

**REPORT ON SURVEY & MONITORING OF DRAINS AND  
STATUS OF STP AND MUNICIPAL SOLID WASTE DUMP  
SITE OF VAPI NAGAR PALIKA WRT ORDER OF HON'BLE  
NATIONAL GREEN TRIBUNAL (PRINCIPAL BENCH),  
NEW DELHI**

**IN THE MATTER**

**OF**

**KIRTI DESAI & ANR VERSUS COLLECTOR, VALSAD & ORS.**

**ORIGINAL APPLICATION NO. 57/2016**



**CENTRAL POLLUTION CONTROL BOARD  
REGIONAL DIRECTORATE (WEST), VADODARA**

**GUJARAT POLLUTION CONTROL BOARD  
GANDHINAGAR**

**REPORT ON SURVEY & MONITORING OF DRAINS IN VAPI NAGAR PALIKA AREA AND STATUS OF SEWAGE TREATMENT PLANT AND MUNICIPAL SOLID WASTE DUMP SITE OF VAPI NAGAR PALIKA WRT ORDER OF HON'BLE NATIONAL GREEN TRIBUNAL (PRINCIPAL BENCH), NEW DELHI IN ORIGINAL APPLICATION NO. 57/2016 (KIRTI DESAI & ANR. VERSUS COLLECTOR, VALSAD & ORS.)**

## **1.0 BACKGROUND**

An application was filed by Kirti Desai before the Hon'ble National Green Tribunal (NGT) on 05.05.2016 having Original Application No. 57 of 2016 (Kirti Desai Vs. Collector, Valsad & Ors.) regarding solid waste management, liquid waste management and supply of drinkable water. Hon'ble NGT has issued orders from time to time.

Presently, Hon'ble National Green Tribunal (NGT) has issued an order on 12.10.2020 in the said matter (i.e. Original Application No. 57/ 2016 (M.A. No. 64/ 2018) in the matter Kirti Desai & Anr. Versus Collector, Valsad & Ors.) The part of the said order reads as

*"...We constitute a committee consisting (i) Central Pollution Control Board and (ii) State Pollution Control Board to submit a factual and action required to be taken on above points..."*

In pursuance to the above order, a team of officials from Central Pollution Control Board, Regional Directorate (west) and Gujarat Pollution Control Board, Regional Office, Vapi carried out survey and monitoring in Vapi Nagar Palika area and its surrounding villages during 20.10.2020 to 22.10.2020 to assess the status of management of sewage/ untreated water and municipal solid waste in Vapi nagar palika and status of disposal of sewage/ untreated water into the natural water bodies in the area.

The Hon'ble NGT in its said order also directed the concerned authorities/ Municipal authorities to submit information related to sewage management and solid waste management. Accordingly, the joint team of CPCB and GPCB also visited the upcoming site of STPs and solid waste processing facility of Vapi Nagar Palika and collected the required information from the concerned authority.

## **2.0 OBSERVATIONS**

Based on the visit of joint team, the point wise status with respect to the order of Hon'ble NGT dated: 12.10.2020 is given in table below:

Para no. of the NGT Order	Directions in the Order of Hon'ble NGT	Status
2	There is no proper management of collection, segregation and transportation and disposal of solid waste	<ul style="list-style-type: none"> <li>• The population of Vapi Nagar Palika as per 2011 Census is 163613.</li> <li>• Present population in Vapi Nagar Palika is estimated to be around 215000.</li> <li>• Presently, about 50 TPD of solid waste is being generated in Vapi Nagar Palika area and as informed by Vapi Nagar Palika almost 100% of the waste generated in the nagar palika is being collected Door to Door.</li> <li>• The generated solid waste is being collected and transferred to the solid waste dumpsite through dedicated 33nos. of closed vehicle having GPS tracking system.</li> <li>• The GPS tracking report is being uploaded by Vapi Nagar Palika in Swachh Survekshan website of ministry of Housing and Urban Affairs.</li> <li>• Presently, there is no scientifically designed Sanitary Land Fill site for the disposal of Municipal solid waste of Vapi Nagar Palika.</li> <li>• Vapi Nagar Palika is having a site at Survey No.113,114,115,116 &amp; 128 at Chandor Village, Ta- Pardi for disposal of municipal solid waste. Total land area allotted for solid waste treatment/ processing/ disposal facility is 31472m<sup>2</sup>. Presently, dumping of solid waste is being carried out in open land in the said location.</li> <li>• Vapi Nagar palika is in the process of setting up a Material Recovery Facility (MRF facility) in the said site and work for the same has been initiated. It is informed by the Vapi Nagar Palika that setting up of MRF shall be completed by July 2021.</li> <li>• A temporary MRF facility has been set up near the upcoming STP in Namdha Village and the collected waste is sorted in different categories and materials like plastics, metals, etc. are recovered and sent to registered recyclers. Photographs of temporary MRF is given in <b>Annexure-1</b>.</li> <li>• As reported by Vapi Nagar Palika, presently about 65 % to 70 % of generated waste is being segregated at Site.</li> <li>• Vapi Nagar Palika is in the process of setting up of 100 TPD waste to compost plant in the dump site and completed the tendering process.It is informed by the Vapi Nagar Palika that the work of setting up of compost plant shall be completed by July 2021.</li> <li>• A small Organic Waste Composter (OWC) machine of 100kg/day capacity is installed in the dump site as demo plant</li> </ul>

	<p>for the composting of vegetable based wet waste.</p> <ul style="list-style-type: none"> <li>It is informed by the Vapi Nagar Palika that a Sanitary Landfill Site as per the provisions of Solid Waste Management Rules-2016 shall be developed for the disposal of municipal solid wastes. Land has been allotted to The Vapi Nagar for the establishment of sanitary landfill site by collector dated 09/08/2005.</li> </ul>
<p>There is no proper management of collection, segregation and untreated water/sewage water and same is discharged into the water bodies contaminating the ground water.</p>	<ul style="list-style-type: none"> <li>Presently, there is no operational sewage treatment plant (STP) for the sewage generated in the Vapi Nagar Palika area. The sewage generated in the Vapi Nagar Palika is being discharged in natural drains which discharges into River Daman Ganga and River Kolak.</li> <li>Presently, Vapi Nagar Palika generates about 21 MLD of sewage.</li> <li>Vapi Nagar palika is in the process of setting up two new sewage treatment plants (STPs) for treatment of sewage generated in the Vapi nagar palika area.</li> <li>Construction of one STP (STP-1) of 14 MLD capacity has been started at survey no. 132/1, Rafel college road, Namdha Village.</li> <li>The order for the installation &amp; commissioning of STP-1 including O&amp;M for one year has been awarded to M/s. Khilari constructions. About 50% of civil work for 14MLD STP has been completed and electro-mechanical work is pending. Reportedly, the commissioning of STP shall be completed by March 2021. Present status of STP-1 is shown in <b>Annexure-1</b>.</li> <li>Another STP (STP-2) of 29.35 MLD capacity is proposed for establishing at survey no. 213, near GETCO electric station, Chandor village. The land has been allotted but the work has been halted due to an ongoing court case in Vapi District Court.</li> <li>Vapi nagar palika is in the process of providing 'In Situ remedial treatment' for the natural drains discharging sewage into rivers till the STP becomes operational.</li> <li>Tendering process for "In Situ Remedial measures" has been completed by Vapi Municipality and work order has been awarded to M/s. Gujarat Eco Microbial Technology Pvt. Ltd., Subhanpura, Vadodara on 16.10.2020 for In Situ Remedial measures at all the discharge point and the In-situ remedial work shall be commencing from end of October 2020.</li> </ul>
<p>Drinkable water is not available.</p>	<ul style="list-style-type: none"> <li>Source of drinking water is from River Daman Ganga.</li> <li>Vapi Nagar Palika supplies water to all the Domestic and Commercial users in the jurisdiction of Vapi Nagar Palika. The water supply for the villages around Vapi which are not in the jurisdiction of Vapi Nagar palika are being done by Notified Area Authority.</li> </ul>

		<ul style="list-style-type: none"> <li>• Vapi Nagar Palika has provided a water treatment plant of 35.5 MLD capacity at survey no. 819, Koliwad Tanki Faliya, Near Saraswati Nagar for the treatment of water from River Daman Ganga and providing to Vapi nagar Palika area.</li> <li>• It was informed by Vapi nagar palika that presently about 25MLD of fresh water is being treated in the water treatment plant and being supplied to Vapi Nagar Palika.</li> <li>• Notified area authority of GIDC supplies about 20 MLD of water to GIDC housing area (GIDC housing-I and GIDC housing-II) and to the Villages around Vapi nagar palika through pipeline which are not in the jurisdiction of Vapi nagar palika (about 15MLD to GIDC housing-I &amp; GIDC housing-II and about 5 MLD to the villages).</li> <li>• Notified Area Authority is supplying water to 11 villages since more than last 10 years including villages of Charwada, Chanod, Namdha &amp; Chandor through pipeline.</li> <li>• It is understood that drinking water to the villages located outside the jurisdiction of Vapi Nagar palika are being supplied by Notified area authority considering the population of those villages as per 2011 census. However, it was informed by the Gram panchayat that with exponential growth of population in the villages surrounding the GIDC area, the quantity of water being supplied has become inadequate.</li> </ul>
3	What will be the method of supply of drinkable water amid this period.	<ul style="list-style-type: none"> <li>• Vapi Nagar Palika is supplying about 25 MLD to 27 MLD of water to all the Domestic and Commercial users in the nagar palika jurisdiction through pipe network after treating in their Water treatment plant.</li> <li>• Notified area authority of GIDC supplies about 15 MLD of drinkable water to GIDC housing area (GIDC housing-I and GIDC housing-II) and about 5 MLD of drinkable to 11 Villages around Vapi nagar palika through pipeline which are not in the jurisdiction of Vapi nagar palika after treating in their water treatment plant.</li> <li>• To substitute the above arrangement, new and separate project is undertaken by GWSSB (Gujarat Water Supply &amp; Sewerage Board) is in the process of laying a separate pipeline in the villages located outside the vapi nagar palika area for the supply of drinking water where notified area is presently supplying water.</li> </ul>
4 (i)	The total number of drains where untreated/sewage water is being discharged in the lake or river bodies.	<ul style="list-style-type: none"> <li>• During the survey carried out with members of Nagarpalika, total 7 stretches/ drains are found out wherein untreated/sewage wastewater is being discharged.</li> <li>• Sampling from each points was carried out by GPCB on 16.10.2020 and detail of sampling point with photographs are given in <b>Annexure-2</b>.</li> </ul>

4 (ii)

Total number of STPs installed there.

- Presently, there is no sewage treatment plant (STP) for the sewage generated in the Vapi Nagar Palika area. The sewage generated in the Vapi Nagar Palika is being discharged in natural drains; which discharges into River Daman Ganga and River Kolak.
- Vapi Nagar palika is in the process of setting up two new sewage treatment plants (STPs) for treatment of sewage generated in the Vapi nagar palika area.
- STP-1 (14MLD): During inspection about 50% of civil work of STP is completed and installation of electro-mechanical equipment is pending. It was informed by the contract agency that the work will be completed by March 2021.
- Land has been allocated for another 29.35MLD capacity STP (STP-2) by collector vide letter dated 05/06/2020. During inspection to the said location, it was observed that no work has been initiated in the said allotted land.
- The STPs are being constructed by GUDA (Gujarat Urban Development Authority). The time limit given by Vapi nagar palika to GUDA for the completion of STP-2 is September 2022.
- 10 pumping stations has been developed at various locations to pump the sewage to the upcoming STPs. Out of 5 pumping stations, 5 pumping stations are completely installed and ready and shall be connected to the upcoming STP-1. The details of the pumping stations and its capacity are given in table below:

S. No.	Sewage Pumping Station	MLD	HP	Pump Nos
1	LPS at Chharvada	2.85	15	1
			25	1
			35	1
2	Vapi Zone 4 Dungri Faliya LPS	5.34	20	1
			30	1
			40	1
3	SPS at Dungara Village Dadrimora	12.10	30	2
			55	2
4	Mukatanand	4.25	20	1
			35	1
			55	1
5	MPS Roffel Collage Namdha	29.84	100	2
			200	2

- Pumping stations in s.no. 1 to s. no 4 are connected to the pumping station no. 5 located at Rofel college road at Namdha Village which pumps the sewage into STP-1 for treatment.

- It is proposed that the treated water from the STP shall be reused in GIDC for industrial purpose.
- The details of remaining 5 pumping stations proposed for pumping sewage to the upcoming STP-2 at chandor Village are given in table below:

S. No	Sewage Pumping stations	Zone	MLD
6	Vapi Zone- 3 Sulpada	Zone- 3	5.02
7	MPS behind Hanumanji Temple	Zone- 2b	10.93
8	MPS at Dungara Village Hariya Park	Zone- 4	22.02
9	MPS at Dungara Village Chanod	Zone- 4	8.53
10	Chala Patel Faliya	Zone- 1	16.66

- The civil work for the pumping stations mentioned in s.no. 6 to s.no. 9 are completed and electrical works are pending.
- The mechanical installations and electrical works are pending for the pumping stations mentioned in s.no.10.

4 (iii) Quantity of water being used by the residents in the city.

- Vapi Nagar Palika supplies water to all the Domestic and Commercial users in the jurisdiction of Vapi Nagar Palika.
- It was informed by Vapi nagar palika that presently about 25MLD of fresh water is being treated in the water treatment plant and supplied to Vapi Nagar palika area.
- Considering the present population of around 215000 and the present water supply of around 25MLD, per capita water supply is about 115 lpcd, which is more than the water supply norms of 70 lpcd proposed by Government of India for the towns and cities not equipped with sewerage system.
- Notified area authority of GIDC supplies about 15 MLD of drinkable water to GIDC housing area (GIDC housing-I and GIDC housing-II) and about 5 MLD of drinkable water to 11 Villages around Vapi nagar palika through pipeline which are not in the jurisdiction of Vapi nagar palika after treating in their water treatment plant.
- Notified Area Authority is supplying water to 11 villages since more than last 10 years including villages of Charwada, Chanod, Namdha & Chandor through pipeline.
- Presently, Notified Area Authority is supplying about 6 to 7 Lakh litres per day of water to Charwada Village which is having population of 8806 as per 2011 census, per capita water supply is about 80 lpcd (as informed by Charwada Gram Panchayat the present estimated population is about 35,000 and considering the present estimated population, per capita water supply is about 20 lpcd); about 19 to 20 lakh litres of water per day to Chanod Village which is having population of

		<p>18000 as per 2011 census, per capita water supply is about 110 lpcd (as informed by Chanod Gram panchayat present estimated population is about 50000 and considering the present estimated population, per capita water supply is about 40 lpcd); about 3 to 3.5 Lakh litres of water per day to Namdha &amp; Chandor villages which are having population of 3000 as per 2011 census, per capita water supply is about 115 lpcd (as informed by the Gram panchayat, the present estimated population is about 8800 and considering the present population, per capita water supply is less than 40 lpcd). Considering the present population and present water supply to the villages, the water supply to these villages is inadequate.</p>
4 (iv)	Total capacity to treat the water. (Referred in context of Drinking water)	<ul style="list-style-type: none"> <li>• Vapi Nagar Palika is having 35.5 MLD (design capacity) capacity Water treatment plant. Presently, treating about 25 MLD of water intake from River Daman Ganga and supplying to Vapi Nagar palika area after treatment. The hydraulic load capacity of the water treatment plant to cater the present water supply is adequate.</li> <li>• Notified Area Authority, Vapi is having 113 MLD (design capacity) capacity water treatment plant. Presently, treating about 80 to 85 MLD of water intake from River Ganga and supplying about 55 MLD of treated water to industries in GIDC area and supplying about 20 MLD of treated water to GIDC housing/ residential areas and to the Villages not in the jurisdiction of Vapi nagar palika. The hydraulic load capacity of the water treatment plant to cater the present water supply is adequate.</li> </ul>
4 (v)	The gap between the use and capacity to treat.(Referred in context of Sewage)	<ul style="list-style-type: none"> <li>• Presently, about 21MLD of sewage is being generated in the Vapi nagar palika area. Since, there is no STP is in operation at present, the gap between generation of w/w and treatment is @21 MLD. The construction work of STP is in progress and till the operation of STPs, in-situ treatment for the drains discharging in the Rivers been initiated. The work order for the In-Situ remedial treatment has been awarded to M/s. Gujarat Eco Microbial Technology Pvt. Ltd., Vadodara on 16.10.2020 and the In-situ remedial work shall be commencing from end of October 2020 onwards.</li> </ul>
4 (vi)	Future planning of the municipality to meet out the gap and make proper arrangements for treatment of the water.	<ul style="list-style-type: none"> <li>• Vapi Nagar Palika has issued work order to M/s Gujarat Eco-Micro Bio- Technology Ltd., Vadodara dated 16.10.2020 for In-Situ-Remedial treatment at all the discharge points of drains and the In-situ remedial work shall be commencing from the end of October 2020 onwards and shall be continued till the STPs becomes operational.</li> <li>• Vapi Nagar palika is in the process of setting up two new sewage treatment plants (STPs) for treatment of sewage</li> </ul>

		<p>generated in the Vapi nagar palika area.</p> <ul style="list-style-type: none"> <li>• <b>STP-1 (14MLD):</b> During inspection about 50% of civil work of STP is completed and installation of electro-mechanical equipment is pending. It was informed by the contract agency that the work will be completed by <b>March 2021</b>.</li> <li>• Land has been allocated for another 29.35MLD capacity STP by collector vide letter dated 05/06/2020. During inspection to the said location, it was observed that no work has been initiated in the said allotted land.</li> <li>• The STPs are being constructed by GUDA (Gujarat Urban Development Authority). The time limit given by Vapi nagar palika to GUDA for the completion of <b>STP-2 is September 2022</b>.</li> <li>• Notified area authority of GIDC, Vapi has initiated the process for setting up of two new STPs for the GIDC housing areas (proposed 15MLD capacity STP for GIDC housing-I and 10 MLD capacity STP for GIDC housing-II). Notified area of GIDC has recently initiated the process for setting up of STPs.</li> </ul>
4 (vii)	Action taken against the polluters who are discharging the water, sewage and untreated water into the river/water bodies and causing water pollution and contaminating the underground water.	<ul style="list-style-type: none"> <li>• Presently, the domestic wastewater generated is being directly discharged into natural water bodies.</li> <li>• GPCB has collected samples from the discharging points of drains (07 drains) carrying wastewater which are identified during survey.</li> <li>• GPCB has issued direction under section 33-A of Water Act 1974 to Vapi Nagar Palika on 22.10.2020 with respect to the discharge of domestic wastewater in River Damanganga and Bill khadi through the 7 drains identified and monitored during the survey and directed Vapi Nagar palika to install Sewage Treatment plant immediately and not to discharge untreated domestic wastewater into Bill Khadi and River Damanganga.</li> <li>• No industries are located in Vapi Nagar Palika area. As per the information provided by GPCB &amp; Vapi Nagar Palika, the industries are located only in GIDC area, (not in this Vapi Nagar palika limit) having separate conveyance with treatment system i.e common CETP.</li> </ul>
4 (viii)	There should be no solid waste to be thrown into open space and there should be no discharge of untreated/sewage water into the water bodies or in the open space.	<ul style="list-style-type: none"> <li>• Presently, the domestic wastewater is being discharged in waterbodies. Vapi nagar palika has initiated the process of setting up of new STP and till the operation of new STPs, the natural drains carrying wastewater shall be treated by "In Situ" treatment method at all the discharge points and work order for the same has been awarded to M/s Gujarat Eco-Micro Bio- Technology Ltd., Vadodara on 16.10.2020 and the In-situ treatment work shall be commencing from the end of October 2020 onwards. The in-situ treatment process shall be continued till the operation of STPs.</li> <li>• GPCB has issued notice of direction under section 33-A of</li> </ul>

		<p>Water Act 1974 to Vapi Nagar Palika on 22.10.2020 with respect to the discharge of domestic wastewater in River Damanganga and Bill khadi through the 7 drains.</p> <ul style="list-style-type: none"> <li>• GPCB has issued notice of directions under section (5) of the Environment (Protection) Act-1986 and solid waste management Rules-2016 to Vapi Nagar Palika on 09.09.2019 for dumping of solid waste in open land without developing any scientifically designed landfill and for not developing proper waste processing facility and other issues in the solid waste dump site and directed the Vapi Nagar Palika to comply with the provisions of the Solid Waste Management Rules 2016.</li> <li>• Vapi nagar palika has initiated the setting up of permanent material recovery facility and compost plant in the dump site premises at Chandor Village. A temporary MRF facility has been set up near the upcoming STP in Namdha Village and the collected waste is sorted in different categories and materials like plastics, metals, etc. are recovered and sent to registered recyclers.</li> </ul>
5	<b>SOLID WASTE MANAGEMENT</b>	
5 (i)	Total quantity of waste generated	Total estimated Quantity of solid waste generated in Vapi Nagar Palika is about 50 TPD.
5 (ii)	Total quantity of segregation, transportation and availability of land.	<ul style="list-style-type: none"> <li>• Presently, the estimated quantity of solid waste generated is about 50 TPD and reportedly about 65 to 70 % of collected solid is being segregated at solid waste site.</li> <li>• The generated solid waste is collected and transferred to the solid waste site through dedicated 33nos. of closed vehicle having GPS tracking system.</li> <li>• Vapi Nagar palika is in the process of setting up a permanent Material Recovery Facility (MRF facility) in the said site and work for the same has been initiated. It is informed by the Vapi Nagar Palika that setting up of MRF shall be completed by July 2021.</li> <li>• A temporary MRF facility has been set up near the upcoming STP in Namdha Village and the collected waste is sorted in different categories and materials like plastics, metals, etc. are recovered and sent to registered recyclers.</li> <li>• Vapi Nagar Palika is having Solid Waste disposal site located at Survey No.113,114,115,116 &amp; 128 at Chandor Village Ta-Pardi. Total land area allotted for solid waste disposal facility is 31472m<sup>2</sup>. Presently, dumping of solid waste is being carried out in open land in the said location.</li> </ul>

5 (iii)	Total quantity of disposal	<p>Presently, about 130000 MT of solid waste (Legacy waste) was found dumped in the dump site.</p> <p>The dump site is presently being developed as per Swachh Bharat Mission, urban-Gujarat. Detail project report (DPR) in consideration of Solid waste Management rules 2016 is prepared &amp; work order is issued by Vapi Nagarpalika dated 23/09/2020.</p> <p>The DPR items includes the following: Compound Wall, Security Cabin, Parking Shed, Weigh Bridge, Internal RCC Surrounding Road, Water Bore, MRF Collection and shorting shed, Platform Weight Scale, Fresh Waste Receiving and Processing Shed, Fresh Bio degradable composting windrows roof, Processed Material Storage room, UG water Storage tank, Electrical Installation Control Panel Room, Fire Hidden System, Administration Building, Wire Draw Fencing Over Compound Wall, High Mast Tower and CCTV Camera, JCB Skid Steer Loader for the work, Leachate collection system, Plastic densification unit.</p> <p>Organic Waste Composter (OWC) machine of 100kg/day capacity is installed in the dump site as demo plant for the composting of vegetable based wet waste.</p> <p>MRF is being developed at site and a temporary MRF has been developed near STP of Namdha village.</p> <p>Vapi Nagar Palika has initiated the process for setting up of 100 TPD compost plant at the disposal site and initiated the tendering process for the same.</p> <p>It was informed by the Vapi Nagar Palika that the processing of legacy waste shall be completed by 31.12.2022.</p>																		
5 (iv)	Manner of disposal	<p>At present the solid waste disposal site is under development, and the mode of processing and disposal of solid waste is given in table below:</p>																		
		<table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Types of Waste</th> <th>Waste Generated (TPD)</th> <th>Processed Facility</th> <th>Disposal/Treatment</th> <th>Manner</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Wet Waste</td> <td>26</td> <td>100 Kg waste for composting (OWC machine)</td> <td>At present only 100 Kg wet waste is being processed and rest of the waste is being dumped at the site.</td> <td>Dumpsite</td> </tr> <tr> <td>2</td> <td>Dry Waste</td> <td>23</td> <td>Material Recovery Facility Centre</td> <td>Sent to MRF center and recovered materials sold out to registered</td> <td>Dry waste at MRF segregated in 10</td> </tr> </tbody> </table>	Sr. No.	Types of Waste	Waste Generated (TPD)	Processed Facility	Disposal/Treatment	Manner	1	Wet Waste	26	100 Kg waste for composting (OWC machine)	At present only 100 Kg wet waste is being processed and rest of the waste is being dumped at the site.	Dumpsite	2	Dry Waste	23	Material Recovery Facility Centre	Sent to MRF center and recovered materials sold out to registered	Dry waste at MRF segregated in 10
Sr. No.	Types of Waste	Waste Generated (TPD)	Processed Facility	Disposal/Treatment	Manner															
1	Wet Waste	26	100 Kg waste for composting (OWC machine)	At present only 100 Kg wet waste is being processed and rest of the waste is being dumped at the site.	Dumpsite															
2	Dry Waste	23	Material Recovery Facility Centre	Sent to MRF center and recovered materials sold out to registered	Dry waste at MRF segregated in 10															

					recycler.	different categories and disposed for recycling process.
<p>Note: Vapi Nagar Palika has invited tender for installation of 100TPD waste to compost plant for the processing of wet waste.</p>						
5 (v)	If it is in the form of compost, quality of sale of the compost is transferred from one place to another with receipt of the sale or transfer note.	<ul style="list-style-type: none"> <li>At present, Composting is not being carried out at the site and dumped at the site as the site is under development for the treatment of collected solid waste in scientific manner. The Vapi nagar palika has initiated the process for installing 100 TPD capacity compost plant for processing wet waste and completed the tendering process for the same and the . It is informed by the Vapi Nagar Palika that the work of setting up of compost plant shall be completed by July 2021.</li> <li>A small Organic Waste Composter (OWC) machine of 100kg/day capacity is installed in the dump site as demo plant for the composting of vegetable based wet waste.</li> </ul>				
5 (vi)	Quantity of the compost, if any prepared.	During inspection about 500kg compost has been observed stored within premises and about 950T of compost has been used as manure in Municipality gardens. Record of manure usage is also being maintained.				
5 (vii)	Further the plant is functional at present or not.	<p>During inspection it was observed that;</p> <ul style="list-style-type: none"> <li>The Material Recovery Facility (MRF Centre) established temporarily near the upcoming STP at Namdha Village is found in operation.</li> <li>Vermi Compost plant at the dump site was found demolished for further Development and installation of 100 TPD waste to compost plant.</li> <li>The 100 KG/ day organic waste composter (OWC) was found operational.</li> <li>Construction of sorting platforms, boundary wall, administration building, etc. were under progress during the visit.</li> </ul>				
5 (viii)	As reported by the authorities at present the plant is not functional.	<ul style="list-style-type: none"> <li>During the visit, OWC 100 kg/d is found operational for wet waste and temporary Material Recovery Facility (MRF Centre) established at Namdha village near upcoming STP was found in operation.</li> <li>The Vermi Compost plant is found demolished for further Site Development and installation of 100 TPD waste to compost plant.</li> <li>The wet waste is being dumped in the dump site in open land.</li> </ul>				

6	To take remedial measures for supply of water to the persons residing in the village.	<ul style="list-style-type: none"> <li>• Notified area authority of GIDC supplies about 5 MLD of drinkable water to 11 Villages through pipeline which are not in the jurisdiction of Vapi nagar palika after treating in their water treatment plant. The Villages which are being supplied water by Notified Area Authority are Charwada, Chanod, Namdha, Chandor, Chhiri, Balitha (East), Rata, Karvad, Dungra, Kocharva, Chala and Salvav.</li> <li>• To substitute the above arrangement, new and separate project is undertaken by GWSSB (Gujarat Water Supply &amp; Sewerage Board) is in the process of laying a separate pipeline in the villages located outside the vapi nagar palika area for the supply of drinking water where notified area is presently supplying water.</li> </ul>
7	Several industries working has no ETPs or STPs and untreated sewage water is also been discharged.	<ul style="list-style-type: none"> <li>• No industries are located in Vapi Nagar Palika area. As per the information provided by GPCB &amp; Vapi Nagar Palika, the industries are located only in GIDC area, not in this Vapi Nagarpalika limit. Notified Area Authority has laid separate conveyance system (underground pipeline system) for collecting the industrial effluent and treating in the Common Effluent Treatment Plant (CETP) at Vapi.</li> <li>• As per the consent issued to industries by GPCB, the industrial units generating sewage should have their own sewage treatment/ soak pits/Septic tank and the industries generating industrial effluent is being treated into primary treatment system. After primary treatment of the effluent, the same is discharged in the pipeline network of GIDC for further treatment in the CETP.</li> </ul>
8	Total generation in the city and capacity to treat water.	<ul style="list-style-type: none"> <li>• Presently, Vapi Nagar Palika generates about 21 MLD of sewage.</li> <li>• At present, there is no sewage treatment plant (STP) in the Vapi Nagar Palika area. The sewage generated in the Vapi Nagar Palika is being discharged in natural drains which discharge into River Daman Ganga and River Kolak.</li> <li>• Vapi Nagar palika is in the process of setting up two new sewage treatment plants (STPs) for treatment of sewage generated in the Vapi nagar palika area.</li> <li>• The capacity of STPs being proposed/ established for treating sewage is 43.35 (i.e. 14 MLD capacity of STP-1 at Namdha Village and 29.35MLD capacity of STP-2 at Chandor Village) considering the present and future development.</li> <li>• Construction of one STP (STP-1) of 14 MLD capacity has been started at survey no. 132/1, Rafel college road, Namdha Village. About 50% of civil work for 14MLD STP has been completed and electro-mechanical work is pending. Reportedly, the commissioning of STP shall be completed by March 2021.</li> <li>• Another STP (STP-2) of 29.35 MLD capacity is proposed for</li> </ul>

establishing at survey no. 213, near GETCO electric station, Chandor village. The land has been allotted for the STP-2 but the work has not been started yet.

- Vapi nagar palika is in the process of providing 'In Situ remedial treatment' for the natural drains discharging sewage into rivers till the STP becomes operational and the same shall be started from end of October 2020 onwards and will be continued till the STPs become operational.

Discharge of sewage/untreated water into the open land or anywhere else or in the municipal corporation by industries.

- No industries are located in Vapi Nagar Palika area. As per the information provided by GPCB & Vapi Nagar Palika, the industries are located only in GIDC area, not in this Vapi Nagarpalika limit. Notified Area Authority has laid separate conveyance system (underground pipeline system) for collecting the industrial effluent and treating in the Common Effluent Treatment Plant (CETP) at Vapi.
- As per the consent issued to industries by GPCB, the industrial units generating sewage should have their own sewage treatment/ soak pits/Septic tank and the industries generating industrial effluent is being treated into primary treatment system. After primary treatment of the effluent, the same is discharged in the pipeline network of GIDC for further treatment in the CETP.

Total number of drains discharging the water with specific point of generation should be provided.

Total 7 natural drains carrying wastewater were identified near the vapi nagar palika area and the same are given below:

- Namdha Kalakda
- Chala Patel Faliya
- Sulpad Khanki
- Jalaram Mandir at National Highway
- Dungra BilKhadi near Hotel Descent
- Dungra Baramdev temple.
- Haria Park

The above drains were found carrying wastewater and discharging in River Daman Ganga and River Kolak. Samples were collected from the above natural drains by GPCB on 16.10.2020 and the analysis results are given below:

*Analysis results of the samples collected from 7 identified natural drains:*

Sr. No	Sampling location	Parameters			
		pH	Suspended Solids (mg/L)	BOD (mg/L)	Fecal Coliform MPN/100 ml
1.	Drain near STP at Namdha	7.64	44	22	> 1600
2.	Drain at Patel Falia	8.10	20	15	1600
3.	Drain near Jalaram Temple, NH-	7.84	22	17	> 1600

	48, Balitha				
4.	Drain near pumping station at Sulpad	7.90	26	30	> 1600
5.	Bill Khadi near Dungri Falia	7.70	76	51	> 1600
6.	Drain near Brahmdev Temple, Salvas road, Dungra	8.06	24	18	> 1600
7.	Drain near pumpg station at Haria Park	7.83	16	14	1600

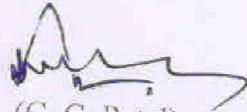
The analysis results reveals that all the 7 natural drains are contaminated with sewage from domestic/ residential area.

GPCB has issued direction under section 33-A of Water Act 1974 to Vapi Nagar Palika 22.10.2020 with respect to the discharge of domestic wastewater in River Damanganga and Bill Khadi through the above 7 drains and directed Vapi Nagar palika to install Sewage Treatment plant immediately and not to discharge untreated domestic wastewater into Bill Khadi and River Damanganga.

### 3.0 RECOMMENDATION

Considering the above observations and findings, the following are recommended:

- Vapi Nagar Palika may be asked to expedite the installation work of STP-1 and STP-2 and to ensure that no domestic sewage is being discharged in any water bodies.
- Vapi Nagar Palika may be asked to expedite the In-situ remedial work of natural drains discharging wastewater into Rivers till the new STPs starts their operations.
- The notified area Authority of GIDC may be directed to submit a time bound action plan for the construction of two new STPs for the GIDC housing-I and GIDC housing-II areas.
- Vapi Nagar Palika may be asked to expedite the work of 100 TPD compost plant & scientifically designed secured land fill and to submit a time bound action plan and to treat the waste being collected on daily basis and the legacy waste available in the dump site.



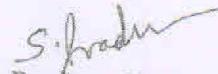
(C. C. Patel)

Scientific Officer, GPCB- RO, Vapi



(M. B. Desai)

Asst. Env. Engineer, GPCB- RO, Vapi



(S. Pradeep Raj)

Scientist- D, CPCB- RD, Vadodara

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*Annexure-1*

**Photographs of Municipal solid waste disposal site and upcoming Sewage treatment of Vapi Nagar Palika**



*Solid waste site at Chandor Village*



*100Kg/day Organic waste Composter at dump site*



*Temporary MRF at Namdha Village*



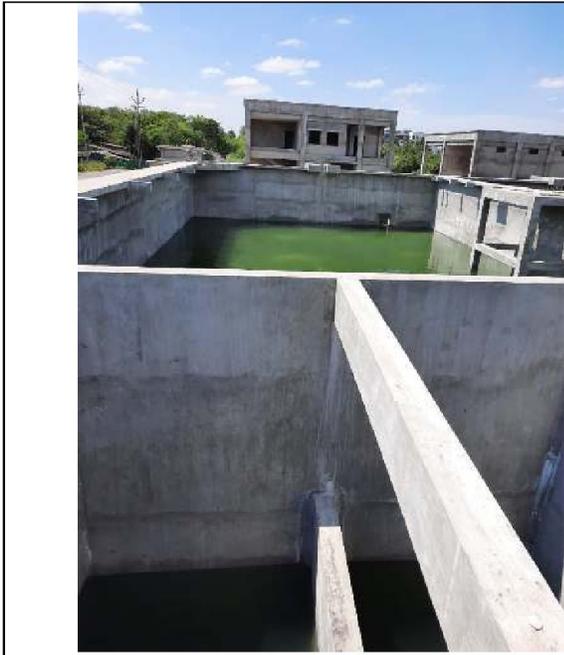
*Temporary MRF at Namdha Village*



*Upcoming STP-1 (14MLD) at Namdha Village*



*Upcoming STP-1 (14MLD) at Namdha Village*



*Upcoming STP-1 (14MLD) at Namdha Village*



*Upcoming STP-1 (14MLD) at Namdha Village*

*Annexure-2*

The details of domestic waste water outfall discharged into natural water bodies (drains) without any treatment identified during the survey. The details of the location and the sampling points including photographs and latitude & longitude are as under.

1. Domestic w/w outfall at Namdha Kalakada (Latitude:20°22'51.17"N, Longitude:72°53'37.81"E)

During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found Greyish and pH is found neutral. Septic odour is sensed from the out fall and discharge flow into River Damanganga is found approx.  $0.064\text{m}^3/\text{s}$ .



*Drain at Namdha Kalakada*

2. Domestic w/w outfall at Patel faliya at Chala (Latitude:20°23'48.41"N, Longitude:72°53'37.03"E).

During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found Greyish and pH is found neutral. Septic odour is sensed from the out fall and discharge flow into River Damanganga is found approx.  $0.048\text{m}^3/\text{s}$ .



*Drain at Patel faliya at Chala*

3. Domestic w/w outfall Nr. Jalaram Mandir at NH-48 (Latitude:20°23'48.41"N, Longitude:72°53'7.03"E).

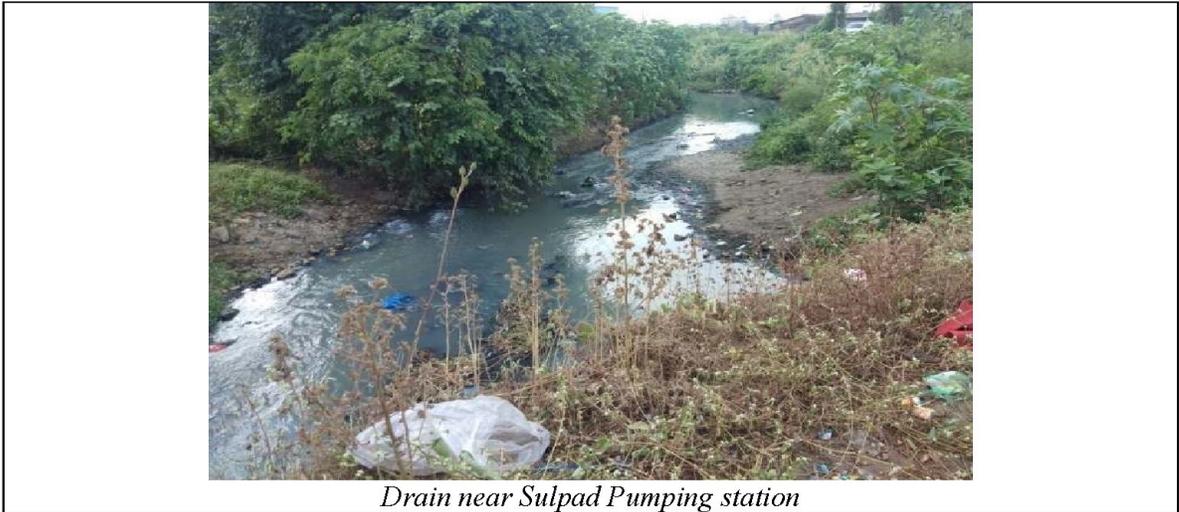
During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found Grayish ting and pH is found neutral. Septic odour is sensed from the out fall and discharge flow into River Kolak through BilKhadi is found approx.  $0.026\text{m}^3/\text{s}$ .



*Drain near Jalaram Mandir at NH-48*

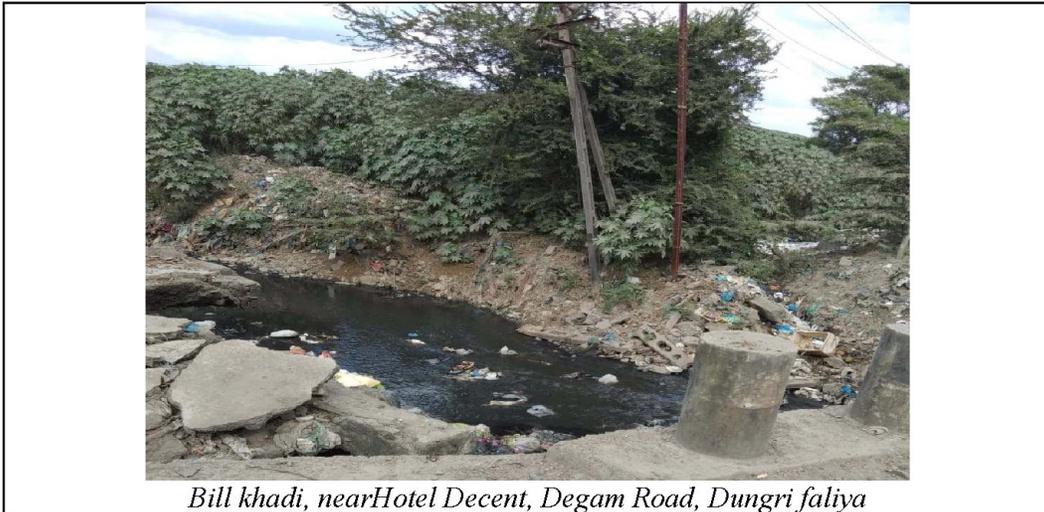
4. Domestic w/w outfall Nr. Sulpad Pumping station (Latitude:20°21'1.86"N, Longitude:72°55'13.82"E).

During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found light Grayish and pH is found neutral. Septic odour is sensed from the out fall and discharge flow into River Damanganga is found approx.  $0.016\text{m}^3/\text{s}$ .



5. Domestic w/w outfall into Bilkhadi, nr. Hotel Decent, Degam Road, Dungri faliya (Latitude: 20°17.80'N, Longitude: 72°56'36.62'E).

During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found Grayish and pH is found neutral. Septic odour is sensed from the out fall and discharge flow into River Kolak through Bil, Khadi is found approx.  $0.040\text{m}^3/\text{s}$ .



6. Domestic w/w outfall Nr. Baramdev Temple, Selvas road, Dungra (Latitude: 20°19'43.65"N, Longitude: 72°57'16.01"E).

During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found Grayish and pH is found neutral in character. Septic

odour is sensed from the out fall and discharge flow into River Damanganga is found approx.  $0.014\text{m}^3/\text{s}$ .



*Drain near Baramdev Temple, Selvas road, Dungra*

7. Domestic w/w outfall Nr. Pumping station at Haria park (Latitude:  $20^{\circ}19'24.08''$  N, Longitude:  $72^{\circ}56'1.84''$  E).

During inspection, waste water sample is collected from the above point to check the quality. Color of the sample is found Grayish and pH is found neutral in character. Septic odour is sensed from the out fall and discharge flow into River Damanganga is found approx.  $0.017\text{m}^3/\text{s}$ .



*Drain near Pumping station at Haria park*