

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,**

Principal Bench, New Delhi  
Original Application No. 05 of 2022

In re : News item published in The Indian Express dated 07.01.2022 titled  
"Gujarat: At least 6 dead, 20 sick after gas leak at industrial area in Surat".

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Place: Delhi  
Date: 17.01.2022

**RESPONSE NOTE ON ACCIDENT IN GIDC SURAT AREA, SURAT DUE TO DISCHARGE OF TOXIC CHEMICAL INTO NATURAL DRAIN**

In the matter of Hon'ble NGT OA 05 of 2022, titled "In re: News item published in The Indian Express dated 07.01.2022 titled "Gujarat: At least 06 dead, 20 sick after gas leak at industrial area in Surat". A brief about the accident and response with reference to the Notice served to CPCB on 10.01.2022 is given in the subsequent paragraphs.

An accident leading to death of about 6 persons and hospitalisation of 23 others, occurred reportedly at about 3:00 AM on 06.01.2022 in GIDC Sachin area in Surat. The natural drain in which accident took place is part of estuary of River Mindhola which finally converges to Arabian Sea. The matter was reported in the News Channels. CPCB Regional Directorate (RD) pursued the matter with GPCB over phone and also sent email on 06.01.2022 to investigate the matter and to take appropriate strict action. In reference to the same matter, CPCB RD received copy of several public representations and accordingly again pursued with GPCB on the same date through email. GPCB sent ATR vide email dated 08.01.2022. It is gathered that GPCB along with other investigating agencies worked on investigation process related with the accident. As per the ATR and communication received from GPCB:

- Casualties have occurred due to release of toxic gas resulting from illegal discharge of hazardous waste/chemical from a tanker (GJ 06 ZZ 6221) into natural drain parked Nr. Vishwaprem D & P Mills, P- 6.Rd-3,GIDC-Sachin.
- GPCB carried out sampling of left over hazardous chemical in the tanker and wastewater samples from the natural drain at various locations namely upstream of the accident locations, accident location and downstream locations in two rounds on 06.01.2022.
- GPCB Central Laboratory carried out analysis of the samples and also requested CPCB RD vide email dated 07.01.2022 for help and support in analysing 15 nos. of wastewater & hazardous chemical samples collected from the accident site. On 08.01.2022, GPCB sent part of sample to CPCB Regional Directorate Vadodara for analysis. Accordingly, CPCB RD also carried out analysis of the samples collected by GPCB.

As per the CPCB analysis results, it is gathered that:

1. The samples received in the office were to be analysed for various relevant physico-chemical parameters pertaining to wastewater characteristics. However, the samples were not preserved. Samples supplied by GPCB were unpreserved. But the tanker sample was highly basic hence preservation related issues would not interfere significantly with sulphide and cyanide content in tanker sample. Similarly Chemical Oxygen Demand, Ammonical nitrogen and phenolic compounds in samples collected

from natural drain would not interfere with analytical results due to highly acidic in nature.

2. This laboratory understood that GPCB carried out two rounds of sampling. The analytical information related to accident may be captured in first round of samples from natural drain and sample collected from tanker.

3. The analysis results of wastewater samples is given in **Annexure-1**. From the analytical results, it is inferred that

(i) Natural drain was carrying highly acidic wastewater. The pH of wastewater flowing in natural drain in upstream of accident site, at the accident site and in downstream of accident site was acidic and pH ranged from 1.62 to 2.61. The natural drain is not supposed to carry such acidic wastewater. Apart from pH, other analysed parameters namely COD, NH<sub>3</sub>-N, phenolic compounds, sulphides and cyanides were also observed in high concentration. The concentration of analysed parameters even exceeds the general discharge standards notified under E(P)A, 1986 for effluents in upstream and downstream of a site.

(ii) The liquid hazardous material collected from tanker was highly basic. The pH was nearly 14. The analysis results of tanker sample is tabulated below

Location	Date & Time of sampling	GPCB Lab Code	pH	COD	NH <sub>3</sub> -N	SO <sub>4</sub> <sup>-2</sup>	S <sup>-2</sup>	CN <sup>-</sup>
Liquid waste from tanker	06.01.2022 10.30 Hrs.	233	≈ 14	3,00,672	13,832	13,453	87,956	165.1

Note: Except pH, all other results expressed in mg/L. \*All the Samples received in 1.0 lit carboy except sample code 233 in glass bottle and without any preservations including ice.

The analysis results reveal that the sample of tanker was highly basic and toxic in nature. Concentrations of sulphides, ammonical nitrogen and cyanides were very high.

(iii) As the tanker liquid waste was highly basic and natural drain wastewater was highly acidic, during such mixing generation of some abrupt toxic gases due to acid base reactions is envisaged. The content of tanker was found to have high sulphide and high cyanide concentration. It is nature of sulphide and cyanide that it liberates sulphide gases such as H<sub>2</sub>S and cyanogenic gases such as HCN in acidic medium. Hence the accident may have been caused by abrupt formation of such poisonous gases due to acid base reaction. It is worth to mention that HCN gas do not cause significant pungent smell and H<sub>2</sub>S gas is highly pungent in odour. Hence people inhaling such mixed gases in an industrial area may not be able to alert themselves. Apart from these gases, some short-lived toxic volatile compounds may also have generated due to illegal discharge which may have further escalated the lethal impact.

The reaction of illegal discharge of liquid waste (highly basic) through tankers and highly acidic wastewater in upstream of the natural drain of the GIDC has resulted in the release of various toxic gases. The causality due to the intensified illegal activity has resulted in the accident. Such accidents are detrimental. Strict action in addition to environmental damage compensation from the polluter is needed. The generator (industry) and transporter both are responsible for the cause. The industry being the generator has a duty to treat such wastewater and meet the environmental compliance. Therefore, the state needs to formulate a firm action frame work to address the issue as similar incidences were also reported in the past.

there is illegal disposal of waste into the Creek of Surat at Ankleshwar and Vapi. Two persons died while disposing of hazardous waste on 09.02.2019 on account of inhalation of toxic gases. Such incidents take place from time to time on account of illegal trade. The Gujarat State Pollution Control Board (GSPCB) issued closure notices but revoked the same after few days without taking any strict action. Vehicles involved in illegal disposal of waste are not confiscated.

Similar incidence of illegal discharge resulted in death of two persons due to inhalation of toxic gases on 09.02.2019 in the state of Gujarat was also dealt in the Hon'ble NGT matter OA 362 of 2019. In the matter Hon'ble NGT passed an order 09.05.2019 regarding illegal disposal of waste into the Creek of Surat at Aknkleshwar and Vapi.

Also in the recent accidents happen in the state of Gujarat in the industries like M/s Yasashvi Rashyan, M/s UPL etc. wherein Hon'ble NGT taken up the matter and constituted various committee for calculation of Environmental damage and compensation. The reports were on record wherein the methodology adopted for calculation is reflected.

The part of order of Hon'ble NGT in O.A. No. 85/2020 (Earlier O.A.No.22/2020 [WZ]) (Aryavart Foundation through its President v/s Yashashvi Rasayan Pvt. Ltd &Anr) reads as:

*"...32. In view of frequent accidents resulting in deaths and injuries, the Chief Secretaries of all the States/UTs may evolve a mechanism to ensure that the companies dealing with hazardous substance must forthwith pay compensation for deaths and injuries to the victims at least as per Workmen Compensation Act, 1923 wherever applicable or the principle of restitution laid down in Sarla Verma (supra), National Insurance Company Ltd. v. Pranay Sethi, (2017) 16 SCC 680 to the victims either directly or through the District Magistrate.*

*33. Conduct of safety audits of all establishments having potential for such accidents may be ensured. All States/UTs may also ensure availability of healthcare facilities in the vicinity of such establishments. PCB and DM must assess cost of restoration of environment which should be recovered from company and spent on such restoration. The States and UTs in accordance with 1989 and 1996 Rules need to step up vigilance, surveillance and monitoring to avert such accidents. Preparedness to meet such eventualities be ensured. Regular mock*

*drills may be ensured in respect of onsite and offsite emergency plans. We may also refer to the directions issued by this Tribunal to the MoEF&CC and all the States/UTs on the subject of strengthening regulatory and oversight measures, vide order dated 01.02.2021 in OA 837/2018, Sandeep Mittal vs. Ministry of Environment, Forests & Climate Change & Ors..”*

- **In case of any such accidents which lead to environmental damage, environmental compensation accordingly may be assessed by the state agencies and strict action against the polluter should be taken by the concerned authorities. Thus, it is suggested that GPCB may evolve mechanism of calculation and recovery of Environmental Damage Compensation by constituting appropriate team of their own officials and any reputed academic institutions.**
- **GPCB along with GIDC need to investigate the source of illegal acidic discharge in the natural drain where the accident took place and also to take appropriate strict action including EDC.**
- **The matter of illegal discharge, illegal dumping of waste is a serious offence and need detailed investigation. Thus GPCB need to identify all such industries generating various acidic wastewater, acidic stream as co-product/hazardous waste, scrubbed liquor in the industrial estates. In addition specific category of waste streams such as high phenolic, high ammonia, high sulphite etc. also need to be identified. Manifest system may be adopted in case of transfer of such streams from one place to another. In addition material balance of all such industries with cross verification with actual production and various waste generated & disposed may be carried out on routine basis.**
- **All GIDC may have toll (amount may be only token) at entry & exit points and CCTV camera to identify movement of such tankers and all the tankers should have GPS enabled tracking system for the transportation of all chemicals and wastewater like hazardous waste.**
- **Action policy for ceasing tankers involved in the illegal movement of toxic streams and action against the transporter need to be framed and published and implemented in strict sense by the concerned state authorities.**

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**ANALYSIS REPORT OF PHYSICO-CHEMICALS PARAMETERS**

Reg. No.: W-18/21(99/21 to 106/21)

Date and type of sample collection: 06.01.2022, (information as provided by GPCB at the time of handing over of samples on 08.01.2022 at 5.0PM).

**Name of the location:** Samples from drain and Liquid waste from tanker at Toxic Gas Accident at Surat (Gujarat)

Sample collected by: Samples collected by GPCB, Gandhinagar.

Location	Parameters									
	Date & Time	GPCB Lab Code	pH	COD	NH <sub>3</sub> -N	Phenolic Compounds	SO <sub>4</sub> <sup>-2</sup>	NO <sub>2</sub> -N	S <sup>2-</sup>	CN <sup>-</sup>
Waste water from natural drain at accident place near Vishwaprem D&P Mills,P-6,Rd-3,GIDC, Sachin (21°05'40.0"N:72°50'51.2"E)	06.01.2022 09.20 Hrs.	232	1.62	1875	214	19.48	3248	1.17	5.66	0.26
Liquid waste from tanker No.GJ06-ZZ-6221 parked near Vishwaprem D&P Mills,P-6,Rd-3,GIDC, Sachin (21°05'40.0"N:72°50'51.2"E)	06.01.2022 10.30 Hrs.	233	≈ 14	300672	13832	NR	13453	NR	87956	165.1
From natural drain @150 mtrs from incident place in downstream, GIDC, Sachin, Surat (21°05'40.3"N:72°50'45.6"E)	06.01.2022 11.00 Hrs.	234	1.67	2615	211	17.53	3314	0.91	10.8	0.37
From natural drain @500 mtrs from incident place in downstream, GIDC, Sachin, Surat (21°05'37.3"N:72°50'43.3"E)	06.01.2022 11.20 Hrs.	235	1.72	2020	153	16.20	3917	0.80	14.97	0.32
From natural drain @100 mtrs from incident place in upstream, GIDC, Sachin, Surat (21°05'39.0"N:72°50'57.9"E)	06.01.2022 11.45 Hrs.	236	1.83	989	171	6.99	1948	0.54	1.79	0.24
From natural drain @250 mtrs from incident place in upstream, GIDC, Sachin, Surat (21°05'38.3"N:72°50'57.8"E)	06.01.2022 12.10 Hrs.	237	1.78	877	35	8.87	1926	0.80	1.43	0.23
From natural drain @500 mtrs from incident place in upstream, GIDC, Sachin, Surat (21°05'37.8"N:72°51'11.2"E)	06.01.2022 12.30 Hrs.	238	2.61	2121	1124	30.54	3824	0.75	13.29	0.33
From natural drain @600 mtrs from incident place in upstream, GIDC, Sachin, Surat (21°05'37.8"N:72°51'11.2"E)	06.01.2022 12.40 Hrs.	239	2.52	2177	998	31.04	3937	0.80	10.81	0.33

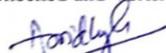
Note: Except pH,all other results expressed in mg/L. \*All the Samples received in 1.0 lit carboy except sample code 233 in glass bottle and without any preservations including ice.

\*\* NR-Not reported

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