Co*	mg/kg	BLQ(LOQ:2.0)	2.39	2.92	5.17	4.73	2.04

16. Results and Discussion:

The analysis results of the ground water samples collected from all the above eight locations (**Given in Table: 3**) were compared with Drinking Water Standards (IS 10500:2012, Edition 2.2 (2003-09) acceptable limit) as specified in the Solid Waste Management Rules, 2016, Schedule I, Clause (E) - Criteria for water quality monitoring for usage of groundwater in and around landfill sites for any purpose (including drinking and irrigation).

The analysis results of the samples collected from all the above eight locations reveals that the Total Dissolved Solids (TDS) are in the range of 656 mg/l to 2728 mg/l and exceeding the acceptable limit of 500 mg/l as prescribed in the Drinking Water Standards (IS 10500:2012). The TDS level in the groundwater samples collected at the legacy waste processing facility premises and at Mr. KV Pratap Chowdhry's premises which are in close proximity to the legacy waste dump site found to be 2592 mg/l and 2728 mg/l respectively as compared to the other locations which are in the range of 656 mg/l to 900 mg/l. Hence, there is a possibility of contamination of groundwater due to the legacy waste dumpsite.

The analysis results of the samples collected from all the above eight locations reveals that the Chloride are in the range of 115 mg/l to 930 mg/l and exceeding the acceptable limit of 250 mg/l as prescribed in the Drinking Water Standards (IS 10500:2012).

Further, the Total Hardness as CaCO_3 in the eight locations are in the range of 280 mg/l to 1360 mg/l and exceeding the acceptable limit of 200 mg/l as prescribed in the Drinking Water Standards (IS 10500:2012).

In respect to Heavy Metal and Phenolic Compounds concentration, the report of analysis of the samples collected from all the above eight locations reveals that the parameters such as Arsenic, Cadmium, Chromium(as Cr^{6+}), Copper, Cyanide, Lead, Mercury, Nickel, Zinc, Fluoride, Iron and Phenolic compounds (as $\text{C}_6\text{H}_5\text{OH}$) are confirming to the Drinking Water Standards (IS 10500:2012).

The report of analysis of water samples in the eight locations also reveals that the parameters such as Sulphate, Nitrate Nitrogen and Phosphate are confirming to the Drinking Water Standards (IS 10500:2012).

In respect to the irrigation water quality parameters such as pH, Conductivity and SAR out of eight samples two well water samples collected at compost yard premises at Dasapally and at Thiru. Prathap Chowdhary's land premises are exceeding the designated best use criteria Category – E (Irrigation), notified under Environment (Protection) Rules, 1986.

In view of the above, it is submitted that a detailed study to be carried out by a reputed institution in the legacy waste dump site area and necessary remediation shall be carried out in the legacy waste dump site area by the Hosur Municipal Corporation Authorities based on the study report if required.


District Environmental Engineer,
Tamil Nadu Pollution Control Board,
Hosur.
~~27.03.2021~~ 27.03.2021

Enclosures:

1. Copy of the Land use classification certificate obtained online from the DTCP – Annexure- 1
2. Copy of the CTE issued from the TNPCB dated 9.12.2016 – Annexure - 2.
3. Copy of the CTO issued from the TNPCB dated 25.06.2020- Annexure - 3.
4. Copy of the certificate obtained from the PESO dated 3.10.2019 – Annexure - 4.
5. Copy of letter submitted by the Hosur Municipal Corporation for legal issues of Bio-methanation plant operation – Annexure-5
6. Fortnight progress report submitted by the Hosur City Municipal Corporation dated 25.03.2021 –Annexure-6
7. Copy of the G.O. Ms. No.121 dated 27.11.2017 – Annexure - 7
8. Copy of performance Guarantee of sum of Rs. 25 Lakh submitted by the Hosur City Municipal Corporation – Annexure - 8.
9. Copy of Solid Waste Authorisation issued from the TNPCB dated 10.04.2019 – Annexure-9
10. Letter addressed to the Commissioner, Hosur City Municipal Corporation dated 26.03.2021 – Annexure-10
11. Report of Analysis of water samples analysed through AEL, TNPCB, Salem dated 15.03.2021- Annexure-11.
12. Report of Analysis of Soil samples analysed through NABL Accredited Laboratory of M/s. Glens Innovation Labs Pvt Ltd, Chennai dated 08.03.2021 – Annexure-12.

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

**Original Application No. 162 of
2016 (SZ)**

**K. Nagappa,
Son of Koneetappa,
3/84, Dasarapalli,
Hosur Taluk,
Krishnagiri District**

...Applicant

Vs

**The Union of India,
Rep. by its Secretary,
The Ministry of Environment,
Forest,
New Delhi – 110 003
& 7 others**

...Respondents

**STATUS REPORT FILED BY THE
TAMIL NADU POLLUTION
CONTROL BOARD.**

**Advocate for Respondent: TNPCB
Thiru.Kasi Rajan,
Advocate, Chennai.**

Date: 03.2021.

Date of hearing on:05.042021

