

**BEFORE THE NATIONAL GREEN TRIBUNAL,
WESTERN ZONE BENCH, NEW DELHI**

PUNE ZONAL BENCH

I.A. NO. 88 OF 2020

IN

Original Application No. 7 of 2020.

Aryavart Foundation Through its president ... Applicant

Versus

M/s. Naroda Enviro Project Limited (CETP) & ors. Respondents

INDEX

Sl. No.	Particulars	Pg. Nos.
1.	Reply on behalf of the respondent no. 1 along with Affidavit	1-15
2.	<u>ANNEXURE-R-1 (Colly.)</u> Copies of relevant extract from Criteria for Hazardous Landfills issued by CPCB in February 2001, letter dated 11.06.2020 addressed by GPCB to Eco Care Infrastructure Pvt. Ltd. and copy of the letter dated 02.10.2020 addressed by Eco Care informing the answering respondent that their TSDF site was closed	16-36
3.	Proof of Service	37

Filed by:
New Delhi
Date: 09.10.2020

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REPLY ON BEHALF OF THE RESPONDENT NO. 1

1. The instant application filed by the original applicant is not maintainable and does not deserve to be allowed. Since the main matter (O.A.) is fixed for hearing on 14.12.2020 along with the report, the present application is even otherwise infructuous.

2. The applicant has not approached the Hon'ble Tribunal with clean hands and has failed to make out any case for urgency to warrant an early hearing.
3. The application though titled as "application for early hearing", is a couched attempt at seeking other reliefs going beyond the original application and going much beyond the relief of early hearing. The instant application being misleading and malicious on the face of it, deserves to be rejected *in limine* with costs.
4. At the outset all the statements, averments and contentions of the instant application are denied *in toto* and nothing stated therein may be deemed to be true and correct unless the same is expressly admitted to be true and correct hereinafter.
5. Paragraph – wise reply:

Para 1) The contents of this paragraph of the IA are denied as being misleading. The case of the original applicant in the OA is that untreated effluents are being released into the River Sabarmati by the Respondent No. 1 causing pollution of the river. After the Respondent No.

1 filed its reply and after the report of the Joint Committee failed to substantiate the false claims of the Original Applicant, the present IA came to be filed with renewed submission of discharging of "semi-treated" effluents into Sabarmati River.

Para 2) The contents of this paragraph of the IA are a matter of record. Respondent No. 1 has no knowledge about when the report was submitted before the Hon'ble Tribunal, since a copy of the same was not served on Respondent No. 1 while service was made to Original Applicant.

Para 3) The contents of this paragraph of the IA are a matter of record.

Para 4) The contents of paragraph 4 are denied as being false and misleading. There is no new development after the order of 27.08.2020 so as to give any cause for urgency as is being wrongly assailed before the Hon'ble Tribunal. Merely, filing of report by the Committee cannot be a ground for early hearing. The

report of the Committee, though being objected to by Respondent No. 1, only refers to improved effluent quality than what is being alleged in the Original Application. Therefore, even if report is considered for the sake of argument, there is no "continuing violation" when clearly the Report does not support the allegations in Original Application.

Para 5) The contents of this paragraph are denied as being false and misleading. It is denied that the alleged violations in the committee report are stark or necessitate early hearing of the matter. There is no finding warranting any urgent hearing as being alleged. The committee report itself is replete with errors, inaccuracies and non-disclosures and not acceptable as stated by Respondent No. 1 by way of a separate affidavit.

Para 6) The contents of this paragraph are denied as not only being false but also malicious. The percentage of outfall from CETP of the Respondent No. 1 has been

provided by the Respondent No. 1 in its reply, which was filed prior to the report being made available. Share of 10 % to 12 % of hydraulic load in the megapipeline does not amount to causing of pollution, *per se*. It appears that the Original Applicant is not conversant with simple terms like "hydraulic load" and is trying to make out a case where there is none, signifying its ignorance and the ultimate intention to confound issues. Merely having a share in the hydraulic load does not cast any obligation on the Respondent No. 1 for alleged pollution of Sabarmati. It is necessary that there is determination of individual parameters of each CETP/ STP having their outfall in the mega pipeline, which would clearly be higher than the Respondent No. 1 since the average itself is higher than the parameters found in the effluent discharge of CETP of Respondent No. 1. It is also necessary that the illegal, unidentified and unspecified discharges into the megapipeline are ceased before making adverse orders against the Respondent No. 1. The allegations of

pollution of Sabarmati by the Respondent No. 1 are so casually, unscientifically and irrationally thrown around by the Original applicant, that a grave question arises before the Hon'ble Tribunal over its credibility and intentions in initiating the present proceedings.

Para 7) The contents of this paragraph are again denied as being false, misleading and misconceived. The Original Applicant has no knowledge of implementation of hazardous waste management in the country and has unwittingly revealed its lack of knowledge about environmental protection. So far as the issue of sludge management discussed in Para 2.3.4 of the Report is concerned, it is stated that as per CPCB Criteria for Hazardous Landfills, all hazardous waste management sites are required to be kept capped with the final cover/intermediate cover and landfilling operations remain suspended during monsoon. GPCB also addresses letters to operators of landfill sites on monsoon planning of landfill sites requiring them to

cap the phase with a cover. Copies of relevant extract from Criteria for Hazardous Landfills issued by CPCB in February 2001, letter dated 11.06.2020 addressed by GPCB to Eco Care Infrastructure Pvt. Ltd. and copy of the letter dated 02.10.2020 addressed by Eco Care informing the answering respondent that their TSDF site was closed from 26.05.2020 and that it will be expected to re-open on 20.10.2020 are annexed hereto and marked **Annexure R-1 Collectively**. The committee itself has recorded that from November 2019 to July 2020 NEPL has disposed of 7492 MT sludge to Eco Care and 3542 MT to Detox India. The period during which the committee visited was the period of monsoon. It was on account of monsoon as well as prevailing COVID situation, which restricted transportation that the sludge was collected in a separate earmarked area. The committee has also recorded that the leachate was in a temporary storage area and that from such temporary storage area it was transferred to CETP inlet. The image purported to be

of 2019 also appears to be of monsoon season. It was on account of such peculiar circumstances that the sludge was stored. The removal of sludge resumed from 27.09.,2020. Since then, approximately 100 mt of sludge was disposed of to Detox India. In any case, the sludge was well protected from rain through tarpaulin cover and RCC flooring. As observed by the Committee, seepage, if any, is well managed by treating at CETP. Hence the apprehension of percolation in ground is baseless.

It is unfortunate, if not surprising, that the Report prepared by a committee consisting of officials of CPCB and GPCB has made such allegations in its report without reference to the existing operational framework for disposal of hazardous waste management.

It is all the more necessary to appreciate the lack of credibility of the Original Applicant who is taking advantage of such non-disclosures in the report when

issues of sludge and leachate management are not even raised in its O.A.

Para 8) The contents of this paragraph are mere reproduction of a part of the contents of the report and it is not clear how any part thereof amounts to "continuing violation" as is being alleged. In fact the numbers in the report are itself erroneous and correct figures are being provided by the Respondent No. 1 in its objections to the Report. The very fact that the Original Applicant is relying upon reproduction of innocuous parts of the report to build up its argument reveals the absence of any knowledge, competence or credibility on part of the Original Applicant.

Para 9) The contents of this paragraph are denied as the report itself is erroneous and inaccurate in this respect. The committee consisted of officials of GPCB as well as CPCB. CPCB has a daily and intra-daily record of online monitoring of the quality of effluent of the CETP of the Respondent No. 1 since Online Continuous Monitoring

System for Effluents purchased from CPCB approved vendor has been installed at the outlet of the CETP. Such records have not been acknowledged in the report of the committee. GPCB conducts regular testing of effluent samples without providing a counter sample to the Respondent No. 1 and the same being in violation of statutory provisions, was all through out objected to by Respondent No. 1. Copies of letters to this effect have already been placed on record along with the reply of the Respondent No. 1. Moreover, the procedure adopted by GPCB for collection, storage and testing of the sample, is unscientific as already stated in the reply of Respondent No. 1. GPCB has recently corrected one of its test reports after the error in protocol was pointed out implicating that such mistakes have happened in the past also but have not been corrected. In view thereof the test reports prepared by GPCB are not accurate or reliable. Despite GPCB being represented in the committee through its nominated official, such fact has not been disclosed in

the report. The reports of GPCB having been prepared in violation of statutory requirements, are even otherwise lacking evidentiary value.

Para 10) The contents of this paragraph are matter of record.

Para 11) The contents of this paragraph are not relevant for assailing any urgency for early hearing and therefore not germane to the instant application of the original applicant.

Para 12) The contents of this paragraph are grossly incorrect. The report has nowhere found the three member industries, inspected by it, to be violating any norms. The statements of the original applicant are false on the face of the record, thereby proving the abject abuse of process of law. Such an application deserves to be rejected with costs and the original application also deserves to be rejected for the original applicant is misusing and abusing the process of law.

Para 13) The contents of this paragraph are denied as being false. It is denied that there are "many other observations showing continuous non-compliance by the Respondent No. 1."

6. Since no case is made out, for urgency to grant early hearing, the **prayer (a)** is not tenable. Relief/s claimed in **prayer (b)** are also legally not tenable. Firstly, such a prayer is not maintainable while seeking early hearing, clearly indicating that a hearing has not yet taken place and therefore, no orders can be passed against any party. The relief/s claimed in **prayer (b)** are also against third parties who are not before the Hon'ble Tribunal, which is not tenable. No case is even made out against such third parties to warrant making of such prayers. In view of the test reports pertaining to individual member industries summarized by the committee with its report, **prayer (c)** is infructuous. It is urged that making of **prayer (d)** ought not to be taken as an excuse for the original applicant to wriggle out of the duties it owes to the Hon'ble Tribunal while making statements before it, which are required to be made on oath. Numerous false statements have

been made in the application and the Hon'ble Tribunal must take cognizance thereof to impose penalty on the original applicant in accordance with law in addition to initiating proceedings for perjury and contempt of court.

7. In view of what is stated hereinabove, and in the objections submitted by the Respondent No. 1 to the report of the committee, the instant application deserves to be dismissed with costs.

Filed by:



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Date: 09.10.2020

**NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH
FARIDKOT HOUSE, NEW DELHI**

PUNE ZONAL BENCH

I.A. NO. 88 OF 2020

IN

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IN THE MATTER OF:

ARYAVART FOUNDATION
THROUGH ITS PRESIDENT

...APPLICANT

VERSUS

M/S NARODA ENVIRO PROJECTS LTD
(CETP) & ORS.

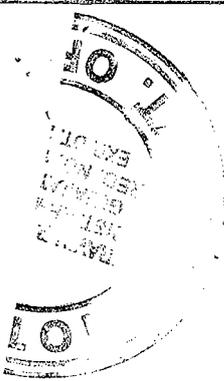
...RESPONDENTS

AFFIDAVIT

I, Shailesh Patwari, S/o Indradaman, Aged about 66 years, having my office at 512-515, Phase 1 GIDC, Naroda, Admedabad 382330, do hereby solemnly affirm and declare as under:-

1. That I am Chairman and Director of the respondent No.1 in the present case and am authorized to file the present Reply on behalf of the respondent No.1. I am well conversant with the facts and circumstances of the case based on the record available with my office and I am competent to affirm this affidavit.
2. That the accompanying Reply has been drafted by my counsel under my instructions and the contents of the same have been

Shailesh Patwari



read over and explained to me. I say that facts stated therein are true and correct as per the record available with my office and the legal submissions are true as per Counsel's advice believed to be correct.

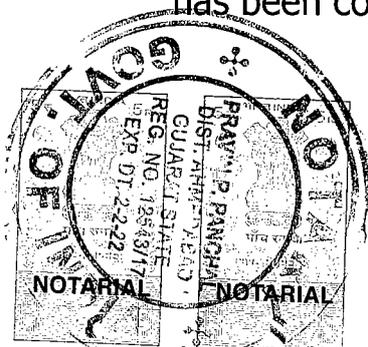
- 3. I say that no part of my above deposition is false and nothing material has been concealed there from.
- 4. I state that all the annexures to the accompanying reply are true copies of their respective originals.

Swati Panchal

DEPONENT

VERIFICATION

Verified at Ahmedabad on this 8th day of October 2020. I say that the contents of this affidavit are true and correct to the best of my knowledge and I believe the same to be true and that nothing material has been concealed there from.

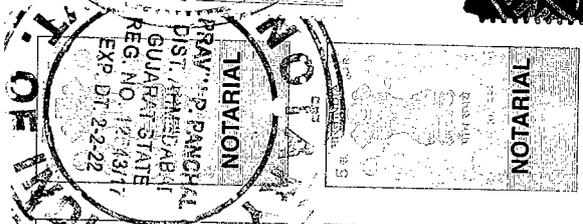


Swati Panchal

DEPONENT

RG. SERIAL No. *1055/2020*
 DATE *08/10/2020*
 BOOK No. *29*
 PAGE No. *185*

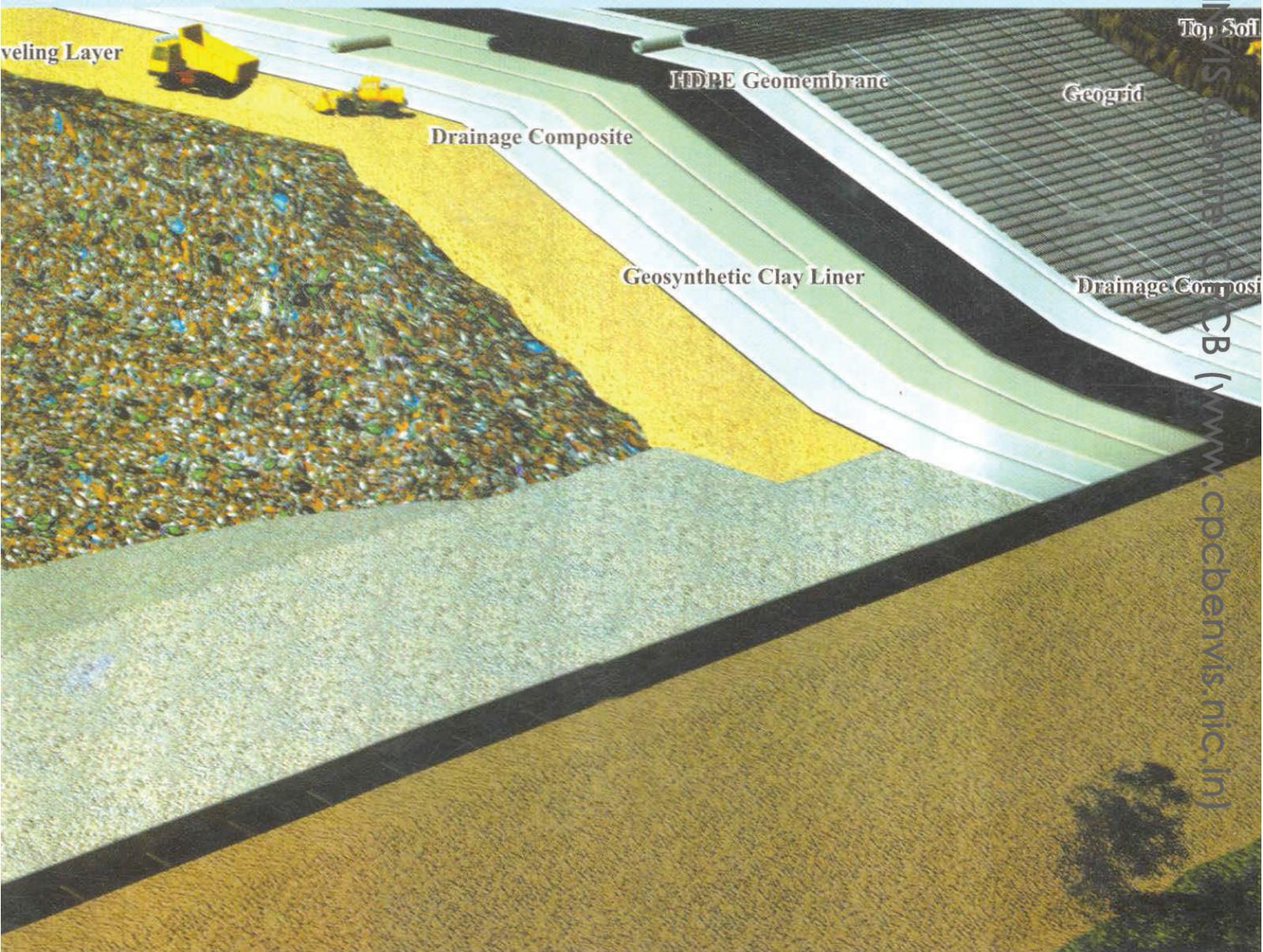
Pravin P. Panchal
PRAVIN P. PANCHAL
 NOTARY
 GOVT. OF INDIA



SOLEMNLY AFFIRMED
 BEFORE *Pravin P. Panchal*
8/10/2020
PRAVIN P. PANCHAL
 NOTARY
 GOVT. OF INDIA
 08 OCT 2020



CRITERIA FOR HAZARDOUS WASTE LANDFILLS



**CENTRAL POLLUTION CONTROL BOARD
MINISTRY OF ENVIRONMENT & FORESTS**

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February, 2001

ENVIS Centre, CPCB (www.cpcbenvvis.nic.in)

Hazardous Waste Management
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CRITERIA FOR HAZARDOUS WASTE LANDFILLS

ENVIS Centre, CPCB (www.cpcbenvvis.nic.in)



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DILIP BISWAS
Chairman

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
(भारत सरकार का संगठन)
पर्यावरण और वन मंत्रालय
Central Pollution Control Board
(A Govt. of India Organisation)
Ministry of Environment & Forests
Phone : 2204948

FOREWORD

The Ministry of Environment & Forests, Government of India, has notified the Hazardous Waste (Management & Handling) Rules, in July 1989 under the Environment (Protection) Act, 1986. On 6th of January, 2000, major amendments to these rules with re-defined categories of hazardous wastes and harmonising them with the international laws, were notified. In order to facilitate implementation it is felt necessary to provide a set of guidelines on the Criteria for Hazardous Waste Landfills for the use of industries, implementing agencies and the general public.

The task of preparation of the guidelines was entrusted to a group comprising Prof. Manoj Datta, Indian Institute of Technology, New Delhi, Dr. D.B. Boralkar, Assistant Secretary, Central Pollution Control Board, Delhi and Ms. Sanchita Jindal, Joint Director (HSMD), Ministry of Environment & Forests, New Delhi. Useful criticism and suggestions were provided by National Productivity Council, New Delhi. The draft document was discussed and finalised by an Expert Committee under the Chairmanship of the Chairman, CPCB. The Expert Committee opined that secured disposal facilities need to be properly designed, constructed, commissioned and operated and that such facilities may not serve for the disposal of high-volume low-toxic waste. The present document provides guidance in respect of criteria for location, site selection and investigation, planning and design, waste acceptance, landfill liner system and cover, construction and operation, inspection, monitoring & record keeping, post-closure, financial assurance and contingency plan for emergencies.

This document on criteria for hazardous waste landfills has been brought out for use by implementing agencies, operators of landfills and others concerned.

(Dilip Biswas)

February, 2001

ENVIS Centre, CPCB (www.cpcbenvis.nic.in)

CRITERIA FOR HAZARDOUS WASTE LANDFILLS

CONTENTS

S.No.	Particular	Page No.
1.0	Applicability	1
2.0	Locational Criteria	1
3.0	Site Selection	2
4.0	Site Investigation Criteria	5
5.0	Planning and Design Criteria	6
5.1	Essential Components	6
5.2	Design Life	7
5.3	Waste Volume, Waste Compatibility & Landfill Capacity	7
5.4	Landfill Layout	8
5.5	Landfill Section	8
5.6	Phased Operation	9
5.7	Estimation of Leachate Quantity	9
5.8	Liner System	10
5.9	Leachate Drainage, Collection and Removal	10
5.10	Leachate Management	11
5.11	Gaseous Emissions Management	12
5.12	Final Cover System	12
5.13	Surface Water Drainage System	12
5.14	Base Stability, Slope Stability and Seismic Aspects	13
5.15	Materials Balance	14
5.16	Site Infrastructure	14
5.17	Environmental Monitoring System	15
5.18	Closure and Post-Closure Maintenance System	16
6.0	Waste Acceptance Criteria	16
7.0	Landfill Liner Criteria and Cover Criteria	17
7.1	Liner Criteria	17
	7.1.1 Minimum Specifications	18
	7.1.2 Design Requirements	19
	7.1.3 Construction Requirements	20

S.No.	Particular	Page No.
	7.1.4 Quality Control	20
	7.2 Cover Criteria	21
	7.2.1 Minimum Specifications	21
	7.2.2 Design Requirements	22
	7.2.3 Construction Requirements	23
	7.2.4 Quality Control	24
8.0	Construction and operation Criteria	24
	8.1 Site Development	24
	8.2 Site Procedures : Record Keeping and Waste Inspection	25
	8.3 Phase Development	26
	8.4 Phase Operation	26
	8.5 Pollution Prevention and Safety During Operation	28
	8.6 Phase Closure	29
	8.7 Landfill Closure	30
	8.8 Post-closure Vegetative Stabilisation (Long-term)	30
9.0	Inspection, Monitoring and Record Keeping Criteria	31
	9.1 During Construction of Liners and Covers	31
	9.2 During Operation	32
	9.3 During Closure and Post-Closure Period	32
	9.4 Environmental Monitoring Systems	33
10.0	Post-closure Criteria	34
11.0	Financial Assurance Criteria	34
12.0	Contingency Plan for Emergencies	35

CRITERIA FOR HAZARDOUS WASTE LANDFILLS

1.0. APPLICABILITY

The criteria stated hereafter apply to owners and operators of facilities that dispose hazardous waste in landfills. The term 'hazardous waste landfill' (HW Landfill) is used to designate a waste disposal unit, designed and constructed with the objective of minimum impact to the environment. This term encompasses other terms such as "secured landfill", "engineered landfill", "waste mounds", "waste piles" etc.

2.0. LOCATIONAL CRITERIA

HW Landfills shall not be located within a certain distance of the following : lakes, ponds, rivers, wetlands, flood plains, highways, habitation, critical habitat area, water supply wells, Airports, coastal zone. If it is absolutely essential to site a landfill within the restricted zone, then appropriate design measures are to be taken and prior permission from the SPCB/PCC should be obtained :

- (a) Lake or Pond : No landfill shall normally be constructed within 200 m of any lake or pond. Because of concerns regarding runoff of waste contaminated water, a surface water monitoring network with approval of SPCB/PCC shall be established.
- (b) River : No landfill shall be constructed within 100 m of a navigable river or stream.
- (c) Flood Plain : No landfill shall be constructed within a 100 year flood plain. A landfill may be built within the flood plains of secondary streams if an embankment is built along the stream side to avoid flooding of the area. However, landfills must not be built within the flood plains of major rivers unless properly designed protection embankments are constructed around the landfills.
- (d) Highway : No landfill shall be constructed within 500 m of the right of way of any state or national highway.
- (e) Habitation : A landfill site shall be atleast 500 m from a notified habitated area. A zone of 500 m around a landfill boundary should be declared a no-development buffer zone after the landfill location is finalised.
- (f) Public parks : No landfill shall be constructed within 500 m of a public park.

- (g) Critical Habitat Area : No landfill shall be constructed within critical habitat areas including reserved forest areas. A critical habitat area is defined as the area in which one or more endangered species live. It is sometimes difficult to identify a critical habitat area. If there is any doubt then the SPCB/PCC shall be consulted for clarification.
- (h) Wetlands : No landfill shall be constructed within wetlands. It is often difficult to identify a wetland area. Maps may be available for some wetlands, but in many cases such maps are absent or are incorrect. If there is any doubt, then the SPCB/PCC shall be consulted for clarification.
- (i) Airports : No landfill shall be constructed within a zone around Airports as notified by the regulatory authority or the aviation authority.
- (j) Water Supply Well : No landfill shall be constructed within 500 m of any water supply well.
- (k) Coastal Regulation Zone : No landfill shall be sited in a coastal regulation zone.
- (l) Ground water table level : No landfill shall be located in areas where the ground water table will be less than 2 m below the base of the landfill.
- (m) Other criteria may be decided by the planners in consultation with SPCB/PCC commensurate with specific local requirements such as presence of monuments, religious structures etc.

3.0. SITE SELECTION

Hazardous waste landfills should preferably be located in areas of low population density, low alternative land use value, low ground water contamination potential and at sites having high clay content in the subsoil.

A HW landfill will be selected following the guidelines published by MoEF. The step by step procedure will be as follows :

- (i) Earmarking a 'search area' taking into account the location of the waste generation units and a 'search radius' (typically 5 to 250 km). The search area will be so chosen that it minimises the number of HW landfills in any region or state.
- (ii) Identification of a list of potential sites on the basis of:
 - (a) availability of land
 - (b) collection of preliminary data
 - (c) restrictions listed in the locational criteria (section 2.0).

(iii) Collection of preliminary data as follows :

- (a) Topographic Maps : A topographic map will help find sites that are not on natural surface water drains or flood plains. Topographical maps may be procured from Survey of India.
- (b) Soil Maps : These maps, primarily meant for agricultural use, will show the types of soil near the surface. They are of limited use as they do not show types of soil a few metre below the surface. They may be procured from Indian Agricultural Research Institute.
- (c) Land Use Plans : These plans are useful in delineating areas with definite zoning restrictions. There may be restrictions on the use of agricultural land or on the use of forest land for landfill purposes. Such maps are available with the Town Planning Authority or the Municipality.
- (d) Transportation Maps : These maps, which indicate roads and railways and locations of airports, are used to determine the transportation needs in developing a site.
- (e) Water Use Plans : Such maps are usually not readily available. A plan indicating the following items should be developed : private and public tubewells indicating the capacity of each well, major and minor drinking water supply line(s), water intake wells located on surface water bodies, and open wells.
- (f) Flood Plain Maps : These maps are used to delineate areas that are within a 100 year flood plain. Landfill siting must be avoided within the flood plains of major rivers.
- (g) Geologic Maps : These maps will indicate geologic features and bedrock levels. A general idea about soil type can be developed from a geological map. Such maps can be procured from Geological Survey of India.
- (h) Aerial Photographs / Satellite Imagery : Aerial photographs or satellite imageries may not exist for the entire search area. However such information may prove to be extremely helpful. Surface features such as small lakes, intermittent stream beds and current land use, which may not have been identified in earlier map searches, can be easily identified using aerial photographs.
- (i) Ground Water Maps : Ground water contour maps are available in various regions which indicate the depth to ground water below the land surface as well as regional

ground water flow patterns. Such maps should be collected from Ground water Boards or Minor Irrigation Tubewell Corporations.

- (j) Rainfall Data : The monthly rainfall data for the region should be collected from the Indian Meteorological Department.
 - (k) Wind Map : The predominant wind direction and velocities should be collected from the Indian Meteorological Department.
 - (l) Seismic Data : The seismic activity of a region is an important input in the design of landfills. Seismic coefficients are earmarked for various seismic zones and these can be obtained from the relevant BIS code or from the Indian Meteorological Department.
 - (m) Site Walk Over and Establishment of Ground Truths : A site reconnaissance will be conducted by a site walk-over as a part of the preliminary data collection. All features observed in various maps will be confirmed. Additional information pertaining to the following will be ascertained from nearby inhabitants : (a) flooding during monsoons; (b) soil type; (c) depth to G.W. table (as observed in open wells or tube wells); (d) quality of groundwater and (e) depth to bedrock.
 - (n) Preliminary Boreholes and Geophysical Investigation : At each site, as a part of preliminary data collection, one to two boreholes will be drilled and samples collected at every 1.5m interval to a depth of 20m below the ground surface. The following information will be obtained : (i) soil type and stratification; (ii) permeability of each strata; (iii) strength and compressibility parameters (optional); (iv) ground water level and quality and (v) depth to bedrock. In addition to preliminary boreholes, geophysical investigations (electrical resistivity/seismic refraction/others) may be undertaken to assess the quality of bedrock at different sites.
- (iv) Selection of two best ranked sites from amongst the list of potential sites on the basis of the ranking system stipulated by MoEF (1991).
 - (v) Environmental Impact Assessment for the two sites for the following parameters :
 - (a) ground water quality; (b) surface water quality; (c) air quality - gases, dust, litter, odour; (d) land use alteration; (e) drainage alteration; (f) soil erosion; (g) ecological

impacts (h) noise; (i) aesthetics - visual, vermin, flies; (j) traffic alteration; and (k) others.

- (vi) Assessment of public perception for the two sites.
- (vii) Selection of final site.
- (viii) The above site selection procedure shall not be applicable for location of facility within industrial areas of State Industrial Development Agencies. However EIA requirement will apply.

4.0. SITE INVESTIGATION CRITERIA

The data collected during site selection is not sufficient for landfill design. To be able to undertake detailed design of a landfill at a selected site, it is essential to characterise the landfill site and evaluate the parameters required for design. It is necessary that all data listed in Section 3.0 (iii) on "preliminary data" be collected for site characterisation. If some data has not been collected, the same should be obtained before site investigations are undertaken for site characterisation. The following additional data will be collected through a detailed site investigation programme at the chosen site.

A detailed site investigation programme will comprise of subsoil investigation, ground water/hydrogeological investigation, hydrological investigation, topographical investigation and geological investigation. The output expected from each investigation is listed below :

- (a) Subsoil Investigation : A detailed investigation plan may be drawn up in consultation with a geotechnical engineer. The output from such an investigation should yield the following :
 - (i) Stratification of subsoil - type of soil and depth
 - (ii) Depth to ground water table and bedrock (if located within 15m of base of landfill)
 - (iii) Permeability of various strata beneath the landfill.
 - (iv) Strength and compressibility properties of subsoil
 - (v) Extent of availability of liner material, drainage material, top soil and protective soil in adjacent borrow areas.
 - (vi) Subsoil properties along approach road.

A minimum of 3 boreholes per hectare of landfill area upto 15m beneath the base of the landfill shall be drilled and insitu tests as well as laboratory tests shall be performed for permeability, strength, compressibility and classification of soils. In addition, test pits and boreholes should be drilled at borrow area for liner and cover materials as well as along approach road.

waste will undergo due to overburden stress and due to bio-degradation (if any) shall also be taken into account.

The total landfill area should be computed on the basis of the designed height of the landfill (usually between 5 to 20m). Approximately 15 to 20% area more than the area required for landfilling should be adopted to accommodate all infrastructure and support facilities as well as to allow the formation of a green belt around the landfill. This additional area shall be computed separately and may be as high as 30% of the total area in case of small to medium landfills. The total landfill area is computed on trial and error basis.

There is no standard method for classifying landfills by their capacity. However the following nomenclature is often observed in literature :

Small size landfill	:	less than 5 hectare area
Medium size landfill	:	5 to 20 hectare areas
Large size landfill	:	greater than 20 hectare area.

5.4. Landfill Layout

A landfill site will comprise of the area in which the waste will be filled as well as additional area for support facilities. The area in which waste is to be filled may comprise of separate landfill units with each unit, accommodating a group of compatible wastes. Within each unit work may proceed in phases with only a part of the area under active operation. A typical site layout is shown in Fig.1. Such a layout must be prepared for all landfills. The following facilities must be located in the layout: (a) access roads; (b) equipment shelters; (c) weighing scales; (d) office space; (e) location of waste inspection facility (if used); (f) temporary waste storage and/or disposal sites for special wastes; (g) demarcation of the landfill areas and areas for stockpiling cover material and liner material; (h) location of surface water drainage facilities; (i) location of landfill leachate management facilities; (j) location of gas management facilities (optional); (k) location of monitoring wells/environmental monitoring facilities, (l) fencing and green belt along the peripheral boundary and (m) emergency exit.

It is essential that for each landfill site, a layout be designed incorporating the above mentioned facilities.

5.5. Landfill Section

Landfills may have different types of sections depending on the topography of the area. The landfills may take the following forms : (a) above ground landfills; (b) below ground landfill; (c) slope landfills; (d) valley landfills (canyon landfills); and (e) a combination of the above. Fig.2 shows some typical landfill sections.

It is recommended that the landfill section be arrived at keeping in view the topography, depth to water table and availability of liner and cover material. Above ground landfills shall be preferred to below ground landfills, as leachate collection in the former is by gravity flow and does not require the use of pumps.

Slope landfills and valley landfills are normally adopted in hilly areas; above-ground landfills in flat undulating ground and below-ground landfills in low-lying areas, depressions or pits.

5.6. Phased Operation

Before the main design of a landfill can be undertaken it is important to develop the operating methodology. A landfill is operated in phases because it allows the progressive use of the landfill area, such that at any given time a part of the site may have a final cover, a part being actively filled, a part being prepared to receive waste, and a part undisturbed.

For each landfill unit, a phased operation plan will be drawn up.

The term 'phase' describes a sub-area of the landfill. A 'phase' consists of cells, lifts, daily/weekly (optional) or intermediate cover, liner and leachate collection facility, gas control facility (optional) and final cover over the sub-area (Fig.3).

Each phase is typically designed for a period of 12 months. Phases are generally filled from the base to the final/intermediate cover and capped within this period leaving a temporary unrestored sloping face. Fig.4 shows a simplified sequence of phased operation.

A 'phase plan' shall be drawn up for the active life of the landfill as soon as the landfill layout and section are finalised. It must be ensured that each phase reaches the final cover/intermediate cover level at the end of its construction period and that it is capped before the onset of monsoons.

During the monsoon months the waste may stockpiled in a temporary holding areas (covered with roof). During this period and the landfill may be kept capped with the final cover/intermediate cover and landfilling operations suspended to reduce infiltration of rain water into the landfill. However, if the incoming waste quantity is too large for temporary stockpiling or the monsoon period lasts for a long period, special phases may have to be designed with high leachate handling capacity and special operating procedures adopted.

5.7. Estimation of Leachate Quantity

Leachate is generated on account of the infiltration of water into landfills and its percolation through waste as well as by the squeezing of the waste due to self weight. The quantity of leachate generated in a landfill

(iii) Vehicle Inspection :

Each vehicle carrying the waste shall be checked for :

- (a) Incoming weight (full)
- (b) Outgoing weight (empty)
- (c) Availability of relevant documents
- (d) Visual check at weigh-in (if feasible)
- (e) Visual inspection after discharge at tipping area (inspection report to be filed for each vehicle). A visual inspection checklist must be framed which should list visual features for identification of unacceptable material. This checklist shall be filled for every unloading by a vehicle in tipping area at the working phase in the landfill.

If there is reason to doubt the presence of unacceptable waste, the vehicle shall be taken to the waste inspection facility, the waste downloaded, inspected visually and sampled (if necessary). Vehicles having non-conforming waste shall be held-up and matter reported to engineer or manager at site.

8.3. Phase Development

Development of each phase shall be done in stages. These stages are:

- (a) Clearing the area of all shrubs and vegetation
- (b) Excavation (if required),
- (c) Stockpiling of excavated material and material imported from borrow area,
- (d) Levelling of base and side slopes of landfill and achieving desirable grades at the base of the landfill,
- (e) Construction of embankment and temporary berms along the perimeter of the phase,
- (f) Construction of temporary surface water drains,
- (g) Installation of monitoring instruments,
- (h) Liner Construction
- (i) Leachate collection and removal system

8.4. Phase operation

At the design stage, the phases of a landfill are clearly demarcated. Operation of a phase requires planning and execution of daily activities – daily waste filling plan and demarcation, waste discharge and inspection, waste placement, waste compaction, daily covering of waste, prevention of pollution and fires.

- (a) **Daily waste filling plan and demarcation at site :** On the completion of a phase and before the start of a new phase, a waste filling plan for daily cells shall be evolved. A study of the landfill base contour maps

and the final cover levels of the phase allows such a plan to be developed. If a phase is to be operational for 365 days, all 365 cells must be marked in plan and in sectional drawings. These may require revision as a landfill is constructed because waste quantities may vary in an unforeseen manner. The area and height proposed to be filled every day should be demarcated at the site on a daily or weekly basis using temporary markers or bunds.

- (b) **Waste discharge and inspection** : Waste shall be discharged by tipping at the working area of a landfill, within the area demarcated for the cell. Every discharged load shall be visually inspected by a designated operator. Working area personnel shall be trained and competent at waste identification in order that they can recognise waste which may be non-conforming. In the event of reasonable doubt as to the waste acceptability, the operator shall inform the waste reception facility and/or the site manager immediately and the consignment shall be isolated pending further inspection.
- (c) **Waste placement (spreading) and compaction** : Once waste has been discharged it shall be spread in layers and compacted in a well defined manner to ensure that the completed slopes of a daily cell are at the designed gradients. Waste placement (spreading) can be done by the following methods :
- (i) **Face tipping method** : Waste is deposited on top of existing surface and spread horizontally by tipping over an advancing face.
 - (ii) **Inclined layering method (onion skin tipping)** : Similar to (a) but inclined layering (gentle slope) done instead of advancing of face.
 - (iii) **Working upwards** : Waste is deposited on the lower surface and pushed upwards.

It is necessary to level and compact the waste as soon as it is discharged at the working area. Steel wheeled mobile landfill compactors (smooth / cleated / spiked / special wheels) are generally accepted as the best equipment for this purpose. They have largely replaced the small crawler-tracked machines which were previously in general use.

- (d) **Daily / Weekly Cover** : Daily / Weekly cover (optional) is primarily used for prevention windblown dust, litter and odours, deterrence to scavengers, birds, reduction of infiltration (during unseasonal rain) and in improving the site's visual appearance. Soil used as daily / weekly cover shall give a pleasing uniform appearance from the site boundary. To achieve this a thickness of about 150 mm is usually adequate and shall be adopted.
- (e) **Operation in Monsoons** : During the monsoon month, high rainfall results in excessive generation of leachate. Hence, before the onset of monsoons, the phase must be capped with a cover. Waste received

during monsoon months shall be stockpiled in temporary holding area (covered). Alternatively special “monsoon phases” may be designed with high leachate holding capacity and operated using daily covers / temporary covers.

8.5. Pollution Prevention and Safety During Operation

The following measures are needed to ensure that the landfill operation shall not adversely affect local environment within and outside the landfill.

- (i) **Traffic** : Heavy lorry traffic shall give rise to nuisance, damage to road surface and verges and routing problems. The following measures are helpful :
 - (a) routing to avoid residential area
 - (b) using one-way routes to avoid traffic conflict in narrow roads
 - (c) carrying out road improvements, for example strengthening or widening roads, improved provision of footpaths, improvement of sight lines, provision of passing places, provision of new roads,
 - (d) Limiting the number of vehicle movements
 - (e) Restrictions on traffic movement hours which are staggered with respect to peak traffic hours.
- (ii) **Noise** : Adverse impacts on the local community from noise may arise from a number of sources including : throughput of vehicles and fixed and mobile plant, for example compactors, generators at the site. Peripheral noise abatement site measures shall be adopted.
- (iii) **Odour** : Offensive odours at landfill sites may emanate from a number of sources, including waste material, which have decomposed significantly prior to landfilling, leachates and leachate treatment systems, and landfill gas. Good landfill practices shall greatly reduce general site smell and reduce impact from odours which could lead to complaints from the local community, site users and site staff. Good practice includes : (a) adequate compaction; (b) speedy disposal and burial of malodorous wastes; (c) effective use of appropriate types of daily cover; (d) progressive capping and restoration; (e) effective landfill gas management; (f) effective leachate management and (g) consideration of prevailing wind direction when planning leachate treatment plants, gas flares, and direction of tipping.
- (iv) **Litter** : Poor litter control both on and off site is particularly offensive to neighbours. Good operational practice shall be adhered to in terms of temporary fencing, waste discharge, placement, compaction and covering to minimise the occurrence of windblown litter.
- (v) **Bird Control** : Birds are attracted to landfill sites in large numbers where sites receive appreciable amounts of bio wastes. Measures which can be used to mitigate birds nuisance include the employment

owner/operator to the SPCB/PCC for verification and record keeping. The same will also be done upon the completion of cover system in each phase.

9.2. During Operation

- (a) The owner/operator shall monitor and keep a record of the following in the operation period :
- (i) Functioning of the leachate management system (including levels in leachate holding tank) (weekly)
 - (ii) Functioning of the surface water run-off system (weekly)
 - (iii) Functioning of the gas management system (if any) (weekly)
 - (iv) Waste filling records shall be kept on daily basis as specified in Section 8.2 on site procedure
 - (v) Environmental monitoring shall be done, 1 to 2 times a month, and all parameters listed in Section 5.17 shall be recorded and compared with the permissible limits provided by the SPCB/PCC
 - (vi) After a major storm, the occurrence of the storm and functioning of various systems shall be recorded.
- (b) The SPCB/PCC (or its nominee) shall inspect all facilities atleast twice a year. The owner/operator shall provide a copy of the environmental monitoring record to the SPCB/PCC on a yearly basis.

9.3. During Closure and Post Closure Period

Period inspection and routine maintenance at a closed landfill site shall be carried out for a period of 30 years after closure. The SPCB/PCC shall inspect all facilities during the closure and post closure period atleast once a year. The owner/operator shall provide a copy of the environmental monitoring record to the SPCB/PCC once a year. The following components of a closed landfill shall be inspected visually after landfill closure to confirm that all functional elements are working satisfactorily and inspection report will be recorded. A maintenance schedule with specified reporting formats is drawn up after each inspection.

- (a) Cover System : The final cover is inspected 2 to 4 times a year
- (a) to check that vegetation growth is occurring satisfactorily and that plants are not showing stunted growth,
 - (b) to detect if any erosion gullies have been formed thereby exposing the barrier

layers, (c) to earmark depressions that may have developed with time and (d) to identify ponding of water on the landfill cover. At least one inspection shall be carried out during or immediately after the peak of the monsoon season.

Closed landfills show significant settlement. Rectification measures shall not only re-establish the initial slope of the cover (for proper surface water run-off) but shall also ensure that all the components of the landfill cover system continue to perform as originally envisaged. Site managers shall have sufficient equipment and funds to periodically carry out maintenance work in the form of soil filling, re-grading the cover and revegetating the landfill cap.

In areas where extensive erosion gully formation is observed, filling of cover material, regrading of cover slopes and re-vegetation must be routinely undertaken.

- (b) **Surface Water Drainage System** : The surface water drainage system is also inspected 2 to 4 times a year (a) to identify cracks in drains due to settlements, (b) to delineate clogged drains requiring immediate clean-up and (c) to study the level of deposited soil in the storm water basin and initiate excavation measures. Broken pipes and extensively cracked drains may require replacement after filling soil beneath them to establish slopes for gravity flow. In extreme cases where long-term settlement shall be excessive, it shall become necessary to make sumps and operate storm water pumps for removal of accumulated water in the drainage system.
- (c) **Gas and Leachate Management Systems** : A weekly operating record of leachate and gas management systems shall be kept in the post-closure period. Periodic inspection of the leachate and gas collection systems (2 to 4 times a year) is undertaken to identify broken pipes, leaking gas (if any) and damaged or clogged wells/sumps. Repair work requires skilled manpower and shall be carried out by the agencies operating the gas treatment and leachate treatment facilities. One may often have to install new gas extraction wells and leachate collection wells if the damaged/clogged facilities are inaccessible and irreparable.

9.4. Environmental Monitoring Systems

Ground water monitoring wells, air quality monitoring systems and vadose zone monitoring instruments shall be periodically inspected 2-4 times a year to check that all systems are functioning satisfactorily and that well caps and sampling ports are not subjected to damage due to excessive settlement or vandalism.



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN

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(079) 23232152

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Website : www.gpcb.gov.in

By R.P.A.D

No. GPCB/HAZ-GEN-294(8)/561872

Date: 11 JUN 2020

To,

M/s Eco care Infrastructures Pvt. Ltd.

Plot no/ Sr. no: 127/1,127/2,128, 132/1,132/2,131,

132/2/2,125/6,125/3, Village: Ghaspur,

Tal: Dasada, Dist: Surendranagar.

Sub: Monsoon Planning for Monitoring & Control of Pollution.

Sir,

As you are aware Monsoon is about to set in, you are required to make yourselves fully equipped and ready to take all required mitigation steps with regards to prevent and control pollution from various sensitive points and to ascertain that pollution is fully controlled at source. At the outset, following points are required to ascertain in your industry / facility in addition to routine monitoring and controlling pollution activities at source.

1. Before the onset of monsoons, the phase must be capped with a cover.
2. The facility shall comply with all other conditions mentioned in operation and maintenance of TSDF in CPCB guidelines.
3. The run off/storm water at various significant points, which lead to vital stretches of River, Nalas, Natural Drain etc. should be constantly monitored for its water quality assurance.
4. Final outlet of industry / Facility is also required to be monitored during rainy days to ensure that there is no irregular discharge by any means.
5. Effluent treatment plant units & chemical storage tanks / Hazardous waste storage sites etc. should be monitored to prevent that there is no overflow/leakage to the surrounding environment.
6. The Hazardous waste and other solid waste accumulated in storage site should be provided with complete waterproof cover/roof in order to avoid mix up of rainwater / industrial effluent with the solid waste and so as to prevent the excess leachate generation. You are also requested to dispose off all the accumulated hazardous waste /sludge to TSDF site or incinerate it as the case may be.
7. You are also required to implement relevant guidelines for management plan for used/discarded packaging materials etc.
8. You are required to monitor & operate Air Pollution Control equipments / measures efficiently in such a manner that any flue gas/process emission from your industrial plant / facility should conform the GPCB norms. Further, you are required to ensure that accidental leakage, fugitive emissions etc. are prevented.

Clean Gujarat Green Gujarat

ISO-9001-2008 & ISO-14001 - 2004 Certified Organisation

9. You are also required to ensure good housekeeping practices to avoid any chemical contamination of rain water and to avoid any uncertainties.
10. Development of green belt with regards to protect environment. Pre-Monsoon is the ideal time for the planning of the plantation. It would be pleasure to see "Green Belt Plan" along with the compliance report.

You are requested to make implementations of above referred conditions immediately and submit the report of the same to G.P.C.B. Head Office, Gandhinagar as well as our Regional Office.

You are also requested to submit the onsite emergency management plan and Annual Return in Form - IV under Hazardous and Other Wastes (M&TM) Rules - 2016 to the undersigned within 7 days.

Thanking you,

For and on behalf of GPCB,

D.M. Thaker
11/6/2020

(D. M. Thaker)
Environment Engineer
Unit Head, Hazardous Waste Cell



Date : 02-10-2020

To,

Chariman

Naroda Enviro Projects Limited

Ahmedabad.

Sub : Monsoon Closure

Dear Sir,

As per the Monsoon Guidelines of GPCB, TSDF site was closed during the monsoon period.

As per Monsoon guidelines, our TSDF Site was closed from 26-05-2020 and it's will be expected to re-open on 20-10-2020.

We will start the waste collection in our storage shed on 05-10-2020 for members which is required emergency situation.

Thanking You,

FOR, ECOCARE INFRASTRUCTURES PVT LTD

Manoj P Patel

(MANAGING DIRECTOR)

SERVICE OF REPLY IN IA NO. 88/2020 IN OA NO. 7/2020 (WZ)

Anushree Kapadia <anushree@hexislegal.in>

Fri, Oct 9, 2020 at 3:57 PM

To: JITENDAR SINGH <jpvlawassociates@gmail.com>, uh-gpcb-ahme@gujarat.gov.in, rajeshgpcb@gmail.com, legal.gpcb@gmail.com, Aniruddha Kulkarni <aniruddha1488@gmail.com>, sshooda65@gmail.com, megha jani <adv.megha.jani@gmail.com>

NATIONAL GREEN TRIBUNAL**I.A.NO. 88/2020 IN O.A. NO. 7/2020 (WZ)****ADVANCE SERVICE OF REPLY TO I.A. NO. 88/2020**

Dear Sir/ Ma'am

Please find attached complete scan of the reply on behalf of Respondent No. 1 in I.A. No. 88/2020 in O.A. No. 7/2020 (WZ).

Yours sincerely

Anushree Kapadia
Advocate for Respondent No. 1

--
Anushree Kapadia
Advocate
Supreme Court of India

**HEXIS LEGAL**

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 **Reply IA 88 of 2020 final.pdf**
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