





GOVERNMENT OF PUDUCHERRY

Puducherry Pollution Control Committee

State of Environment & its Related Issues in Puducherry

ENVIS HUB NEWSLETTER



STATUS OF WATER QUALITY IN THE U.T OF PUDUCHERRY FOR THE YEAR 2017

Volume IX-II

April - June, 2018

Sponsored by
Ministry of Environment, Forests & Climate Change
Government of India,
New Delhi

Introduction

Water quality monitoring is carried out by Puducherry Pollution Control Committee periodically at various locations with financial assistance from Central Pollution Control Board under National Water Quality Monitoring Programme (NWMP). Monitoring is done on quarterly basis in surface water bodies in Puducherry and Karaikal regions, Annually in Mahe and Yanam regions and during pre and post monsoon in the case of ground water.

Objectives of Water Quality Monitoring

The water quality monitoring is performed with following main objectives:

- To understand the nature and extet of pollution control and measures required.
- To evaluate the extend of pollution control required and effectiveness of pollution control measures already in existence.
- To assess water quality trends over a period of time.
- To assess assimilative capacity of a water body thereby reducing cost on pollution control.
- To understand the environmental fate of different pollutants.
- To assess the fitness of water for different uses.

Water Quality Monitoring stations in U.T. of Puducherry region

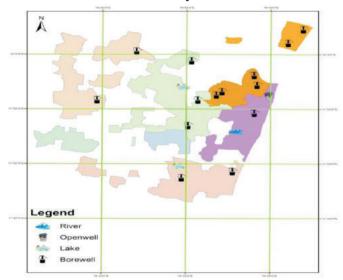
The following five new stations have been included in water quality monitoring network under NWMP during the year 2017 and monitoring initiated.

Station Code	Location	Туре	Latitude	Longitude	Date of inception
3882	Echankadu, Kirumambakkam	Borewell	11° 49'17.29" N	79° 47'46.42" E	12-09-17
3883	Near by Lake, Bahoor	Borewell	11° 48'42.87" N	79° 44'44.77" E	12-09-17
3884	Chevelier Sellane Govt. Higher Secondary School, Kalapet	Borewell	12° 02'16.88" N	79° 51'56.60" E	11-09-17
3885	Dhanderar Kulam, Sedarapet	Borewell	11° 59'25.5" N	79° 45'19.0" E	12-09-17
3886	Kithpurinatham, Thiruvandarkoil	Borewell	11° 55'49.8" N	79° 39'42.1" E	12-09-17

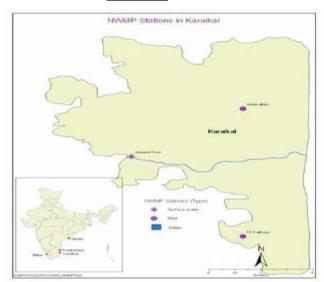
Station Code	Location	Туре	Latitude	Longitude	Date of inception	
Puducl	nerry					
1396	Ousteri	Lake	11° 57'01.9" N	79° 44' 47.7" E	11-01-90	
1397	Krishna Nagar	Borewell	11° 57'10.88" N	79° 49' 12.68" E	11-01-90	
1398	Thengaithittu	Borewell	11° 54'37.24" N	79° 49' 03.10" E	11-01-90	
1453	Muthirappalayam	Borewell	11° 56'17.26" N	79° 46' 47.73" E	01-01-92	
1454	Pondicherry University, Kalapet	Borewell	12°01'01.43" N	79° 51'02.74" E	01-01-92	
1688	Katterikuppam	Borewell	12° 00'17.03" N	79° 42' 02.92" E	15-05-02	
1686	Bahour	Lake	11° 49'47.8" N	79° 44' 35.3" E	15-05-02	
1687	Chetty Koil, Mission Street	Openwell	11° 56'12.9" N	79° 49' 51.7" E	15-05-02	
1689	Chunnambar	River	11° 52'59.9" N	79° 47' 57.0" E	15-05-02	
2009	Kurumbapet	Borewell	11° 55'49.81" N	79° 45' 41.50" E	16-05-06	
2010	Mettupalayam	Borewell	11° 56'35.64" N	79° 47' 07.64" E	15-05-06	
2011	Uruvaiyar	Borewell	11°53'29.45" N	79° 45'06.95" E	15-05-06	
2012	Maruthi school, Karuvadikuppam	Borewell	11° 58'04.79" N	79° 49'02.03" E	15-05-06	
Karaik	Karaikal					
1685	Arasalar	River	10° 54' 562" N	79 ° 49' 066" E	15-05-02	
2013	T.R.Pattinam	Borewell	10° 50' 485" N	79 ° 49' 918" E	16-05-06	
2014	Vadamattam	Borewell	11° 56' 773" N	79 ° 49' 771" E	16-05-06	
Yanam		I				
2442	Gowtami – Godavari river Near balayogi Bridge	River	16° 72' 597" N	82 ° 20' 216" E	07.01.2009	
2443	Gowtami –Godavari Near Adavipolam	River	16° 71' 519" N	82 ° 26' 158" E	07.01.2009	
2444	Gowtami – Godavari Coringa River (Tidal Lock)	River	16° 73' 000" N	82°21'747" E	07.01.2009	
Mahe						
2445	Mahe river	River	11° 42' 275" N 75 ° 32' 594" E		07.01.2009	
2446	Pallur	Openwell	11° 43' 960" N		07.01.2009	
2447	Panthakkal	Openwell	11° 45' 123" N	75 ° 32' 284" E	07.01.2009	

Location Map of Monitoring stations in the U.T of Puducherry:

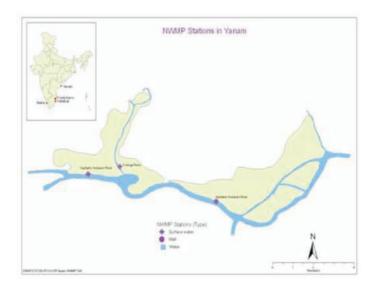
Puducherry



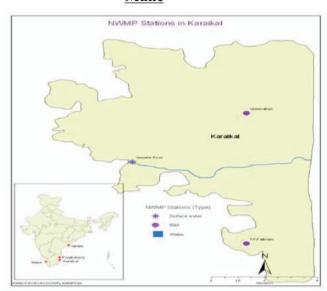
<u>Karaikal</u>



Yanam

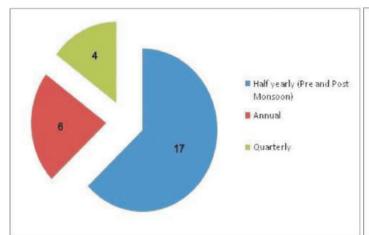


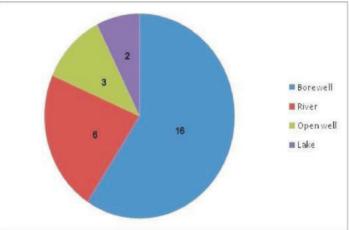
Mahe



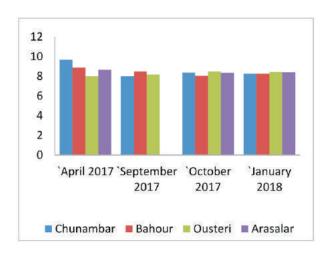
Water Body Wise Number of Stations

Frequency Wise Water Quality Monitoring (in numbers)





Status of Water Quality in Surface Water



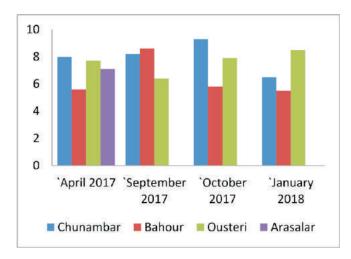


Fig 1.0 pH

Fig 1.1 DO (mg/l)



Fig 1.2 BOD (mg/l)

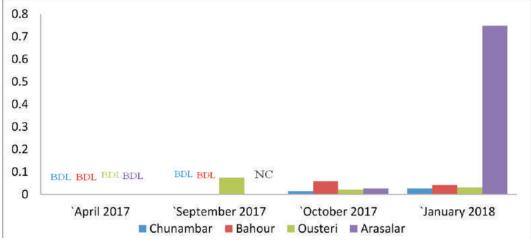


Fig 1.3 Ammonia-N (mg/l)

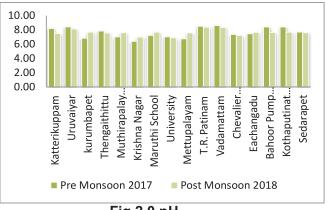
Status of Water Quality in Borewell

6000

5000

4000

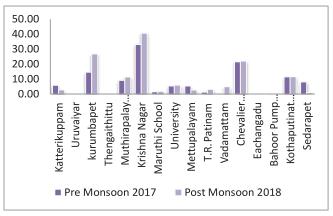
3000



2000 1000 Bahoor Pump.. kurumbapet hengaithittu Krishna Nagar Maruthi School Mettupalayam Chevalier Eachangadu Sothaputinat. Sedarapet Muthirapalay University T.R. Patinam Vadamattam Katterikuppam Uruvaiyar Pre Monsoon 2017 Post Monsoon 2018

Fig 2.0 pH

Fig 2.1 Conductivity(mg/l)



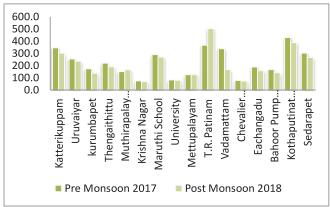
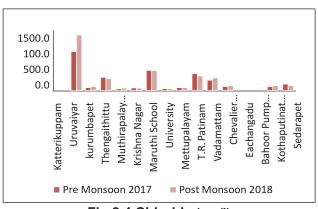


Fig 2.2 Nitrate(mg/l)

Fig 2.3 Alkalinity (mg/l)



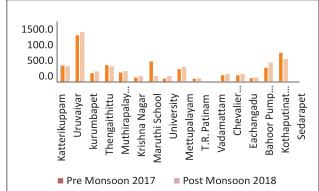


Fig 2.4 Chloride (mg/l)

Fig 2.5 Total Hardness (mg/l)

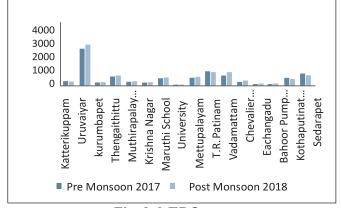


Fig 2.6 TDS(mg/l)

Surface Water Quality in Yanam Region - 2017

SI. No	Parameters	Adavipulam	Tidel Lock	Balayogi River
1	Date of Sampling	14.11.2017	14.11.2017	14.11.2017
2	Time	3.35 PM	3.45 PM	4.25 PM
3	Temperature°C	30	30	30
4	DO mg/l	8.5	7.1	9.4
5	рН	8.29	8.42	8.48
6	Conductivity (µmho/cm)	10160.00	6960.00	6190
7	BOD (mg/l)	BDL	BDL	BDL
8	Nitrate - N (mg/l)	0.0781	0.1266	0.082
9	Nitrate (mg/l)	0.3458	0.5606	0.3631
10	Nitrite - N (mg/l)	0.0068	0.0206	0.0081
11	Turbidity NTU	1.1	6.8	1.4
12	Bi- Carbonate as CaCO₃ (mg/l)	111.3	128.1	111.3
13	Carbonate as CaCO₃ (mg/l)	12.6	25.2	23.1
14	Chloride (mg/l)	294	199	181
15	COD (mg/l)	3.9	7.9	3.9
16	Total Hardness as CaCO₃ (mg/l)	951	670	607
17	Calcium Hardness as CaCO₃(mg/l)	852	600	528
18	Calcium as Ca++ (mg/l)	341	240	211
19	Magnesium Hardness as CaCO₃ (mg/l)	99	70	79
20	Magnesium as Mg++(mg/I)	24.1	17	19.2
21	Sulphate (mg/l)	161.5	123.8	118.2
22	Orthophosphate (mg/l)	0.009	0.004	0.0128
23	TDS (mg/l)	6190.2	4135	3609
24	TSS (mg/l)	16.2	23.0	19.1
25	FDS (mg/l)	4028.4	2478.0	1403.2
26	Ammonia- N (mg/l)	BDL	BDL	BDL
27	Hexavalent Chromium Cr+6 (mg/l)	BDL	BDL	BDL

Mahe region-2017

SI.No.	Parameters	Pandakkal	Pallur	Mahe river
1	Date of Sampling	04.07.2017	04.07.2017	04.07.2017
2	Time	8.40 AM	9.30 AM	10.30 AM
3	Temperature° C	28	28	28
4	DO mg/l	-	-	6.6
5	рН	7	6.99	7.14
6	Conductivity µmho/cm	120	195	324
7	COD mg/l	Nil	Nil	12
8	Nitrate - N - mg/l	2.20	7.15	0.447
9	Nitrate mg/l	9.74	31.66	1.98
10	Nitrite mg/l	BDL	BDL	BDL
11	BOD mg/l	BDL	BDL	BDL
12	Bi -Carbonate as CaCO₃ mg/l	90	30	30
13	Chloride mg/l	24	16	80
14	Ammonia N mg/l	-	-	BDL
15	Total Hardness as CaCO₃ mg/l	90	50	42
16	Calcium hardness as CaCO₃ mg/l	68	30	32
17	Calcium as Ca++ (mg/l)	27.2	12	12.8
18	Magnesium hardness as CaCO₃ mg/l	22	20	10
19	Magnesium as Mg++(mg/l)	5.4	4.9	2.4
20	Sulphate mg/l	1.9	5.627	8.314
21	TDS mg/l	94	144	202
22	FDS mg/l	32.0	60.0	140.0
23	TSS mg/l	6.0	9.0	7.0
24	Orthophosphate mg/l	0.009	0.012	0.076
25	Chromium as (Cr) mg/l	0.0036	0.0001	0.0239
26	Arsenic mg/l	0.0189	0.0189	0.0159
27	Cadmium mg/l	BDL	BDL	BDL
28	Copper mg/l	BDL	BDL	BDL
29	Lead mg/l	BDL	0.0941	0.0229
30	Nickel mg/l	0.0761	0.0723	0.0216
31	Zinc mg/l	0.0655	0.0138	0.1672
32	Iron mg/l	0.0541	0.0369	0.6493

Status of Ground Water Quality in Puducherry & Karaikal

In Uruvaiyar the concentration of Chloride, Total Hardness and Total Dissolved Solids (TDS) are higher than the permissible limit (refer graphs). Heavy metals and pesticides in most of the locations are Below Detectable Limit (BDL) during pre and post monsoon except iron which is slightly higher than the permissible limit in some of the locations.

Status of Surface Water Quality in Puducherry & Karaikal

Surface water bodies viz., Bahour lake, Ousteri Lake, Chunnambar River and Arasalar river Water Quality meet the primary water quality criteria of CPCB for class 'D' (the parameter pH, DO & Free Ammonia as N meet the criteria) during all the quarters of April 2017, July 2017, October 2017 and March 2018 except pH which is slightly high in Chunnambar River, Bahour Lake and Arasalar river and BOD in Chunnambar River and Ousteri Lake during April Quarter 2017.

Status of Surface Water Quality in Yanam & Mahe

Surface water bodies in Yanam and Mahe regions meet the Primary Water Quality Criteria of CPCB for class 'D'.

Status of open well in Mahe Region

The concentrations of all the parameters are within the permissible limit of drinking water standards in the Pandakkal and Pallur at Mahe region.

Conclusion

The concentration of Total Hardness, Chloride and Total Dissolved Solids higher than the permissible limit in Uruvaiyar may be due to geological condition of that area.

During April Quarter 2017, slightly high pH and BOD in surface water bodies may be due to water stagnation and heavy algae biomass. The river is non perennial.

Monitoring during Festival Occasion

To assess the water quality due to idol immersion in the sea on the occasion of Vinayaka Chathurthi festival, Coastal Water Quality Monitoring is done at three stages viz., Pre immersion, during immersion and post immersion.

STATUS OF SEA WATER QUALITY ON THE OCCASION OF VINAYAGAR CHATURTHI FESTIVAL 2017- KARAIKAL

		Pre Immersion		During Immersion		Post Immersion	
S.No	Parameter	Sample - I	Sample - II	Sample-III	Sample-IV	Sample-I	Sample-II
		Reference Point	Immersion Point	Reference Point	Immersion Point	Reference Point	Immersion Point
1	Dt. of Sampling	21.08.2017	21.08.2017	28.08.2017	28.08.2017	01.09.2017	01.09.2017
2	Time	09.30 A.M	09.30 A.M	09.00 A.M	09.30 A.M	09.30 A.M	09.40 A.M
3	Temperature °C	29	29	29.5	29.5	30	30
4	pH	8.54	8.56	8.48	8.57	8.46	8.50
5	Conductivity ms/cm	50.0	50.1	48.3	48.9	49.2	49.6
6	COD mg/l	Nil	Nil	Nil	Nil	Nil	Nil
7	BOD mg/l	BDL	BDL	BDL	BDL	BDL	BDL
8	TS mg/l	36,377	36,754	35,486	35,506	35,683	36,199
11	Arsenic (as As) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
12	Cadmium (as Cd) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
13	Copper (as Cu) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Lead (as Pb) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
15	Chromium (as Cr) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
16	Nickel (as Ni) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
17	Zinc (as Zn) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
18	Iron (as Fe) mg/l	0.1859	0.2349	0.3157	0.4438	0.1926	0.2539
19	Dissolved Oxygen mg/l	6.8	7.2	6.8	6.8	6.3	6.3

STATUS OF SEA WATER QUALITY ON THE OCCASION OF VINAYAGAR CHATURTHI FESTIVAL 2017- PUDUCHERRY

		PreImmersion		During Immersion		Post Immersion	
S.No	Parameter	Sample - I	Sample - II	Sample-III	Sample-IV	Sample-I	Sample-II
		Reference Point	Immersion Point	Reference Point	Immersion Point	Reference Point	Immersion Point
1	Dt. of Sampling	21.08.2017	21.08.2017	29.08.2017	29.08.2017	31.08.2017	31.08.2017
2	Time	11.15 A.M	12.00 Noon	05.45 A.M	10.15 A.M	11.45 A.M	11.10 A.M
3	Temperature °C	30	31	30	30	30	30
4	рН	8.53	8.56	8.48	8.53	8.4	8.46
5	Conductivity ms/cm	49.53	49.5	48	48.2	48	48.2
6	COD mg/l	Nil	Nil	Nil	Nil	Nil	Nil
7	BOD mg/l	BDL	BDL	BDL	BDL	BDL	BDL
8	TS mg/l	39,092.0	39,925.0	35,376	35,821	34,696	35,179
11	Arsenic (as As) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
12	Cadmium (as Cd) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
13	Copper (as Cu) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
14	Lead (as Pb) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
15	Chromium (as Cr) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
16	Nickel (as Ni) mg/l	BDL	BDL	BDL	BDL	BDL	BDL
17	Zinc (as Zn) mg/l	0.1085	0.3809	0.1882	0.0405	0.0761	0.0247
18	Iron (as Fe) mg/l	0.255	0.3756	0.1832	0.5474	0.4586	0.4205
19	Dissolved Oxygen mg/l	6.6	7	6.8	6.8	6.1	6.1

Environment Events

World Environment Day 2018 Celebration

The Department of Science, Technology and Environment, Puducherry Pollution Control Committee along with Puducherry Envis Hub, Government of Puducherry has celebrated World Environment Day 2018 at Gandhi Thidal, Beach Road, Puducherry. Hon'ble Chief Minister of Puducherry, Hon'ble Minister for Science, Technology & Environment and Member of Legislative Assembly of Raj Bhavan Constituency participated in the Programs.

Circulars were issued to schools, colleges and other institutions to celebrate the World Environment Day, 2018 by creating awareness on safe usage of plastic and its disposal.

Beach Cleaning activities:

A Beach cleaning activities were carried out by Karaikal Administration, officials of Department of Science, Technology and Environment, Puducherry Pollution Control Committee along with Ministry of Environment, Forest and Climate Change, New Delhi officials and Envis Hub Coordinator in the Karaikal region, U.T. of Puducherry. NSS Volunteers, School & College Students and public participated in the campaign and many plastic and other littered solid waste materials were collected from the beach which was later handed over to Karaikal Municipality.

Date	Name of the place
03.06.2018	Karukalacheri, Karaikal
04.06.2018	Karaikal Beach
05.06.2018	Karaikal Beach



Pledge:

Pledge in Tamil language was taken by the Officials and Staff of DST&E and its Autonomous Bodies.









Coastal Clean up at Puducherry:

A coastal clean-up was carried out in the coastal stretches of Puducherry at Gandhi Statue. Hon'ble Chief Minister V. Narayanasamy and Hon'ble Minister (Environment) inaugurated the cleaning campaign. Nearly 1000 school children, 200 NCC cadets and NSS volunteers participated in the campaign.













Awareness Rally on Beat Plastic Pollution:

Awareness rally was organized by Department of Science, Technology and Environment, Puducherry Pollution Control Committee along with Puducherry Envis Hub, Government of Puducherry during World Environment Day "2018" event organized on 05.06.2018 at Gandhi Thidal. The Event was inaugurated by Hon'ble Minister for Science, Technology and Environment.



















Debate on "Who is responsible for Pollution?-Men or Women" at Gandhi Thidal.









World Day to Combat Desertification and Drought

Puducherry Envis Hub was celebrated World Day to Combat Desertification and Drought at Thiru Vi Ka Government High School, Arumbarthapuram, Puducherry. Mrs. Nithiya, Programme Officer from ENVIS and Balaji, Junior Research Fellow, Puducherry Climate Change Cell participated in the programme. Head master of the school gave the welcome address. Mr. Balaji delivered the inaugural lecture on World Day to Combat Desertification and Drought. The theme lecture on "Land has true value – Invest in it," was delivered by Mrs. Nithiya (Programme Officer) in Power point presentations and Video clippings. A Drawing competition was also organized by Puducherry Envis Hub.









Puucherry Environment News: Planetarium to host summer camp for children



Minister for Science and Technology M. Kandasamy, students and parents on the occasion of prize distribution function for the drawing competition organised by the Puducherry Council for Science and Technology and ENVIS, Puducherry Pollution Control Committee.

The Minister distributed prizes to the winners of the drawing competition conducted on the theme 'Climate Change Special Train' visit to Puducherry on June 15 and 16 and for International Ozone Day Celebration held on September 16, 2017.

Source Link:https://www.thehindu.com/news/cities/puducherry/planetarium-to-host-summer-camp-for-children/article23385288.ece

Beach nourishment project by July



The beach nourishment project is likely to be completed by July this year, according to scientists of the National Institute of Ocean Technology (NIOT).

The announcement came after Minister for Port M. Kandasamy met the scientists from NIOT during the inspection of the project site.

Source Link: https://www.thehindu.com/news/cities/puducherry/beach-nourishment-project-by-july/article23919623.ece 16

Lt. Governor Kiran Bedi seeks waste management action plan from local bodies, June, 2018

Lt. Governor Kiran Bedi on Saturday sought a concrete action plan on waste management from local bodies as part of a broader effort towards holistic rural development and creation of smart villages. Ms. Bedi, who convened a meeting with commune panchayat commissioners at the Raj Nivas, asked the Commune Commissioners to identify lands for establishing decentralised recycling dumpyard. In order to meet the recurring cost for source segregation of waste, the Commissioners were asked out to carry out a proper study of their budget and look out for avenues for augmenting their revenue. The Commune Commissioners were also asked to look for alternative use of idle assets.

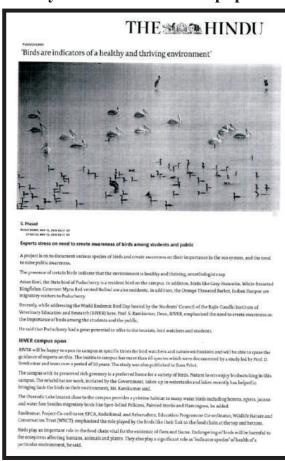
The Director of Local Administration and Project Director, District Rural Development Agency, would work in coordination for finalising the effective use of assigned funds and help put in place a waste management mechanism for collection and disposal of segregated waste. Ms. Bedi said that at the next convergence meet on July 14, each Commune Commissioner will give a composite picture of the budget of his commune, a village plan for solid waste management along with re-distribution of personnel for effective delivery of services and resource mobilisation.

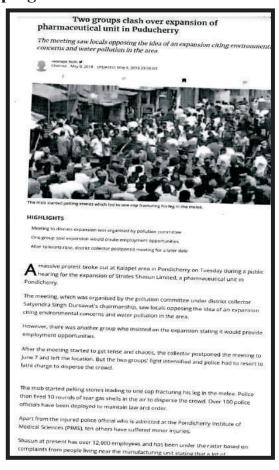
She also assured the local body chiefs of government support for strengthening the functioning of commune panchayats to achieve holistic rural development. Rudra Gowd, project director, DRDA, gave an overview of liquid waste management. The Director of Local Administration, G. Malarkannan, shared the experience of challenge faced in dousing the fire that kept emanating from the dump at Bahour situated next to INOX factory that was manufacturing liquid oxygen for around 80 hospitals meant for patients admitted in ICUs. He stressed the necessity of decentralised dumps in rural areas.

Source link: https://www.nyoooz.com/news/puducherry/1139951/bedi-seeks-waste-management-action-plan-from-

local-bodies/ ***

Puducherry Environment Newspaper Clippings:







Business Standard

Expansion of pharmaceutical unit; HC notice to Puducherry govt

Press Trust of India | Chemnai May 44, 2018 Last Updated at 21:10 IST

The Modras High Courlast issued notice to the Pathcharry government on a Pill, seeking direction to halt the proposed expansion of a plantaceutical unit, which was oligothly ensuing grow-pollution, and stop a public hearing on the matter.

The division bench, comprising justices V Blanchhisten and N Sedansyo, before which the PU, filed by Adult Anand come up spatenthy, issued as the suscenance, arching on Fullation Control Committee which had issued notice for a public bening on the proposed expansion on May 8.

The potitioner alleged that the pharmaceutical unit menufacturing drugs was a Red entegory' large industry and that as per Central Pollution Control Board classification, it was already causing game pollution.

He alleged that the areit, which did not have the mandatory or simumental eleganees, was continuing its operations in violation of a ban by the government.

The unit was operating from the year 1990, consuming several aikh liters of water per day and it has now gone up to 12 laich liters per day.

As one representing the people of the area, he had suised the issue in the assembly, pointing out that the public in the area was put to grove risk because of water being polluted drough release of industrial efflorest by the unit, he said.

The unit had applied for expansion to the Environment Ministry, following which the positioner wrote to them, requesting that it not be given the and.

Amend said he was shorted to read the public issue notice in newspapers by the Publisherry Pollution Control Committoe, calling for a public hearing on the expansion. He said the contrainter, which has to be the guardian of the environment and was expected to render the Union territory free from pollution, has openly issued the notice, and saught a direction to the authorities to extp the proposed expansion.

He also sought an interior injunction to contrain the contrainee from conducting the public hearing on May E.

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ENVIS CENTER

Puducherry Envis Hub Centre,
Puducherry Pollution Control Committee
3rd Floor, PHB Building,
Anna Nagar,
Puducherry - 605 005.

E-mail: dste.pon@nic.in, envis.pon@nic.in Website: http://dste.py.gov.in URL:https://dste.py.gov.in/envisnew/envis1.html





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