

## EXECUTIVE SUMMARY IN ENGLISH

For Proposed Brown Field Project

### **“COMMON BIO-MEDICAL WASTE TREATMENT & DISPOSAL FACILITY”**

By

**M/s. Karad Hospital Association (CBMW TDF)**

12, Dabari, Near Nagarpalika STP, Shaniwar Peth, Taluka- Karad, District-  
Satara, Maharashtra

**Baseline period: March 2023 to May 2023**

Conducted & Prepared By

**Chandigarh Pollution Testing Laboratory- EIA Division**

(QCI/ NABET Certificate No: NABET/EIA/2225/RA 0250)

**Address: E- 126, Phase- VII, Industrial Area, Mohali, Punjab- 160055.**

**Contacts: 0172-4669295, 5090312**

**E-mail: eia@cptl.co.in / cptleia@gmail.com**



## Table of Contents

1.	Introduction .....	3
2.	Project Description.....	3
3.	Baseline Environmental Details .....	5
4.	Identification, prevention and measures .....	7
5.	Analysis of Alternatives .....	7
6.	Environmental Monitoring Program.....	8
7.	Additional Studies .....	9
8.	Provisions in the Budget for Environmental Management Plan .....	10
9.	Green Belt Details .....	13
10.	Corporate Environmental Responsibility Plan .....	13
11.	Conclusion .....	13

## 1. Introduction

M/s. Karad Hospital Association is a facility for general bio medical waste treatment proposed expansion facility 3717.47 m<sup>2</sup> area located at 12, Dabari, Near Nagarpalika STP, Shaniwar Peth, Taluka: Karad, District: Satara, Maharashtra.

The existing project is CBWTF, which is a part of Common Hazardous Waste Treatment, Storage and Disposal Facilities (TSDFs) and falls under Category B, Schedule 7 (da) as per EIA Notification dated 14th September, 2006 and subsequent amendments dated 17th April, 2015, under Bio -Medical waste Treatment facility.

**Table1.1 Connectivity**

Sr. No.	Description	Name	Aerial Distance From Project Site
1.	Nearest Village	Karad	0.94 Km
2	Nearest Town/City	Karad	0.94 Km
3	Nearest Railway Station	Karad Railway Station	4.41 km
4	Nearest Bus stand	Karad bus stand	1.25 Km
5	Nearest post office	Karad post office	1.58 Km
6	Nearest police station	Karad police station	1.22 Km
7	Nearest Airport	Kolhapur Airport	68 Km
8	Nearest National Highway	NH-48	1.87 Km
9	Nearest River/ Estuary/ Canal/ Sea	Krishna River	1.41 Km
10	Archaeological important places	No such archaeological important place near proposed project.	
11	National Parks/ Sanctuaries/Eco Sensitive Area/ Wild Life Sanctuary	No such national parks/ sanctuary within 10 Km from the proposed project	

## 2. Project Description

**Waste Segregation:** Waste segregation reduces the load of Bio-Medical Waste from about 2kg/bed day and this also minimize the environmental impacts associated with further processing. Waste is segregated into domestic refuse, hazardous waste and infectious waste separately. Further the infectious waste is segregated into plastics, metals, and other infectious waste. Segregation is done effectively if performed at source. CPCB has issued clear guidelines for colour coded segregation.

**Waste Collection and Transport:** In CBWTF, it will be ensured that there are no environmental or human impacts while collecting and transporting Bio-Medical Waste.

**Treatment/ Storage/ Disposal:** Treatment, Storage and disposal of the waste have various options available. Waste treatment can be effectively performed by two operations running parallel to each other.

**Disinfecting Unit:** A Disinfecting unit is one that will effectively kill all the microorganisms. Autoclaving and Chemical disinfection processes are the most prevalent technologies used for disinfection of pathogens from the Bio-Medical Waste.

**Table 1.2 Land Breakup**

Sr. No.	Particulars	Existing Area	Proposed Area
1	Security room	64.56 SFT	64.56 SFT
2	ETP Area	360 SFT	359.27 SFT
3	Office room	100 SFT	115.00 SFT
4	Store room (BMW)	205 SFT	205.08 SFT
5	Effluent treatment plant	180 SFT	359.27 SFT
6	Incinerator Shed	735 SFT	2195 SFT
7	Segregation room	200 SFT	200 SFT
8	Ash room	159.78 SFT	159.78 SFT
9	Shredded plastic storage room	120 SFT	335 SFT
10	Secondary segregation room	100 SFT	535 SFT
11	Autoclave room	238.97 SFT	238.97 SFT
12	Vehicle wash	71.44 SFT	71.44 SFT
13	Overhead water tank	2000 Lit	5000 Lit

### Electricity/Power Requirement

The power required for the existing CBWTF is 9 KW and for proposed power requirement will be 60 KW which will be fetched from Maharashtra Power Transmission Corporation Limited. A DG set of 250 kVA will be used for emergency power backup.

**Table 1.3 Detail of power consumption**

Sr. No.	Source	Total
1.	Maharashtra Power Transmission Corporation Limited.	Existing - 9 KW Proposed – 60
2.	D.G. Set	Proposed- 250 KVA

### Water Requirement

The domestic water requirement after expansion will be 1.5 KLD and the corresponding sewage generation will be 4 KLD, which will be disposed to Septic Tank and Soak Pit. The water requirement for the process will be 8 KLD and the effluent generated will be 0.4 KLD, which shall be treated in in-house ETP of capacity 15 KLD and the treated wastewater shall be continuously re-circulated to fulfil the water

requirement of Air Pollution Control Devices (APCDs) attached to the incinerator(s). Hence the Total Water Requirement is 15 KLD.

**Table 1.3 Water consumption**

Sr. No.	Particular	Existing Consumption in KLD	Proposed Consumption in KLD	Total Consumption in KLD
1.	Domestic	1	1.5	2.5
2.	Gardening	Nil	0.5	0.5
3.	Cooling	2	4	6
4.	Washing	2	4	6
	<b>Total</b>	5	10	15

**Table 1.4 Wastewater generation**

Sr. No.	Particular	Existing Wastewater Generation in KLD	Proposed Wastewater Generation in KLD	Total Wastewater Generation in KLD
1.	Domestic Effluent	0.5	1	1.5
2.	Trade Effluent	1.5	2.5	4
3.	Washing Effluent	1.5	2.5	4
	<b>Total</b>	3.5	6.5	10

### 3. Baseline Environmental Details

#### Air Environment

The dispersion of pollutants in the atmosphere is a function of several meteorological parameters viz. temperature, wind speed and direction, mixing depths, inversion level, etc. The ambient air samples were collected and analyzed for Particulate Matter (PM<sub>10</sub>), Particulate Matter (PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>), Ozone (O<sub>3</sub>), Lead (Pb), Carbon Monoxide (CO), Ammonia (NH<sub>3</sub>), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (a) Pyrene (BaP), were monitored at site and nearby villages for identification, prediction, evaluation and assessment of potential impact on ambient air environment.

The maximum & minimum concentration of important parameters recorded in study area are given in the table below:

**Table 3.1- Air quality monitoring data**

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value	Prescribed Standard
2	PM <sub>10</sub>	µg/m <sup>3</sup>	79.2	50.1	100
3	PM <sub>2.5</sub>	µg/m <sup>3</sup>	29	17.5	60
4	SO <sub>2</sub>	µg/m <sup>3</sup>	23.6	14.4	80
5	NO <sub>x</sub>	µg/m <sup>3</sup>	36.6	21	80

**Water Environment****Baseline Ground water quality****Table 3.2- Ground water quality monitoring data**

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value	Desirable Limit	Maximum Permissible Limit
1.	pH	-	7.8	7.1	6.5-8.5	No Relaxation
2.	Conductivity	µs/cm	462.2	418	80	120
3.	Total Hardness	mg/l	188	154	200	600
4.	Fluoride	mg/l	BDL	BDL	1	1.5
5.	Total Dissolved Solids	mg/l	335	270	500	2000
6.	Chlorides	mg/l	38.4	15.5	250	1000
7.	Zinc	mg/l	0.26	0.19	5	15

**Baseline Surface Water Quality****Table 3.3- Surface water quality data**

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value
1.	pH	-	7.9	7.2
2.	DO	mg/l	19	13
3.	COD	mg/l	40	10
4.	BOD	mg/l	8	6

**Noise Environment**

The objective of the noise pollution survey around the project site was to identify existing noise sources and to measure background noise levels. The study was carried out in the following steps:

- Reconnaissance
- Identification of noise sources and measurement of noise levels
- Measurement of noise levels due to transportation

- Community noise levels

### Land Environment

Soil quality monitoring has been carried during pre-monsoon season at 8 locations.

### Baseline Status

Parameters like Porosity, Water Holding Capacity, Bulk Density, etc. were considered. Given Below is Table, which shows the maximum and minimum values of parameters found during baseline soil monitoring.

**Table 3.4- Soil Quality Data**

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value
1.	pH	-	7.6	7.1
2.	Potassium (K)	mg/kg	276.5	175.2
3.	Moisture Content	%	6.44	4.56
4.	Calcium	mg/kg	267	209
5.	Chlorides	mg/kg	356.7	256.2
6.	Organic matter	%	1.8	1.07
7.	Organic Carbon	%	1.8	1.07

## 4. Identification, prevention and measures

Impacts on air, water, soil, noise, biodiversity, social and economic environment due to various activities during construction phase and operation phase (live phase) are studied and measures to mitigate its effects are suggested in Chapter 4.

## 5. Analysis of Alternatives

Alternative analysis is the process of analyzing the project's location for suitability of basic necessities to operate the plant safely. This analysis also covers the environmental aspect of pollution prevention and improvement in quality of life near to the project vicinity.

The supporting factors for site selection:

The project site is located in Satara district having all basic facilities like availability of water and fuel, electricity, transport and telecommunication systems etc.

- Availability of trained and skilled manpower nearby because of the proximity to various industrial areas and city/town.
- There is no protected area notified under the Wild Life (Protection) Act (1972) & Eco- sensitive area notified under Section 3 of the Environment (Protection) Act-1986 exists within 10 Km radius areas from the Plant Site.

Hence, the proposed location is best suited for proposed activities and no other alternative for site is analyzed.

### Advantages:

- Minimal waste pre-processing;

- Can deal with low melting material, solid or liquid state waste of any form;
- May feeding solid and liquid state material separately;
- May put bucket or bulk form solid state waste into the kiln directly to treat;
- Air turbulence in Kiln makes well contact between gas and solid material;
- May adjust rolling speed to control solid state material's retention period in kiln;
- Temperature can be high and above 1,000 inside the Kiln, can effectively destroy most of hazardous material.

## 6. Environmental Monitoring Program

**Table 6.1- Environmental Monitoring Program**

Sr. No.	Component	Parameters	Location	Frequency	Duration
1.	Ambient Air Quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> ,	Minimum 3-4 locations with one on upwind side, one on downwind and one on lateral side and one at project site.	Quarterly	24 hrs.
2.	Point Source Emissions	Particulates, SO <sub>2</sub> , NO <sub>x</sub> ,	Each stack – for flue gas	Quarterly	As per the CPCB guidelines
3.	Noise level	Leq day, Leq night, L10, L50, L90 dB(A)	In and around the work zone	Quarterly	24 hour reading with a frequency of 10 minutes every hour
4.	Effluent Quality	General parameters like pH, COD, TDS and other parameters as specified by GPCB through consent	Inlet and outlet all relevant parameters	Daily	-
5.	Soil Quality	Physico-chemical characteristics	At relevant locations	Quarterly	Sample every season
6.	Ecology	Survival rate of plantation	At locations of compensatory plantation and landscaping	Annually	For 3 years after operation starts



Sr. No.	Component	Parameters	Location	Frequency	Duration
7.	Health	All relevant parameters	Every 15 days	Regular check ups	As per requirement
8.	Solid waste	Depending on type of wastes	Solid waste disposal location	Once during each season	One time sample
9.	Ground & Drinking water	As per IS 10500:2012	Adjoining village	Quarterly	At least at three Locations.

## 7. Additional Studies

The Risk assessment study has been conducted for all the operations involved in the project. The study considers all the hazards associated with all the activities which will be involved. The hazards leading to possible consequences are summarized in the chapter-7 and the risk mitigation measures and intended safeguards are specifically mentioned in the chapter-7 in the EIA report. The risk to personnel, process/ operation is considered.

## 8. Provisions in the Budget for Environmental Management Plan

**Table 8.1- Environmental Management Plan**

Sr. No.	Unit	Detail	Capital Cost (Rs. In Lakhs)	Operating Cost (Rs. In Lakhs)	Maintenance Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs)	Detail
1	Waste Water	In-house ETP	10	2.8	1.8	4.6	Capital cost would include cost of ETP and recurring cost would include maintenance charges, manpower salary etc.
2	Air	Air Pollution Control Measures	22.8	2.3	1.2	3.5	Capital cost would include air pollution control devices and the recurring cost would include operation and maintenance of pollution control devices and stack emission monitoring.
3	Hazardous Management	Storage and membership	4.5	0.9	0.2	1.1	Capital cost would include expense for providing storage area for hazardous waste and recurring cost would be for solid/ hazardous waste packing & its disposal and for the membership of TSDF site

Sr. No.	Unit	Detail	Capital Cost (Rs. In Lakhs)	Operating Cost (Rs. In Lakhs)	Maintenance Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs)	Detail
4	Fire & Safety	Fire Extinguishers, Fire hydrant line, water sprinkler	7.0	1.8	1.2	3.0	Installation of Fire Extinguishers, Fire hydrant line, water sprinkler and its operation and maintenance cost
5	AWH Monitoring	Monitoring of ETP +APCM +Haz. Management System through Outsourced	1.2	0.6	0.4	1.0	Monitoring of ETP + APCM + Haz Management System through Outsourced as per CCA/EC conditions
6	Green Belt Development	Greenbelt inside the premises	4.0	0.8	0.5	1.3	Capital cost would include cost of plant species and labour cost, soil filling, soil dressing and recurring cost would include cost of maintenance of that green belt including cost of required water for plant growth.
7	Occupational Health	First aid kits, OHC and tie up with Doctor	1.0	0.2	0.3	0.5	Cost of establishing OHC, regular medical check-up of employees, Installation of fire hydrant line & extinguishers.
8	CER activity	As per list	2.03	--	--	--	As per list

Sr. No.	Unit	Detail	Capital Cost (Rs. In Lakhs)	Operating Cost (Rs. In Lakhs)	Maintenance Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs)	Detail
9	Automation, DCS system	Temperature controller system in reactors, Cut-off switches, level sensors,	15	2	2	4	Temperature controller system in reactors, Cut-off switches, level sensors,
<b>Total</b>			<b>67.53</b>	<b>11.4</b>	<b>7.6</b>	<b>19</b>	

## 9. Green Belt Details

About 1226.7651 m<sup>2</sup> (33%) area is reserved for greenbelt development, out of total plot area 3717.47 m<sup>2</sup>. The main objective of the green belt is to provide a barrier between the plant and the surrounding areas. Unit will develop greenbelt area and for this activity demands expert advice and guidance. Details of the selected plant species for greenbelt area are given in the Table.

**Table 9.1- Green Belt details**

Sr. No.	Common Name of Trees	Scientific Name	Number of Species
1.	Neem	<i>Azadirachta indica</i>	240
2.	Asopalav	<i>Polyalthia Longifolia</i>	257
3.	Mango	<i>Mangifera</i>	240
4.	Teak	<i>Tectona grandis</i>	240
5.	Golden Shower	<i>Cassia fistula</i>	240
		Total species	1217

**Table 9.2- Greenbelt development plan**

Sr. No.	Proposed Five Years Program for Greenbelt Development	
1.	Plantation Details	1st Year
2.	No. of plants	1217
3.	Yearly Percentage	100 %

## 10. Corporate Environmental Responsibility Plan

Company will regularly conduct the CSR activities for social welfare & Upliftment. In addition to CSR, as per recent OM of MoEF& CC, company will allocate separate budget for CER.

Industry will provide 1 % which is 0.0203 Cr (2.03 Lakhs) rupees of the proposed expansion project cost (i.e. Rs. 2.03 Cr.) towards the Corporate Environment Responsibility. Socio-economic development activities will be planned, as well as general necessity in nearby villages.

## 11. Conclusion

The EIA study of M/s. Karad Hospital Association (CBMW TDF) has been carried out with respect to the TORs awarded by SEIAA, Maharashtra. All the impacts likely to have an effect on the environment have been identified and efficient/adequate mitigation measures have been proposed for the same.

- The proposed project will provide quality product at lower cost to the users.
- There should be positive impact on the socio-economic condition of the area in terms of direct and indirect employment due to the proposed project.

Country will save valuable foreign exchange as import of these products will be reduced by corresponding amounts

# Thank You.....

