

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH AT NEW DELHI**

**APPEAL NO. 49 OF 2018**

**(EARLIER APPEAL NO. 4 OF 2017 (WZ))**

**IN THE MATTER OF:**

The Conservation Action Trust & Anr.

...Appellants

VERSUS

Union of India & Ors.

...Respondents

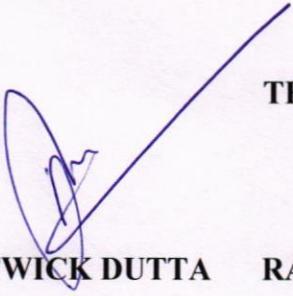
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NEW DELHI

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**WRITTEN SUBMISSIONS DATED 18.11.2020 ON BEHALF OF THE  
APPELLANTS**

**MOST RESPECTFULLY SHOWETH:-**

1. That the above titled appeal has been filed under Section 16 of the National Green Tribunal Act, 2010, challenging the Environment Clearance dated 2.11.2016 granted for the proposed expansion of Alang-Sosiya Ship Recycling Yard (Hereinafter called as "SRY") from the present ship breaking capacity of 400 ships per year to 600 ships per year at Alang and Sosiya villages, Bhavnagar district, Gujarat.

Copy of the Environmental Clearance dated 2.11.2016 is annexed herewith as

**ANNEXURE-1**

- 2. That the Appellants have raised the following critical issues in the present Appeal:-
  - i. Whether beaching method should be still permitted in India when its accepted to be the most polluting method of ship breaking across the world?
  - ii. Whether even after accepting that the beaching method is the most polluting method of ship breaking, the Project Proponent ought to have proposed for the same for grant of Environmental Clearance and whether the EAC and the MOEFCC should have granted EC for the same?

- iii. Whether adequate TORs were prescribed by the EAC and the Ministry of Environment Forest and Climate Change while granting TOR for preparation of EIA Report for the project in question?
  - iv. Whether the EIA report can be considered valid in view of the fact that there were several faults in the EIA process such as baseline air, water and noise pollution already exceeded the stipulated standards, baseline monitoring of sediments and many hazardous air pollutants had not been conducted, incremental air, water and sediments pollution load due to the project was not studied?
  - v. Whether the Public Hearing was adequate and in consonance with the provisions of the EIA Notification, 2006 to address the various issues raised?
  - vi. Whether the EAC even considered the various aspects regarding severe environmental and health related issues arising out of the dangerous activity of beaching method of ship breaking?
  - vii. Whether the EAC and Ministry ought to have sought for information regarding compliance with the Ship Breaking Code, 2013 before grant of Environmental Clearance?
3. That certain critical issues were brought to light by the Gujarat Coastal Zone Management Authority which filed its reply belatedly on 4.12.2018 regarding the validity and legality of the CRZ Clearance granted to the project in question. The following additional questions are to be considered by this Hon'ble Tribunal in light of the same:
- i. Whether the project in question is a permissible activity under CRZ Notification, 2011?
  - ii. Whether the GCZMA had the jurisdiction to recommend project in question for grant of CRZ Clearance?
4. The Appellants submit that in the present matter, the EAC and Ministry of Environment Forest and Climate Change have not applied their mind or taken relevant consideration regarding material facts while recommending and granting the impugned Environmental Clearance dated 2.11.2016. This is clearly an arbitrary

action on part of the executive which ought to be struck down by this Hon'ble Tribunal.

5. The issues raised in the Appeal are discussed in detail in the following paragraphs:-

**I. LEAST ENVIRONMENT FRIENDLY AND MOST POLLUTING METHOD CHOSEN:**

- i. The Appellant has already raised the most critical issue regarding the selection of method of ship breaking at Alang Sisoya. The highly polluting method of beaching has been selected to expand the existing ship breaking yard by granting permission for additional 15 no. of plots each admeasuring 100x90 m. This is in addition to the existing 167 plots which are already using beaching method for the purpose of carrying out ship- breaking activities.

The Appellants would like to submit certain photographs which clearly show the dangerous, hazardous and polluting nature of the activity in question. The same are being annexed as ANNEXURE-2

- ii. That the Appellant has placed on record several studies and documents which have clearly shown that beaching method is the worst method of ship breaking, both from the perspective of environment as well as health of the thousands of migrant workers who are engaged in this activity. (Refer to Annexure A-7 and A-8 at pages 103-114 of the Appeal as well as rejoinder dated 10.07.2017 at Pages 392-458) The Beaching method of ship breaking can never be environmentally safe and protective of human health. The method has the following environmental and human health issues:-

- First there is the impossibility of containing pollutants on a tidal beach where hulls of ships are often breached accidentally or by cutting, or toxic paints erode or are abraded sending persistent organic pollutants, heavy metals and oils onto the beach and into the seawater;
- Second, due to a shifting and soft wet tidal sand surface, there is the impossibility of rapidly bringing emergency response equipment, including

fire-fighting equipment and vehicles, ambulances and cranes alongside the ship, to assist or remove persons hurt inside the hull;

- Third, the impossibility of allowing cranes to work alongside to lift heavy cut sections of a ship and thereby preventing heavy cut sections from being subject to gravity, shifting or falling directly into workers or into the marine environment; and
  - Finally, there is the absolute incompatibility of conducting hazardous waste management operations (which is what they are as long as ships contain hazardous wastes) in the ecologically delicate and vital coastal zone.
- iii. That as per the Report of the Special Rapporteur to the UN Human Rights Council, titled "Report of the Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Okechukwu Ibeanu", has also noted the adverse impacts:-

*"Every year, about 600 end-of-life ships containing large amounts of toxic and hazardous substances and materials, including asbestos, polychlorinated biphenyls, heavy metals, oils and fuels, are sent to the beaches of South Asia, where they are dismantled without concrete covering or any containment other than the hull of the ship itself. This method of ship dismantling, commonly referred to as "beaching", generates high levels of pollution of coastal soil, air, sea and groundwater resources, and adversely affects local communities, which often rely on agriculture and fishing for their subsistence."*

*(Emphasis Supplied)*

- iv. The research article titled "*The Dismantling of End-of-Life Ships: The Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships*" authored by Valentina Rossi also reiterates and agrees to the view that beaching method is highly pollution and environmentally unsound practice of ship breaking. She observes as follows:-

*"Nowadays, about ninety per cent of end-of-life vessels are dismantled in Bangladesh, India, Pakistan and China. In South Asian countries, operating costs are extremely low because of inexpensive labour and, more importantly, because of inexistent or unenforced labour and environmental standards. Thanks to large intertidal zone areas where*

*high tide allows the vessels to be beached under their own power, ships are often dismantled directly on beaches (“beaching”), without any containment to prevent the pollution of soil, air and marine and freshwater resources.*

*Nor do recycling yards have the technology needed to ensure the environmentally sound and safe management and disposal of hazardous wastes and materials. A recent report published by the United Nations Environment Programme (UNEP) includes the ship-breaking activities in Bangladesh, India and Pakistan among the major land-based sources of marine pollution in the South Asian region.*

*The current methods of ship-breaking in most South Asian facilities not only have severe adverse effects on the environment, but also adversely affect the enjoyment of workers’ human rights and that of the surrounding communities relying on agriculture and fishing for their subsistence. This situation has caught the attention of the Special Rapporteurs of the Human Rights Council “on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights”. In several reports, while analyzing new trends in illicit traffic and dumping of toxic and dangerous products and wastes, the Special Rapporteur, Ms. Fatma-Zohra Uohachi Vesely, observed that prohibiting the disposal of toxic wastes in developing countries has led corporations to ship by-products to developing countries for “recycling”. However, “waste trade for recycling is either ‘sham recycling’ where wastes are not really recycled but simply burned or dumped or ‘dirty recycling’ which involves polluting operations”. She identified various forms of trade in hazardous wastes for “dirty recycling”, including the export of ships for recycling operations. The second Special Rapporteur, Mr. Okechukwu Ibeanu, devoted the second part of his last annual report (2009) to this issue. The document explains how the conditions prevailing in many ship-breaking yards in the world risk adversely affecting the enjoyment of several human rights, including the right to life, the right to the highest attainable standard of physical and mental health and the right to safe and healthy working conditions.”*

(Emphasis Added)

- v. As per Article titled “Revisiting the Ship Breaking Industry in India”, the adverse impacts of the beaching method have been succinctly adduced: -

*“The beaching method makes little effort to mitigate the potential environmental harm of these substances. Beaching involves crashing an end-of-life vessel ashore during high tides. When the tides recede,*

*workers use gas torches to cut the ship up into segments, which are pulled up to the beach for further dismantling. The whole process takes place on the sandy wetness of the beach, thereby allowing pollutants to directly percolate into the soil and the atmosphere.*

*The structural indifference of beaching towards the environment is evident from the studies undertaken to record the impact of beaching on Alang's ecosystem. These studies have reported inflated levels of TBTs (by 10 to 100 million times over the accepted limit) and asbestos in the soil, along with the presence of other pollutants in the sea and ground water. While there is a dearth of studies on the impact of shipbreaking on marine life near the Alang beaches, similar studies conducted in Bangladesh which also follows the beaching method have concluded that there was a relatively low abundance of zooplanktons, which are essential to the marine ecosystem, in the affected areas due to an alarming rate of heavy metal pollution in the sediments.*

*Ecologically insensitive shipbreaking also amplifies the exposure of workers to toxins, as is evident from a recent study conducted by National Institute of Occupational Health ('NIOH'), Gujarat which showed that 15 out of 94 workers demonstrated symptoms of asbestos poisoning, which is primarily caused by pollutants released during shipbreaking."*

(Emphasis Added)

- vi. That the Appellant had also raised the issue of violation of international standards and treaty commitments under the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, 1989. It is pertinent to note that India has ratified the said Convention and is therefore bound by the various obligations under the said Convention. It is submitted that the Basel Convention's Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of the Ships has categorically stated the dismal condition of Alang ship yard as follows:-

**"3.4.2 India**

*India is the world's leading ship-breaking nation in terms of volume. Activities are centred along the beaches of Alang in the Indian State of Gujarat.*

***Insufficiencies relating to workers' health and safety and protection of the environment have been affirmed by several independent assessments at both Alang and other ship-breaking sites.***

*From the investigations undertaken, high concentrations of heavy metals, asbestos, PAH, and tributyl tin (TBT) were revealed. A lack of waste reception and disposal capability have been revealed and particular focus has been drawn to the careless handling of hazardous substances such as ACM. Workers at the dismantling sites in Alang are exposed to these contaminants 24 hours a day, living as they do within the immediate vicinity of their workplace”*

*(Emphasis Supplied).*

- vii. That the EIA Report prepared and submitted by the Project Proponent states that the beaching method has the maximum potential for pollution. Relevant extract from the EIA Report is annexed herewith as ANNEXURE-3
- viii. That the Appellants would like to show a pictorial/diagrammatical representation of each of the method of ship breaking, which would clearly show as to how the selected method is the most polluting method. The same is annexed herewith as ANNEXURE-4
- ix. That further, even after admitting that the beaching method is the most polluting method, the EIA Report gives the following reasons for choosing the same at Alang Sosiya:-

*“5.2.6 Selected Method*

*At Alang the beaching method is followed. The reasons for selecting the same are:*

- 1. High Tidal Range (<10 m) which enables beaching of very large ships including ULCCs and Cape Size Vessels*
- 2. Suitable strata over a continuous long stretch of beach*
- 3. Relatively calm water”*

Thus, no ecological considerations were looked at while choosing the said method.

- x. That it is pertinent to note that even though one of the components of the Project in question states that in Phase-I, existing 70 ship breaking plots would be upgraded by constructing impermeable floor, every document states that the project area includes intertidal zones and areas immediately landward of the High Tide Line.

Thus, the first stages of decontamination, cutting, etc. would take place in the inter-tidal zone. This has been recorded in the minutes of the 9th Meeting of the EAC (Infra-2) dated 21-22 September 2016 wherein it has been stated that:-

*“Project area comprises inter-tidal zone and area immediately landward of HTL.”*

## **II. INADEQUATE TORs PRESCRIBED BY THE EAC:**

- i. That it is submitted that the project was appraised by the EAC (Infrastructure) for grant of TOR during its 141st Meeting which was held from 26-28th November 2014. The said minutes also record that the ships are grounded/beached by their own propulsion during high tide. The Project Proponent had at that time given a proposal with the following components:-
  - (I) Pilot project to improve existing infrastructure In Alang area -impervious flooring for 70 plots (150 x 60 or 150 x 90 m) in Phase-I and remaining 97 in Phase-II,
  - (II) Dry Dock facility for the purpose of pre-cleaning of hazardous materials and wastes,
  - (III) Waste oil treatment system and Incinerator and
  - (IV) Housing, Hospital facilities, community centre, community school to be developed for welfare of labourer's working at the yard
- ii. The EAC recommended for grant of TOR for preparation of EIA Report for the said proposal. On the basis of the said recommendation, the Ministry of Environment Forest and Climate Change granted TOR vide letter dated 22.12.2014 wherein only nine TORs were prescribed. Out of the said nine TORs, three TORs sought various plans, one sought for information regarding MoU with authorised agency for disposal of hazardous waste. In fact, the TOR did not prescribe that the Standard TOR for the ship breaking industry prepared by the Ministry must be followed. This becomes important in light of the fact that the EIA Report that was prepared by the EIA Consultant of the Project Proponent was highly lacking and inadequate.

iii. That the project again came up for scoping before the EAC in its 147<sup>th</sup> Meeting held on 13-14<sup>th</sup> April 2014, wherein the Project Proponent informed the EAC that the Project has some additional components which included:-

- (I) Providing additional improved 15 Nos. of Ship Recycling Plots (size approx. 110 x 90 m) southward to last Ship Recycling Plot at Alang and
- (II) Hazardous Material Removal pre-treatment facility (Dry Dock) of size of 400 x 166 m including outer limits, which may be used for ship repairing and building when dry dock is not in use for decontamination.

The Project Proponent further requested that the same TORs that were granted vide letter dated 22.12.2014 be issued in respect of the additional components of the project.

iv. That it is submitted that once the Project Proponent had added new components which essentially meant expansion of the project by adding 15 new plots for ship breaking by beaching method and one dry dock for decontamination, the EAC ought to have considered the issue seriously and ought to have issued additional TORs keeping in mind that 15 new ship breaking plots and a dry dock would now be constructed as part of the project.

Copy of the minutes of the EAC meeting dated 26.08.2014 is annexed herewith as ANNEXURE-5

Copy of the TOR letter dated 22.12.2014 is annexed herewith as ANNEXURE-6

Copy of the minutes of the 147<sup>th</sup> EAC Meeting is annexed herewith as ANNEXURE-7

### III. LACUNAE AND FAULTS IN THE EIA REPORT

i. That the Appellant has raised serious issues relating to the EIA Report including the fact that the EIA Report does not contain the following important studies:

a. **Baseline Monitoring Studies for several hazardous pollutants.**

That the EIA Report is completely lacking with regard to the baseline monitoring of several hazardous pollutants which are associated with ship-breaking industry. These include Asbestos, Polychlorinated Biphenyls (PCBs), VOCs Manganese, Nickel, Chromium, Iron, Aluminium, Lead, Carbon Dioxide, Carbon Monoxide, PM, Sulphur Dioxide and oxides of Nitrogen (NOx). However, the Project

Proponent has only conducted baseline studies regarding PM, SO<sub>2</sub> and NO<sub>x</sub>. None of the other hazardous pollutants have been monitored. It is pertinent to note that even the Technical EIA Guidance Manual for Ship Breaking Yards of the MOEFCC categorically states that the said activity results in the emission of these hazardous pollutants. (Refer Para 17-18 of the Appeal and Annexure A-6 of the Appeal at page 93-102) Even, the Standard TOR prescribed by the Ministry of Environment Forest and Climate Change for the activity in question prescribes details of VOC emissions. However, this was never complied by the Project Proponent. This clearly shows that the EIA Report was completely lacking and therefore has vitiated the entire process of the Environmental Clearance under the EIA Notification, 2006.

Copy of the Standard TOR for ship breaking yard is annexed herewith as **ANNEXURE-8**

**b. Incremental Air Pollution load due to the proposed project.**

That the EIA Report only presents the details of the emissions and incremental load due to operation of the proposed incinerator of the TSDF unit, that too only for PM, SO<sub>2</sub> and NO<sub>x</sub>. None of the other pollutants including asbestos and VOCs have been looked into and studied and presented by the EIA Consultant. (Refer Para 19-21 of the Appeal at Page 23-26).

Copy of Relevant extracts of the EIA Report on air pollution is annexed as **ANNEXURE-9**

**c. Incremental water pollution due to the proposed project.**

The Project Proponent has not given any details as to what would be the incremental load due to ballast, bilge and sewage discharge due to the proposed up gradation and expansion of the ship breaking activity in Alang Sosiya. This becomes all the more important in light of the fact that the baseline studies had revealed that the water pollution levels of ground water as well as surface water is exceeding the permissible limits. (Refer Para 22-24 at pages 26-29)

Copy of the relevant extracts of the EIA Report on water pollution is annexed herewith as **ANNEXURE-10**

d. **Baseline monitoring of sediment pollution as well as study on incremental load of the same**

That such a study is critical when the project in question is ship breaking using the beaching method. In such a case, there is a huge ecological stress on the sediments and sea water. However, the Project Proponent failed to conduct baseline studies as well as study the impact of incremental load due to the project in question on existing pollution levels. The Appellant has put on record several studies which have found that there is a high level of pollution in the sediments and enrichment/accumulation of heavy metals in the coastal sediments of Alang Sosiya. (Refer Para 25- 27 at pages 29-32 as well as Annexure A-7 at pages 103-107) As per research article titled "Distribution, enrichment and accumulation of heavy metals in coastal sediments of Alang Sosiya Ship Scrapping yard, India" the following findings have been shown:-

*"3. Results and discussion*

*.....The comparison of the average enrichment factor of each heavy metal found in BF and FF sediments of all the stations (SS0-SS11 and SSM) reveals that Co, Cr, Cu, Mn, Pb and Zn at SSM (Mahuva) show EF < 1 in the case of Fe, Ni and Zn in BF; Fe and Ni in FF, and close to one in the case of Co, Cr, Cu, Mn and Pb in BF; Co, Cr, Cu, Mn, Pb and Zn in FF sediments. This may be due to local crystal composition rather than anthropogenic activities in and around Mahuva region. **The highest enrichment factor at SS1-SS10 is attributed totally to the ship scrapping industry at this region. Similarly, the high enrichment factor observed at SS0 and SS11, 5 km away from Ship scrapping yard is accounted for by the effect of this industry at and around Alang-Sosiya.**"*

(Emphasis Supplied)

Thus, it was imperative that the Project Proponent should have addressed the said issue in the EIA Report. This clearly shows the insensitivity and lackadaisical manner in which the EIA Report was prepared in the present case.

e. **Social impact assessment vis-à-vis socio-economic security of the workers engaged in the project in question.**

It is submitted that as it has been submitted by the Project Proponent itself in the EIA Report, about 72.5% of the present work population in the ship breaking

yard are wage labourers. The present number of these wage labourers who are working in the ship breaking yard is about 40,000. It is submitted that although the Alang-Sosiya Ship breaking yard has been in operation since the year 1982, till date most of the working population does not have access to basic amenities such as proper housing, sanitation, proper health care, sustainable livelihoods, income security, etc. Most of the wage labourers working in the ship breaking yard live in small shanties and do not have proper sanitation, as the government has not provided them housing facilities. Further, there is also no employment scheme for the workers in the ship breaking yard. Most of the workers in the ship breaking yard are hired as wage labourers only.

In addition to this, the project area does not also have a proper hospital till date. There is only one small clinic which gives basic medication and first aid to the patients. Other than these small medical facilities, all the medical facilities are available at a town called Bhavnagar, which is more than 50 kilometres from the project area. It is submitted that the Ship breaking process affects the health of the people in different ways, including bodily injuries. In addition, the workers are exposed to high levels of pollution. As submitted above, the Air, Water and Noise pollution in the project are already in excess of prescribed limits. Thus, the requirement of the proper hospital which would attend to every medical is most needed and should have been already there in the Ship breaking yard. Similarly, the income and social security, including permanent employment, should have been provided to many of the wage labourers long time ago only. However, the government has so far not provided the working populations with any of the above facilities and benefits.

That the EIA report of the proposed project does not mention or provide any details of the above-said issues and present socio-economic situation of the working population of Ship Breaking Yard. Similarly, the EIA Report does not also provide any details and does not promise anything about the sustainable livelihoods, permanent employment, income security, employment beneficial programs or schemes, health care, etc. to the working population of the ship

breaking yard. It only generically states that the proposed project will have positive impact and would be benefit of the people. However, none of the above issues have been discussed in the EIA report. Hence, it is submitted that the proposed project does not give any Socio-Economic security to the working population in the ship breaking yard.

- ii. That the EIA Report has already stated that the air and water pollution and noise parameters are exceeding the stipulated standards. It is pertinent to note that the said baseline studies were conducted during the summer season, when the pollution levels are known to be reduced. Even so, the parameters of air quality and water quality are far exceeding the standards. (Refer Para 11-16 of the Appeal, at pages 16-18)
- iii. That even after finding that the levels of air pollution as well as water pollution are exceeding stipulated standards, the EIA Report has recommended not only up gradation of the ship yard but also addition of new plots which would only increase the levels of air pollution as well as water pollution. There is no justification given in the report as to how the project can come up in an already critically polluted area.
- iv. That it is pertinent to note that the Project Proponent has not responded to even a single issue that has been raised by the Appellant in its reply dated 08.04.2017. This has been also raised by the Appellants in their rejoinder dated (at Pages 397-409 of the record). This clearly indicates a complete lack of seriousness as they have failed to respond to any of the substantial issues raised by the Appellants in the instant Appeal. Despite knowing that the method of beaching is the worst method with maximum pollution potential, the same was chosen.
- v. That further, the following was held with respect to sanctity of information submitted to the EAC for Appraisal process:

*"Para 8 (vi) of the EC Regulations, 2006 voices the sanctity of information or data material to screening or scoping or appraisal or decision on the application in following terms:*

*"Deliberate concealment and or submission of false or misleading information or data which is material to screening or scoping or appraisal*

*or decision on the application shall make the application liable for rejection, and cancellation or prior environment clearance granted on that basis".*

*The reason for such information or data to be sacrosanct is evident from the entire mechanism which is so interconnected that one false or misleading information and/or its deliberate concealment data in the process necessarily has cascading effect on rest that follows."*

#### **IV. FAULTY PUBLIC HEARING**

- i. That the Appellant had raised the issue that the Public Hearing held for the project in question was not in consonance with the accepted principles of public participation in decision making and access to information as envisaged in the EIA Notification, 2006. The Appellant had raised the issue that only 69 persons had participated in the Public Hearing and only eight persons had spoken at the meeting.
- ii. That in fact, as revealed from the documents annexed along with the reply dated 19.04.2017 of the Gujarat SPCB (at Pages 254-257 of the record), out of the eight persons who had raised queries during the public hearing, three persons were ship breakers and were more concerned about their businesses.
- iii. That the said reply also revealed that no public notice was published in any national newspaper. This is in clear violation of the EIA Notification, 2006. As per the provision of Clause 3.1 of Appendix IV of the EIA Notification, 2006 the notice for the public hearing of a project has to be published in one National Daily and in a regional vernacular daily. Since the said notice was never published in a national daily, it is clear that the public at large was never given an opportunity to put the objections.
- iv. That it is important to note that the Gujarat SPCB has not put on record, the recording of the entire Public Hearing Proceedings. It is submitted that there are no documents to show if the Project Proponent had presented both benefits as well as negative impacts that could arise from the project in question during the public hearing. It is submitted that the judgment of the Hon'ble Delhi High Court in Utkarsh Mandal v. Union of India 2009 SCC OnLine Del 3836 has clearly laid down that a public consultation process which involves public hearing necessarily

needs to follow a democratic and participative process and the public must have full information regarding pros and cons of the proposed project to make a meaningful informed participation. The relevant extract is reproduced hereunder:

*'31. The purport of the above clauses is to make the public hearing a meaningful one with full participation of all interested persons who may have a point of view to state. The above clauses operationalise the decentralised decision making in a democratic set up where the views of those who are likely to be affected by a decision are given a say and an opportunity to voice their concerns. This procedure is intended to render the decision fair and participative and not thrust from above on a people who may be unaware of the implications of the decision. ... **If their participation has to be meaningful, informed and meaningful, then they must have full information of the pros and cons of the proposed project and the impact it is likely to have on the environment in the area.***

(Emphasis Supplied)

#### V. NON APPLICATION OF MIND BY THE EAC AS WELL AS THE MOEFCC

- i. That the Appellant has raised the issue that both EAC and MoEF&CC have not considered many of the issues pertaining to the present project and have not conducted the appraisal in accordance with the principles of precaution and sustainable development. Given the fact that ship breaking is an extremely hazardous activity, the EAC should have undertaken the pros and cons of allowing for expansion when there is evidence that the environmental conditions at Alang are far from ideal.
- ii. That the EAC failed to consider the fact that the Air, Water and Noise quality in the project area are already above the stipulated limits, as per the findings of the Project Proponent in the EIA Report. Thus, the carrying capacity of the ecosystem of the project area is in critical condition. The EAC also failed to take into consideration that the Project Proponent has not conducted the baseline monitoring of a number of air pollutants and has not studied the incremental air and water and sediment pollution which will be added by the present project. Similarly, the project proponent has also not conducted the Hydro-geological and Health impact

assessment studies. The Project Proponent has also not studied the Socio-economic situation of the working population of the ship breaking yard and the public hearing conducted for the project is deficient and ineffective. Further, the TOR granted for the EIA study of the project itself are inadequate and are not sufficient to evaluate the Environmental and Social impacts of the proposed project.

- iii. It is submitted that the EAC and MoEF&CC have failed to note these issues and have not applied their minds to consider and evaluate impacts of the project during the scoping and appraisal stages. The meeting minutes of EAC do not provide any details of the impact assessment and evaluation conducted by the EAC on the environmental and social impacts of the proposed project. Further, EAC has also not made an effort to visit the project in order to better appraise the projects. The Environmental pollution as well as the Social living conditions of Ship Breaking Yard have been reported and documented over the years by a number of reports. Considering these issues, the EAC ought to have visited the project site before the scoping and appraisal stages. However, the EAC has disregarded it. Hence, it is submitted that the EAC and MoEF&CC have failed to apply their minds and have conducted the appraisal of the proposed project in haste and against the principles of precaution and sustainable development.
- iv. That it was held by the Southern Zone of this Hon'ble Tribunal in Sreeranganathan K P v. Union of India [2014 ALL (I) NGT REPORTER (2) (SZ) 1], which was also a matter contesting the grant of clearance to a Greenfield Airport in Kerala, that:

*"For a huge project as the one in the instant case, the consideration for approval has been done in such a cursory and arbitrary manner even without taking note of the implication and importance of environmental issues. On the same day the EAC took for appraisal not only the airport project in question, but also other projects which would be indicative of the haste and speedy exercise of its function of appraisal of the project. It casts a doubt that whether the EAC would have accepted the response made by the Project Proponent in respect of the objections and concerns raised at the time of public hearing as a Gospel Truth. Thus, the EAC has not conducted itself as mandated by the EIA Notification, 2006 since it has not made proper appraisal by considering the available materials and objections in order to*

*make proper evaluation of the project before making a recommendation for grant of EC".*

- v. That it is pertinent to note that the Environmental Clearance has been recommended and granted by the EAC and the Ministry, respectively, without giving any reasons as to how they came to the conclusion that the said project may be granted Environmental Clearance. The impugned Environmental Clearance is completely devoid of reasons. In the matter of **Kranti Associates Pvt. Ltd. and Ors. vs. Masood Ahmed Khan and Ors.**, reported in (2010) 9 SCC 496, the Hon'ble Supreme Court has summarized the importance of giving reasoned decisions. The relevant extract is reproduced hereunder:

*"47. Summarising the above discussion, this Court holds:(a) In India the judicial trend has always been to record reasons, even in administrative decisions, if such decisions affect anyone prejudicially.(b) A quasi-judicial authority must record reasons in support of its conclusions.(c) Insistence on recording of reasons is meant to serve the wider principle of justice that justice must not only be done it must also appear to be done as well.(d) Recording of reasons also operates as a valid restraint on any possible arbitrary exercise of judicial and quasi-judicial or even administrative power.(e) Reasons reassure that discretion has been exercised by the decision-maker on relevant grounds and by disregarding extraneous considerations.(f) Reasons have virtually become as indispensable a component of a decision-making process as observing principles of natural justice by judicial, quasi-judicial and even by administrative bodies.(g) Reasons facilitate the process of judicial review by superior courts.(h) The ongoing judicial trend in all countries committed to rule of law and constitutional governance is in favour of reasoned decisions based on relevant facts. This is virtually the lifeblood of judicial decision-making justifying the principle that reason is the soul of justice.(i) Judicial or even quasi-judicial opinions these days can be as different as the judges and authorities who deliver them. All these decisions serve one common purpose which is to demonstrate by reason that the relevant factors have been objectively considered. This is important for sustaining the litigants' faith in the justice delivery system.(j) Insistence on reason is a requirement for both judicial accountability and transparency.(k) If a judge or a quasi-judicial authority is not candid enough about his/her decision-making process then it is impossible to know whether the person deciding is faithful to the doctrine of precedent or to principles of incrementalism.(l) Reasons in support of*

*decisions must be cogent, clear and succinct. A pretence of reasons or "rubber-stamp reasons" is not to be equated with a valid decision-making process.(m) It cannot be doubted that transparency is the sine qua non of restraint on abuse of judicial powers. Transparency in decision-making not only makes the judges and decision-makers less prone to errors but also makes them subject to broader scrutiny. (See David Shapiro in Defence of Judicial Candor [(1987) 100 Harvard Law Review 731-37] .)(n) Since the requirement to record reasons emanates from the broad doctrine of fairness in decision-making, the said requirement is now virtually a component of human rights and was considered part of Strasbourg Jurisprudence. See Ruiz Torija v. Spain [(1994) 19 EHRR 553] EHRR, at 562 para 29 and Anya v. University of Oxford [2001 EWCA Civ 405 (CA)] , wherein the Court referred to Article 6 of the European Convention of Human Rights which requires, "adequate and intelligent reasons must be given for judicial decisions".(o) In all common law jurisdictions judgments play a vital role in setting up precedents for the future. Therefore, for development of law, requirement of giving reasons for the decision is of the essence and is virtually a part of "due process".*

Copy of the minutes of the 8<sup>th</sup> EAC Meeting is annexed herewith as

**ANNEXURE-11**

Copy of the 9<sup>th</sup> EAC Meeting dated 21-22<sup>nd</sup> September 2016 is annexed herewith

as **ANNEXURE-12**

6. That in its reply dated 08.04.2017, the Project Proponent had taken a preliminary objection stating that the issues raised in the instant Appeal have been decided by the Hon'ble Supreme Court in the matter of Research Foundation for Science and Technology v. Union of India &Ors. (W.P. 657 of 1995). In this regard, the Appellants have submitted in their rejoinder dated 10.07.2017 that in the said matter, the Hon'ble Supreme Court had issued several general directions regarding the ship breaking industry.
7. That the instant appeal has been filed challenging the Environmental and CRZ Clearance dated 2.11.2016 granted to the Project Proponent for upgradation as well as expansion of the Alang Sosiya Ship Recycling Yard which is a statutory right under Section 16 of the National Green Tribunal Act, 2010. Further as per General Condition No. 16 of the impugned EC states that any appeal against the Clearance

shall be filed with the National Green Tribunal. If the Project Proponent had an objection to the said condition, they should have preferred an Appeal against the said letter. However, the same has not been done, till date.

8. That the Appellant would also like to address the issues arising out of the CRZ Clearance granted vide the impugned letter of the Ministry of Environment Forest and Climate Change which was brought to light vide reply dated 4.12.2018 of the Gujarat Coastal Zone Management Authority, Respondent No. 3:

**I. THE PROJECT IN QUESTION IS NOT A PERMISSIBLE ACTIVITY UNDER CRZ NOTIFICATION, 2011**

9. It is submitted that the project in question is "*Upgradation of existing ship recycling yard at Alang-Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations.*" It is submitted that a CRZ Clearance can be granted only to an activity which is permissible under the CRZ Notification, 2011. As a general principle, in all CRZ areas, the following prohibition has been imposed under the Notification under Para 3. The relevant provision is reproduced hereunder:

*"3. Prohibited activities within CRZ,- The following are declared as prohibited activities within the CRZ,-*

*(i) Setting up of new industries and expansion of existing industries.."*

There are several exceptions to this general prohibition under Para 3 (i) from clauses (a) to (e). The provision under clause (a) would be relevant in the present case:-

*"(a) those directly related to waterfront or directly needing foreshore facilities;*

*Explanation: The expression "foreshore facilities" means those activities permissible under this notification and they require waterfront for their operations such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, lighthouses, navigational safety facilities, coastal police stations and the like.;"*

In the present case, it is submitted that the activity of ship breaking or recycling in a "safe and environmentally sound" manner does not require foreshore facilities that require waterfront for their activities. The most environmentally sound manner of ship breaking is the dry docking method which has already been admitted by the Project Proponent in the EIA Report submitted to the Ministry of Environment

Forest and Climate Change. The dry docking method does not require waterfront facilities for its operation. In fact despite admitting that the dry dock method is the most environmentally sound method, the Project Proponent has chosen the least environmentally sound method, i.e. beaching. The Appellant has put on record enough material to show how beaching method has adverse impacts on environment as well as human health.

10. That it is to be noted that the inter-tidal zone between High Tide Line and Low Tide Line has been classified as CRZ-I Zone under the CRZ Notification, 2011. The project in question is admittedly situated in CRZ-I (B) as per Para 7 of the Notification which states as follows:

*“7. Classification of the CRZ – For the purpose of conserving and protecting the coastal areas and marine waters, the CRZ area shall be classified as follows, namely:-*

*(i) CRZ-I,-*

*...*

*B. The area between Low Tide Line and High Tide Line”*

In addition, it is important to note that the existence of sand dunes [page number 546 of the record] would also lead to the area being classified as CRZ-I (A) as per the CRZ Notification, 2011.

11. That further it is submitted that the activity of “ship breaking/recycling” does not figure in any of the enlisted permissible activities in CRZ I area as per the provisions of the CRZ Notification, 2011. Paragraph 8 lays down the norms for regulation of permissible activities in CRZ areas. The relevant

*“8. Norms for regulation of activities permissible under this notification,-*

*(i) The development or construction activities in different categories of CRZ shall be regulated by the concerned CZMA in accordance with the following norms, namely:-*

*...*

*I. CRZ-I,-*

*(i) no new construction shall be permitted in CRZ-I except,-*

*(a) projects relating to Department of Atomic Energy;*

*(b) pipelines, conveying systems including transmission lines;*

*(c) facilities that are essential for activities permissible under CRZ-I;*

- (d) installation of weather radar for monitoring of cyclones movement and prediction by Indian Meteorological Department;
- (e) construction of trans harbour sea link and without affecting the tidal flow of water, between LTL and HTL.
- (f) development of green field airport already approved at only Navi Mumbai;"

There is a specific provision with respect to CRZ I (B) area between LTL and HTL which are not ecologically sensitive. The relevant portion is reproduced hereunder:-

*"(ii) Areas between LTL and HTL which are not ecologically sensitive, necessary safety measures will be incorporated while permitting the following, namely:-*

- (a) exploration and extraction of natural gas;*
- (b) construction of dispensaries, schools, public rainshelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are required for traditional inhabitants living within the biosphere reserves after obtaining approval from concerned CZMA.*
- (c) necessary safety measure shall be incorporated while permitting such developmental activities in the area falling in the hazard zone;*
- (d) salt harvesting by solar evaporation of seawater;*
- (e) desalination plants;*
- (f) storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports;*
- (g) construction of trans harbour sea links, roads on stilts or pillars without affecting the tidal flow of water."*

It is clear from the above listed permissible activities that ship breaking/recycling yard is not permissible in CRZ-I area especially in the sand dunes.

12. That in fact, it is pertinent to note that even though ship construction yard is permissible under Para 4 of the Notification of 2011, the activity of ship breaking/recycling is completely left out from the list under the Notification of 2011.

The relevant part of Para 4 is reproduced hereunder:

*4. Regulation of permissible activities in CRZ area.- The following activities shall be regulated except those prohibited in para 3 above,-*

...

- (f) construction and operation for ports and harbours, jetties, wharves, quays, slipways, ship construction yards, breakwaters, groynes, erosion control measures;*

Copy of the CRZ Notification, 2011 is annexed herewith as **ANNEXURE-13**

13. That in this regard, the Appellants would like to highlight a recent judgment of the Southern Zone Bench of this Hon'ble Tribunal in the matter of **Meenava Thanthai K.R. Selvaraj Kumar Meenavar Nala Sangam v. Union of India & Ors.** (Appeal No. 4 of 2019 (SZ)), this Hon'ble Tribunal vide judgment dated 30.09.2020 has noted that the CRZ Notification was drafted very carefully, and therefore must be strictly construed, otherwise there would be adverse impact on the coastal environment. The relevant part of the judgment is reproduced hereunder:

*"if it is liberally construed and it was allowed to provide beyond that area without any restriction then, it is likely to be misused by the authorities and such facilities will be permitted in such zone indiscriminately throughout the foreshore area of the Coastal Zone which will have a great adverse impact on coastal environment and also it will affect the interest of the traditional fishermen community as such."*

Copy of the relevant pages of the judgment dated 30.09.2020 of the Hon'ble National Green Tribunal Southern Zone Bench in **Meenava Thanthai K.R. Selvaraj Kumar Meenavar Nala Sangam v. Union of India & Ors.** (Appeal No. 4 of 2019 (SZ)) is annexed herewith as **ANNEXURE-14**

## **II.GCZMA did not have the jurisdiction to recommend project in question for grant of CRZ Clearance**

14. That it is submitted that the GCZMA can permit only those activities which are permissible under law, i.e. provisions of the CRZ Notification, 2011. It is clear from the preceding paragraphs that the activity of ship breaking yard is not permissible in CRZ I area. Therefore, the recommendation for grant of CRZ clearance for the project in question was impermissible under law. The GCZMA ought to have rejected the project at the outset. There is a catena of decisions of the Hon'ble Supreme Court which have held that the powers of the statutory bodies are derived, controlled and restricted by the Statutes which create them and the Rules and Regulations framed thereunder (**Delhi Transport Corporation v DTC Mazdoor Congress & Ors.**, reported in ((1991) Supp 1 SCC 600)). In the matter of **V.K. Ashokan v. CCE**, reported in (2009) 14 SCC 85, the Hon'ble Supreme Court has held as follows:-

*"52. ...Where the statutory authority, it is well known, exercises its jurisdiction conferred on it by a statute, it has to apply its own mind and the procedures laid down therefor must be scrupulously followed."*

53. In *Ramana Dayaram Shetty v. International Airport Authority of India* [(1979) 3 SCC 489 : AIR 1979 SC 1628] this Court held: (SCC pp. 503-04, para 10)

“10. ... It is a well-settled rule of administrative law that an executive authority must be rigorously held to the standards by which it professes its actions to be judged and it must scrupulously observe those standards on pain of invalidation of an act in violation of them. ...

*It is a rule of administrative law which has been judicially evolved as a check against exercise of arbitrary power by the executive authority. ...*

54. *It is furthermore a well-settled principle of law that a statutory authority must exercise its jurisdiction within the four corners of the statute. Any action taken which is not within the domain of the said authority would be illegal and without jurisdiction.”*

15. That it is a well settled principle of Administrative law that what cannot be done directly, cannot be done indirectly. In the matter of *Dayal Singh v. Union of India*, reported in (2003) 2 SCC 593, the Hon'ble Supreme Court has held as follows:

“33. *The person whose lands were acquired, thus, having entered into an agreement cannot be said to have any legal right which can be enforced in a court of law so as to enable him to obtain an order from the court directing the Union of India to reopen the agreement, only because by reason of a subsequent award an enhanced amount of compensation has been paid for similar class of lands. If a right to get the amount of compensation redetermined is held to be implicit in the Act, the same for all intent and purport would amount to invoking the provisions of Section 28-A of the Land Acquisition Act indirectly which cannot be done directly. It is a well-settled principle of law that what cannot be done directly cannot be done indirectly.*

...

37. *It is a well-settled principle of law that the court cannot read anything into the statutory provision which is plain and unambiguous. The court has to find out legislative intent only from the language employed in the statutes. Surmises and conjectures cannot be restricted to for interpretation of statutes. (See Union of India v. Filip Tiago De Gama [(1990) 1 SCC 277 : AIR 1990 SC 981] .)”*

(Emphasis Added)

16. That the Appellant has raised specific issues relating to the legality and correctness of the environmental clearance granted to the expansion project. Thus, it is clear that these issues have not been raised before the Hon'ble Supreme Court in the Research Foundation (supra) matter. In any case, the Appeal is with respect to the Environmental Clearance granted by the MoEF for the expansion project, which is not the subject matter of Research Foundation wherein generic directions regarding the ship breaking industry at Alang were passed. Further, there is no specific order of the Hon'ble Supreme Court that Appeals against the grant of Environmental Clearance can be filed only before

the Hon'ble Supreme Court or placing a specific bar on the Appeals being filed before this Hon'ble Tribunal.

**ORDER DATED 19.08.2019 AND MOEF&CC REPORT OF JULY 2020**

17. That on 19.08.2019, this Hon'ble Tribunal had passed the following order:-

*"After taking into consideration the issues raised by the applicant and also the prayer, inter alia, that a **Comprehensive Impact Assessment with respect to the existing environment impact due to Beaching method and Ship Breaking method be called for, we direct the Ministry of Environment, Forest and Climate Change to have an environment audit conducted through an agency i.e. National Institute of Oceanography or NEERI, in compliance of CRZ Notification. Let the study be done within a period of three months positively.**"*

(Emphasis Added)

Thus, it is the Ministry of Environment Forest and Climate Change was given a clear mandate of undertaking a "comprehensive" assessment of the impact of the beaching method of ship breaking at Alang.

18. That subsequently, the Ministry has filed a report titled "**Marine Environmental Monitoring and Verification for Compliance of CRZ Notification at Alang Ship Recycling Yard**" in July 2020. (The detailed response on behalf of the Appellant in relation to the said report, is part of the record at pages 1217 onwards). However the following submissions need to be highlighted here with regard to the said report:-

- a. **Firstly, the conclusions of the study are completely contrary to the findings in the report.** The study clearly found that the levels of toxic heavy metals were highly exceeding in the water as well as sediment samples taken from the shore and inter-tidal near shore locations. The findings at Table 5.1.5 at Page no. 162 of the Report clearly shows exceeding levels of heavy metals such as chromium, manganese, iron, cobalt, nickel, copper, zinc, arsenic, cadmium and lead in the onshore and near shore water samples. It is pertinent to note that a major ship run off from ship breaking activities is that of Mercury (Hg). However, the NIO failed to conduct any analysis of the water samples for Mercury in the entire report. Thus, it is clear that the presence of such high and toxic levels of heavy metals can be attributed only

to the ship breaking activity. However, the report concludes that *“the impact of ship breaking activities on the marine environment is not significant”*. This is clearly contrary, and it is submitted that this Hon’ble Tribunal may pass directions to the Project Proponent to discontinue with this highly polluting method of ship breaking and shift to a “safe and environmentally sound” methods of ship breaking.

b. That despite such categorical findings, the Report concludes as follows:-

*“In general, the ecology of coastal water of Alang is seen similar to that of surrounding area of Bhavnagar and Dahej and it compares well with earlier studies of 2007–08 in Alang area. The adverse impact of ship breaking activities on water quality, sediment quality and biological characteristics was not significant except a certain intertidal region showing high concentration of PHc and some metals.*

...

***Influence of ship-breaking activities on intertidal microbenthic fauna resulting poor standing stock, was localized at Alang.** The results of bioaccumulation suggest that the concentration of all the metals are within the specified values for human consumption, except Fe. To confirm the impact of ship breaking activities on the ecology of Alang, the long-term monitoring is essential.*

***Present study reveals significant improvement in ship-recycling yards with respect to safety, security, health and environment. However, the living area of most of the shipbreaking workers is poor in regards to the infrastructure and sanitization, that can be prioritised in future. The residential accommodation developed by GMB jointly with shipbreakers association is either insufficient and/or there is no awareness among the workers.”***

(Emphasis Added)

c. **Secondly, the study clearly states that the entire ship breaking activity is being conducted in CRZ 1 (B), CRZ III and CRZ-IV and that the major activities happen in CRZ I (B) area.** (Page 135 of the report). At page 137-138 of the report, it has been observed as follows:-

*“The ship breaking yards including ship breaking units are listed at 7 (b) of the schedule of EIA Notification, 2006 covered under Category ‘A’, as it comes under the project requiring water front and fore shore facilities. **However, by grounding and cutting activities, temporarily disturbance***

*benthic fauna takes place. Therefore, upgradation of ship recycling yard at Alang is highly required for the preservation of coastal environment”*

(Emphasis Added)

The main ground raised by the Appellants in the above titled Appeal is that beaching method is the most polluting and unsafe method of ship breaking. This has been clearly shown to be the observation of the Report as well. **It is pertinent to note that ship breaking by beaching method is not an activity permissible under the CRZ Notification.**

- d. The Report however erred in stating that *“The ship breaking yards including ship breaking units are listed at 7 (b) of the schedule of EIA Notification, 2006 covered under Category ‘A’, as it comes under the project requiring waterfront and fore shore facilities.”* The Schedule of the EIA Notification, 2006 nowhere states that ship breaking activities require waterfront and fore shore facilities. The relevant part of the Schedule is reproduced hereunder:-

<b>7(b)</b>	All ship breaking yards including ship breaking units.	All projects
-------------	--	--------------

It may be noted that the project in question is *“Upgradation of existing ship recycling yard at Alang-Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations.”* **It is pertinent to note that a CRZ Clearance can be granted only to an activity which is permissible under the CRZ Notification, 2011.**

- 19. That therefore, in light of the above made submissions, it is clear that the Respondents have shown a complete lack of seriousness as they have failed to respond to any of the substantial issues raised by the Appellants in the instant Appeal. Despite knowing that the method of beaching is the worst method with maximum pollution potential, the same was chosen. It is submitted that the impugned EC is in complete violation of the Precautionary Principle and the Article 21 of the Constitution which guarantees a right to healthy environment. The EC is also in violation of Article 14 as it is arbitrary and suffers from

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Wednesbury unreasonableness (Tata Cellular vs Union Of India (1994) 6 SCC 651) since relevant facts were not considered while recommending the project and the granting the impugned clearance. Therefore it is submitted that the instant Appeal may be allowed and the prayers sought in the Appeal may be granted.

**FILED BY:**



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To,

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**Subject:** Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board –Environmental and CRZ Clearance reg.

**Ref.:** Your online proposal no. IA/GJ/MIS/24799/2014 dated 8<sup>th</sup> July, 2016.

Sir,

This has reference to your online proposal no. IA/GJ/MIS/24799/2014 dated 8<sup>th</sup> July, 2016 alongwith project documents including Form I, Terms of References, Pre-feasibility Report, EIA/EMP Report regarding above mentioned project.

2.0 The Ministry of Environment, Forest and Climate Change has examined the application. It is noted that the proposal is for upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board. The existing yard stretches over a length of 10 km of coastline. The yard is divided into 167 plots which have been leased to private entrepreneurs for ship recycling. The existing yard has the capacity to recycle 400 ships per year to recover 4 million tonnes per year (Mt/yr) of various materials which include over 99% steel. Details of the proposed upgradation and expansion project are as given below:

- a. **Upgradation of existing Ship recycling plots:** 70 plots in Phase I and remaining 97 plots in Phase II.
- b. **Hazardous Material removal Pre-treatment Facility:** Constructing two nos. of dry-docks (each of dimension: l x b x h = 300 m x 50 m x 11.5 m) for pre-cleaning of hazardous materials from ships. Dry-dock 1 will be at the southern end of the existing yard and Dry-dock-2 about 2 km further south. Both the dry-docks may also be used for ship repair and ship building purposes when there are no ships for decontamination.

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- c. **Additional facilities:** (1) Waste oil treatment system. (2) Incinerator at the existing dedicated waste Treatment Storage and Disposal Facility (TSDF) site located within Alang Notified Area.
- d. **Additional Plots:** 15 nos. 100 x 90 m plots between the two proposed dry-docks.

3.0 The total quantity of capital dredging from each dry-dock works to about 1.00 million cubic metres (Mm<sup>3</sup>). Quantity of maintenance dredging will be 0.10 Mm<sup>3</sup> for each dry-dock.

4.0 Cost of project is Rs. 1630 Crore. Total water requirement for industrial purpose will be 2000 m<sup>3</sup>/day and potable purpose will be 2000 m<sup>3</sup>/day after expansion. At present, 1000 m<sup>3</sup>/day is being supplied through pipeline from Trapaj. The remaining water is supplied in tankers from bore-wells located well away from the coast. Ballast water will be treated for oil content and sediments before discharging. Quantity of bilge water generation will be 52 m<sup>3</sup>/day, which will be treated in the ETP (60 m<sup>3</sup>/day). Each plot will have RCC storage tank of 25 m<sup>3</sup> capacity. Sewage will be treated in the STP. Power requirement for grid will be increased from 1.35 MW to 3.0 MW after expansion. Emergency power will be provided by DG set.

5.0 Adequate measures will be taken while handling asbestos. Asbestos & asbestos containing material (ACM) will be removed before actual ship cutting starts; Dismantling of large sub-assemblies containing asbestos/ACM will be carried out in special completely enclosed chambers equipped with special air filters. Pressure inside will be kept slightly below atmospheric pressure. Salvageable asbestos/ACM will be sold to only authorized recyclers only. All asbestos containing waste-packed in leak proof & labelled containers will be disposed in TSDF. Glass wool, Paint chips and waste containing poly chlorinated biphenyls (PCBs), waste Rubber will be sent to TSDF. Poly-urethane foam (PUF) & Polystyrene (Thermocol), Sludge Residue and Contaminated Material, Unusable plastics & non-metallic paints, Rexene will be incinerated in the incinerator. Incinerator should be designed as per CPCB guidelines. Energy shall be recovered from incinerator.

6.0 Public hearing was held on 20<sup>th</sup> October, 2015.

7.0 Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2016-99-E (T Cell) dated 8<sup>th</sup> June, 2016 has recommended the proposed facilities to MoEF&CC under the provisions of the CRZ Notification, 2011. As per the CRZ maps prepared by the NCSCM, Chennai proposed facilities fall in the CRZ – (IB), CRZ (III) and CRZ (IV) category.

8.0 All the projects related to ship breaking yards including ship breaking units are listed at 7(a) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at Central level.

9.0 The proposal was considered by the Expert Appraisal Committee (Infrastructure-2) in its meetings held during 26<sup>th</sup> – 28<sup>th</sup> November, 2014, 23<sup>rd</sup> – 24<sup>th</sup> April, 2015, 28<sup>th</sup>-29<sup>th</sup> July, 2016 and 21<sup>st</sup> – 22<sup>nd</sup> September, 2016 respectively. Project Proponent and the EIA Consultant namely M/s MECON Limited, have presented EIA / EMP report as per the TOR. EAC has found the EIA / EMP Report and additional information to be adequate and in full consonance with the presented TORs. The Committee recommended the proposal for environmental and CRZ clearance.

10.0 As per the recommendations of EAC, the Ministry of Environment, Forest & Climate Change hereby accords Environmental and CRZ Clearance for the above-mentioned project "Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat by M/s Gujarat

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Maritime Board", under the provisions of the Environment Impact Assessment Notification, 2006 & Coastal Regulation Zone (CRZ) Notification, 2011 and amendments thereto and Circulars issued thereon and subject to the compliance of the following specific conditions, in addition to the general conditions mentioned below:

**A. SPECIFIC CONDITIONS:**

- i) 'Consent to Establish' shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- ii) Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
- iii) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.
- iv) Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring report. A creek protection plan and a plan to manage the marine biodiversity shall be prepared, documented and implemented through the NIOS or any other specialist institution of repute in marine and brackish water biology
- v) GMB shall implement the plan for upgradation of the existing ship recycling units in such a way that will help to improve the overall marine water quality of the sea atleast for Class SW-IV water (for harbour water) parameters i.e. pH range 6.5-9.0; Dissolved Oxygen 3.0 mg/l or 40 percent saturation value, which ever is higher; Colour and Odour: no noticeable colour or offensive odour; Floating Matters Oil, grease and scum (including Petroleum products) 10 mg/l; Fecal Coliform 500/100 ml (PAN) Not exceeding 1000/100 ml in 20 percent of samples in the year and in 3 consecutive samples in monsoon months; Biochemical Oxygen Demand (3 days at 27°C) 5 mg/l.
- vi) All the recommendations and conditions specified by Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2016-99-E (T Cell) dated 8<sup>th</sup> June, 2016 shall be complied with. All the provisions of the CRZ notification, 2011 as amended from time to time shall be strictly complied with.
- vii) All details on waste management and handling as given in letter no. GMB/ENV/91(C)/JICA/5404 dated 19-7-2016 as submitted before the committee should also be provided to the State Pollution Control Board along with the application for consent and authorisation to enable them to verify compliance on site before the Consents to Operate, authorisation or any other permission to operate is given. An action plan shall be formulated, documented and implemented for the existing and proposed dock to ensure zero waste spill.
- viii) While breaking the ship, boom (circular pneumatic type) should be placed around the ship to control the spillage.
- ix) Collection vehicles used for the collection and transportation of solid/liquid waste should be adequately designed to handle specific type of wastes and shall have protection against the leaking or spilling of solid waste or being blown or hurled from such vehicles.

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- x) Safety and health requirements relating to occupational exposure to Asbestos, while ship breaking shall be in compliance with IS11456-1986 and subsequent amendments. Facility must ensure that workers are not exposed to air-borne asbestos concentrations in excess of prescribed Permissible Exposure Limits (PELs).
- xi) There should be a safe working and operating procedures ensuring safe accessibility to all the areas and compartments of the ship and safe conditions for hot work.
- xii) Hazardous waste inventory that identifies, quantifies and locates the type of waste on board should be carried out before the ship comes to the shore. Chemical safety data sheets should be made available for each hazardous substance that is identified. As per the High Power Committee, maintaining the complete inventory of hazardous wastes on board is a mandatory task for any ship owner. This inventory shall be submitted by the State Maritime Board to the SPCB to ensure safe disposal of hazardous waste. Further permissions for ship anchoring and beaching will be based on hazardous waste inventory. Removing and cleaning of liquids, fuels and oils: Before start of ship dismantling, all the liquid residues should be removed and cleaned from the ship. This process may continue during the entire ship dismantling process.
- xiii) The hazardous wastes identified by the inventory data be properly removed and disposed. Dismantling plan should be drawn before start of the work. This plan forms the basis for sectional breaking of the ship; proper storage; breaking and disposal of waste. Waste obtained during dismantling should be sorted and segregated based on the type of waste and disposal option. Specific wastes from the ship breaking yard are as follows: Asbestos / Polychlorinated biphenyls (PCBs) / Bilge and ballast waters / Oils and fuels / Metal cutting / Paints Removal and Disposal of Miscellaneous Ship Machinery
- xiv) The Project Proponent should perform air surveillance activities in work areas where asbestos is being removed, including meeting the general monitoring criteria, conducting initial exposure assessments, and performing daily and periodic monitoring. The facility must keep an accurate record of all measurements taken to monitor the workers' exposure to asbestos. Facility is required to conduct medical surveillance for all workers who, for a combined total of 30 or more days per year, are performing asbestos removal work or are exposed at or above the permissible exposure limit. This includes medical examination and consultation prior to beginning work, at least annually, and upon termination of employment. The facility must establish and maintain an accurate record for each worker subject to medical surveillance. These records must be maintained for the duration of the worker's employment, plus an additional 30 years.
- xv) The Project Proponent should provide, at no cost, a training program for employees likely to be exposed to asbestos removal work during the ship breaking.
- xvi) A comprehensive Medical contingency plan shall be evolved, documented and implemented for occupational health and safety. Proper periodical medical check-ups and insurance plans shall be undertaken for workers during and after their employment on the premises. The project will build in a continued program of

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sensitising all stake holders to the hazards of asbestos exposure and its management.

- xvii) The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.
- xviii) Incinerator shall be designed as per CPCB guidelines. Energy shall be recovered from incinerator. Online pollutant monitoring shall be provided as per CPCB guidelines for monitoring particulate matter, SO<sub>2</sub>, NO<sub>x</sub> and CO from the incinerator stack. The periodical monitoring of Dioxins and Furans in the Stack emissions shall be carried out. Efficiency of scrubber shall be monitored regularly and maintained properly.
- xix) The removal of paints and coatings, regardless of the process used, generates wastes that must be managed and disposed. The Project Proponent should implement procedures to ensure that all wastes are contained and stored in a manner that will prevent their release into the environment.
- xx) Refrigerants (CFC-12, HCFC-22, HFC), which are ozone depleting or with high Global Warming Potential from the ship shall be recovered without leaking into atmosphere and stored safely. Recovered refrigerant shall be sent to authorized recycler/reclaimer. If recycling /reclaiming are not possible, then recovered refrigerant shall be sent to authorized destruction facilities.
- xxi) Municipal solid waste shall be disposed off as per Solid Waste Management Rules, 2016. Construction activity related wastes (C & D waste) shall be disposed off as per Construction and Demolition Waste Management Rules, 2016. Plastic waste shall be disposed off as per Plastic Waste Management Rules 2016. E-waste shall be disposed off as per e-waste (Management) Rules, 2016. Lead acid batteries shall be disposed off as per Batteries (Management and Handling ) Rules, 2001 and its amendment from time to time.
- xxii) All hazardous wastes including onboard wastes (while ships dock at the site) shall be handled as per the Hazardous and other Waste (Management & Transboundary Movement) Rules, 2016.
- xxiii) To ensure better safety and security of plots, open spaces (buffers) can be created for giving emergency access/ parking to/for fire tenders, installing water lines for emergency services, access to beach, anchoring rescue boats and dinghies.
- xxiv) Truck parking facility should be provided for easy accessibility of vehicles for transporting scrap and other materials and to relieve the traffic congestion around the yards. The parking facility should have basic infrastructure like potable water, sanitation, resting, shops, eating joints, vehicle repair shops, fuelling stations, etc., for the drivers. It should also have accommodation for transporter companies/agents. To accommodate more number of vehicles the trucks can be parked angularly.
- xxv) Facility must ensure that workers are protected from exposure to airborne PCB concentrations. As per OSHA (Occupational Safety and Health Administration) regulations, governing exposure to PCBs in the workplace include two time-weighted averages for chlorodiphenyl.

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- xxvi) All encroachments shall be removed and suitably rehabilitated as proposed. The project proponents would provide for waste management from eateries, dhabas and other sources within the area of jurisdiction/ influence of the project.
- xxvii) All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.
- xxviii) Automatic /online monitoring system (24 x 7 monitoring devices) for air pollution as well as water pollution in respect of flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB and in the GMB's website.
- xxix) A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions. The current upgradation project should be supervised and monitored by the proposed cell.
- xxx) The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.
- xxxi) The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also during their presentation to the EAC.
- xxxii) The Project Proponent shall prepare operating manual in respect of all activities. It shall cover all safety & environment related issues and system. Measures to be taken for protection. One set of environmental manual shall be made available at the project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office.
- xxxiii) Corporate Social Responsibility:
  - a. The Company shall have a well laid down Environment Policy approved by the Board of Directors.
  - b. The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/ deviation/violation of the environmental or forest norms/ conditions.
  - c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.
  - d. To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/ violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

**B. GENERAL CONDITIONS:**

- (i) Appropriate measures must be taken while undertaking dredging/digging activities to avoid any likely degradation of water quality.
- (ii) Full support shall be extended to the officers of this Ministry/ Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.

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- (iii) A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.
- (iv) Ministry of Environment, Forest and Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (v) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied to the satisfaction of the Ministry.
- (vi) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest and Climate Change.
- (vii) The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.
- (viii) A copy of the environmental clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.

11.0 These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 2006, including the amendments and rules made thereafter.

12.0 All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.

13.0 The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at <http://www.envfor.nic.in>. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.

14.0 This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.

15.0 Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.

16.0 Any appeal against this Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

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17.0 A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.

18.0 The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEFCC, the respective Zonal Office of CPCB and the SPCB.

19.0 The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEFCC by e-mail.

AS1  
21/11/16  
(A N Singh)  
Scientist D

Copy to :-

1. The Principal Secretary, Forests & Environment Department, Government of Gujarat, Sachivalaya, 8<sup>th</sup> Floor, Gandhi Nagar - 382 010, Gujarat.
2. The Additional Principal Chief Conservator of Forests (Western Zone), Ministry of Environment, Forest and Climate Change, Regional Office, E-5, Arera Colony, Link Road - 3, Bhopal -462 016, M.P.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Gujarat State Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhi Nagar-382 043, Gujarat.
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhavan, Jor bagh Road, New Delhi.
6. Guard File/Monitoring File/Record File.

/  
(A N Singh)  
Scientist D

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ANNEXURE-2



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1306 34



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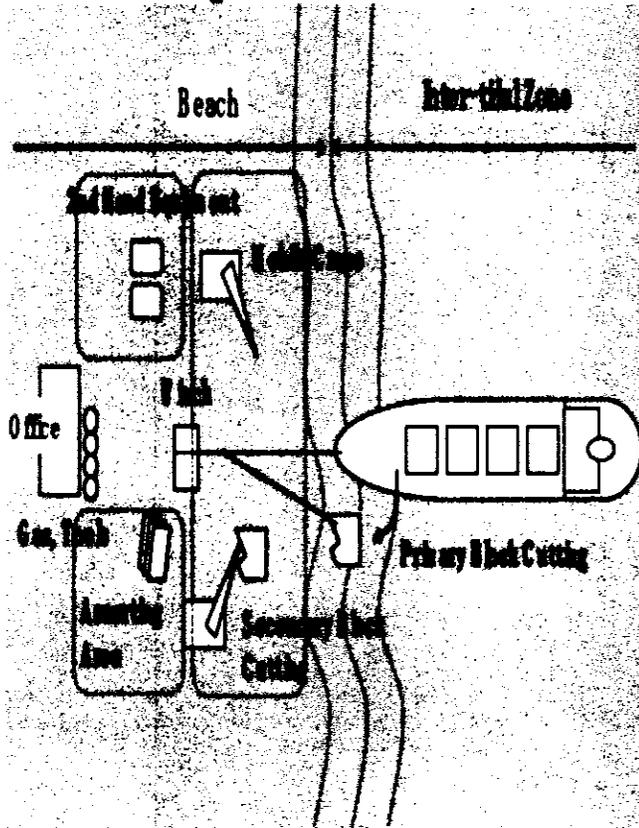
Table 5.1: Relative Merits / Demerits of Different Ship Recycling Methods

Attribute	Beaching Method	Dry Docking Method	Berthing Method	Air Bag Method	Slip-way Method
Size of Ship	Restricted only by tidal range at site	Restricted by dimensions and specifications of dry dock	Restricted by navigational constraints & quay length.	Restricted by load bearing capacity of air bags.	Restricted
Infrastructure Requirement	Minimum. Only mechanical material handling eqpt. reqd.	Dry dock and mechanical material handling eqpt. reqd.	Quay & mechanical handling eqpt. reqd. Land for beaching also reqd.	Winches, air bags, air compressors, keel blocks & mechanical handling eqpt. reqd.	Civil infrastructure, winches & mechanical handling eqpt. reqd.
Working efficiency	Low as mobile machinery have to be withdrawn during high tides. Working during day time only. Recovered materials have to be carried / winched across hundreds of m of inter-tidal zone	Round the dock working possible. Material sorting and storage areas may be located close by.	Round the dock working possible. Material sorting and storage areas may be located close by.	Round the dock working possible. Material sorting and storage areas may be located close by.	Round the dock working possible. Material sorting and storage areas may be located close by.
Time required	Fast	Fast but less than that for beaching	Slow	Fast	Fast
Effect of stormy weather	Rough seas may restrict deployment of men and machines and increase pollution	No effect	May have some effect	No effect	No effect
Pollution Potential	Maximum	Minimum	May be high but can be controlled to some extent	Low	Low
Time for casualty evacuation	Has to wait till low tide	Minimum delay	Minimum delay	Minimum delay	Minimum delay

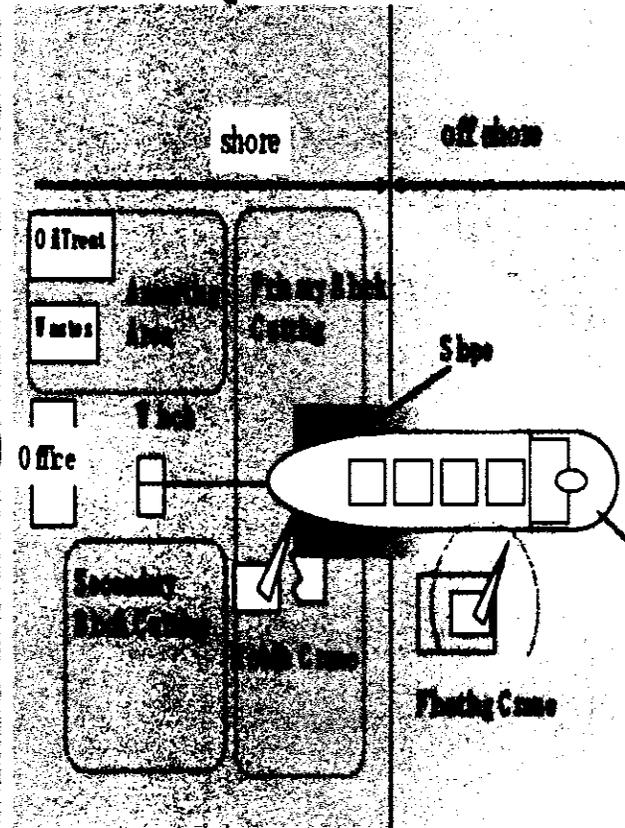


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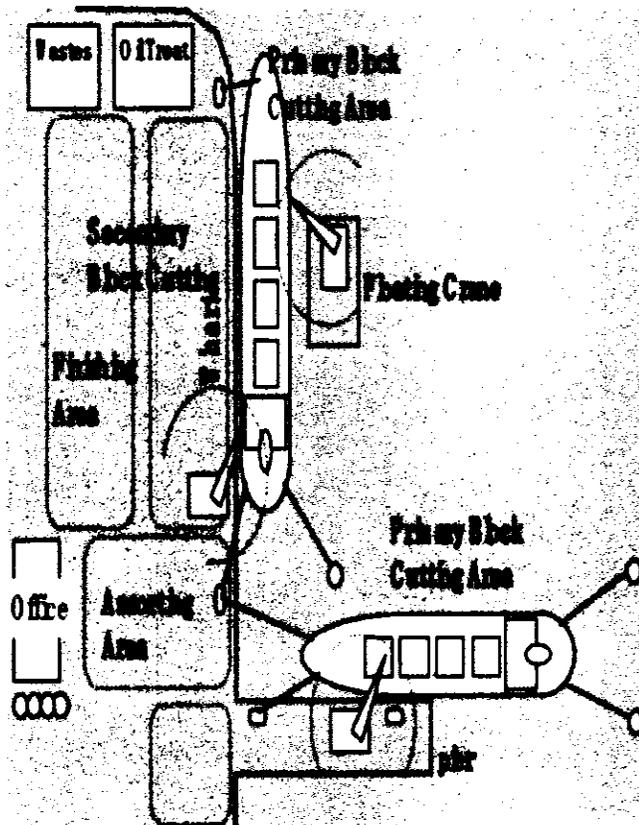
1. Beaching



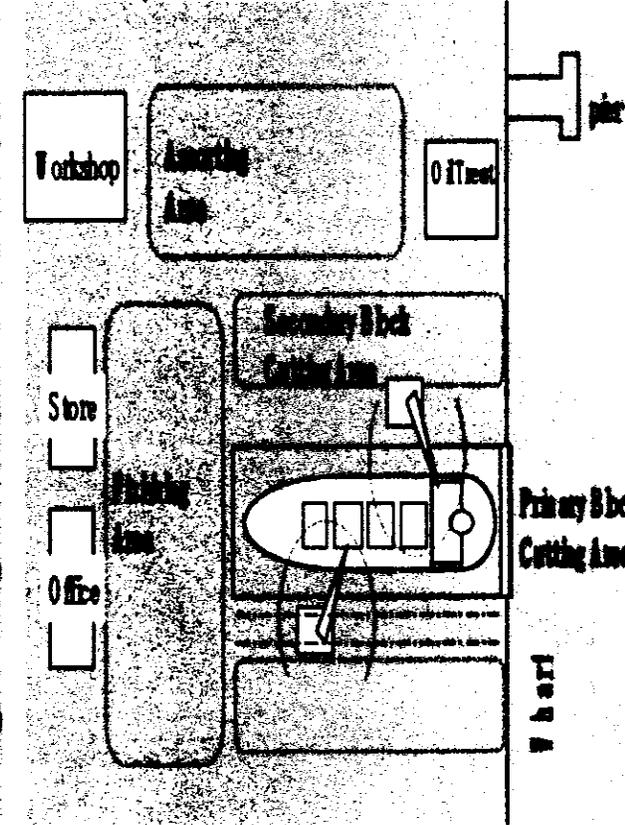
2. Landing



3. Afloat



4. Dry



MINUTES

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**Minutes of 141<sup>st</sup> meeting of Expert Appraisal Committee for Projects related to Infrastructure Development, Coastal Regulation Zone, Building/Construction and Miscellaneous projects held during 26<sup>th</sup> to 28<sup>th</sup> November, 2014.**

**1. Opening Remarks of the Chairman.**

The Chairman welcomed the members to the 141<sup>st</sup> meeting of the Expert Appraisal Committee.

**2. Confirmation of the Minutes of the 140<sup>th</sup> Meeting of the EAC held on 27<sup>th</sup> – 29<sup>th</sup> October 2014 at New Delhi.**

The EAC confirmed the minutes of the 140<sup>th</sup> Meeting of the EAC held on 27<sup>th</sup> – 29<sup>th</sup> October 2014 at New Delhi.

**3. Consideration of Proposals**

**3.1 Finalisation of Model ToRs for infrastructure projects**

**3.1.1** The model draft ToRs for the Airport, Industrial Estate and Port & Harbor were circulated to Members for comments so as to finalize the ToRs.

**3.2. Extension of validity of CRZ Clearance granted for intake and outfall facility of 2x660MW Coal based thermal Power plant near Thiyagavalli and kudikadu villages of Cuddalore district, Tamil Nadu by M/s Cuddalore PowerGen Corporation Limited [F. No. 11-116/2008-IA.III]**

**3.2.1** The Project Proponent informed that the CRZ clearance was granted on 11.06.2009, there is delay in acquisition of land hence requested for extension of validity for a period of five years. There is no change in the scope of the project. The application was made on 9<sup>th</sup> May, 2014 within validity period.

**3.2.2** The EAC recommended for extension of validity of CRZ clearance dated 11.06.2009 for a period of five years with effect from 11.06.2014.

**3.3 Extension of validity of CRZ and Environmental Clearance granted for development of deep water port (Phase-I) at Machilipatnam, Andhra Pradesh by M/s Machilipatnam Port Limited [F.No. 10-5/2009-IA-III]**

**3.3.1** The Project Proponent informed that the Environment and CRZ clearance was granted on 25.11. 2009, there is delay in transfer of land by the Government of Andhra Pradesh hence requested for extension of validity for a period of five years. There is no change in the scope of the project.

- ii. Layout showing green belt of at least 5 m width all along the periphery.
- iii. Details on the availability of capacity of the secured land fill facility where the incinerator ash and MEE residue are proposed to be disposed.
- iv. Details of responses on the issues raised during Public Hearing in a tabular form indicating issues raised, and commitments by proponent along with the action plan.

**3.10. Finalization of ToR for proposed Strategic Storage of Crude oil Cavern, Manglore, Karnataka by M/s ISPRL [F.No.21-94/2014-IA.III]**

3.10.1 The proposal was for CRZ clearance for laying of 1.4 km pipeline and was examined by the EAC in its meeting held in September, 2014 and recommended for grant of CRZ Clearance.

**3.11. Finalization of ToR for up-gradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board [F.No.11-43/2014-IA.III]**

3.11.1 The Project Proponent made the presentation and informed that:

- i. Alang is located on the Western part of Gulf of Cambay in South Gujarat (Latitude 21<sup>0</sup>15'-21<sup>0</sup>29' N; Longitude 72<sup>0</sup>5'-72<sup>0</sup>15' E).
- ii. Stretching over 10 km of the coastline, extending about 100 m inland from the shore, the area is covered by the port limits of Talaja. At present there are 167 ship recycling plots that are leased out to private entrepreneurs.
- iii. In operation since 1982, over 5500 vessels have been scrapped in the yard, including warships, tankers and even oil rigs.
- iv. Ships are grounded/beached by their own propulsion in high tide.
- v. After the beaching is completed, residual fuels are removed and gas free confirmed.
- vi. Large hull blocks are cut by gas torch.
- vii. Hull block cut will be pulled by winch and further cut to smaller sizes.
- viii. Remaining hull will be towed to shore side by using winches.
- ix. Hull steels and other materials are cut down to truck size or smaller size as required by the market
- x. Main engines or other large equipment will be finally pulled up to the shore and lifted by utilizing cranes.
- xi. All the regulatory requirements on ship recycling procedures such as Gas Free Certificate: Safe for entry and hot work certified by Department of Explosive (PESO), Inventory of Hazardous Waste on board by Gujarat Pollution Control Board (GPCB), Ship Recycling Facility Management Plan (RFMP) and Ship Recycling Plan (SRP) by GMB etc, will be followed.
- xii. Lightening: reduce weight by removing oil, equipment, furniture etc., prior to beaching to tidal amplitude for beaching.
- xiii. Grounding and preparatory works
- xiv. Before commencement of work, all tanks are decontaminated & checked by GPCB.
- xv. Sludge is cleaned with sand and packed, transferred to TSDF with the control of manifest system

- xvi. Asbestos is extracted by trained workers with PPEs, Scattering protection, packed in double sealed bags and transferred to TSDF.
- xvii. Present up-gradation included (i) Pilot project to improve existing infrastructure in Alang area -impervious flooring for 70 plots (150 x 60 or 150 x 90 m) in Phase-I and remaining 97 in Phase-II, (ii) Dry Dock facility for the purpose of pre-cleaning of hazardous materials and wastes, (iii) Waste oil treatment system and Incinerator and (iv) Housing, Hospital facilities, community centre, community school to be developed for welfare of labourer's working at the yard.

**3.11.2 The EAC after deliberation recommended for granting ToR with the following specific ToRs:**

- i. Details of the processes for each activity, generation of wastes, types quantity and methodology for collection, storage, treatment and disposal of wastes be submitted.
- ii. MoU with authorized agency for disposal of hazardous wastes if any be submitted,
- iii. Detailed base line marine water quality vis-a-vis likely impact due to ship breaking and mitigation proposed be submitted.
- iv. Details of personal prospective equipments (gas masks, dust masks, hand gloves, safety shoes, safety goggles, etc) for workers engaged for cutting, dismantling, isolation and segregation process be submitted.
- v. Details of the reclamation along with the source of materials and its quantity & quality be submitted .
- vi. Details of shore line changes along with the shore protection if nay required be submitted .
- vii. Details of Environmental Management Plan and Environmental Monitoring Plan with parameters and costs be submitted
- viii. Details of Oil Spill Contingent Management Plan be submitted .
- ix. Details of Risk Assessment, Disaster Management Plan including emergency evacuation during natural and man-made disaster like floods, cyclone, tsunami and earth quakes etc. be submitted
- x. Public Hearing should be conducted for the project in accordance with provisions of Environment Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan along with the action plan.

**3.12 Finalization of ToR for proposed construction of Industrial Park at Attivaram Village, TalukaOzili, District Srii Potti Sriramulu Nellore, Andhra Pradesh by M/APIIC [F.No.21-93/2014-IA.III]**

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**F.No.11-43/2014-IA.III**  
Government of India  
Ministry of Environment, Forests & Climate Change  
(IA.III Section)

Indira Paryavaran Bhawan,  
Jor Bagh Road,  
New Delhi - 110 003.

22nd.  
Dated: December, 2014

To  
**The Deputy General Manager (Env),**  
M/s Gujarat Maritime Board,  
Sector-10-A, "Chh" Road,  
Opp Air Force Station,  
Gandhinagar - 382010, Gujarat

**Subject: Up-gradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board - ToR reg.**

Sir,

This has reference to your letter No. GMB/Env/91/JICA/6224 dated 16.09.2014 forwarding along with application seeking for Terms of Reference for the aforesaid project under the Environment Impact Assessment Notification, 2006.

2. The proposal was considered by the EAC in its 141<sup>st</sup> meeting held on 26<sup>th</sup> - 28<sup>th</sup> November, 2014 and the proponent has informed that:

- i. Alang is located on the Western part of Gulf of Cambay in South Gujarat (Latitude 21<sup>o</sup>15'-21<sup>o</sup>29' N; Longitude 72<sup>o</sup>05'-72<sup>o</sup>15' E).
- ii. Stretching over 10 km of the coastline, extending about 100 m inland from the shore, the area is covered by the port limits of Talaja. At present there are 167 ship recycling plots that are leased out to private entrepreneurs.
- iii. In operation since 1982, over 5500 vessels have been scrapped in the yard, including warships, tankers and even oil rigs.
- iv. Ships are grounded/beached by their own propulsion in high tide.
- v. After the beaching is completed, residual fuels are removed and gas free confirmed.
- vi. Large hull blocks are cut by gas torch.
- vii. Hull block cut will be pulled by winch and further cut to smaller sizes.
- viii. Remaining hull will be towed to shore side by using winches.
- ix. Hull steels and other materials are cut down to truck size or smaller size as required by the market
- x. Main engines or other large equipment will be finally pulled up to the shore and lifted by utilizing cranes.
- xi. All the regulatory requirements on ship recycling procedures such as Gas Free Certificate: Safe for entry and hot work certified by Department of Explosive (PESO), Inventory of Hazardous Waste on

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board by Gujarat Pollution Control Board (GPCB), Ship Recycling Facility Management Plan (RFMP) and Ship Recycling Plan (SRP) by GMB etc, will be followed.

- xii. Lightening: reduce weight by removing oil, equipment, furniture etc., prior to beaching to tidal amplitude for beaching.
- xiii. Grounding and preparatory works
- xiv. Before commencement of work, all tanks are decontaminated & checked by GPCB.
- xv. Sludge is cleaned with sand and packed, transferred to TSDF with the control of manifest system
- xvi. Asbestos is extracted by trained workers with PPEs, Scattering protection, packed in double sealed bags and transferred to TSDF.
- xvii. Present up-gradation included (i) Pilot project to improve existing infrastructure in Alang area -impervious flooring for 70 plots (150 x 60 or 150 x 90 m) in Phase-I and remaining 97 in Phase-II, (ii) Dry Dock facility for the purpose of pre-cleaning of hazardous materials and wastes, (iii) Waste oil treatment system and Incinerator and (iv) Housing, Hospital facilities, community center, community school to be developed for welfare of labourer's working at the yard.

3. The Expert Appraisal Committee (EAC) has considered the proposal in its 141<sup>st</sup> meeting held on 26<sup>th</sup> - 28<sup>th</sup> November, 2014 and recommended for the TOR with the following specific TOR with general conditions for preparation of the Environment Impact Assessment (EIA) Report and Environment Management Plan (EMP) in respect of the **Up- gradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board:**

- (i) Submit the details of the processes for each activity, generation of wastes, types quantity and methodology for collection, storage, treatment and disposal of wastes.
- (ii) MoU with authorized agency for disposal of hazardous wastes if any be submitted,
- (iii) Submit the detailed base line marine water quality vis-a-vis likely impact due to ship breaking and mitigation proposed.
- (iv) Submit the details of personal prospective equipments (gas masks, dust masks, hand gloves, safety shoes, safety goggles, etc) for workers engaged for cutting, dismantling, isolation and segregation process.
- (v) Submit the details of the reclamation along with the source of materials and its quantity & quality.
- (vi) Submit the details of shore line changes along with the shore protection, if any required.

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- (vii) Details of Environmental Management Plan and Environmental Monitoring Plan with parameters and costs be submitted
  - (viii) Submit the details of Oil Spill Contingent Management Plan.
  - (ix) Submit the details of Risk Assessment, Disaster Management Plan including emergency evacuation during natural and man-made disaster like floods, cyclone, tsunami and earth quakes etc.

**General Guidelines**

- (i) The EIA document shall be printed on both sides, as far as possible.
- (ii) All documents should be properly indexed, page numbered.
- (iii) Period/date of data collection should be clearly indicated.
- (iv) Authenticated English translation of all material provided in Regional languages.
- (v) The letter/application for EC should quote the MoEF&CC File No. and also attach a copy of the letter prescribing the TOR.
- (vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
- (vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Questionnaire related to the project (posted on MoEF&CC website) with all sections duly filled in shall also be submitted at the time of applying for EC.
- (viii) Grant of TOR does not mean grant of EC.
- (ix) Grant of TOR/EC to the present project does not mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.
- (x) Grant of EC is also subject to Circulars issued under the EIA Notification 2006, which are available on the MoEF&CC website: [www.envfor.nic.in](http://www.envfor.nic.in).
- (xi) The status of accreditation of the EIA consultant with NABET/QCI shall be specifically mentioned. The consultant shall certify that his accreditation is for the sector for which this EIA is prepared.

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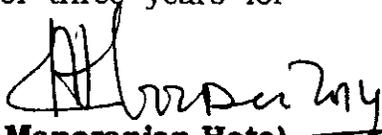
- (xii) On the front page of EIA/EMP reports, the name of the consultant/consultancy firm along with their complete details including their accreditation, if any shall be indicated. The consultant while submitting the EIA/EMP report shall give an undertaking to the effect that the prescribed TORs (TOR proposed by the project proponent and additional TOR given by the MoEF) have been complied with and the data submitted is factually correct (Refer MoEF office memorandum dated 4<sup>th</sup> August, 2009).
- (xiii) While submitting the EIA/EMP reports, the name of the experts associated with/involved in the preparation of these reports and the laboratories through which the samples have been got analysed should be stated in the report. It shall clearly be indicated whether these laboratories are approved under the Environment (Protection) Act, 1986 and the rules made there under (Please refer MoEF office memorandum dated 4<sup>th</sup> August, 2009). The project leader of the EIA study shall also be mentioned.
- (xiv) All the TOR points as presented before the Expert Appraisal Committee (EAC) shall be covered.

4. A detailed draft EIA/EMP report should be prepared in terms of the above additional ToRs and should be submitted to the State Pollution Control Board for conduct of Public Hearing. Public Hearing to be conducted for the project in accordance with the provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.

5. You are required to submit the detailed final EIA/EMP prepared as per ToRs including issues raised during Public Hearing to the Ministry for considering the proposal for environmental clearance within 3 years as per the MoEF&CC O.M. No.J-11013/41/2006-IA-II(I) (P) dated 08.10.2014.

6. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc. vide notification of the MoEF dated 19.07.2013.

7. The prescribed ToRs would be valid for a period of three years for submission of the EIA/EMP Reports.

  
(Dr. Manoranjan Hota)  
Director

Copy to  
The Member Secretary, Gujarat State Pollution Control Board, Paryavaran Bhawan, Sector 10 A, Gandhinagar-382 010, Gujarat.

ToR\_Alang\_Shipyard

- xii. The NIO, Goa has carried out CRZ demarcation study along with preparation of CRZ map in 1: 4,000 scale. As per this report, the project falls in CRZ-I and CRZ-III area. The proposed jetty along with Amba River is in CRZ-I, part of proposed stack yard and other port associated facilities including conveyor belt are in CRZ-I and CRZ-III. In the northern side of the Jetty, around 20m wide mangroves are noticed all along the river, which would be left untouched since the proposed activities are 50m or more away from the mangroves. Only approach to berths will pass over the mangroves. The structures do not block any light penetration and thus mangroves can thrive and grow below. Beyond mangroves towards the landward side, most of the area is agricultural lands/ fallow lands. As per the land use map, the proposed and surrounding areas comprise of agriculture/barren lands, patches of mangroves, small creeks, built up area and terrestrial vegetation.
- xiii. As per the EIA report wherein studies regarding marine ecology, distribution of benthic organism, air and water, noise environment are done, impact on flow hydrodynamics and the river morphology would be limited to the blocking effect of the piles on the river water course.
- xiii. No breakwater/groin/training bunds are proposed as part of the project. The configuration of the proposed jetty does not obstruct flow of water to the creek system around the project.

**3.8.2. The EAC after deliberations deferred its decision and suggested PP to provide following additional information:**

- (i) Provide details of the plots without mangroves. The PP may use Google imagery for this purpose.
- (ii) Specify changes in hydrodynamics of affected water body due to blocking effect of the piles on the river water course.
- (iii) Proposed construction methodology along with details of foot prints of construction machinery on the ground. Details of foot prints should preferably be on the map.

**3.9 Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board - Amendment to the ToR - [F.No.11-43/2014-IA.III]**

**3.9.1** The PP made a presentation and informed that:

- i. The Ministry has granted TOR for the up gradation of the Alang Ship Recycling Yard vide letter dated 22<sup>nd</sup> December, 2014. It was proposed that the project would have following components:
  - a. Pilot project to improve existing infrastructure in Alang Area i.e. impervious flooring for 70 plots (150 x 60 or 150 x 90 m) in Phase-I and remaining 97 plots in Phase-II.
  - b. Dry Dock facility for the purpose of pre-cleaning of hazardous material and wastes
  - c. Waste oil treatment system and Incinerator
  - d. Labour Welfare Infrastructure- Housing, Hospital facilities, community centre, community school at the yard.

- ii. Now, it is proposed to include two additional components in the project namely (i) Providing additional improved 15 Nos. of Ship Recycling Plots (size approx. 110 x 90 m) southward to last Ship Recycling Plot at Alang and (ii) Hazardous Material Removal pre-treatment facility (Dry Dock) of size of 400 x166 m including outer limits, which may be used for ship repairing and building when dry dock is not in use for decontamination. It is proposed to extend the ship recycling yard towards Southern Side from existing last plot at Alang by developing the above mentioned 15 plots and dry dock with the same dimensions. The development would be within 2 km stretch from the last plot of the yard.
- iii. GMB requested to issue same TOR for undertaking EIA for the above mentioned components in existing proposal to upgrade the Ship Recycling yard.

**3.9.2 The EAC after deliberation recommended issuing same TOR for undertaking EIA for the above mentioned components in existing proposal to upgrade the Ship Recycling yard.**

**3.10 Construction of fifth Oil Berth at Jawahr Dweep, Mumbai by M/s Mumbai Port Trust - Finalization of ToR [F.No.10-4/2015-IA-III]**

**3.10.1** The PP made a presentation and informed that:

- i. With expanding capacity of the BPCL and HPCL refineries, Crude Oil demand is increasing and Oil companies insist that the facility to handle Suez Max / VLCC tankers of 1,50,000 Tonne to 2,00,000 Tonne parcel load for Crude import should be created to achieve economy in freight charges. Hence, Mumbai Port Trust (MbPT) has decided for construction of fifth Oil berth at Jawahar Dweep in Mumbai Harbour area located downstream of existing J4 berth at a distance of approximately 600m south west. The location of proposed fifth berth (JD5) is selected to have good separation between the tankers during berthing and de-birthing. A distance of 300m is maintained after berthing.
- ii. The dredging for connection to the new berth is proposed to a depth up to -19m CD. The channel leading to JD5 is a common channel of MbPT and JNPT. The second phase of dredging of the common channel i.e. up to -16m CD has been considered while designing the berth.
- iii. The proposed JD5 berth will consist of a central service platform of size 50m x 25m, 4 Nos. of berthing dolphins of size 20m x 16m and 6 Nos. of mooring dolphin of size 15.65m x 15.6m. The deck can accommodate 7 Nos. Marine Loading Arms for handling crude oil, Products, dirty ballast / bunkering.
- iv. This is designed to accommodate crude pipelines and with the service road of 4.3m wide. The length of trestle is approximately 4 km and overall width is 14.9m.
- v. Presently, one submarine pipeline of 42 for handling crude import from JD to MbPT Manifold at Pir Pau exists. Additional 42 dia pipeline is proposed to be laid.

STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR  
PROJECTS/ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE

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7(b): STANDARD TERMS OF REFERENCE FOR CONDUCTING  
ENVIRONMENT IMPACT ASSESSMENT STUDY FOR ALL SHIP  
BREAKING YARDS INCLUDING SHIP BREAKING UNITS AND  
INFORMATION TO BE INCLUDED IN EIA/EMP REPORT

- 1) Reasons for selecting the site with details of alternate sites examined/rejected/selected on merit with comparative statement and reason/basis for selection. The examination should justify site suitability in terms of environmental angle, resources sustainability associated with selected site as compared to rejected sites. The analysis should include parameters considered along with weightage criteria for short-listing selected site.
- 2) Details of the land use break-up for the proposed project. Details of land use around 10 km radius of the project site. Examine and submit detail of land use around 10 km radius of the project site and map of the project area and 10 km area from boundary of the proposed/existing project area, delineating project areas notified under the wild life (Protection) Act, 1972/critically polluted areas as identified by the CPCB from time to time/notified eco-sensitive areas/interstate boundaries and international boundaries. Analysis should be made based on latest satellite imagery for land use with raw images.
- 3) Submit the present land use and permission required for any conversion such as forest, agriculture etc. land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- 4) Details of the processes for each activity, generation of wastes, types quantity and methodology for collection, storage, treatment and disposal of wastes.
- 5) Details of Tri butyl Tin (TBT) based paints to be used, details of collection and treatment of the ship wash containing TBT and solid waste.
- 6) Details of the water source, waste generation, treatment system and disposal along with water balance.
- 7) Details of the emission control. details of Monitoring of VOC
- 8) MoU with authorized agency for disposal of hazardous wastes if any
- 9) Detailed base line marine water quality vis-a-vis likely impact due to ship breaking and mitigation proposed.
- 10) Details of personal prospective equipments (gas masks, dust masks, hand gloves, safety shoes, safety goggles, etc) for workers engaged for cutting, dismantling, isolation and segregation process.
- 11) Details of the dredging, quantity and disposal
- 12) Details of reclamation along with the source of materials and its quantity & quality.
- 13) Details of shore line changes along with the shore protection if any required.
- 14) Details of Environmental Management Plan and Environmental Monitoring Plan with parameters and costs.

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STANDARD TERMS OF REFERENCE (TOR) FOR EIA/EMP REPORT FOR PROJECTS/  
ACTIVITIES REQUIRING ENVIRONMENT CLEARANCE

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- 15) Details of Oil Spill Contingent Management Plan. Details of oil, hazardous materials, asbestos etc handling onshore or offshore.
- 16) Details of Risk Assessment, Disaster Management Plan including emergency evacuation during natural and man-made disaster like floods, cyclone, tsunami and earth quakes etc.
- 17) Copy of layout superimposed on the HTL/LTL map demarcated by an authorized agency on 1:4000 scale along with the recommendation of the SCZMA.
- 18) Details of independent road connectivity to the main NH/SH.
- 19) Noise levels, particularly for night operations
- 20) The Public Hearing should be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the ToR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.
- 21) A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.
- 22) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 23) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 24) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "[http://moef.nic.in/Manual/Ship breaking yard](http://moef.nic.in/Manual/Ship%20breaking%20yard)".

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# ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

Proposed Upgradation of  
Existing Ship Recycling Yard at Alang Soshiya, Gujarat  
For Undertaking Safe and Environmentally Sound  
Ship Recycling Operations



Report serial no. 11.S2.2015.EE.2205

August, 2015

**Project Proponent**

**Environmental Consultant**



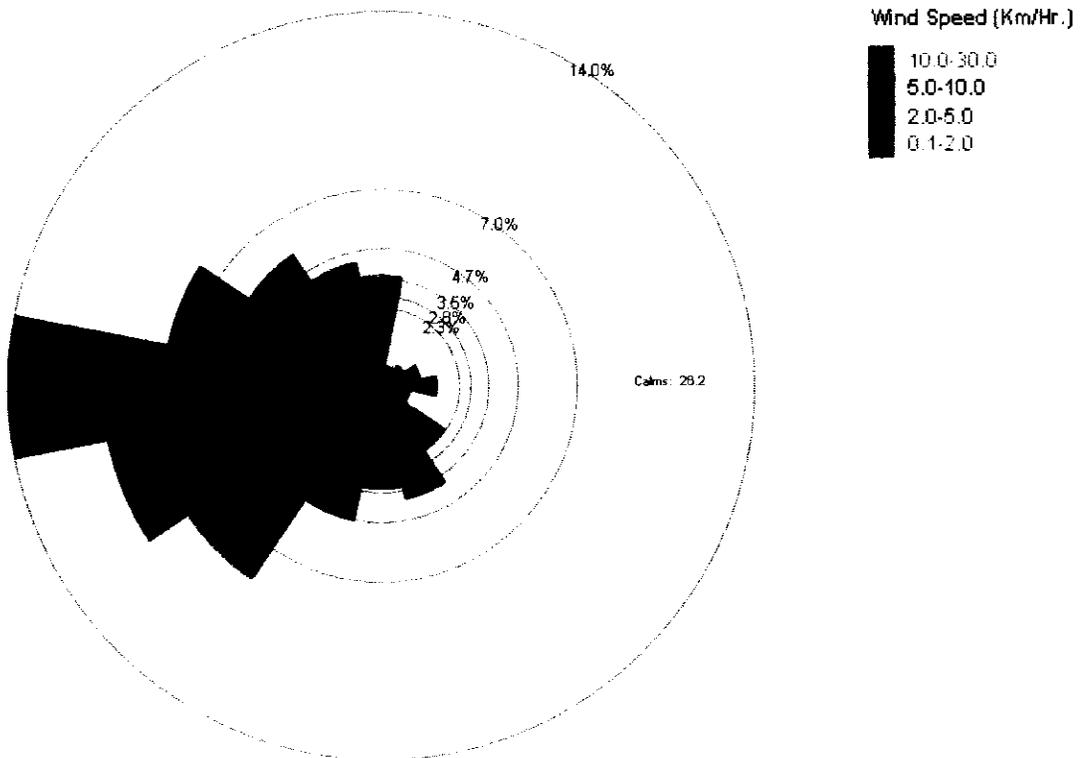
**GUJARAT MARITIME BOARD**  
( Govt. of Gujarat Undertaking)  
Sagar Bhavan  
Sector 10-A ,  
Gandhinagar-382010



**MECON LIMITED**  
(A Govt. of India Enterprise)  
Vivekananda Path  
PO. Doranda  
Dist - Ranchi, Jharkhand - 834002  
CERTIFICATE NO: NABET/EIA/1013/031

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**Fig. 3.3c: Overall Wind Rose at Alang-Sosiya SRY (Summer Season, 2015)**

The maximum recorded wind-speed during the monitoring period was 19 km/hr. The average wind-speed for the entire monitoring period was ~4.2 km/hr. During the monitoring season, air temperatures ranged between 36.7°C and 22°C, the average being 29.7°C. **Table 3.3** gives the summary of meteorological data collected during Summer Season, 2015.

**Table 3.3: Summarised Meteorological Data for Summer (2015)**

Month	Wind speed km/hr			Temperature ( C )			Relative humidity ( )		Rainfall		
	Max.	Min.	Mean	Max.	Min.	Mean	Highest	Lowest	Total (mm)	24 hrs. highest (mm)	No. of rainy days
March	18	0	4.08	34.2	22.0	28.1	85.2	22.6	0	-	-
April	19	0	3.72	35.9	23.1	29.7	95.7	16.4	4.8	3.8	1
May	17	0	4.78	36.7	24.3	31.2	87	19	0	0	-

**3.4.1 Air Quality**

To quantify the impact of increased ship recycling activities on the ambient air quality, it is necessary at first to evaluate the existing ambient air quality of the study area. The existing ambient air quality, in terms of Respirable Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>), Sulphur-dioxide (SO<sub>2</sub>), Oxides of Nitrogen



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(NOx) and Carbon Monoxide (CO) has been measured through a planned field monitoring.

**Ambient Air Quality Monitoring Location**

In order to fix the locations of the monitoring stations, a model suggested by Houghland and Stephens (*Ref: The Design of Air Quality Monitoring Network; R.E. Munn, 1981*) has been used. This model suggests setting up of monitoring stations at those locations where ground level concentration (GLC) is high. The probability factor was found by determining the "coverage factor" for potential monitoring locations around the project, which are likely to be affected due to air pollutants from the project. The coverage factors for all potential locations were calculated by the following formula:

$$A_{jk} = \frac{\text{Freq. (k)}}{(1 + D_j)}$$

**Where**

$A_{jk}$  = Coverage factor of the monitoring site in the  $k^{th}$  down wind sector

Freq. (k) = Frequency of wind direction in the  $k^{th}$  sector.

$D_j$  = Distance (km) from the source (project) to the site.

- The wind rose data of IMD Bhavnagar observatory was used to calculate the  $A_{jk}$  values of all potential AAQ monitoring stations. Stations were set up all around the project site.
- Stations were set up on all landward sides of the project area.

Possible stations covering all possible downwind directions and in varying distances up to a limited stretch from the project site were tested with this mathematical model. The station with the lowest coverage factor has been selected to serve as the control station. **Table 3.5** gives location of the ambient air quality monitoring stations and their coverage factors.

**Table 3.5: Coverage factors of Potential AAQ Monitoring Sites**

Sl. No.	Location	Distance & Direction from nearest Project Boundary	Coverage Factor
1.	Alang Fire Station	Adjacent	-
2.	Village Alang	1.0 km north-west	3.5
3.	Village Chopada	2.7 km north-west	1.89
4.	Village Bharapara	1.6 km north-west	2.69
5.	Village Sosiya	1.5 km north-west	2.80
6.	Village Sathara	5 km west	1.25
7.	Village Jaspara	4.5 km north	2.54
8.	Village Mathavda	1.1 km north-west	3.18
9.	Village Kathava	4.0 km north-west	1.40
10.	Village Mandva	3.9 km north-north-west	1.43



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Alang Fire Station was selected as it was located between two plots of the SRY. It was chosen as the air quality at this location represents that prevailing in the existing SRY. Alang, Mathavda and Sosiya were chosen as they had the highest coverage factor. Village Kathava was chosen as it had the least coverage factor and would be the "Control Station".

The selected stations are given in **Table 3.6**. They are also marked in **Dr. No. MEC/Q770/11/S2/05**.

**Table 3.6: Ambient Air Quality (AAQ) Monitoring Stations**

Sl. No.	Location	Stn. Code	Latitude & Longitude
1.	Alang Fire Station	A1	21°23'45.9" N, 72°10'41.2" E
2.	Village Alang	A2	21°24'29.2"N, 72°10'41.6" E
3.	Village Sosiya	A3	21°26'00.8"N, 72°12'04.6" E
4.	Village Mathavda	A4	21°22'24.9"N, 72°08'59.8" E
5.	Village Kathava	A5	21°25'13.6" N, 72°09'0.0" E

**Monitoring schedule**

As mentioned earlier, the EIA report has been prepared on the basis of Ambient Air Quality data generated in the study area for one full season covering twelve weeks of summer season, 2015. Samples of 24 hourly duration were taken on each monitoring day on two days a week for twelve weeks (i.e. 24 samples were collected at each location). In case of CO, 1 – hourly samples were taken for 24 hours on each monitoring day.

**Methods of Sampling and Analysis**

The methods of sample collection, equipment used and analysis procedures as followed are given in **Table 3.7** and National Ambient Air Quality Standards are given in **Table 3.8**.

**Table 3.7 : Methodology of Sampling & Analysis and Equipment used**

Sl. No.	Parameters	Method followed
1.	PM <sub>10</sub>	Gravimetric. IS:5182 (Part 23)
2.	PM <sub>2.5</sub>	Gravimetry
3.	NO <sub>x</sub>	Jacobs and Hochheiser modified (Na-arsenite) Method. IS:5182 (Part VI)
4.	SO <sub>2</sub>	Improved West & Gaecke method: IS:5182 (Part II)
5.	CO	NDIR Method



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**Table 3.8: National Ambient Air Quality Standards**

Sl. No.	Parameter	Time Weighted Average	Concentration in Ambient Air	
			Industrial, Residential, Rural & Other Areas	Ecologically Sensitive Area (Notified by Central Government)
1	SO <sub>2</sub> ; (µg/m <sup>3</sup> )	Annual*	50	20
		24 Hours**	80	80
2	NO <sub>x</sub> ; (µg/m <sup>3</sup> )	Annual*	40	30
		24 Hours**	80	80
3	PM <sub>10i</sub> ; (µg/m <sup>3</sup> )	Annual*	60	60
		24 Hours**	100	100
4	PM <sub>2.5</sub> ; (µg/m <sup>3</sup> )	Annual*	40	40
		24 Hours**	60	60
5	CO; (mg/m <sup>3</sup> )	24 Hours**	1.0	1.0
		8 Hours **	02	02
		1 Hour **	04	04

\*Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals  
 \*\*24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be compiled with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days.

**Results and Discussions**

Station wise detailed monitoring data are furnished in **Tables 3.9.1 to 3.9.5**. The summarized results of ambient air quality monitoring (covering PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>) are given in **Table 3.10**.

The results when compared with National Ambient Air Quality Standards (NAAQS), 2009 of Central Pollution Control Board (CPCB) indicate that air quality is within norms at all the monitoring locations. At Alang Fire station, particulate matter levels were on the higher side due to salt spray from the sea which is at times hardly 125 m away. Carbon-monoxide content was also measured and found to be within norms in all the samples



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## EIA/EMP Studies for Proposed Upgradation of Alang-Sosiya Ship Recycling Yard

**Table 3.9.1 : Detailed Ambient Air Quality results for Opp. Alang Fire Station, Summer 2015**

Sample No.	Date	Results in $\mu\text{g}/\text{m}^3$				CO Results in $\text{mg}/\text{m}^3$		
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	Max.	Min.	Avg.
1	03-03-15	77	50	9.5	45.5	0.98	0.15	0.44
2	08-03-15	71	48	9.6	34.5	0.99	0.13	0.41
3	12-03-15	84	58	8.5	30.2	0.88	0.16	0.38
4	15-03-15	114	63	11.2	36.6	1.022	0.15	0.53
5	19-03-15	66	41	6.2	44.0	1.02	0.15	0.46
6	22-03-15	66	46	7.8	35.6	1.06	0.15	0.47
7	25-03-15	65	37	8.5	32.2	1.11	0.15	0.52
8	28-03-15	88	54	8.2	20.2	1.22	0.15	0.55
9	01-04-15	98	56	4.5	36.6	1.05	0.12	0.39
10	05-04-15	63	27	6.2	24.2	1.22	0.12	0.40
11	08-04-15	73	47	8.5	30.2	1.20	0.18	0.53
12	11-04-15	95	46	7.2	29.6	0.88	0.11	0.40
13	15-04-15	87	55	5.3	30.2	1.32	0.11	0.51
14	20-04-15	84	51	4.5	42.2	0.99	0.19	0.54
15	23-04-15	80	45	7.2	36.6	1.05	0.11	0.48
16	27-04-15	86	37	6.6	30.2	1.22	0.15	0.42
17	02-05-15	98	56	8.5	21.2	1.20	0.08	0.48
18	06-05-15	75	35	9.5	32.2	1.11	0.13	0.53
19	09-05-15	84	41	6.3	29.6	1.30	0.12	0.46
20	13-05-15	87	36	5.5	26.6	0.99	0.12	0.46
21	18-05-15	75	35	7.5	32.2	1.05	0.10	0.48
22	22-05-15	56	26	6.2	30.2	0.99	0.09	0.48
23	26-05-15	61	32	5.2	22.2	0.95	0.15	0.43
24	30-05-15	83	42	7.5	28.3	1.08	0.14	0.45

**Table 3.9.2 : Detailed Ambient Air Quality results for Alang Village, Summer 2015**

Sample No.	Date	Results in $\mu\text{g}/\text{m}^3$				CO Results in $\text{mg}/\text{m}^3$		
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	Max.	Min.	Avg.
1	03-03-15	82	56	7.5	20.2	0.77	0.08	0.33
2	08-03-15	59	30	8.5	16.6	0.99	0.08	0.34
3	12-03-15	66	40	5.5	32.2	0.85	0.11	0.37
4	15-03-15	98	58	10.5	30.2	0.68	0.15	0.32
5	19-03-15	81	52	10.2	20.2	0.85	0.08	0.31
6	22-03-15	69	40	6.3	25.2	0.88	0.11	0.30
7	25-03-15	97	51	4.5	18.5	0.65	0.08	0.29
8	28-03-15	98	54	8.6	25.2	0.85	0.15	0.33
9	01-04-15	88	32	5.8	20.2	0.88	0.19	0.37
10	05-04-15	81	35	6.4	30.2	0.77	0.22	0.38
11	08-04-15	80	34	6.8	21.2	0.78	0.11	0.38
12	11-04-15	111	66	9.2	32.2	0.78	0.14	0.34
13	15-04-15	48	22	4.5	28.5	0.82	0.15	0.36
14	20-04-15	65	26	6.6	30.2	0.78	0.15	0.33
15	23-04-15	76	29	7.2	18.5	0.82	0.14	0.38
16	27-04-15	75	26	5.6	13.2	0.88	0.11	0.39
17	02-05-15	68	38	8.4	19.6	0.61	0.13	0.36
18	06-05-15	71	38	9.5	15.5	0.74	0.17	0.36
19	09-05-15	80	42	7.2	16.6	0.70	0.10	0.21
20	13-05-15	65	34	5.5	18.5	0.61	0.13	0.34
21	18-05-15	75	38	6.5	12.2	0.80	0.11	0.36
22	22-05-15	55	26	5.4	28.5	0.74	0.11	0.36
23	26-05-15	70	33	6.2	27.5	0.87	0.08	0.35
24	30-05-15	95	58	5.2	26.6	0.88	0.10	0.33



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EIA/EMP Studies for Proposed Upgradation of Alang-Sosiya Ship Recycling Yard

**Table 3.9.3 : Detailed Ambient Air Quality results for Sosiya Village, Summer 2015**

Sample No.	Date	Results in $\mu\text{g}/\text{m}^3$				CO Results in $\text{mg}/\text{m}^3$		
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	Max.	Min.	Avg.
1	03-03-15	83	45	5.6	20.2	0.84	0.08	0.30
2	08-03-15	77	45	9.6	16.6	0.75	0.08	0.28
3	12-03-15	98	55	4.8	19.5	0.75	0.08	0.30
4	15-03-15	66	37	7.6	30.2	0.88	0.08	0.33
5	19-03-15	92	56	5.2	21.2	0.78	0.08	0.29
6	22-03-15	68	39	4.8	15.5	0.74	0.09	0.33
7	25-03-15	81	40	5.1	17.3	0.84	0.09	0.33
8	28-03-15	75	44	9.5	31.2	0.78	0.13	0.33
9	01-04-15	66	34	5.5	26.6	0.82	0.10	0.34
10	05-04-15	97	52	6.2	15.5	0.65	0.11	0.30
11	08-04-15	85	44	4.2	16.6	0.62	0.08	0.24
12	11-04-15	97	42	5.5	20.2	0.80	0.08	0.27
13	15-04-15	66	31	6.2	18.5	0.82	0.09	0.35
14	20-04-15	58	28	6.3	16.6	0.88	0.09	0.33
15	23-04-15	87	41	4.5	26.2	0.85	0.08	0.33
16	27-04-15	56	29	5.5	16.5	0.85	0.07	0.26
17	02-05-15	48	23	8.5	34.5	0.75	0.08	0.26
18	06-05-15	58	27	9.6	30.2	0.82	0.08	0.24
19	09-05-15	75	30	6.5	16.2	0.56	0.08	0.21
20	13-05-15	45	26	5.2	12.2	0.84	0.11	0.35
21	18-05-15	68	31	4.5	16.6	0.88	0.11	0.31
22	22-05-15	70	37	5.2	15.2	0.78	0.09	0.31
23	26-05-15	87	44	6.2	21.2	0.85	0.12	0.35
24	30-05-15	66	32	4.5	16.2	0.62	0.08	0.29

**Table 3.9.4 : Detailed Ambient Air Quality results for Mathavda Village, Summer 2015**

Sample No.	Date	Results in $\mu\text{g}/\text{m}^3$				CO Results in $\text{mg}/\text{m}^3$		
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	Max.	Min.	Avg.
1	03-03-15	80	41	5.2	20.2	0.75	0.09	0.31
2	08-03-15	70	33	4.8	16.2	0.85	0.09	0.30
3	12-03-15	52	27	6.2	31.2	0.75	0.09	0.26
4	15-03-15	31	14	4.6	15.5	0.75	0.09	0.28
5	19-03-15	94	41	8.5	34.2	0.66	0.12	0.31
6	22-03-15	87	44	7.2	20.2	0.71	0.09	0.30
7	25-03-15	66	31	6.2	18.5	0.66	0.09	0.31
8	28-03-15	74	38	8.3	17.0	0.75	0.09	0.29
9	01-04-15	70	40	4.2	21.2	0.66	0.09	0.30
10	05-04-15	65	32	6.6	28.5	0.88	0.09	0.29
11	08-04-15	84	41	5.2	30.2	0.66	0.07	0.30
12	11-04-15	74	36	4.5	15.5	0.88	0.09	0.32
13	15-04-15	56	27	6.2	13.1	0.68	0.09	0.23
14	20-04-15	48	22	7.5	20.2	0.75	0.09	0.30
15	23-04-15	77	38	6.2	26.6	0.99	0.09	0.29
16	27-04-15	58	29	5.5	25.5	0.88	0.08	0.39
17	02-05-15	78	38	5.5	20.2	0.62	0.09	0.29
18	06-05-15	56	27	4.5	16.6	0.85	0.09	0.31
19	09-05-15	57	27	7.2	18.5	0.90	0.09	0.29
20	13-05-15	64	34	8.5	16.2	0.66	0.09	0.25
21	18-05-15	74	36	9.2	18.5	0.77	0.09	0.26
22	22-05-15	54	28	7.5	20.2	0.75	0.06	0.23
23	26-05-15	58	27	6.2	30.2	0.55	0.08	0.22
24	30-05-15	81	45	5.5	19.5	0.64	0.11	0.24



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**Table 3.9.5 : Detailed Ambient Air Quality results for Kathava Village, Summer 2015**

Sample No.	Date	Results in $\mu\text{g}/\text{m}^3$				CO Results in $\text{mg}/\text{m}^3$		
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	Max.	Min.	Avg.
1	03-03-15	97	52	5.2	21.6	0.72	0.11	0.33
2	08-03-15	68	35	6.2	16.5	0.78	0.12	0.36
3	12-03-15	94	50	7.8	14.2	0.88	0.19	0.29
4	15-03-15	78	42	5.2	23.2	0.92	0.08	0.30
5	19-03-15	88	50	4.6	25.5	0.54	0.09	0.20
6	22-03-15	63	30	6.8	26.2	0.61	0.09	0.30
7	25-03-15	73	46	7.9	18.5	0.77	0.09	0.33
8	28-03-15	60	32	4.5	24.5	0.55	0.09	0.28
9	01-04-15	56	26	6.2	21.2	0.74	0.15	0.35
10	05-04-15	72	38	5.5	16.2	0.66	0.11	0.30
11	08-04-15	68	35	4.5	15.5	0.56	0.09	0.28
12	11-04-15	85	45	5.6	26.2	0.66	0.09	0.27
13	15-04-15	48	41	<4.0	20.2	0.66	0.09	0.23
14	20-04-15	54	45	6.2	18.5	0.63	0.06	0.29
15	23-04-15	62	36	5.5	21.2	0.65	0.07	0.22
16	27-04-15	67	28	4.5	30.2	0.88	0.08	0.26
17	02-05-15	81	31	5.2	16.6	0.75	0.09	0.29
18	06-05-15	87	22	<4.0	27.5	0.62	0.08	0.27
19	09-05-15	86	41	<4.0	15.5	0.75	0.08	0.29
20	13-05-15	96	48	<4.0	18.5	0.75	0.08	0.32
21	18-05-15	55	29	<4.0	23.2	0.74	0.09	0.30
22	22-05-15	48	26	6.3	24.2	0.85	0.08	0.30
23	26-05-15	73	34	6.2	15.5	0.90	0.09	0.29
24	30-05-15	88	48	8.5	26.6	0.68	0.09	0.33



**Table 3.10: Summarised Ambient Air Quality Monitoring Results**

Name of monitoring equipment used	PM <sub>10</sub> (µg/m <sup>3</sup> )			PM <sub>2.5</sub> (µg/m <sup>3</sup> )			SO <sub>2</sub> (µg/m <sup>3</sup> )			NO <sub>x</sub> (µg/m <sup>3</sup> )			CO (mg/m <sup>3</sup> )		
	Respirable Dust Sampler (RDS)			PM <sub>2.5</sub> Dust Sampler			RDS & Spectrophotometer			RDS & Spectrophotometer			NDIR Method		
Equipment sensitivity	Detection Limit: 1 µg/m <sup>3</sup>			Detection Limit: 1 µg/m <sup>3</sup>			Detection Limit: 4 µg/m <sup>3</sup>			Detection Limit: 10 µg/m <sup>3</sup>			Detection Limit: 0.057 mg/m <sup>3</sup>		
AAQ monitoring stations	Max.	Min.	C <sub>98</sub>	Max.	Min.	C <sub>98</sub>	Max.	Min.	C <sub>98</sub>	Max.	Min.	C <sub>98</sub>	Max.	Min.	C <sub>98</sub>
Alang Fire Station	114	56	98	63	26	58	11.2	4.5	9.6	45.5	20.2	44.0	1.32	0.08	1.06
Alang Village	111	48	98	66	22	58	10.5	4.5	10.2	32.2	12.2	32.2	0.99	0.08	0.80
Sosiya Village	98	45	97	56	23	55	9.6	4.2	9.6	34.5	12.2	31.2	0.88	0.07	0.82
Mathavda	94	31	87	45	14	44	9.2	4.2	8.5	34.8	13.1	31.2	0.99	0.06	0.75
Kathava Village	97	48	96	52	22	50	8.5	4.5	7.9	30.2	14.2	27.5	0.92	0.06	0.75



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### Work Zone Air Quality

One 8 hourly sample was collected at three representative work zones to assess work zone air quality during Summer 2015. The summarized results are given in **Table 3.11**.

**Table 3.11: Summarised Results of Work Zone Air Quality Monitoring**

Location	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
Plot in southern part of SRY	127	58	6.6	38.5	810
Plot in northern part of SRY	195	86	9.2	41.1	1260
TSDF Area	120	71	8.9	32.5	750

*All values in  $\mu\text{g}/\text{m}^3$*

The Work Zone Air Quality has been compared with the following norms:

SPM: 10,000  $\mu\text{g}/\text{m}^3$  (after American Council of Government Industrial Hygienists)

SO<sub>2</sub>: 5,000  $\mu\text{g}/\text{m}^3$  (after Indian Factories Act)

NO<sub>x</sub>: 6,000  $\mu\text{g}/\text{m}^3$  (after Indian Factories Act)

CO : 40,000  $\mu\text{g}/\text{m}^3$  (after Indian Factories Act)

It can be seen that the Work Zone Air Quality is well within the norms.

### 3.4.2 Water Quality

Sources of water in the study area are surface water in sea / creeks and ground water.

#### 3.4.2.1 Water Quality Monitoring stations, Frequency and Mode of Sampling

Water samples have been collected thrice during summer season, 2015 from sixteen (16) locations, which are listed in **Table 3.12**. The locations of the surface water and ground water sampling points are marked in **Drawing No. MEC/Q770/11/S2/05**.

**Table 3.12: Water Sampling Locations, Summer Season, 2015**

Sl. No.	Location	Stn. No.	Type	Distance from project area and Latitude & Longitude
1	Pasivali Creek	SW1	Creek Water	0.4 km West (21°26'09.3"N, 72°13'6.3"E)
2	Sea, intertidal zone at southern end of existing yard	SW2	Sea Water	- (21°22'35.8"N, 72°10'01.1"E)
3	Sea, intertidal zone at site of Dry Dock 2	SW3	Sea Water	- (21°21'39.9"N, 72°09'32.2"E)
4	Sea, intertidal zone near Alang Fire Station	SW4	Sea Water	- (21°23'46.8"N, 72°11'06.9"E)
5	Sea, intertidal zone near Jaspara Village	SW5	Sea Water	~4 km North-east (21°28'18.5"N, 72°14'45.4"E)
6	Sea, off southern end of existing yard	SW6	Sea Water	~1.7 km offshore (21°22'22.3"N, 72°10'54.8"E)



**ENVIRONMENTAL IMPACT ASSESSMENT  
AND  
ENVIRONMENTAL MANAGEMENT PLAN**

**Proposed Upgradation of  
Existing Ship Recycling Yard at Alang Sosiya, Gujarat  
For Undertaking Safe and Environmentally Sound  
Ship Recycling Operations**



Report serial no. 11.S2.2015.EE.2205

August, 2015

**Project Proponent**

**Environmental Consultant**



**GUJARAT MARITIME BOARD**  
( Govt. of Gujarat Undertaking)  
Sagar Bhavan  
Sector 10-A ,  
Gandhinagar-382010



**MECON LIMITED**  
(A Govt. of India Enterprise)  
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Dist- Ranchi, Jharkhand - 834002  
CERTIFICATE NO: NABET/EIA/1013/031

**Work Zone Air Quality**

One 8 hourly sample was collected at three representative work zones to assess work zone air quality during Summer 2015. The summarized results are given in **Table 3.11**.

**Table 3.11: Summarised Results of Work Zone Air Quality Monitoring**

Location	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
Plot in southern part of SRY	127	58	6.6	38.5	810
Plot in northern part of SRY	195	86	9.2	41.1	1260
TSDf Area	120	71	8.9	32,5	750
<i>All values in µg/m<sup>3</sup></i>					

The Work Zone Air Quality has been compared with the following norms:

- SPM: 10,000 µg/m<sup>3</sup> (after American Council of Government Industrial Hygienists)
- SO<sub>2</sub>: 5,000 µg/m<sup>3</sup> (after Indian Factories Act)
- NO<sub>x</sub>: 6,000 µg/m<sup>3</sup> (after Indian Factories Act)
- CO : 40,000 µg/m<sup>3</sup> (after Indian Factories Act)

It can be seen that the Work Zone Air Quality is well within the norms.

**3.4.2 Water Quality**

Sources of water in the study area are surface water in sea / creeks and ground water.

**3.4.2.1 Water Quality Monitoring stations, Frequency and Mode of Sampling**

Water samples have been collected thrice during summer season, 2015 from sixteen (16) locations, which are listed in **Table 3.12**. The locations of the surface water and ground water sampling points are marked in **Drawing No. MEC/Q770/11/S2/05**.

**Table 3.12: Water Sampling Locations, Summer Season, 2015**

Sl. No.	Location	Stn. No.	Type	Distance from project area and Latitude & Longitude
1	Pasivali Creek	SW1	Creek Water	0.4 km West (21°26'09.3"N, 72°13'6.3"E)
2	Sea, intertidal zone at southern end of existing yard	SW2	Sea Water	- (21°22'35.8"N, 72°10'01.1"E)
3	Sea, intertidal zone at site of Dry Dock 2	SW3	Sea Water	- (21°21'39.9"N, 72°09'32.2"E)
4	Sea, intertidal zone near Alang Fire Station	SW4	Sea Water	- (21°23'46.8"N, 72°11'06.9"E)
5	Sea, intertidal zone near Jaspara Village	SW5	Sea Water	~4 km North-east (21°28'18.5"N, 72°14'45.4"E)
6	Sea, off southern end of existing yard	SW6	Sea Water	~1.7 km offshore (21°22'22.3"N, 72°10'54.8"E)



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Sl. No.	Location	Stn. No.	Type	Distance from project area and Latitude & Longitude
7	Sea off Dry-dock 2 Site	SW7	Sea Water	~2 km offshore (21°21'19.3"N, 72°10'34.9"E)
8	Sea, off Alang Fire Station	SW8	Sea Water	~2 km offshore (21°23'06.1"N, 72°11'51.8"E)
9	Sea, off Jaspara Village	SW9	Sea Water	~2.5 km offshore (21°27'47.2"N, 72°15'53.3"E)
10	Tube-well at vill. Kathava	GW1	Ground Water	4 km north-west (22°25'14.8"N, 72°09'01.6"E)
11	Tubewell at vill. Sosiya	GW2	Ground Water	1.5 km north-west (21°25'51.2"N, 72°09'16.5"E)
12	Tubewell at vill. Alang	GW3	Ground Water	1 km north-west (21°24'32.3"N, 72°10'45.6"E)
13	Tubewell at vill. Mathavda	GW4	Ground Water	1.2 km north-west (21°22'28.0"N, 72°09'01.1"E)
14	Ship's Ballast Water	E1	Effluent	Ship beached in Plot 29
15	Ship's Bilge water	E2	Effluent	Ship beached in Plot 28
16	Treated Effluent from TSDF ETP	E3	Effluent	At Alang TSDF

### 3.4.2.2 Water Quality

The results of analysis of surface water are given in **Tables 3.13.1, 3.13.2 and 3.13.3**. The results have been compared with the standards specified in Primary Water Quality Criteria for Designated Best Uses for Coastal Waters [As per "The Environment (Protection) Rules, 1986 (as given in **Table 3.14**).

**Table 3.13.1: Results of Analysis of Water of Pasvivali Creek (SW1)**

Sl. No.	Parameter	Results
1	pH Value	7.41
2	Colour & Odour	32 & Slight fishy smell
3	Dissolved Oxygen (as O <sub>2</sub> ), mg/l	6
4	Suspended Solids, mg/l	1758
5	Turbidity, NTU	225
6	BOD (3 days at 27 °C), mg/l.	4
7	Total Dissolved Solids, mg/l	43900
8	Free Ammonia (as NH <sub>3</sub> ), mg/l	0.36
9	Oil & Grease, mg/l	<0.1
10	Lead (as Pb), mg/l	<0.005
11	Mercury (as Hg) mg/l	<0.0005
12	Cadmium (as Cd), mg/l	<0.002
13	Electrical Conductivity, s/cm at 25°C	65600
14	Dissolved Iron (as Fe) mg/l	0.55
15	Dissolved Manganese (as Mn) mg/l	0.081
16	Sodium Absorption Ratio	68.16
17	Boron (as B), mg/l	7.7
18	Coliforms, MPN/100 ml	<1.8



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**Table 3.13.2: Results of Analysis of Sea Water in Inter-Tidal Zone**

Sl. No.	Parameter	Results			
		SW2	SW3	SW4	SW5
1	pH Value	7.29	7.18	7.25	7.35
2	Colour & Odour	18 & Slight fishy smell	20 & Slight fishy smell	19 & Slight fishy smell	21 & Slight fishy smell
3	Dissolved Oxygen (as O <sub>2</sub> ), mg/l	6.8	6.5	6.4	6.9
4	Suspended Solids, mg/l	1572	1663	1728	1705
5	Turbidity, NTU	190	185	198	205
6	BOD (3 days at 27 °C), mg/l.	2.9	5.6	3.6	2.3
7	Total Dissolved Solids, mg/l	39920	40550	41490	39420
8	Free Ammonia (as NH <sub>3</sub> ), mg/l	<0.1	<0.1	<0.1	<0.1
9	Oil & Grease, mg/l	<0.1	<0.1	0.2	<0.1
10	Lead (as Pb), mg/l	<0.005	<0.005	<0.005	<0.005
11	Mercury (as Hg) mg/l	<0.0005	<0.0005	<0.0005	<0.0005
12	Cadmium (as Cd), mg/l	<0.002	<0.002	<0.002	<0.002
13	Electrical Conductivity, µs/cm at 25°C	50900	53156	59588	51976
14	Dissolved Iron (as Fe) mg/l	0.51	0.71	0.63	0.69
15	Dissolved Manganese (as Mn) mg/l	0.089	0.079	0.083	0.092
16	Sodium Absorption Ratio	61.6	60.7	69.6	64.2
17	Boron (as B), mg/l	3.5	3.3	3.2	3.4
18	Coliforms, MPN/100 ml	<1.8	<1.8	<1.8	<1.8
19	Poly Chlorinated Bi Phenyls, mg/l	-	-	<0.0005	<0.0005

**Table 3.13.3: Results of Analysis of Sea Water Offshore**

Sl. No.	Parameter	Results			
		SW6	SW7	SW8	SW9
1	pH Value	7.45	7.43	7.48	7.20
2	Colour & Odour	4 & Odourless	4 & Odourless	5 & Odourless	6 & Odourless
3	Dissolved Oxygen (as O <sub>2</sub> ), mg/l	6.5	6.8	6.4	6.6
4	Suspended Solids, mg/l	823	658	708	661
5	Turbidity, NTU	60	80	84	56
6	BOD (3 days at 27 °C), mg/l.	2.7	2.9	2	3.4
7	Total Dissolved Solids, mg/l	40140	42500	39960	38200
8	Free Ammonia (as NH <sub>3</sub> ), mg/l	<0.1	<0.1	<0.1	<0.1
9	Oil & Grease, mg/l	<0.1	<0.1	<0.1	<0.1
10	Lead (as Pb), mg/l	<0.005	<0.005	<0.005	<0.005
11	Mercury (as Hg) mg/l	<0.0005	<0.0005	<0.0005	<0.0005
12	Cadmium (as Cd), mg/l	<0.002	<0.002	<0.002	<0.002
13	Electrical Conductivity, s/cm at 25°C	50700	53820	49902	51872
14	Dissolved Iron (as Fe) mg/l	0.57	0.67	0.43	0.59
15	Dissolved Manganese (as Mn) mg/l	0.087	0.092	0.078	0.083
16	Sodium Absorption Ratio	65.9	68.7	63.7	64.2
17	Boron (as B), mg/l	3.4	3.1	3.8	5.7
18	Coliforms, MPN/100 ml	<1.8	<1.8	<1.8	<1.8
19	Poly Chlorinated Bi Phenyls, mg/l	-	-	<0.0005	<0.0005



**Table 3.14: Water Quality Criteria**

**A. Primary Water Quality Criteria for Designated Best Uses for Coastal Waters [As per "The Environment (Protection) Rules, 1986**

Parameters	SW-I	SW-II	SW-III	SW-IV	SW-V
1. pH	6.5 – 8.5	6.5 – 8.5	6.5 – 8.5	6.0 – 9.0	6.0 – 9.0
2. Dissolved oxygen (as O <sub>2</sub> ), mg/l, min	5 or 60% of saturation value, whichever is higher	4 or 50% of saturation value, whichever is higher	3 or 40% of saturation value, whichever is higher	3 or 40% of saturation value, whichever is higher	3 or 40% of saturation value, whichever is higher
3. Colour & odour	No noticeable colour or offensive odour	No noticeable colour or offensive odour	No noticeable colour or offensive odour	No noticeable colour or offensive odour	None in such concentrations that would impair any usages specifically assigned to this class
4. Floating Matters	No visible, obnoxious floating debris, oil slick, scum	Nothing obnoxious or detrimental for use purpose	No visible, obnoxious floating debris, oil slick, scum	10 mg/l max. (including Oil & grease & scum / petroleum products)	-
5. Oil & grease (including petroleum products)	0.1 mg/l max.	-	-	-	-
6. Suspended solids	None from sewage & industrial origin	-	-	-	-
7. Heavy metals a) Mercury (as Hg) b) Lead (as Pb) c) Cadmium (as Cd)	0.001 mg/l 0.001 mg/l 0.01 mg/l	-	-	-	-
8. Turbidity, NTU max.	-	30	30	-	-
9. Faecal coliforms, MPN/100 ml, max	-	100	500	500	500
10. BOD, 3 days at 27° C, max	-	3 mg/l	-	5 mg/l	-
11. Dissolved Iron (as Fe)	-	-	0.5 mg/l max.	-	-
12. Dissolved Manganese (as Mn)	-	-	0.5 mg/l max.	-	-



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BT

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Parameters	SW-1	SW-II	SW-III	SW-IV	SW-V
13. Sludge deposits, solid refuse, floating solids, oil & grease, scum	-	-	-	-	None except for such small amount that may result from discharge of appropriately treated sewage & or industrial waste
SW-1 : Salt Pans, Shell fishing, mariculture and ecologically sensitive zone. SW-II : Bathing, Contact Water Sports and Commercial Fishing SW-III : Industrial Cooling, Recreation (non-contact) and aesthetics SW-IV : Harbour Waters SW-V : Navigation and Controlled Waste Disposal					



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ER

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The sea water quality when compared with Coastal Water Quality Criteria specified designated best uses, the water quality meets criteria specified for SW-IV. The water was too muddy because of very rough sea conditions. PCBs were less than 0.5 mg/m<sup>3</sup>.

The result of analysis of ground water is given in **Table 3.15**. The results have been compared with the drinking water quality standards specified in IS:10500 (2012).

**Table 3.15: Results of Ground Water Analysis during Summer, 2015**

Sl. No.	Parameters	Acceptable Limit *	Permissible Limits in absence of Alternate Source *	GW1	GW2	GW3	GW4
1	Taste	Agreeable	-	Agreeable	Agreeable	Agreeable	Agreeable
2	Turbidity, NTU	Max. 1	Max. 5	<1.0	3.5	<1.0	<1.0
3	TDS,mg/l	500	Max. 2000	580	1300	1295	2380
4	Total Hardness (as CaCO <sub>3</sub> ), mg/l	Max.200	Max. 600	198	138.6	772.2	366.3
5	Calcium (as Ca),mg/l	Max. 75	Max. 200	39.6	27.72	122.76	51.48
6	Magnesium (as Mg),mg/l	Max. 30	Max. 100	23.76	16.63	111.67	57.02
7	Total alkalinity (as CaCO <sub>3</sub> ), mg/l	Max. 200	Max. 600	226.6	484.1	339.9	525.3
8	Fluoride (as F),mg/l	Max. 1	Max. 1.5	0.11	<0.1	0.2	0.28
9	Colour, Hazen	Max.5	Max. 25	<1	<1	<1	<1
10	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
11	pH at 25°C	6.5-8.5	No relaxation	7.32	7.56	7.56	7.52
12	Chloride (as Cl),mg/l	Max. 250	Max. 1000	130.91	256.97	392.73	635.15
13	Sulphate (as SO <sub>4</sub> ),mg/l	Max. 200	Max. 400	68.31	230.95	140.26	535.93
14	Iron (as Fe),mg/l	Max. 0.3	No relaxation	<0.05	0.14	<0.05	0.07
15	Aluminium (as Al),mg/l	Max. 0.03	Max. 0.2	<0.01	<0.01	<0.01	<0.01
16	Residual Free Chlorine ,mg/l	Max. 0.2	-	<0.1	<0.1	<0.1	<0.1
17	Mercury (as Hg),mg/l	Max. 0.001	No relaxation	<0.0005	<0.0005	<0.0005	<0.0005
18	Cadmium (as Cd),mg/l	Max. 0.003	No relaxation	<0.002	<0.002	<0.002	<0.002
19	Total Arsenic (as As),mg/l	Max. 0.01	Max. 0.05	<0.01	<0.01	<0.01	<0.01
20	Anionic detergent (as MBAS), mg/l	Max. 0.2	Max. 1	<0.02	<0.02	<0.02	<0.02
21	Boron (as B),mg/l	Max. 0.5	Max. 1	<0.5	<0.5	<0.5	<0.5
22	Chromium (as Cr <sup>6+</sup> ),mg/l	Max. 0.05	No relaxation	<0.01	<0.01	<0.01	<0.01
23	Copper (as Cu),mg/l	Max. 0.05	Max. 1.5	<0.02	<0.02	<0.02	<0.02
24	Cyanide (as CN),mg/l	Max. 0.05	No relaxation	<0.01	<0.01	<0.01	<0.01
25	Lead (as Pb),mg/l	Max. 0.01	No relaxation	<0.005	<0.005	<0.005	<0.005
26	Manganese (as Mn) ,mg/l	Max. 0.1	Max. 0.3	<0.02	<0.02	<0.02	<0.02
27	Nitrate (as NO <sub>3</sub> ),mg/l	Max. 45	No relaxation	7.92	12.79	51.42	97.5
28	Selenium (as Se),mg/l	Max. 0.01	No relaxation	<0.005	<0.005	<0.005	<0.005
29	Zn (as Zn),mg/l	Max. 5	Max. 15	<0.02	<0.02	<0.02	<0.02
30	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l	Max. 0.001	Max.0.002	<0.001	<0.001	<0.001	<0.001
31	Total Coliform organisms, MPN/100 ml	Absent/100 ml	-	Nil	Nil	Nil	Nil

\* Drinking Water Specification, IS : 10500 (2012)



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From the results it can be seen that during summer season, 2015 tube-well water from Mathavda Village (GW4) is unsuitable for drinking because of excessive Dissolved Solids, Sulphates, Nitrates and Magnesium; tube-well water from Alang Village (GW3) is unsuitable for drinking because of excessive Hardness, Nitrates and Magnesium. In the other samples, some of the parameters are higher than the Desirable Limits, but within the Permissible Limits. There are indications that some degree of sea water intrusion may have taken place.

The results of effluent analysis are given in **Table 3.16**.



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EIA/EMP Studies for Proposed Upgradation of Alang-Sosiya Ship Recycling Yard

**Table 3.16: Results of Effluent Analysis**

Sl. No.	Characteristics	Norms	Results		
			E1 (Ballast Water)	E2 (Bilge Water)	E3 (Treated Effluent)
1	Colour, Hazen units	All efforts should be made to remove colour and unpleasant odour as far as practicable	<1.0	<1.0	<1.0
2	Odour		Unobjectionable	Unobjectionable	Unobjectionable
3	Suspended Solids, mg/l	100	223.9	435.8	14.2
4	Temperature, °C	Shall not exceed 5°C above receiving water temperature	29 (+ 2)	30 (+ 3)	29
5	pH	5.5-9.0	7.34	7.27	7.03
6	Oil & Grease, mg/l	20 #	<1.4	5.6	<1.4
7	Ammoniacal nitrogen (as N), mg/l, Max	50	0.16	17.1	4.4
8	Total Kjeldahl nitrogen (as N), mg/l,	100	0.19	26.7	13.4
9	Free ammonia (as NH <sub>3</sub> ), mg/l	5	<0.1	14.2	0.58
10	Biochemical oxygen demand (3 days at 27 °C), mg/l	100	37.6	133	38.2
11	Chemical Oxygen Demand	250	129	439.5	161.3
12	Arsenic (as As), mg/l	0.2	<0.01	<0.01	<0.01
13	Mercury (as Hg), mg/l	0.01	<0.001	<0.001	<0.001
14	Lead (as Pb), mg/l	2.0	0.11	<0.005	<0.005
15	Cadmium (as Cd), mg/l	2.0	0.062	0.099	<0.001
16	Hexavalent chromium (as Cr <sup>+6</sup> ), mg/l, Max	1.0	<0.01	<0.01	<0.01
17	Total chromium (as Cr), mg/l	2.0	<0.01	0.017	<0.01
18	Copper (as Cu), mg/l	3.0	0.1	0.195	<0.02
19	Zinc (as Zn), mg/l	15	0.04	3.09	0.02
20	Selenium (as Se), mg/l	0.05	0.009	0.012	<0.005
21	Nickel (as Ni), mg/l	5.0	0.19	0.35	<0.02
22	Cyanide (as CN), mg/l	0.2	<0.001	<0.001	<0.001
23	Fluoride (as F), mg/l	15	1.36	1.14	1.23
24	Nitrate Nitrogen, mg/l	20	<0.1	<0.1	0.47
25	Sulphide (as S), mg/l	5.0	<0.1	<0.1	<0.1
26	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l	5.0	<0.001	<0.001	<0.001
27	Dissolved Phosphate (as P), mg/l	-	0.17	<0.05	<0.05
28	Manganese (as Mn), mg/l	2	0.14	7.82	0.12
29	Iron (as Fe), mg/l	3	1.8	6.99	0.13
30	Vanadium (as V), mg/l	0.2	<0.2	<0.2	<0.2
31	Total residual chlorine, mg/l	1.0	<0.1	<0.1	<0.1

# Regulation 9 of Annex I of MARPOL 73 / 78 stipulates maximum limit of 15 mg/l in undiluted effluent

The results of Effluent Water Analysis have been compared with the General Standards for discharge of environmental pollutants to Marine Coastal waters as prescribed by MoEF&CC vide notification dated 19<sup>th</sup> May, 1993 and amendment in December,1993. From the above results it is can be that suspended solids content of ship's ballast water as well as bilge water



exceeds the norms. Bilge water is not discharged; it is pumped out into tankers and transported to a shore based effluent treatment plant (ETP) at Alang Waste TSDF. It may also be noted that Regulation 9 of Annex I of MARPOL 73 / 78 prohibits the discharge of oily effluent whose oil content does not exceed 15 parts per million (ppm) without dilution. The oil content of the discharge water does not exceed 15 ppm. In bilge water iron and manganese content exceeds the norms but after treatment is reduced to well within the norms as can be seen from the results of analysis of treated effluent at Alang TSDF.

### 3.4.3 Noise Levels

In order to have an idea about the existing ambient noise level of the study area, noise monitoring has been carried out at seven locations during summer season, 2015. All the stations are listed in **Table 3.17**. These stations are also marked in **Drg. No. MEC/Q770/11/S2/05**.

**Table 3.17 : Ambient Noise Monitoring Stations**

Sl. No.	Location	Stn Code	Distance & Direction from nearest Project Boundary
1.	In front of Alang Fire Station	AN1	Adjacent
2.	Village Alang	AN2	1.0 km north-west
3.	Village Sosiya	AN3	1.5 km north-west
4.	Village Mathavda	AN4	<ul style="list-style-type: none"> <li>• 1.9 km west-south-west from existing yard.</li> <li>• 1.1 km north-west from expansion area</li> </ul>
5.	Village Kathava	AN5	4.0 km north-west
6.	Village Chopada	N6	<ul style="list-style-type: none"> <li>• 4.3 km south-west from existing yard.</li> <li>• 2.7 km west from expansion area</li> </ul>
7.	Village Bharpara	N7	1.6 km north-west

### Noise Monitoring Frequency

Monitoring was carried out once during Summer Season, 2015. At each ambient noise monitoring station, Leq. Noise level has been recorded at hourly intervals for 24 hours continuously by operating the noise-recording instrument for fifteen (15) minutes during each hour.

### Results and Discussions

The summarized results of ambient noise monitoring are given in **Table 3.18**. The results have been compared with the standard specified in Schedule III, Rule 3 of Environmental Protection Rules given in **Table 3.19**.



Minutes for 8<sup>th</sup> meeting of Expert Appraisal Committee (Infra-2) for Projects related to All ship breaking yard including ship breaking unit, Airport, Common Hazardous Waste Treatment, Storage and Disposal Facilities, Ports and Harbours, Aerial Ropeways, CETPs, Common Municipal Solid Waste Management Facility, Building/Construction Project, Townships and Area Development projects held on 28-29 July, 2016

Thursday 28<sup>th</sup> July, 2016

8.1. Confirmation of Minutes of 7<sup>th</sup>EAC Meeting for Infra-2 held on 29 June, 2016.

The minutes of the 7<sup>th</sup> Expert Appraisal Committee (Infrastructure- 2) meeting held during 29<sup>th</sup> June, 2016 were confirmed.

8.2. Consideration of Proposals

8.2.1.	<p>Construction of Dedicated Berth and other Infrastructure Facilities for the Administration of the Union Territory of Lakshdweep at Beypore, Calicut, Kerala by M/s CPWD, Calicut Central Circle – <b>Environmental and CRZ Clearance [Proposal No. IA/KL/MIS/32325/2013 ]</b></p> <p>The Committee noted that public hearing was conducted by KSPCB on 26.02.2016 and supervised/presided by Dy. Collector (Election), Kozhikode.</p> <p>As per EIA Notification, 2006, the District Magistrate or his or her representative not below the rank of an Additional District Magistrate assisted by a representative of SPCB or UTPCC, shall supervise and preside over the entire public hearing process.</p> <p>The Committee was of the view that level of the Dy. Collector seems to be below the rank of an Additional District Magistrate. Although PP was unable to clarify the issues. Therefore, the Committee recommended that procedure prescribed for conducting public hearing as per EIA Notification, 2006 shall be strictly followed by the project authority and KSPCB.</p> <p>The proposal was deferred till the necessary action taken by the project authority.</p>
8.2.2.	<p>Expansion of existing jetty by setting a new berth at Gulf of Kutch, Jamnagar by M/s Reliance Industries Ltd. – <b>Environmental and CRZ Clearance [Proposal No. IA/MIS/GJ/23582/2014]</b></p> <p>The project authorities and their consultant (M/s NEERI) gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken as per Terms of References (TORs) awarded during the 136<sup>th</sup> Meeting of the Expert Appraisal Committee (Infrastructure) held during 30th July– 1st August, 2014 for preparation of EIA-EMP report. All the projects related to Ports and Harbour i.e. &gt;5 million TPA of cargo handling capacity (excluding fishing harbours) are listed at 7(e) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.</p> <p>M/s Reliance Industries Ltd has proposed to expand the existing liquid jetty by setting up a new berth to the south east of the existing liquid jetty in order to facilitate additional product evacuation through marine route. At present, the products manufactured in the refinery and downstream petrochemical complex are being evacuated through the existing marine facilities that are operational at Sikka, Jamnagar, Gujarat. The marine facilities comprises of five SPMs (i.e. Three SPMs for crude oil import and Two SPMs for product export) and a liquid jetty with</p>

	<p>components and ecology within the area of influence.</p> <p>(viii) Certified compliance report of the environmental conditions stipulated in the existing environment clearance as well as copy of six monthly compliance report submitted to the Regional Office, MoEF&amp;CC.</p> <p>(ix) Details energy conservation measures to be taken for new administrative office building (all points mentioned in the proposal such as orientation to support reduced heat gain, use of ASHRAE 90.1, use of ECBC compliant envelope measures to be supported through drawings and details in the proposal).</p> <p>(x) Disaster Management Plan</p> <p>The proposal was deferred till the desired information is submitted through online. The above information shall be provided with the uploading of minutes on the website.</p>
8.2.5.	<p><b>Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board – Environmental and CRZ Clearance [Proposal No. IA/GJ/MIS/24799/2014]</b></p> <p>The project authorities and their consultant (M/s Mecon Ltd) gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken as per Draft Terms of References (TORs) awarded during the Meetings of the Expert Appraisal Committee (Infrastructure) held during 26<sup>th</sup> -28<sup>th</sup> November, 2014 for preparation of EIA-EMP report. All the projects related to ship breaking yards including ship breaking units are listed at 7(a) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.</p> <p>Gujarat Maritime Board (GMB) has proposed to upgrade and expand the existing Alang-Sosiya Ship Recycling Yard located in Talaja Tehsil of Bhavnagar District in Gujarat. The existing yard stretches over a length of 10 km of coastline. The yard is divided into 167 plots which have been leased to private entrepreneurs for ship recycling. The existing yard has the capacity to recycle ~400 ships per year to recover ~4 million tonnes per year (Mt/yr) of various materials which include over 99% steel. Details of the proposed upgradation and expansion project are as given below:</p> <ol style="list-style-type: none"> <li>a. <b>Upgradation of existing Ship recycling plots:</b> 70 plots in Phase I and remaining 97 plots in Phase II.</li> <li>b. <b>Hazardous Material removal Pre-treatment Facility:</b> Constructing two nos of dry-docks (each of dimension: l x b x h = 300 m x 50 m x 11.5 m) for pre-cleaning of hazardous materials from ships. Dry-dock 1 will be at the southern end of the existing yard and Dry-dock-2 about 2 km further south. Both the dry-docks may also be used for ship repair and ship building purposes when there are no ships for decontamination.</li> <li>c. <b>Additional facilities:</b> (1) Waste oil treatment system. (2) Incinerator at the existing dedicated waste Treatment Storage and Disposal Facility (TSDF) site located within Alang Notified Area.</li> <li>d. <b>Improvement of Labour Welfare Infrastructure:</b> Housing including hospital facilities, community centre and community school to be developed for welfare of labourers working at the yard (Total built-up area: ~94,700 m<sup>2</sup>).</li> <li>e. <b>Additional Plots:</b> 15 nos. 100 x 90 m plots between the two proposed dry-docks.</li> </ol>

During presentation, PP requested that construction of Labour Welfare Infrastructure housing project may be dropped. Separate application shall be filed in SEIAA, Gujarat for obtaining environmental clearance as this project does not attract CRZ and covered under category 'B' project.

The total quantity of capital dredging from each dry-dock works to about 1.00 million cubic metres (Mm<sup>3</sup>). Quantity of maintenance dredging will be 0.10 Mm<sup>3</sup> for each dry-dock. The basic design of existing ship-recycling plots include:

- Impermeable concrete pavement
- Embankment of sheet piles on the sea-side of the concrete pavement (90 m x 60 m)
- Drain ditch at the edge of the concrete pavement, along-side the sheet piles capture oil and /or oily water and a pit of 1 m x 1 m x 2 m to store oil & oily water
- Oil skimmer of 1.1 m (w) x 2.7 m (l) x 1.15 m (d) to prevent oil escaping during heavy rain.

Presently, all wastes generated at the yard are sent to a dedicated waste Treatment, Storage and Disposal Facility (TSDF), spread over 7 ha, located near Manar village within Alang Notified Area. At present the TSDF has a 100,000 m<sup>3</sup> capacity landfill facility for hazardous and non-hazardous solid wastes, a 5 t/day capacity incinerator and a 30 m<sup>3</sup>/capacity Effluent Treatment Plant (ETP) for treating oily waste waters. It is proposed to develop the following additional facilities at the existing TSDF:

1. A 25 t/day incinerator spread over 875 m<sup>2</sup>
2. Oil Recovery and ETP capable of processing 30 m<sup>3</sup>/day of effluents and recovering 4 m<sup>3</sup>/hr of oil. This facility will be spread over 1400 m<sup>2</sup>.

Power requirement for grid will be increased from 1.35 MW to 3.0 MW after expansion. Emergency power will be provided by DG set. Total water requirement for industrial purpose will be 2000 m<sup>3</sup>/day and potable purpose will be 2000 m<sup>3</sup>/day after expansion. At present 1000 m<sup>3</sup>/day is being supplied through pipeline from Trapaj. The balance is supplied in tankers from bore-wells located well away from the coast.

**As per EIA report**, the shoreline of Alang-Sosiya SRY is found to be stable and no changes in shoreline have been recorded since the last 8 years (2001-2008).

PP informed that plankton and benthos samples were collected from the sea at five line transects, each with three sampling points, 100 m off HTL, ~500 m off HTL and ~2-2.5 km offshore. As per Phytoplankton study, the species diversity was found poor and showed the presence of *Navicula spp.* and *Nitzschia spp.* as dominant species occurring at stations. The diversity of zooplankton was found to be poor. Biomass and bio-diversity of benthic fauna was low probably due to the strong currents, and rocky substratum. Marine algae were more or less absent. Only *Enteromorpha* was found in small scattered clumps on rocks at Stations B and D (i.e. at the existing northern and southern ends of the yard). The Committee suggested them to prepare management plan for improving marine biodiversity at the proposed project site.

Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2016-99-E (T Cell) dated 8<sup>th</sup> June, 2016 has recommended the proposed facilities to MoEF&CC under the provisions of

the CRZ Notification, 2011. As per the CRZ maps prepared by the NCSCM, Chennai proposed facilities fall in the CRZ – ( IB), CRZ ( III) and CRZ ( IV ) category.

The Committee deliberated upon the issues raised during the Public Hearing / Public Consultation meeting conducted by the Gujarat Pollution Control Board on 20<sup>th</sup> October, 2015. The issues were raised regarding any additional land acquisition; hospital project; bilge water management; Intertidal land management, additional hazardous waste management; impact on agriculture due to ship recycling project etc. After detailed deliberation, the Committee noted that issues have satisfactorily been responded by the project proponent and incorporated in the final EIA-EMP report.

After deliberation, the Committee sought following additional information:

- i) List of all wastes to be generated alongwith quantity, type of storage, mode of transportation and disposal method.
- ii) Monitoring report of the existing work areas where asbestos is being removed, including meeting the general monitoring criteria.
- iii) Measures to be taken during asbestos handling in the open and within rooms.
- iv) Quantity of bilge and ballast water generation from ship. Plan for transportation, treatment and disposal of bilge and ballast waters.
- v) Action plan for conducting employees training program for likely to be exposed to asbestos and PCB removal work during the ship breaking.
- vi) Management plan to improve the marine biodiversity at the project site
- vii) Layout plan indicating truck parking facility for easy accessibility of vehicles for transporting scrap and other materials and to relieve the traffic congestion around the yards.
- viii) Ground water analysis of the peizometer wells around the captive landfill site.
- ix) Creek protection plan to be submitted.
- x) Pollution load (in respect of air pollution, water pollution and solid waste) from the existing and proposed DG sets, vehicle repair centre/shop, Dhaba/restaurant, sanitation facilities etc shall be assessed and incorporated in the EIA report. Action plan to control pollution to also be incorporated.
- xi) Location of dump site for capital and maintenance dredge materials to be furnished. Elaborate the scientific methods for dumping.
- xii) Risk assessment for hazardous chemical storage facility. Disaster Management Plan.
- xiii) Action plan for existing and proposed dock to achieve zero waste spill.
- xiv) **As per EIA report**, the shoreline study has been conducted by considering data for year 2001-2008. Pl. revalidate the study by considering latest data.

	<p>The proposal was deferred till the desired information is submitted through online. The above information shall be provided with the uploading of minutes on the website.</p>
<p>8.2.6.</p>	<p><b>Common Hazardous Waste Treatment, Storage and Disposal Facility and Incineration facility at survey No.163,180,181,182,183 and 184 at village vadgam, Taluka Khambhat Distt. Anand, Gujarat by M/s Hindustan Enviro Life Protection Services Ltd.– Further consideration for Environmental Clearance [Proposal No. IAGJ/MIS/22261/2014]</b></p> <p>The aforesaid proposal was considered by the Expert Appraisal Committee (Infrastructure-2) in its 4<sup>th</sup> meeting held during 28<sup>th</sup> – 29<sup>th</sup> March, 2016 and the Committee sought following additional information:-</p> <ul style="list-style-type: none"> <li>(i) To carry out a sensitivity analysis of alternative sites as per the “Guidelines for conducting Environmental Impact Assessment: site selection for common Hazardous waste management facility published by the CPCB in October 2003.”</li> <li>(ii) Project proponents would also submit a write up on how their project proposals conform to the stipulations made in the “Protocol for Performance evaluation and monitoring of the Common Hazardous Waste Treatment Storage and Disposal facilities including common Hazardous Waste incinerators”, published by the CPCB on May 24, 2010</li> <li>(iii) Ground water table in all seasons, Ground water analysis report.</li> <li>(iv) Leachate characteristics and its treatment methodology.</li> <li>(v) Ambient air quality modelling.</li> <li>(vi) Issues raised during public hearing and commitments made by the project proponent in the form of tabular chart with financial budget for complying with the commitments made.</li> <li>(vii) Detailed reply on the environmental concerns (7 points) emerged from the public hearing.</li> <li>(viii) Comments of SPCB on the action report taken with respect to the observations of the Public hearing as well as recommendation of SPCB w.r.t. project.</li> </ul> <p>PP has submitted the above mentioned addl. information. PP informed that four alternative locations were identified and considered for evaluation of setting up of proposed facilities. Alternative Site 1: Site along the road from Vadgam to Tadatalav Village – Location 1; Alternative Site 2: Site along the road from Vadgam to Tadatalav Village – Location 2; Alternative Site 3: Near Dharvala Talav Village; Alternative Site 4: Near Jafrabad Pravishakha Village. It is reported that <i>Alternative Site 2</i> was found to be suitable for the proposed project. Ground water table was found in the range of 1.8 m to 2 m below ground level. Ground water analysis report has been submitted. Leachate characteristics have been submitted. Leachate will be treated in the ETP followed by RO. AAQ modeling study for point source emissions indicates that the maximum incremental GLCs after the proposed project would be 1.47 µg/m<sup>3</sup>, 4.40 µg/m<sup>3</sup>, 11.7 µg/m<sup>3</sup>, 12.8 µg/m<sup>3</sup>, 2.56 µg/m<sup>3</sup>, 6.61 µg/m<sup>3</sup>, 0.54 µg/m<sup>3</sup> and 2.56 µg/m<sup>3</sup> with respect to PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub>, CO, HC, HCl, HF and TOC. Regarding near water bodies which house migratory birds including flamingos, the site is well located and found to be away from migratory birds nesting area. PP submitted the copy of certificate issued by Deputy Forest Conservator of Anand District, wherein it is mentioned that site of migratory bird is more than 5.7 km away. Letter from R&amp;B department for expansion of</p>

**Minutes for 9<sup>th</sup> meeting of Expert Appraisal Committee (Infra-2) for Projects related to All ship breaking yard including ship breaking unit, Airport, Common Hazardous Waste Treatment, Storage and Disposal Facilities, Ports and Harbours, Aerial Ropeways, CETPs, Common Municipal Solid Waste Management Facility, Building/Construction Project, Townships and Area Development projects held on 21<sup>st</sup> – 22<sup>nd</sup> September, 2016**

9.1. Opening Remarks of the Chairman.

9.2 Confirmation of Minutes of 8<sup>th</sup>EAC Meeting for Infra-2 held on 28-29 July, 2016.

The minutes of the 8<sup>th</sup> Expert Appraisal Committee (Infrastructure- 2) meeting held during 28-29 July, 2016 were confirmed.

**9.3. Consideration of Proposals**

9.3.1	<p><b>Construction of New Integrated Terminal Building at LGBI Airport, Guwahati (Assam) by M/s Airports Authority of India - Finalization of ToR – [F.No.10-58/2016-IA-III]</b></p> <p>The project authorities gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken along with the draft Term of References for the preparation of EIA-EMP report. All the projects related to Airports are listed at 7(a) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.</p> <p>M/s Airports Authority of India has proposed for construction of new Integrated Terminal Building at LGBI Airport, Guwahati, Assam. It was informed that the existing terminal building has saturated. In view of the future traffic growth at Guwahati Airport, there is a requirement of construction of New Integrated Terminal Building. Total existing land available is 580.25 acre. No additional land will be acquired for the proposed project. Cost of project is Rs. 912 Crore. Deepore Beel Bird Sanctuary is located at a distance of 3km from the project site. Brahmaputra River is flowing at a distance of 2.2 km. Deeper Beel ( Lake) is listed in Ramsar site. Proposed project consists of following activities:</p> <ul style="list-style-type: none"> <li>(i) Integrated Terminal Building with area of 77500 sqm (excluding Service area as per requirement in Basement) shall be designed for 2900 Domestic and 200 International passengers at a time.</li> <li>(ii) Considering fast growing air traffic &amp; demand for better passenger facilities an additional area of 12500 sqm is kept for retail / commercial outlets to tap future potential at the airport.</li> <li>(iii) Multilevel car parking is proposed with all amenities for at least 1500 cars and surface parking for VIP cars &amp; 10 buses, Separate car / scooter park area for AAI and airlines staff at appropriate location.</li> <li>(iv) Development of four-lane vehicular road is also proposed from Terminal Building / Car parking with canopy covering two lanes in front of the Terminal Building on the city side and connecting the main approach road to the city.</li> </ul> <p>Water requirement will be 150 kl/d for domestic and CFT, which will be met through</p>
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9.3.5 **Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board- Further consideration for Environmental and CRZ Clearance – [11-43/2014-IA-III]**

The aforesaid proposal was considered by the Expert Appraisal Committee (Infrastructure-2) in its 8<sup>th</sup> meeting held during on 28<sup>th</sup>-29<sup>th</sup> July, 2016 and the Committee deferred the proposal. Now, PP has submitted following addl. Information:

i) **List of all wastes to be generated alongwith quantity, type of storage and disposal method is as given below:**

Waste	Sources	Expected Generation (t/yr*)	Category	Storage Facility	Disposal Option
Asbestos Containing Material (ACM)	Engine room, galley, cabin areas	~140	Hazardous	Thoroughly wetted, packed in leak proof labelled containers & stored in special rooms on plots till being sent TSDF	Disposed off in Hazardous Waste Landfill after solidification with cement.
Glass wool	Galley, Chilling systems	~3500	Non-Hazardous	Temporarily stored in designated rooms on plots till being sent to TSDF	Disposed off in Landfills for Non-Hazardous Wastes within TSDF
Poly-urethane foam (PUF) & Polystyrene (Thermocol)	Galley, Chilling systems	~200	Non-Hazardous	Stacked temporarily in designated areas on plots till being sent to TSDF	Incinerated in TSDF's incinerator
Sludge Residue and Contaminated Material	Fuel & oil tanks, ballast tanks, bilges	~600	Hazardous	Packed in covered drums or leak proof plastic bags which are stored in designated rooms on plots till being sent to TSDF	Incinerated in TSDF's incinerator
Plastics and Cables with Paint chips	Entire ship	~30	Hazardous as may contain PCBs	Packed in leak proof plastic bags which are stored in designated rooms on plots till being sent to TSDF	Unusable plastics & non-metallic paints incinerated. Metallic paints dumped in hazardous waste land-fill .

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Iron Scales	Entire ship	~1200	Non Hazardous	Packed in canvas bags & stored temporarily in designated covered enclosures	Sold off as melting scrap
Broken glass	Living & working areas	~150	Non Hazardous	Packed in canvas bags & stored temporarily in designated enclosures till being sent to TSDf	Unsold material dumped in TSDf's land fill in manner such that broken glass does no come in contact with lining
Rubber (non-contaminated)	Cabin areas	~100	Non Hazardous	Packed in canvas bags & stored temporarily in designated rooms or covered enclosures till being sent to TSDf	Dumped in hazardous waste land-fill
Rubber (contaminated)	Cabin areas	~75	Hazardous	Packed in leak proof labelled bags & stored temporarily in designated rooms till being sent to TSDf	Dumped in hazardous waste land-fill
Fibre glass	Cabin areas	~35	Non Hazardous	Packed in canvas bags & stored temporarily in designated covered enclosures on plots till being sent to TSDf	Unused material dumped in non-hazardous waste land-fill
Rexene	Cabin areas	~50	Non Hazardous	Packed in canvas bags & stored temporarily in designated covered enclosures on plots till being sent to TSDf	Unused material incinerated in TSDf's incinerator
Cardboard & packing material	Living & working areas	~40	Non Hazardous	Packed in canvas bags & stored temporarily in designated covered enclosures on plots till being sent to TSDf	Dumped in non-hazardous waste land-fill

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Paint chips	Entire ship	~20	Hazardous	Packed in leak proof labelled bags & stored temporarily in designated rooms till being sent to TSDF	Dumped in hazardous waste land-fill
Waste	Sources	Expected Generation (t/yr*)	Category	Storage Facility	Disposal Option
Municipal solid wastes	Cabin areas	~1550	Non-Hazardous	Sorted into "Combustible" / "Non-Combustible" categories. Combustible wastes packed in labelled leak-proof containers. Non-combustible wastes packed in labelled canvas / jute bags. All bags stored temporarily in designated covered enclosures or rooms on plots temporarily till being sent to TSDF.	Combustible wastes incinerated. Non-combustible wastes dumped in TSDF's landfill for municipal solid wastes.
Cement Tiles	Cabin areas, engine room	~8800	Non-Hazardous	Stacked temporarily in designated enclosures on TSDF till they can be despatched to TSDF.	Used for repair of village roads. Unutilised tiles dumped in TSDF's landfill.
TOTAL		~16400			
Bilge water	Engine room, cargo pump rooms of tankers	~15700	Hazardous	5 – 30 m3 tank on each plot. 400 m3 tank at TSDF	Treated in TSDF's ETP. Recovered oil incinerated in TSDF's incinerator

ii) **Monitoring report of the existing work areas where asbestos is being removed, including meeting the general monitoring criteria:**

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PP informed that two ship recycling plots, where asbestos removal was going on were selected. At each plot, monitoring was carried out at 2 locations: One location very near to the workers and 2<sup>nd</sup> location 4 ft away from the workers. It is reported that exposure of Asbestos fibres are within the permissible exposure limit of 1fibre/cc at Alang Shio Breaking yard.

- iii) Following measures will be taken during asbestos handling in the open and within rooms.
- (i) Asbestos Containing Material (ACM) will be removed as part of "Ship Decontamination" prior to actual ship cutting.
  - (ii) A dedicated trained Asbestos Removal Supervisor will oversee all ACM removal activities.
  - (iii) Areas where ACM is present, will be identified & marked off as special areas for restricted entry to authorized workers only. Temporary air filtration and water sprinkling systems installed at these areas.
  - (iv) The Supervisor will put up prominent slogans in large letters in prominent colours and symbols in such areas regarding potential hazards and spelling out proper work practices will also be displayed in the regulated areas.
  - (v) Trained workers will put on special full body clothing, face masks & respirators before entering such special areas. Such workers will be certified to be medically fit.
  - (vi) ACM will be thoroughly wetted before removal. Abrasive disc saws / compressed air will not be used to prevent generation of asbestos dust.
  - (vii) As much as possible, large ACM portions shall be carefully removed without "breaking". ACM which is compounded in other material (e.g. flanges in pipes) will not be removed; such materials will be removed entirely without disturbing ACM.
  - (viii) The removed ACM, shall be immediately packed in approved packaging system (double layered black polythene bag with thermal packing and labeling). Sub-assemblies which require further dismantling, shall be wrapped in leak-proof wrapping, while still wet.
  - (ix) Asbestos work areas will be cleaned with heavy duty vacuum cleaners equipped with HEPA filters and the debris shall be packed in approved packaging system. The workers clothing shall also be vacuumed before they workers take them off.
  - (x) The asbestos containing sub-assemblies, which require further working (and packed in leak-proof packing) will be carefully taken off the ship and taken inside special enclosures located on the ship-recycling plots.
  - (xi) Atmospheric pressure inside these enclosures will be <outside pressure. These enclosures' air filtration systems will be provided with HEPA filters. There shall be arrangements for water sprinkling / spraying inside these enclosures also.
  - (xii) The used protective clothing will be packed in labeled leak proof containers before being sent to the cleaners. The cleaners / washers are informed about need to take necessary protective measures. The Asbestos Removal Supervisor ensures that the procedures are strictly followed.
  - (xiii) The removed ACM shall be carefully inventoried. The containers / bags of asbestos waste shall be temporarily stored in a secure room on the plots till they can be dispatched to Alang TSDF with proper documentation. Only, the TSDF's dedicated waste transportation vehicles shall be engaged in this task
  - (xiv) At Alang TSDF, the containers of ACM waste shall be placed in a special masonry pit in the Hazardous Waste Land-fill. Each layer of ACM waste containers will be cemented over to ensure complete immobilization of the asbestos / ACM.

iv) **Quantity of bilge and ballast water generation from ship.** Plan for transportation, treatment and disposal of bilge and ballast waters are as given below:

The upgraded yard will attract large number of tankers (which are likely to contain more bilge water), annual bilge water generation is expected to increase to ~15700 m<sup>3</sup>.

- ❖ Bilge water pumped out during "Ship Decontamination" prior to breaking.
  - ❖ Bilge water stored temporarily on plots in 5 – 30 m<sup>3</sup> capacity tanks.
  - ❖ Bilge water transported to TSDF by road tankers.
  - ❖ Bilge water to be stored at TSDF in 400 m<sup>3</sup> capacity tank.
  - ❖ TSDF has ETP of 30 m<sup>3</sup>/day capacity. Another module of similar size to be set up under expansion programme.
  - ❖ In ETP oily water treated by physico-chemical and biological means.
  - ❖ Recovered oil is incinerated in TSDF's incinerator. ETP sludge dried and dumped in TSDF's land-fill.
- Treated water used for dust suppression in landfills and roads

v) **Action plan for conducting employees training program for likely to be exposed to asbestos and PCB removal work during the ship breaking:**

- ❖ GMB has developed special Environment, health and safety modules in support of GEPIL, National institute of Occupation health (NIOH) and other EHS experts in the field. GMB safety institute regularly conducts training programme on various subjects including safe handling of ACM & PCB.
- ❖ GMB has its own training centre located in Alang-Sosiya Ship Recycling Yard, where workers and other concerned personnel are imparted necessary training.
- ❖ GMB has developed detailed PCB disposal Method Manual, which is available at yard.

vi) **Management plan to improve the marine biodiversity at the project site as given below:**

- ❖ Project area comprises Inter-tidal zone & area immediately landward of HTL.
- ❖ As part of upgradation programme, all landward part of all plots to have impervious pavement sloped towards settling pits provided with oil & grease trap to prevent flow of contaminated water to sea.
- ❖ Ballast water exchange mandatory for Beaching Permission to prevent introduction of invasive species with ballast water.
- ❖ Bilge water, which may contain oil, pumped out and sent to shore based ETP.
- ❖ Paint chips, a major cause of sediment pollution, collected to the maximum possible extent, bagged and sent to TSDF for proper disposal.
- ❖ To prevent pollution of sea by sewage, all ship recycling plots have sanitary toilets. Sanitary toilet blocks have been set up at several places in yard for use by other workers and visitors. Workers' barracks to have sewage treatment plant.
- ❖ With reduction of water pollution, project area to be recolonised by larval forms of plants & animals already present in sea water.
- ❖ Rocky outcrops present in inter-tidal zone to be preserved to the extent possible to

provide habitat for crustaceans, molluscs & sessile organisms.

- ❖ In fact, the Alang sea water is highly turbid that too is influenced with strong current and high tidal flux which does not support good amount of primary productivity. However, care is being taken to prevent any waste entering into to marine environment would a great help to the existing status though least productivity but will be maintained as per base line parameters.

vii) **Layout plan indicating truck parking facility for easy accessibility of vehicles for transporting scrap and other materials and to relieve the traffic congestion around the yards.** PP informed the following:

- ❖ Alang-Sosiya Ship Recycling Yard does not required a dedicated Vehicle Parking Area as all vehicles are parked only inside the respective plots.
- ❖ Approach road and the service road running the length of the yard is 4-laned, rated for heavy goods vehicles.
- ❖ Trucks will directly enter the concerned plots to load / unload material and after completion of operations will leave the yard.

The Committee further suggested to construct pucca truck parking area to control dust emission.

viii) **Ground water analysis reports of the peizometer wells around the captive landfill site have been submitted.**

ix) **Creek protection plan:** PP informed the following:

- ❖ 2 creeks cross Alang-Sosiya Ship Recycling Yard before discharging in the sea.
  - Pasvivali Creek (~12 m wide) – close to the northern limit of ship recycling yard
  - Manar Creek (~18 m wide) – in the northern half of the yard but south of Pasvivali creek.
- ❖ Average discharge in these creek during full monsoon season ~300 m<sup>3</sup>/s and ~500 m<sup>3</sup>/s respectively.
- ❖ The Alang coast as per Shore Line Changes maps prepared by NCSCM, Chennai for MOEFCC shows that this is stable coast hence as such it is not desirable to play with these creeks as the same were maintained naturally.
- ❖ Nevertheless following preventive measures will be taken for protection of the creeks:
  - A distance of at least 25 m will be maintained between creek bank and ship recycling plot boundary
  - A 7.5 m wide green belt will be developed on the land-ward side of the creeks' High Tide Line (HTL). 2 rows of *Pandanus sp.* {Screwpine (E), Kevda (H)} will be planted in this green belt extending for ~1.5 km from creek mouth. This indigenous species is already growing in the area.

x) **Pollution load (in respect of air pollution, water pollution and solid waste) from the existing and proposed DG sets, vehicle repair centre/shop, Dhaba/restaurant, sanitation facilities etc shall be assessed and incorporated in the EIA report.** PP has submitted following details:

**TOTAL POLLUTION LOADS**

❖ **AIR POLLUTANTS**

- NOx from LPG use in ship cutting : 290.77 kg/day
- NOx from Incinerators : 136.86 kg/day (both incinerators operating)
- SO<sub>2</sub> from Incinerators : 73.61 kg/day (both incinerators operating)
- NOx from material transport : 21.78 kg/day
- NOx from DG sets : 65 kg/hr (130 x 125 KVA DG sets running)
- NOx from cooking in eateries : 4.65 kg/day

❖ **WASTE WATER**

- Ballast water : Few m<sup>3</sup> to several thousand m<sup>3</sup> per ship.
- Bilge water : ~15700 m<sup>3</sup>/year (To be treated in ETP)
- Sewage from plots : ~200 m<sup>3</sup>/day (Disposed through septic tanks)
- Sewage from public toilet blocks : ~540 m<sup>3</sup>/day (Disposed through septic tanks)
- Sewage from workers' barracks : ~3000 m<sup>3</sup>/day (To be treated in STP)
- Effluents from eateries : ~80 m<sup>3</sup>/day (settled in tanks and water is used in plantation, residual will be sent to MSWlandfill)
- Vehicle repair workshops : ~50 m<sup>3</sup>/day (Gravimetric separation and sent to ETP)

❖ **SOLID WASTE**

- Kitchen waste : ~0.5 MT per day from dhabas (Disposed off to Municipal landfill site)
- Waste from sweeping : ~45 MT per month (Disposed off to Municipal landfill site)

xi) **Location of dump site for capital and maintenance dredge materials to be furnished. Elaborate the scientific methods for dumping.** PP has submitted the following:

- ❖ 1 x 10<sup>6</sup> m<sup>3</sup> dredge spoils to be generated on account of capital dredging for each dry-dock. Dredge spoils to be mostly rocks.
- ❖ Rocks generated from dredging will be used for building road from existing southern end of SRY to Dry-dock 2 site, concrete paving of existing & proposed ship recycling plots.
- ❖ 0.1 x 10<sup>6</sup> m<sup>3</sup> dredge spoils to be generated on account of maintenance dredging for each dry-dock. Dredge spoils to be mostly mud & fine sand.
- ❖ Trailer-suction dredgers will be used for maintenance dredging. Dredge spoils to be directly pumped into hopper barges.
- ❖ When full barges will move to identified dredge spoil dumping area located beyond -20 m contour. Dredge spoils will be simply pumped overboard.

xii) **Risk assessment for hazardous chemical storage facility.** PP informed that :

- ❖ LPG is only hazardous chemical stored in quantities exceeding threshold quantities on a regular basis.
- ❖ Other hazardous chemicals which are also handled at the ship-recycling yard are paint chips, asbestos & asbestos containing material, oil sludge, wastes containing Poly-Chlorinated Bi-phenyls etc., but the quantities involved are small and the wastes are stored only temporarily on the ship-recycling plots in dedicated enclosures / rooms and that too after being properly packed in labeled leak-proof containers, before being dispatched to the dedicated TSDF for proper disposal.

- ❖ LPG is a "Flammable substance" , which "Ignites at Normal Temperature" and is "Explosive under Certain Conditions".
- ❖ At the plots, LPG is stored under pressure in 19 kg cylinders. Each plot usually stores ~3 days LPG requirements (Max. 3.43 t). Each plot has its own LPG storage godown which is licensed by the Department of Explosives.

xiii) Action plan for existing and proposed dock to achieve zero waste spill is as given below:

- ❖ After dry-docking of ships, heavy duty canvas sheets will be placed on the dock floor. Paint on the ships' external hulls will be removed to the maximum extent possible. The falling paint chips will and other solid debris will fall on the canvas sheets. The debris will be collected, sorted and packed for proper disposal.
- ❖ After decontamination of the ships, the floors of the dock will be cleaned. Initially fallen debris will be picked up manually or semi-mechanically. The floors will be washed by water jets. The contaminated water will flow into the drains at the sides and collect in the sumps. The sumps will be emptied.
- ❖ After ensuring that the dry dock has been cleared of all solid debris and spilled liquids, dock will be re-flooded for un-docking the decontaminated ship.

In fact, a dry-dock itself is a containment. There is no chance of release of hazardous waste to marine environment as it is mandatory for the dry dock to be thoroughly cleaned with mechanized vacuum system before flooding. In fact in Western-Europe and U.S.A, where the environmental legislations are very stringent, it is mandatory for naval vessels and nuclear powered ships & submarines to be recycled only inside dry docks as such ships contain large quantities of hazardous materials / chemicals.

xiv) **Regarding revalidation of the shoreline study, PP informed that :**

- ❖ **The Report "Coastal Zones of India" prepared by Space Applications Centre, ISRO Ahmedabad on behalf of Ministry of Environment and Forests, Govt. of India in 2012 has classified the stretch of coastline where Alang is located as "Stable" on basis of shoreline changes**
- ❖ **National Centre for Sustainable Coastal Management (NCSCM), Chennai, an Institute under Ministry of Environment, Forest and Climate Change, Government of India is mapping the coastline of India. These maps are updated at regular intervals. NCSCM's studies have indicated that the coastline of Alang area is stable. The recent CRZ maps prepared by NCSCM for Alang during July 2015 also matches with their shoreline maps prepared in 2012-13.**
- ❖ **Probable impacts of the construction of dry docks at Alang on the coastline was studied through hydro-dynamic modeling by M/s Indomer Coastal Hydraulics Ltd., Chennai with bathymetry data and water current measurements taken during December, 2015.**

xv) **The hydro-dynamic model study on currents, near-shore sediment transport**

**modelling studies, shoreline studies show that there are no visible impacts on the environment and the stabilization on the shoreline.**

Since marine water quality of the project area is poor, the Committee suggested them that proposed project should be planned/ designed to improve the overall marine water quality of the sea atleast for Class SW-IV water (for harbour water) parameters. It was also suggested that while breaking the ship, boom (circular pneumatic type) should be placed around the ship to control the spillage. Proper storm water drainage system alongwith treatment facility should be provided along the project site.

After detailed deliberations, the Committee found additional information adequate and recommended the project for environmental and CRZ clearance and stipulated the following specific conditions along with other environmental conditions while considering for accord of environmental and CRZ clearance:

- i) GMB shall implement the plan for upgradation of the existing ship recycling units in such a way that will help to improve the overall marine water quality of the sea atleast for Class SW-IV water (for harbour water) parameters i.e. pH range 6.5-9.0; Dissolved Oxygen 3.0 mg/l or 40 percent saturation value, which ever is higher; Colour and Odour: no noticeable colour or offensive odour; Floating Matters Oil, grease and scum (including Petroleum products) 10 mg/l; Fecal Coliform 500/100 ml (PAN) Not exceeding 1000/100 ml in 20 percent of samples in the year and in 3 consecutive samples in monsoon months; Biochemical Oxygen Demand (3 days at 27°C) 5 mg/l; Biochemical Oxygen Demand (BOD) (3 days at 27°C) 3 mg/l restricted for bathing.
- ii) All the recommendations and conditions specified by Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2016-99-E (T Cell) dated 8<sup>th</sup> June, 2016 shall be complied with.
- iii) All details on waste management and handling as given in letter no. GMB/ENV/91(C)/JICA/5404 dated 19-7-2016 as submitted before the committee should also be provided to the State Pollution Control Board along with the application for consent and authorisation to enable them to verify compliance on site before the consents to operate , authorisation or any other permission to operate is given. An action plan shall be formulated, documented and implemented for the existing and proposed dock to ensure zero waste spill.
- iv) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.
- v) While breaking the ship, boom (circular pneumatic type) should be placed around the ship to control the spillage.
- vi) Collection vehicles used for the collection and transportation of solid/liquid waste should be adequately designed to handle specific type of wastes and shall have protection against the leaking or spilling of solid waste or being blown or hurled from such vehicles.
- vii) Safety and health requirements relating to occupational exposure to Asbestos, while ship breaking shall be in compliance with IS11456-1986 and subsequent amendments. Facility must ensure that workers are not exposed to air-borne asbestos concentrations in excess of prescribed Permissible Exposure Limits (PELs).

viii)	There should be a safe working and operating procedures ensuring safe accessibility to all the areas and compartments of the ship and safe conditions for hot work.
ix)	Hazardous waste inventory that identifies, quantifies and locates the type of waste on board should be carried out before the ship comes to the shore. Chemical safety data sheets should be made available for each hazardous substance that is identified. As per the High Power Committee, maintaining the complete inventory of hazardous wastes on board is a mandatory task for any ship owner. This inventory shall be submitted by the State Maritime Board to the SPCB to ensure safe disposal of hazardous waste. Further permissions for ship anchoring and beaching will be based on hazardous waste inventory. Removing and cleaning of liquids, fuels and oils: Before start of ship dismantling, all the liquid residues should be removed and cleaned from the ship. This process may continue during the entire ship dismantling process.
x)	The hazardous wastes identified by the inventory data be properly removed and disposed. Dismantling plan should be drawn before start of the work. This plan forms the basis for sectional breaking of the ship. Proper storage, breaking and disposal of waste: Waste obtained during dismantling should be sorted and segregated based on the type of waste and disposal option. Specific wastes from the ship breaking yard are as follows: / Asbestos / Polychlorinated biphenyls (PCBs) / Bilge and ballast waters / Oils and fuels / Metal cutting / Paints. Removal and Disposal of Miscellaneous Ship Machinery
xi)	The Company should perform air surveillance activities in work areas where asbestos is being removed, including meeting the general monitoring criteria, conducting initial exposure assessments, and performing daily and periodic monitoring. The facility must keep an accurate record of all measurements taken to monitor the workers' exposure to asbestos. Facility is required to conduct medical surveillance for all workers who, for a combined total of 30 or more days per year, are performing asbestos removal work or are exposed at or above the permissible exposure limit. This includes medical examination and consultation prior to beginning work, at least annually, and upon termination of employment. The facility must establish and maintain an accurate record for each worker subject to medical surveillance. These records must be maintained for the duration of the worker's employment, plus an additional 30 years.
xii)	Company should provide, at no cost, a training program for employees likely to be exposed to asbestos removal work during the ship breaking.
xiii)	The removal of paints and coatings, regardless of the process used, generates wastes that must be managed and disposed. The Company should implement procedures to ensure that all wastes are contained and stored in a manner that will prevent their release into the environment.
xiv)	To ensure better safety and security of plots, open spaces (buffers) can be created for giving emergency access/ parking to/for fire tenders, installing water lines for emergency services, access to beach, anchoring rescue boats and dinghies.
xv)	Truck parking facility should be provided for easy accessibility of vehicles for transporting scrap and other materials and to relieve the traffic congestion around the yards. The parking facility should have basic infrastructure like potable water, sanitation, resting, shops, eating joints, vehicle repair shops, fuelling stations, etc.,

	<p>for the drivers. It should also have accommodation for transporter companies/agents. To accommodate more number of vehicles the trucks can be parked angularly.</p> <p>xvi) Facility must ensure that workers are protected from exposure to airborne PCB concentrations. As per OSHA (Occupational Safety and Health Administration) regulations, governing exposure to PCBs in the workplace include two time-weighted averages for chlorodiphenyl.</p> <p>xvii) All encroachments shall be removed and suitably rehabilitated as proposed. The project proponents would provide for waste management from eateries, dhabas and other sources within the area of jurisdiction/ influence of the project.</p> <p>xviii) All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.</p> <p>xix) Automatic /online monitoring system (24 x 7 monitoring devices) for air pollution as well as water pollution in respect of flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB and in the Company's website.</p>
9.3.6	<p><b>Group Housing "swami Bhumanandvihar" at village Jwalapur and Ranipur, Haridwar, Uttarakhand by NDR Constructions Pvt. Ltd. – Further consideration for Environmental Clearance – [F.No.21-3/2016-IA-III]</b></p> <p>The aforesaid proposal was considered by the Expert Appraisal Committee (Infrastructure-2) in its 8<sup>th</sup> meeting held during on 28<sup>th</sup>-29<sup>th</sup> July, 2016 and the Committee sought following additional information:</p> <ul style="list-style-type: none"> <li>(i) Details of no. of floor alongwith builtup area to be constructed in each block to be furnished.</li> <li>(ii) Details of the development plan of the area in which the project is to be constructed is to be submitted along with information of availability of water , sewage lines, storm water drain and power</li> <li>(iii) Layout of parking plan indicating entry and exit points of vehicular movement as well as traffic management plan. Highlight the fire tender pathway.</li> <li>(iv) Details of landscaping along with plantation plan to be submitted</li> <li>(v) Revised water balance chart as per CPHEEO manual to be submitted.</li> <li>(vi) Details of source of water supply alongwith permission to be submitted.</li> <li>(vii) Excess treated sewage disposal plan/scheme to be submitted.</li> <li>(viii) Treatment scheme for sewage and its recycling mode.</li> <li>(ix) Details of rain water harvesting system to be furnished. Clarity on recharge pits, storage systems for rain water and use of appropriate filtration system for collected rain water to be detailed.</li> <li>(x) Calculation on sizing of solar water heating systems to be furnished.</li> <li>(xi) Details on solar lighting for common areas and landscaping to be provided</li> <li>(xii) Solid waste management plan alongwith area earmarked for solid waste management scheme.</li> <li>(xiii) Details energy conservation measures to be taken. taken (all points mentioned in the proposal such as orientation to support reduced heat gain, use of ASHRAE 90.1, use of ECBC compliant envelope measures to be supported through drawings and details in the proposal</li> </ul>

(To be published in the Gazette of India, Extraordinary, Part-II, Section 3, Sub-section (ii) of dated the 6<sup>th</sup> January, 2011)

**COASTAL REGULATION ZONE NOTIFICATION**  
**MINISTRY OF ENVIRONMENT AND FORESTS**  
(Department of Environment, Forests and Wildlife)

S.O.19(E).- WHEREAS a draft notification under sub-section (1) of section and clause (V) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 was issued inviting objections and suggestions for the declaration of coastal stretches as Coastal Regulation Zone and imposing restrictions on industries, operations and processes in the CRZ was published vide S.O.No.2291 (E), dated 15<sup>th</sup> September, 2010.;

AND WHEREAS, copies of the said Gazette were made available to the public on 15<sup>th</sup> September, 2010.;

AND WHEREAS, the suggestions and objections received from the public have been considered by the Central Government.;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government, with a view to ensure livelihood security to the fisher communities and other local communities, living in the coastal areas, to conserve and protect coastal stretches, its unique environment and its marine area and to promote development through sustainable manner based on scientific principles taking into account the dangers of natural hazards in the coastal areas, sea level rise due to global warming, does hereby, declare the coastal stretches of the country and the water area upto its territorial water limit, excluding the islands of Andaman and Nicobar and Lakshadweep and the marine areas surrounding these islands upto its territorial limit, as Coastal Regulation Zone (hereinafter referred to as the CRZ) and restricts the setting up and expansion of any industry, operations or processes and manufacture or handling or storage or disposal of hazardous substances as specified in the Hazardous Substances (Handling, Management and Transboundary Movement) Rules, 2009 in the aforesaid CRZ.; and

In exercise of powers also conferred by clause (d) and sub rule (3) of rule 5 of Environment (Protection) Act, 1986 and in supersession of the notification of the Government of India in the Ministry of Environment and Forests, number S.O.114(E), dated the 19<sup>th</sup> February, 1991 except as respects things done or omitted to be done before such supercession, the Central Government hereby declares the following areas as CRZ and imposes with effect from the date of the notification the following restrictions on the setting up and expansion of industries, operations or processes and the like in the CRZ,-

- (i) the land area from High Tide Line (hereinafter referred to as the HTL) to 500mts on the landward side along the sea front.
- (ii) CRZ shall apply to the land area between HTL to 100 mts or width of the creek whichever is less on the landward side along the tidal influenced water bodies that are connected to the sea and the distance upto which development along such tidal influenced water bodies is to be regulated shall be governed by the distance upto which the tidal effects are experienced which shall be determined based on salinity concentration of 5 parts per thousand (ppt) measured during the driest period of the year and distance upto which tidal effects are experienced shall be clearly identified and demarcated accordingly in the Coastal Zone Management Plans (hereinafter referred to as the CZMPs).

**Explanation.-** For the purposes of this sub-paragraph the expression tidal influenced water bodies means the water bodies influenced by tidal effects from sea, in the bays, estuaries, rivers, creeks, backwaters, lagoons, ponds connected to the sea or creeks and the like.

- (iii) the land area falling between the hazard line and 500mts from HTL on the landward side, in case of seafront and between the hazard line and 100mts line in case of tidal influenced water body the word 'hazard line' denotes the line demarcated by Ministry of Environment and Forests (hereinafter referred to as the MoEF) through the Survey of India (hereinafter referred to as the SoI) taking into account tides, waves, sea level rise and shoreline changes.
- (iv) land area between HTL and Low Tide Line (hereinafter referred to as the LTL) which will be termed as the intertidal zone.
- (v) the water and the bed area between the LTL to the territorial water limit (12 Nm) in case of sea and the water and the bed area between LTL at the bank to the LTL on the opposite side of the bank, of tidal influenced water bodies.

2. For the purposes of this notification, the HTL means the line on the land upto which the highest water line reaches during the spring tide and shall be demarcated uniformly in all parts of the country by the demarcating authority(s) so authorized by the MoEF in accordance with the general guidelines issued at Annexure-I. HTL shall be demarcated within one year from the date of issue of this notification.

3. Prohibited activities within CRZ,- The following are declared as prohibited activities within the CRZ,-

(i) Setting up of new industries and expansion of existing industries except,-

(a) those directly related to waterfront or directly needing foreshore facilities;

*Explanation:* The expression "foreshore facilities" means those activities permissible under this notification and they require waterfront for their operations such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, lighthouses, navigational safety facilities, coastal police stations and the like.;

(b) projects of Department of Atomic Energy;

(c) facilities for generating power by non-conventional energy sources and setting up of desalination plants in the areas not classified as CRZ-I(i) based on an impact assessment study including social impacts.;

(d) development of green field Airport already permitted only at Navi Mumbai;

(e) reconstruction, repair works of dwelling units of local communities including fishers in accordance with local town and country planning regulations.

(ii) manufacture or handling oil storage or disposal of hazardous substance as specified in the notification of Ministry of Environment and Forests, No. S.O.594 (E), dated the 28<sup>th</sup> July 1989, S.O.No.966(E), dated the 27<sup>th</sup> November, 1989 and GSR 1037 (E), dated the 5<sup>th</sup>

December, 1989 except,-

- (a) transfer of hazardous substances from ships to ports, terminals and refineries and vice versa;
- (b) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II appended to this notification and facilities for regasification of Liquefied Natural Gas (hereinafter referred to as the LNG) in the areas not classified as CRZ- I(i) subject to implementation of safety regulations including guidelines issued by the Oil Industry Safety Directorate in the Ministry of Petroleum and Natural Gas and guidelines issued by MoEF and subject to further terms and conditions for implementation of ameliorative and restorative measures in relation to environment as may be stipulated by in MoEF.
 

Provided that facilities for receipt and storage of fertilizers and raw materials required for manufacture of fertilizers like ammonia, phosphoric acid, sulphur, sulphuric acid, nitric acid and the like, shall be permitted within the said zone in the areas not classified as CRZ-I(i).
- (iii) Setting up and expansion of fish processing units including warehousing except hatchery and natural fish drying in permitted areas:
- (iv) Land reclamation, bunding or disturbing the natural course of seawater except those,-
  - (a) required for setting up, construction or modernisation or expansion of foreshore facilities like ports, harbours, jetties, wharves, quays, slipways, bridges, sealink, road on stilts, and such as meant for defence and security purpose and for other facilities that are essential for activities permissible under the notification;
  - (b) measures for control of erosion, based on scientific including Environmental Impact Assessment (hereinafter referred to as the EIA) studies
  - (c) maintenance or clearing of waterways, channels and ports, based on EIA studies;
  - (d) measures to prevent sand bars, installation of tidal regulators, laying of storm water drains or for structures for prevention of salinity ingress and freshwater recharge based on carried out by any agency to be specified by MoEF.
- (v) Setting up and expansion of units or mechanism for disposal of wastes and effluents except facilities required for,-
  - (a) discharging treated effluents into the water course with approval under the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);
  - (b) storm water drains and ancillary structures for pumping;
  - (c) treatment of waste and effluents arising from hotels, beach resorts and human settlements located in CRZ areas other than CRZ-I and disposal of treated wastes and effluents;
- (vi) Discharge of untreated waste and effluents from industries, cities or towns and other human settlements. The concerned authorities shall implement schemes for phasing out existing discharge of this nature, if any, within a time period not exceeding two years from the date of issue of this notification.
- (vii) Dumping of city or town wastes including construction debris, industrial solid wastes, fly

ash for the purpose of land filling and the like and the concerned authority shall implement schemes for phasing out any existing practice, if any, shall be phased out within a period of one year from date of commencement of this notification.

Note:-The MoEF will issue a separate instruction to the State Governments and Union territory Administration in respect of preparation of Action Plans and their implementation as also monitoring including the time schedule thereof, in respect of paras (v), (vi) and (vii).

(viii) Port and harbour projects in high eroding stretches of the coast, except those projects classified as strategic and defence related in terms of EIA notification, 2006 identified by MoEF based on scientific studies and in consultation with the State Government or the Union territory Administration.

(ix) Reclamation for commercial purposes such as shopping and housing complexes, hotels and entertainment activities.

(x) Mining of sand, rocks and other sub-strata materials except,-

- (a) those rare minerals not available outside the CRZ area,
- (b) exploration and exploitation of Oil and Natural Gas.

(xi) Drawl of groundwater and construction related thereto, within 200mts of HTL; except the following:-

- (a) in the areas which are inhabited by the local communities and only for their use.
- (b) In the area between 200mts-500mts zone the drawl of groundwater shall be permitted only when done manually through ordinary wells for drinking, horticulture, agriculture and fisheries and where no other source of water is available.

Note:-Restrictions for such drawl may be imposed by the Authority designated by the State Government and Union territory Administration in the areas affected by sea water intrusion.

(xi) Construction activities in CRZ-I except those specified in para 8 of this notification.

(xiii) Dressing or altering the sand dunes, hills, natural features including landscape changes for beautification, recreation and other such purpose.

(xiv) Facilities required for patrolling and vigilance activities of marine/coastal police stations.

4. Regulation of permissible activities in CRZ area.- The following activities shall be regulated except those prohibited in para 3 above,-

- (i)(a) clearance shall be given for any activity within the CRZ only if it requires waterfront and foreshore facilities;
- (b) for those projects which are listed under this notification and also attract EIA notification, 2006 (S.O.1533 (E), dated the 14<sup>th</sup> September, 2006), for such projects clearance under EIA notification only shall be required subject to being recommended by the concerned State or Union territory Coastal Zone Management Authority (hereinafter referred to as the CZMA).
- (c) Housing schemes in CRZ as specified in paragraph 8 of this notification;

- (d) Construction involving more than 20,000sq mts built-up area in CRZ-II shall be considered in accordance with EIA notification, 2006 and in case of projects less than 20,000sq mts built-up area shall be approved by the concerned State or Union territory Planning authorities in accordance with this notification after obtaining recommendations from the concerned CZMA and prior recommendations of the concern CZMA shall be essential for considering the grant of environmental clearance under EIA notification, 2006 or grant of approval by the relevant planning authority.
- (e) MoEF may under a specific or general order specify projects which require prior public hearing of project affected people.
- (f) construction and operation for ports and harbours, jetties, wharves, quays, slipways, ship construction yards, breakwaters, groynes, erosion control measures;

(ii) the following activities shall require clearance from MoEF, namely:-

- (a) those activities not listed in the EIA notification, 2006.
- (b) construction activities relating to projects of Department of Atomic Energy or Defence requirements for which foreshore facilities are essential such as, slipways, jetties, wharves, quays; except for classified operational component of defence projects. Residential buildings, office buildings, hospital complexes, workshops of strategic and defence projects in terms of EIA notification, 2006.;
- (c) construction, operation of lighthouses;
- (d) laying of pipelines, conveying systems, transmission line;
- (e) exploration and extraction of oil and natural gas and all associated activities and facilities thereto;
- (f) Foreshore requiring facilities for transport of raw materials, facilities for intake of cooling water and outfall for discharge of treated wastewater or cooling water from thermal power plants. MoEF may specify for category of projects such as at (f), (g) and (h) of para 4;
- (g) Mining of rare minerals as listed by the Department of Atomic Energy;
- (h) Facilities for generating power by non-conventional energy resources, desalination plants and weather radars;
- (i) Demolition and reconstruction of (a) buildings of archaeological and historical importance, (ii) heritage buildings; and buildings under public use which means buildings such as for the purposes of worship, education, medical care and cultural activities;

4.2 Procedure for clearance of permissible activities.- All projects attracting this notification shall be considered for CRZ clearance as per the following procedure, namely:-

- (i) The project proponents shall apply with the following documents seeking prior clearance under CRZ notification to the concerned State or the Union territory Coastal Zone Management Authority,-
  - (a) Form-1 (Annexure-IV of the notification);
  - (b) Rapid EIA Report including marine and terrestrial component except for construction projects listed under 4(c) and (d)
  - (c) Comprehensive EIA with cumulative studies for projects in the stretches classified as low and medium eroding by MoEF based on scientific studies and in consultation with the State Governments and Union territory Administration;
  - (d) Disaster Management Report, Risk Assessment Report and Management Plan;
  - (e) CRZ map indicating HTL and LTL demarcated by one of the authorized agency (as indicated in para 2) in 1:4000 scale;
  - (f) Project layout superimposed on the above map indicated at (e) above;

- (g) The CRZ map normally covering 7km radius around the project site.
  - (h) The CRZ map indicating the CRZ-I, II, III and IV areas including other notified ecologically sensitive areas;
  - (i) No Objection Certificate from the concerned State Pollution Control Boards or Union territory Pollution Control Committees for the projects involving discharge of effluents, solid wastes, sewage and the like.;
- (ii) The concerned CZMA shall examine the above documents in accordance with the approved CZMP and in compliance with CRZ notification and make recommendations within a period of sixty days from date of receipt of complete application,-
- (a) MoEF or State Environmental Impact Assessment Authority (hereinafter referred to as the SEIAA) as the case may be for the project attracting EIA notification, 2006;
  - (b) MoEF for the projects not covered in the EIA notification, 2006 but attracting para 4(ii) of the CRZ notification;
- (iii) MoEF or SEIAA shall consider such projects for clearance based on the recommendations of the concerned CZMA within a period of sixty days.
- (vi) The clearance accorded to the projects under the CRZ notification shall be valid for the period of five years from the date of issue of the clearance for commencement of construction and operation.
- (v) For Post clearance monitoring – (a) it shall be mandatory for the project proponent to submit half-yearly compliance reports in respect of the stipulated terms and conditions of the environmental clearance in hard and soft copies to the regulatory authority(s) concerned, on 1<sup>st</sup> June and 31<sup>st</sup> December of each calendar year and all such compliance reports submitted by the project proponent shall be published in public domain and its copies shall be given to any person on application to the concerned CZMA.
- (b) the compliance report shall also be displayed on the website of the concerned regulatory authority.
- (vi) To maintain transparency in the working of the CZMAs it shall be the responsibility of the CZMA to create a dedicated website and post the agenda, minutes, decisions taken, clearance letters, violations, action taken on the violations and court matters including the Orders of the Hon'ble Court as also the approved CZMPs of the respective State Government or Union territory.

#### 5. Preparation of Coastal Zone Management Plans.

- (i) The MoEF may obtain the CZMPs prepared through the respective State Government or Union territory;
- (ii) The CZMPs may be prepared by the coastal State Government or Union territory by engaging reputed and experienced scientific institution(s) or the agencies including the National Centre for Sustainable Coastal Management (hereinafter referred to as the NCSCM) of MoEF and in consultation with the concerned stakeholders;
- (iii) The hazard line shall be mapped by MoEF through SoI all along the coastline of the country and the hazard line shall be demarcated taking into account, tide, waves, sea level

rise and shoreline changes;

- (iv) For the purpose of depicting the flooding due to tides, waves and sea level rise in the next fifty and hundred years, the contour mapping of the coastline shall be carried out at 0.5m interval normally upto 7km from HTL on the landward side, and the shoreline changes shall be demarcated based on historical data by comparing the previous satellite imageries with the recent satellite imageries;
- (v) Mapping of the hazard line shall be carried out in 1:25,000 scale for macro level planning and 1:10,000 scale or cadastral scale for micro level mapping and the hazard line shall be taken into consideration while preparing the land use plan of the coastal areas;
- (vi) The coastal States and Union Territory will prepare within a period of twenty four months from the date of issue this notification, draft CZMPs in 1:25,000 scale map identifying and classifying the CRZ areas within the respective territories in accordance with the guidelines given in Annexure-I of the notification, which involve public consultation;
- (vii) The draft CZMPs shall be submitted by the State Government or Union territory to the concerned CZMA for appraisal, including appropriate consultations, and recommendations in accordance with the procedure(s) laid down in the Environment (Protection) Act, 1986;
- (viii) The State Government or Union territory CZMA shall submit the draft CZMPs to MoEF alongwith its recommendations on the CZMP within a period of six months after incorporating the suggestions and objections received from the stakeholders;
- (ix) MoEF shall thereafter consider and approve the CZMPs within a period of four months from the date of receipt of the CZMPs complete in all respects;
- (x) All developmental activities listed in this notification shall be regulated by the State Government, Union Territory Administration, the local authority or the concerned CZMA within the framework of such approved CZMPs as the case may be in accordance with provisions of this notification;
- (xi) The CZMPs shall not normally be revised before a period of five years after which, the concerned State Government or the Union territory may consider undertaking revision of the maps following the above procedures;
- (xii) The CZMPs already approved under CRZ notification, 1991 shall be valid for a period of twenty four months unless the aforesaid period is extended by MoEF by a specific notification subject to such terms and conditions as may be specified therein.

6. Enforcement of the CRZ, notification, 2011-

- (a) For the purpose of implementation and enforcement of the provisions this notification and compliance with conditions stipulated thereunder, the powers either original or delegated are available under Environment (Protection) Act, 1986 with the MoEF, State Government or the Union territory Administration NCZMA and SCZMA s;
- (b) The composition, tenure and mandate of NCZMA and State Government or the Union territory CZMA s have already been notified by MoEF in terms of Orders of Hon'ble

Supreme Court in Writ Petition 664 of 1993;

(c) the State Government or the Union territory CZMAs shall primarily be responsible for enforcing and monitoring of this notification and to assist in this task, the State Government and the Union territory shall constitute district level Committees under the Chairmanship of the District Magistrate concerned containing atleast three representatives of local traditional coastal communities including from fisherfolk;

(d) The dwelling units of the traditional coastal communities including fisherfolk, tribals as were permissible under the provisions of the CRZ notification, 1991, but which have not obtained formal approval from concerned authorities under the aforesaid notification shall be considered by the respective Union territory CZMAs and the dwelling units shall be regularized subject to the following condition, namely-

- (i) these are not used for any commercial activity
- (ii) these are not sold or transferred to non-traditional coastal community.

7. Classification of the CRZ – For the purpose of conserving and protecting the coastal areas and marine waters, the CRZ area shall be classified as follows, namely:-

(i) CRZ-I,-

A. The areas that are ecologically sensitive and the geomorphological features which play a role in the maintaining the integrity of the coast,-

- (a) Mangroves, in case mangrove area is more than 1000 sq mts, a buffer of 50meters along the mangroves shall be provided;
- (b) Corals and coral reefs and associated biodiversity;
- (c) Sand Dunes;
- (d) Mudflats which are biologically active;
- (e) National parks, marine parks, sanctuaries, reserve forests, wildlife habitats and other protected areas under the provisions of Wild Life (Protection) Act, 1972 (53 of 1972), the Forest (Conservation) Act, 1980 (69 of 1980) or Environment (Protection) Act, 1986 (29 of 1986); including Biosphere Reserves;
- (f) Salt Marshes;
- (g) Turtle nesting grounds;
- (h) Horse shoe crabs habitats;
- (i) Sea grass beds;
- (j) Nesting grounds of birds;
- (k) Areas or structures of archaeological importance and heritage sites.

B. The area between Low Tide Line and High Tide Line;

(ii) CRZ-II,-

The areas that have been developed upto or close to the shoreline.

*Explanation.-* For the purposes of the expression “developed area” is referred to as that area within the existing municipal limits or in other existing legally designated urban areas which are substantially built-up and has been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains;

(iii) CRZ-III,-

Areas that are relatively undisturbed and those do not belong to either CRZ-I or II which include coastal zone in the rural areas (developed and undeveloped) and also areas within municipal limits or in other legally designated urban areas, which are not substantially built up.

(iv.) CRZ-IV,-

- A. the water area from the Low Tide Line to twelve nautical miles on the seaward side;
- B. shall include the water area of the tidal influenced water body from the mouth of the water body at the sea upto the influence of tide which is measured as five parts per thousand during the driest season of the year.

(v) Areas requiring special consideration for the purpose of protecting the critical coastal environment and difficulties faced by local communities,-

- A. (i) CRZ area falling within municipal limits of Greater Mumbai;
  - (ii) the CRZ areas of Kerala including the backwaters and backwater islands;
  - (iii) CRZ areas of Goa.
- B. Critically Vulnerable Coastal Areas (CVCA) such as Sunderbans region of West Bengal and other ecologically sensitive areas identified as under Environment (Protection) Act, 1986 and managed with the involvement of coastal communities including fisherfolk.

8. Norms for regulation of activities permissible under this notification,-

- (i) The development or construction activities in different categories of CRZ shall be regulated by the concerned CZMA in accordance with the following norms, namely:-

Note:- The word existing use hereinafter in relation to existence of various features or existence of regularisation or norms shall mean existence of these features or regularisation or norms as on 19.2.1991 wherein CRZ notification, was notified.

I. CRZ-I,-

- (i) no new construction shall be permitted in CRZ-I except,-
  - (a) projects relating to Department of Atomic Energy;
  - (b) pipelines, conveying systems including transmission lines;
  - (c) facilities that are essential for activities permissible under CRZ-I;
  - (d) installation of weather radar for monitoring of cyclones movement and prediction by Indian Meteorological Department;
  - (e) construction of trans harbour sea link and without affecting the tidal flow of water, between LTL and HTL.
  - (f) development of green field airport already approved at only Navi Mumbai;
- (ii) Areas between LTL and HTL which are not ecologically sensitive, necessary safety measures will be incorporated while permitting the following, namely:-

- (a) exploration and extraction of natural gas;
- (b) construction of dispensaries, schools, public rainshelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are required for traditional inhabitants living within the biosphere reserves after obtaining approval from concerned CZMA.
- (c) necessary safety measure shall be incorporated while permitting such developmental activities in the area falling in the hazard zone;
- (d) salt harvesting by solar evaporation of seawater;
- (e) desalination plants;
- (f) storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports;
- (g) construction of trans harbour sea links, roads on stilts or pillars without affecting the tidal flow of water.

## II. CRZ-II,-

- (i) buildings shall be permitted only on the landward side of the existing road, or on the landward side of existing authorized structures;
- (ii) buildings permitted on the landward side of the existing and proposed roads or existing authorized structures shall be subject to the existing local town and country planning regulations including the 'existing' norms of Floor Space Index or Floor Area Ratio:  
Provided that no permission for construction of buildings shall be given on landward side of any new roads which are constructed on the seaward side of an existing road;
- (iii) reconstruction of authorized building to be permitted subject with the existing Floor Space Index or Floor Area Ratio Norms and without change in present use;
- (iv) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II appended to this notification and facilities for regasification of Liquefied Natural Gas subject to the conditions as mentioned in sub-paragraph (ii) of paragraph 3;
- (v) desalination plants and associated facilities;
- (vi) storage of non-hazardous cargo, such as edible oil, fertilizers and food grain in notified ports;
- (vii) facilities for generating power by non-conventional power sources and associated facilities;

## III. CRZ-III,-

A. Area upto 200mts from HTL on the landward side in case of seafront and 100mts along tidal influenced water bodies or width of the creek whichever is less is to be earmarked as "No Development Zone (NDZ)",-

- (i) the NDZ shall not be applicable in such area falling within any notified port limits;
- (ii) No construction shall be permitted within NDZ except for repairs or reconstruction of existing authorized structure not exceeding existing Floor Space Index, existing plinth area and existing density and for permissible activities under the notification including facilities essential for activities; Construction/reconstruction of dwelling units of traditional coastal communities including fisherfolk may be permitted between 100 and 200 metres from the HTL along the seafront in accordance with a comprehensive plan prepared by the State Government or the Union territory in consultation with the traditional coastal

communities including fisherfolk and incorporating the necessary disaster management provision, sanitation and recommended by the concerned State or the Union territory CZMA to NCZMA for approval by MoEF;

(iii) however, the following activities may be permitted in NDZ –

- (a) agriculture, horticulture, gardens, pasture, parks, play field, and forestry;
- (b) projects relating to Department of Atomic Energy;
- (c) mining of rare minerals;
- (d) salt manufacture from seawater;
- (e) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II;
- (f) facilities for regasification of liquefied natural gas subject to conditions as mentioned in subparagraph (ii) of paragraph 3;
- (g) facilities for generating power by non conventional energy sources;
- (h) Foreshore facilities for desalination plants and associated facilities;
- (i) weather radars;
- (j) construction of dispensaries, schools, public rain shelter, community toilets, bridges, roads, provision of facilities for water supply, drainage, sewerage, crematoria, cemeteries and electric sub-station which are required for the local inhabitants may be permitted on a case to case basis by CZMA;
- (k) construction of units or auxiliary thereto for domestic sewage, treatment and disposal with the prior approval of the concerned Pollution Control Board or Committee;
- (l) facilities required for local fishing communities such as fish drying yards, auction halls, net mending yards, traditional boat building yards, ice plant, ice crushing units, fish curing facilities and the like;
- (m) development of green field airport already permitted only at Navi Mumbai.

B. Area between 200mts to 500mts,-

The following activities shall be permissible in the above areas;

- (i) development of vacant plot in designated areas for construction of hotels or beach resorts for tourists or visitors subject to the conditions as specified in the guidelines at Annexure-III ;
- (ii) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II;
- (iii) facilities for regasification of liquefied natural gas subject to conditions as mentioned in sub-paragraph (ii) of paragraph 3;
- (iv) storage of non-hazardous cargo such as, edible oil, fertilizers, food grain in notified ports;
- (v) foreshore facilities for desalination plants and associated facilities;
- (vi) facilities for generating power by non-conventional energy sources;
- (vii) construction or reconstruction of dwelling units so long it is within the ambit of traditional rights and customary uses such as existing fishing villages and goathans. Building permission for such construction or reconstruction will be subject to local town and country planning rules with overall height of construction not exceeding 9mts with two floors (ground + one floor);
- (viii) Construction of public rain shelters, community toilets, water supply drainage, sewerage, roads and bridges by CZMA who may also permit construction of

schools and dispensaries for local inhabitants of the area for those panchayats, the major part of which falls within CRZ if no other area is available for construction of such facilities;

- (ix) reconstruction or alteration of existing authorised building subject to sub-paragraph (vii), (viii);
- (x) development of green field airport already permitted only at Navi Mumbai.

(IV) In CRZ-IV areas,-

The activities impugning on the sea and tidal influenced water bodies will be regulated except for traditional fishing and related activities undertaken by local communities as follows:-

- (a) No untreated sewage, effluents, ballast water, ship washes, fly ash or solid waste from all activities including from aquaculture operations shall be let off or dumped. A comprehensive plan for treatment of sewage generating from the coastal towns and cities shall be formulated within a period of one year in consultation with stakeholders including traditional coastal communities, traditional fisherfolk and implemented;
- (b) Pollution from oil and gas exploration and drilling, mining, boat house and shipping;
- (c) There shall be no restriction on the traditional fishing and allied activities undertaken by local communities.

V. Areas requiring special consideration,-

1. CRZ areas falling within municipal limits of the Greater Mumbai.

- (i) Developmental activities in the CRZ area of the Greater Mumbai because of the environmental issues, relating to degradation of mangroves, pollution of creeks and coastal waters, due to discharge of untreated effluents and disposal of solid waste, the need to provide decent housing to the poor section of society and lack of suitable alternatives in the inter connected islands of Greater Mumbai shall be regulated as follows, namely:-

A. Construction of roads - In CRZ-I areas indicated at sub-paragraph (i) of paragraph 7 of the notification the following activities only can be taken up:-

- (a) Construction of roads, approach roads and missing link roads approved in the Developmental Plan of Greater Mumbai on stilts ensuring that the free flow of tidal water is not affected, without any benefit of CRZ-II accruing on the landward side of such constructed roads or approach roads subject to the following conditions:-

- (i) All mangrove areas shall be mapped and notified as protected forest and necessary protection and conservation measures for the identified mangrove areas shall be initiated.
- (ii) Five times the number of mangroves destroyed/cut during the construction process shall be replanted.

B. Solid waste disposal sites shall be identified outside the CRZ area and thereafter within two years the existing conventional solid waste sites shall be relocated outside the CRZ area.

(iii) In CRZ-II areas-

- (a) The development or redevelopment shall continue to be undertaken in accordance with the norms laid down in the Town and Country Planning Regulations as they existed on the date of issue of the notification dated the 19<sup>th</sup> February, 1991, unless specified

otherwise in this notification.

**(b) SLUM REHABILITATION SCHEMES,-**

1. In the Greater Mumbai area there are large slum clusters with lakhs of families residing therein and the living conditions in these slums are deplorable and the civic agencies are not able to provide basic infrastructure such as drinking water, electricity, roads, drainage and the like because the slums come up in an unplanned and congested manner and the slums in the coastal area are at great risk in the event of cyclones, storm surges or tsunamis, in view of the difficulties in providing rescue, relief and evacuation.
2. To provide a safe and decent dwelling to the slum dwellers, the State Government may implement slum redevelopment schemes as identified as on the date of issue of this notification directly or through its parastatal agencies like Maharashtra Housing and Area Development Authority (MHADA), Shivshahi Punarvasan Prakalp Limited (SPPL), Mumbai Metropolitan Region Development Authority (MMRDA) and the like.:

Provided that,-

- (i) such redevelopment schemes shall be undertaken directly or through joint ventures or through public private partnerships or other similar models ensuring that the stake of the State Government or its parastatal entities shall be not less than 51%;
- (ii) the Floor Space Index or Floor Area Ratio for such redevelopment schemes shall be in accordance with the Town and Country Planning Regulations prevailing as on the date on which the project is granted approval by the competent authority;
- (iii) it shall be the duty of the project proponent undertaking the redevelopment through conditions (i) (2) above along with the State Government to ensure that all legally regularized tenants are provided houses in situ or as per norms laid down by the State Government in this regard.

**(c) REDEVELOPMENT OF DILAPIDATED, CESSSED AND UNSAFE BUILDINGS:**

1. In the Greater Mumbai, there are, also a large number of old and dilapidated, cessed and unsafe buildings in the CRZ areas and due to their age these structures are extremely vulnerable and disaster prone and therefore there is an urgent need for the redevelopment or reconstruction of these identified buildings.
2. These projects shall be taken up subject to the following conditions and safeguards:
  - (i) such redevelopment or reconstruction projects as identified on the date of issue of this notification shall be allowed to be taken up involving the owners of these buildings either above or with private developers in accordance with the prevailing Regulation, directly or through joint ventures or through other similar models.
  - (ii) the Floor Space Index or Floor Area Ratio for such redevelopment schemes shall be in accordance with the Town and Country Planning Regulations prevailing as on the date on which the project is granted approval by the competent authority

(iii) suitable accommodation to the original tenants of the specified buildings shall be ensured during the course of redevelopment or reconstruction of the buildings by the project proponents, undertaking the redevelopment through condition 2(i) above.

(d) Notwithstanding anything contained in this notification, the developmental activities for slums and for dilapidated, cessed and unsafe buildings as specified at paras (b) and (c) above shall be carried out in an accountable and transparent manner by the project proponents mentioned therein which shall include the following pre-condition measures, wherever applicable:-

1. (i) applicability of the Right to Information Act, 2005 to all redevelopment or reconstruction projects granted clearance by the Competent Authorities;
- (ii) MoEF shall issue an order constituting the CPIO and the first Appellate Authority of appropriate ranks in consultation with Government of Maharashtra;
- (iii) details of the Slum Rehabilitation Scheme, including the complete proposal and the names of the eligible slum dwellers will be declared suo-moto as a requirement of Section 4 of compliance of the Right to Information Act, 2005 by the appropriate authority in the Government of Maharashtra in one month before approving it;
- (iv) the implementing or executing agency at the State Government with regard to projects indicated at sub-item (b) and (c) of item (iii) of sub-paragraph V shall display on a large notice boards at the site and at the office of the implementing or executing agency the names of the eligible builders, total number of tenements being made, names of eligible slum dwellers who are to be provided the dwelling units and the extra area available for free sale.
- (v) Projects being developed under sub-items (b) and (c) of item (iii) of sub-paragraph V shall be given permission only if the project proponent agree to be covered under the Right to Information Act, 2005.

2. MoEF may appoint statutory auditors, who are empanelled by the Comptroller and auditor General (hereinafter referred to as the C&AG) to undertake performance and fiscal audit in respect of the projects relating to redevelopment of dilapidated, cessed and unsafe buildings and the projects relating to Slum Rehabilitation Scheme shall be audited by C&AG.

3. A High Level Oversight Committee may be set up by the Government of Maharashtra for periodic review of implementation of V(iii)(b) and (c) which shall include eminent representatives of various Stakeholders, like Architects, Urban Planner, Engineers, and Civil Society, besides the local urban bodies, the State Government and the Central Government.

4. The individual projects under V(iii)(b) and (c) shall be undertaken only after public consultation in which views of only the legally entitled slum dweller or the legally entitled tenent of the dilapidated or cessed buildings shall be obtained in accordance with the procedures laid down in EIA notification, 2006.

(e) In order to protect and preserve the 'green lung' of the Greater Mumbai area, all open spaces, parks, gardens, playgrounds indicated in development plans within CRZ-II shall be categorized as CRZ-III, that is, 'no development zone'.

(f) the Floor Space Index upto 15% shall be allowed only for construction of civic amenities, stadium and gymnasium meant for recreational or sports related activities and the residential or commercial use of such open spaces shall not be permissible.

- (g) Koliwada namely, fishing settlement areas as identified in the Development Plan of 1981 or relevant records of the Government of Maharashtra, shall be mapped and declared as CRZ-III so that any development, including construction and reconstruction of dwelling units within these settlements shall be undertaken in accordance with applicable as per local Town and Country Planning Regulations.
- (h) Reconstruction and repair works of the dwelling units, belonging to fisher communities and other local communities identified by the State Government, shall be considered and granted permission by the Competent Authorities on a priority basis, in accordance with the applicable Town and Country Planning Regulations.

## 2. CRZ for Kerala

In view of the unique coastal systems of backwater and backwater islands alongwith space limitation present in the coastal stretches of the State of Kerala, the following activities in CRZ shall be regulated as follows, namely:-

- (i) all the islands in the backwaters of Kerala shall be covered under the CRZ notification;
- (ii) the islands within the backwaters shall have 50mts width from the High Tide Line on the landward side as the CRZ area;
- (iii) within 50mts from the HTL of these backwater islands existing dwelling units of local communities may be repaired or reconstructed however no new construction shall be permitted;
- (iv) beyond 50mts from the HTL on the landward side of backwater islands, dwelling units of local communities may be constructed with the prior permission of the Gram panchayat;
- (v) foreshore facilities such as fishing jetty, fish drying yards, net mending yard, fishing processing by traditional methods, boat building yards, ice plant, boat repairs and the like, may be taken up within 50mts width from HTL of these backwater islands.

## 3. CRZ of Goa.-

In view of the peculiar circumstances of the State Goa including past history and other developments, the specific activities shall be regulated and various measures shall be undertaken as follows:-

- (i) the Government of Goa shall notify the fishing villages wherein all foreshore facilities required for fishing and fishery allied activities such as traditional fish processing yards, boat building or repair yards, net mending yards, ice plants, ice storage, auction hall, jetties may be permitted by Grama Panchayat in the CRZ area;
- (ii) reconstruction, repair works of the structures of local communities including fishermen community shall be permissible in CRZ;
- (iii) purely temporary and seasonal structures customarily put up between the months of September to May;
- (iv) the eco sensitive low lying areas which are influenced by tidal action known as khazan lands shall be mapped;
- (v) the mangroves along such as khazan land shall be protected and a management plan for the khazan land prepared and no developmental activities shall be permitted in the khazan land;
- (vi) sand dunes, beach stretches along the bays and creeks shall be surveyed and mapped. No activity shall be permitted on such sand dune areas;
- (vii) the beaches such as Mandrem, Morjim, Galgiba and Agonda has been designated as turtle nesting sites and protected under the Wildlife Protection Act, 1972 and these areas

shall be surveyed and management plan prepared for protection of these turtle nesting sites;

(viii) no developmental activities shall be permitted in the turtle breeding areas referred to in sub-paragraph (vii).

4. (a) Critical Vulnerable Coastal Areas (CVCA) which includes Sunderbans and other identified ecological sensitive areas which shall be managed with the involvement of the local coastal communities including the fisher folk;-
- (b) the entire Sunderbans mangrove area and other identified ecologically important areas such as Gulf of Khambat and Gulf of Kutchhh in Gujarat, Malvan, Achra-Ratnagiri in Maharashtra, Karwar and Coondapur in Karnataka, Vembanad in Kerala, Gulf of Mannar in Tamil Nadu, Bhaitarkanika in Orissa, Coringa, East Godavari and Krishna in Andhra Pradesh shall be declared as Critical Vulnerable Coastal Areas (CVCA) through a process of consultation with local fisher and other communities inhabiting the area and depend on its resources for their livelihood with the objective of promoting conservation and sustainable use of coastal resources and habitats;
- (c) the process of identifying planning, notifying and implementing CVCA shall be detailed in the guideline which will be developed and notified by MoEF in consultations with the stakeholders like the State Government, local coastal communities and fisherfolk and the like inhabiting the area;
- (d) the Integrated Management Plans (IMPs) prepared for such CVCA shall interalia keep in view the conservation and management of mangroves, needs of local communities such as, dispensaries, schools, public rain shelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage and the impact of sea level rise and other natural disasters and the IMPs will be prepared in line with the para 5 above for preparation of Coastal Zone Management Plans;
- (e) till such time the IMPs are approved and notified, construction of dispensaries, schools, public rain shelters, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are required for traditional inhabitants shall be permitted on a case to case basis, by the CZMA with due regards to the views of coastal communities including fisherfolk.

[F.No.11-83/2005-IA-III]  
J. M. MAUSKAR, Addl. Secy.

**ANNEXURE I**

**GUIDELINES FOR PREPARATION OF COASTAL ZONE MANAGEMENT PLANS**

**I. A. Demarcation of High Tide Line**

- 1. Demarcation of High Tide Line (HTL) and Low Tide Line (LTL) shall be carried out by one of the agencies authorised by MoEF based on the recommendations of the National Centre for Sustainable Coastal Management (NCSCM).
- 2. Demarcation of the High Tide Line or LTL shall be made on the Coastal Zone Management (CZM) Maps of scale 1:25,000 prepared by the agencies identified by the MoEF.
- 3. Local level CZM Maps shall be prepared for use of officials of local bodies for determination of the CRZ.
- 4. The local level CZM Maps shall be prepared on a Cadastral scale in accordance with the CZM Maps approved by the Central Government.

**B. Preparation of CZM Maps**

- 5. Base Maps of 1:25,000 scale shall be acquired from the Survey of India (SOI) and wherever 1:25,000 maps are not available, 1:50,000 maps shall be enlarged to 1:25,000 for the purpose of base map preparation and these maps will be of the standard specification given below:
  - Unit : 7.5 minutes X 7.5minutes
  - Numbering : Survey of India Sheet Numbering System
  - Horizontal Datum : Everest or WGS 84
  - Vertical Datum : Mean Sea Level (MSL)
  - Topography : Topography in the SOI maps will be updated using latest satellite imageries or aerial photographs
- 6. The High Water Level (HWL) and Low Water Level (LWL) marked on the Base maps will be transferred to the CZM maps.
- 7. Coastal geomorphological signatures in the field or satellite imageries or aerial photographs will be used for appropriate adjustment, in the HWL or LWL for demarcating HTL or LTL in accordance with the CRZ notification.
- 8. The following geomorphological features shall be considered while demarcating in HTL or LTL:
  - Landward (monsoonal) berm crest in the case of sandy beaches
  - Rocks, Headlands, Cliffs
  - Seawalls or revetments or embankments
- 9. 500 meter and 200 metre lines will be demarcated with respect of HTL.
- 10. HTL (as defined in the CRZ notification) and LTL shall also be demarcated in the CZM maps along the banks of tidal influenced inland water bodies with the help of the geomorphological signatures or features.
- 11. Classification of different coastal zones shall be done as per the CRZ notification
- 12. Standard national or international colour codes shall be used to highlight sub-classification of data.

**C. Local level CZM Maps**

Local level CZM Maps are for the use of local bodies and other agencies to facilitate implementation of the Coastal Zone Management Plans

- 13. Cadastral (village) maps in 1:3960 or the nearest scale, shall be used as the base maps.

14. These maps are available with revenue Authorities and are prepared as per standard norms.
15. HTL (as defined in the CRZ notification) and LTL will be demarcated in the cadastral map based on detailed physical verification using coastal geomorphological signatures or features in accordance with the CZM Maps approved by the Central Government.
16. 500metre and 200metre lines shall be demarcated with respect to the HTL thus marked.
17. HTL (as defined in the CRZ notification, 1991) and LTL will also be demarcated along the banks of tidal influenced inland water bodies with the help of geomorphological signatures or features.
18. Classifications shall be transferred into local level CZM maps from the CZM Plans.
19. Symbols will be adopted from CZM Maps.
20. Colour codes as given in CZM Maps shall be used.
21. Demarcation of cadastral maps will be done by local agencies approved by the Central Government. The local agencies shall work under the guidance of the concerned State Government or Union Territory Coastal Zone Management Authorities.

#### D. Hazard mapping:-

#### II. Classification of CRZ areas

1. The CZM Maps shall be prepared in accordance with para 5 of the CRZ notification demarcating CRZ I, II, III, IV and V.
2. The CZM Maps shall clearly demarcate the land use plan of the area and lists out the CRZ-I areas. All the CRZ-I areas listed under para 7(I)A and B shall be clearly demarcated and colour codes given so that each of the CRZ-I areas can be clearly identified.
3. Buffer zone along mangrove areas of more than 1000sq mts shall be stipulated with a different colour distinguishing from the mangrove area.
4. The buffer zone shall also be classified as CRZ-I area.
5. The hazard line to be drawn up by MoEF shall be superimposed on the CZM maps in 1:25,000 scale and also on the cadastral scale maps.
6. The CRZ-II areas shall be those areas which have been substantially built-up with a ratio of built-up plots to that of total plots is more than 50%.
7. In the CRZ areas, the fishing villages, common properties of the fishermen communities, fishing jetties, ice plants, fish drying platforms or areas infrastructure facilities of fishing and local communities such as dispensaries, roads, schools, and the like, shall be indicated on the cadastral scale maps. States shall prepare detailed plans for long term housing needs of coastal fisher communities in view of expansion and other needs, provisions of basic services including sanitation, safety, and disaster preparedness.
8. No developmental activities other than those listed above shall be permitted in the areas between the hazard line and 500mts or 100mts or width of the creek on the landward side. The dwelling unit of the local communities including that of the fishers will not be relocated if the dwelling units are located on the seaward side of the hazard line. The State Government will provide necessary safeguards from natural disaster to such dwelling units of local communities.
9. The water areas of CRZ IV shall be demarcated and clearly demarcated if the water body is sea, lagoon, backwater, creek, bay, estuary and for such classification of the water bodies the terminology used by Naval Hydrographic Office shall be relied upon.
10. The fishing Zones in the water bodies and the fish breeding areas shall be clearly marked.
11. The water area shall be demarcated indicating the pollution levels as per Central Pollution Control Board standards on water quality.
12. In the CRZ V areas the land use maps shall be superimposed on the Coastal Zone Management Plan and clearly demarcating the CRZ I, II, III, IV.
13. The existing authorized developments on the sea ward side shall be clearly demarcated.

14. The features like cyclone shelters, rain shelters, helipads and other infrastructure including road network may be clearly indicated on the CZM Maps for the purpose of rescue and relief operations during cyclones, storms, tsunami and the like.

### III. CZMPs approved by MoEF in accordance with CRZ notification, 1991

1. While preparing the CZMPs under CRZ notification, 2011, the CZMPs that have been approved under the CRZ Notification, 1991 shall be compared. A justification shall be provided by the concerned CZMA in case the CZMPs prepared under CRZ notification, 2011 varies with respect to the approved CZMP prepared under CRZ notification, 1991.

### IV. Public Views on the CZMP.

- a) The draft CZMPs prepared shall be given wide publicity and suggestions and objections received in accordance with the Environment (Protection) Act, 1986. Public hearing on the draft CZMPs shall be held at district level by the concerned CZMAs.
- b) Based on the suggestions and objections received the CZMPs shall be revised and approval of MoEF shall be obtained.
- c) The approved CZMP shall be put up on the website of MoEF, concerned website of the State, Union Territory CZMA and hard copy made available in the panchayat office, District collector office and the like.

### V. Revision of Coastal Zone Management Plans

1. Whenever there is a doubt the concerned State or Union territory Coastal Zone Management Authority shall refer the matter to the National Centre for Sustainable Coastal Management who shall verify the CZMP based on latest satellite imagery and ground truthing.
2. The rectified map would be submitted to MoEF for its record.

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Annexure-II

List of petroleum and chemical products permitted for storage in [CRZ except CRZ-I(A)]

- (i) Crude oil;
- (ii) Liquefied Petroleum Gas;
- (iii) Motor spirit;
- (iv) Kerosene;
- (v) Aviation fuel;
- (vi) High speed diesel;
- (vii) Lubricating oil;
- (viii) Butane;
- (ix) Propane;
- (x) Compressed Natural Gas;
- (xi) Naphtha;
- (xii) Furnace oil;
- (xiii) Low Sulphur Heavy Stock;
- (xiv) Liquefied Natural Gas;
- (xv) Fertilizers and raw materials for manufacture of fertilizers.

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**Annexure-III****Guidelines for development of beach resorts or hotels in the designated areas of CRZ-III and CRZ-II for occupation of tourist or visitors with prior approval of the Ministry of Environment and Forests**

I. Construction of beach resorts or hotels with prior approval of MoEF in designated areas of CRZ-II and III for occupation of tourist or visitors shall be subject to the following conditions, namely:-

- (a) The project proponent shall not undertake any construction within 200 metres in the landward side of High Tide Line and within the area between Low Tide Line and High Tide Line;
- (b) The proposed constructions shall be beyond the hazard line or 200mts from the High Tide Line whichever is more;
- (c) live fencing and barbed wire fencing with vegetative cover may be allowed around private properties subject to the condition that such fencing shall in no way hamper public access to the beach;
- (d) no flattening of sand dunes shall be carried out;
- (e) no permanent structures for sports facilities shall be permitted except construction of goal posts, net posts and lamp posts;
- (f) Construction of basement may be allowed subject to the condition that no objection certification is obtained from the State Ground Water Authority to the effect that such construction will not adversely affect the flow of groundwater in that area;
- (g) the State Ground Water Authority shall take into consideration the guidelines issued by Central Government before granting such no objection certificate;
- (h) though no construction is allowed in the no development zone for the purposes of calculation of Floor Space Index, the area of entire plot including the portion which falls within the no development zone shall be taken into account;
- (i) the total plot size shall not be less than 0.4 hectares and the total covered area on all floors shall not exceed 33 percent of the plot size i.e., the Floor Space Index shall not exceed 0.33 and the open area shall be suitably landscaped with appropriate vegetal cover;
- (j) the construction shall be consistent with the surrounding landscape and local architectural style;
- (k) the overall height of construction upto the highest ridge of the roof, shall not exceed 9metres and the construction shall not be more than two floors (ground floor plus one upper floor);
- (l) groundwater shall not be tapped within 200metre of the High Tide Line; within the 200metre 500metre zone it can be tapped only with the concurrence of the Central or State Ground Water Board;
- (m) extraction of sand, leveling or digging of sandy stretches except for structural foundation of building, swimming pool shall not be permitted within 500metres of the High Tide Line;

- (n) the quality of treated effluents, solid wastes, emissions and noise levels and the like, from the project area must conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986;
  - (o) necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that the untreated effluents and solid wastes are not discharged into the water or on the beach; and no effluent or solid waste shall be discharged on the beach;
  - (p) to allow public access to the beach, atleast a gap of 20metres width shall be provided between any two hotels or beach resorts; and in no case shall gaps be less than 500metres apart; and
  - (q) if the project involves diversion of forestland for non-forest purposes, clearance as required under the Forest (Conservation) Act, 1980 shall be obtained and the requirements of other Central and State laws as applicable to the project shall be met with; and
  - (r) approval of the State or Union territory Tourism Department shall be obtained.
- II. In ecologically sensitive areas (such as marine parks, mangroves, coral reefs, breeding and spawning grounds of fish, wildlife habitats and such other area as may be notified by the Central or State Government Union territories) construction of beach resorts or hotels shall not be permitted

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Annexure-IV**Form-I for seeking clearance for project attracting CRZ notification**

Basic information:

Name of the Project:-

Location or site alternatives under consideration:-

Size of the project (in terms of total area) :-

CRZ classification of the area :-

Expected cost of the project:-

Contact Information:-

**(II) Activity**

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, and the like)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)		
1.2	Details of CRZ classification as per the approved Coastal Zone Management Plan?		
1.3	Whether located in CRZ-I area?		
1.4	The distance from the CRZ-I areas.		
1.5	Whether located within the hazard zone as mapped by Ministry of Environment and Forests/National Disaster Management Authority?		
1.6	Whether the area is prone to cyclone, tsunami, tidal surge, subduction, earthquake etc.?		
1.7	Whether the area is prone for saltwater ingress?		
1.8	Clearance of existing land, vegetation and buildings?		
1.9	Creation of new land uses?		
1.10	Pre-construction investigations e.g. bore hole, soil testing?		
1.11	Construction works?		

1.12	Demolition works?		
1.13	Temporary sites used for construction works or housing of construction workers?		
1.14	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations		
1.15	Underground works including mining or tunneling?		
1.16	Reclamation works?		
1.17	Dredging/reclamation/land filling/disposal of dredged material etc.?		
1.18	Offshore structures?		
1.19	Production and manufacturing processes?		
1.20	Facilities for storage of goods or materials?		
1.21	Facilities for treatment or disposal of solid waste or liquid effluents?		
1.22	Facilities for long term housing of operational workers?		
1.23	New road, rail or sea traffic during construction or operation?		
1.24	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?		
1.25	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?		
1.26	New or diverted transmission lines or pipelines?		
1.27	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?		
1.28	Stream and river crossings?		
1.29	Abstraction or transfers of water form ground or surface waters?		
1.30	Changes in water bodies or the land surface affecting drainage or run-off?		
1.31	Transport of personnel or materials for construction, operation or decommissioning?		
1.32	Long-term dismantling or decommissioning or restoration works?		
1.33	Ongoing activity during decommissioning which could have an impact on the environment?		
1.34	Influx of people to an area in either temporarily or permanently?		
1.35	Introduction of alien species?		
1.36	Loss of native species or genetic diversity?		
1.37	Any other actions?		

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S. No.	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)		
2.2	Water (expected source & competing users) unit: KLD		
2.3	Minerals (MT)		
2.4	Construction material – stone, aggregates, sand/soil (expected source – MT)		
2.5	Forests and timber (source – MT)		
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)		
2.7	Any other natural resources (use appropriate standard units)		

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)		
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)		
3.3	Affect the welfare of people e.g. by changing living conditions?		
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,		
3.5	Any other causes, that would affect local communities, fisherfolk, their livelihood, dwelling units of traditional local communities etc		

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data

4.1	Spoil, overburden or mine wastes		
4.2	Municipal waste (domestic and or commercial wastes)		
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)		
4.4	Other industrial process wastes		
4.5	Surplus product		
4.6	Sewage sludge or other sludge from effluent treatment		
4.7	Construction or demolition wastes		
4.8	Redundant machinery or equipment		
4.9	Contaminated soils or other materials		
4.10	Agricultural wastes		
4.11	Other solid wastes		

#### 5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources		
5.2	Emissions from production processes		
5.3	Emissions from materials handling including storage or transport		
5.4	Emissions from construction activities including plant and equipment		
5.5	Dust or odours from handling of materials including construction materials, sewage and waste		
5.6	Emissions from incineration of waste		
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)		
5.8	Emissions from any other sources		

#### 6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers		
6.2	From industrial or similar processes		
6.3	From construction or demolition		
6.4	From blasting or piling		
6.5	From construction or operational traffic		
6.6	From lighting or cooling systems		

6.7	From any other sources		
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7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials		
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)		
7.3	By deposition of pollutants emitted to air into the land or into water		
7.4	From any other sources		
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?		

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances		
8.2	From any other causes		
8.3	Could the project be affected by natural disasters causing environmental damage (e.g., floods, earthquakes, landslides, cloudburst etc)?		

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.:  Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)		

	housing development extractive industries supply industries other		
9.2	Lead to after-use of the site, which could have an impact on the environment		
9.3	Set a precedent for later developments		
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects		

### III. Environmental Sensitivity

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value		
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration		
4	Inland, coastal, marine or underground waters		
5	State, National boundaries		
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas		
7	Defence installations		
8	Densely populated or built-up area		
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)		
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)		
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)		
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)		

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**Item No.2:**

**BEFORE THE NATIONAL GREEN TRIBUNAL  
SOUTHERN ZONE, CHENNAI**

**Appeal No. 04 of 2019 (SZ)**

*(Through Video Conference)*

**IN THE MATTER OF**

MEENAVA THANTHAI K.R. SELVARAJ KUMAR  
MEENAVA NALA SANGAM  
(Registered under section 10 of the Tamil Nadu Societies Act,  
in Sl. No.205 of 2015 dated 26.06.2015)  
Represented by its President,  
M.R. Thiyagarajan, S/o. Late C. Rajalingam,  
Office at No.48, 1<sup>st</sup> Floor, East Madha Church Street,  
Royapuram, Chennai – 600 013.

...Appellant(s)

***Versus***

1. Union of India,  
Through the Secretary,  
Ministry of Environment, Forest & Climate Change,  
Indira Paryavaran Bhavan,  
Jor Bagh, New Delhi- 110 003.
2. State of Tamil Nadu,  
Through the Chief Secretary,  
Government of Tamil Nadu,  
Secretariat, Chennai – 600 009.
3. Tamil Nadu State Coastal Zone Management Authority,  
Through the Member Secretary,  
Panagal Building, Saidapet,  
Chennai – 600 015.
4. K.T.V. Health Food Private Limited,  
Through the Director,  
No.7/3, Arul Nagar Salai, Kodungaiyur,  
Chennai – 600 018.

1386

5. Expert Appraisal Committee (CRZ)  
Through the Chairperson,  
Indira Paryavaran Bhawan,  
Ministry of Environment, Forest & Climate Change,  
New Delhi – 110 003.

...Respondent(s)

**For Appellant(s):** Sri. Ritwick Dutta along with  
Sri. G. Stanley Hebzon Singh &  
Sri. K. Mageswaran.

**For Respondent(s):** Sri. G.M. Syed Nurullah Sheriff for R1& R5.  
Sri. S. Kamalesh Kannan for R2 & R3.  
Sri. R. Saravana Kumar for R4.

**Judgment Reserved on: 30<sup>th</sup> July, 2020.**

**Judgment Pronounced on: 30<sup>th</sup> September, 2020.**

**CORAM:**

**HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER**

**HON'BLE MR. SAIBAL DASGUPTA, EXPERT MEMBER**

**REVISED JUDGMENT**

***Delivered by Justice K. Ramakrishnan, Judicial Member.***

1. The above appeal has been filed challenging the CRZ Clearance granted to the 4<sup>th</sup> respondent by the 1<sup>st</sup> respondent

as per Annexure – A1, Proceedings F.No.11-18/2016-IA-III dated 08.03.2019 for the purpose of laying pipeline for transfer of edible oil from Chennai Port to the storage terminal tank and establishment of storage transit terminal at Tondiarpet Village and Taluk in Chennai District.

2. It is alleged in the appeal memorandum that the appellant is an organization engaged in protecting the coastal zone and the welfare of the local fishermen community. When the appellant came to know that the 4<sup>th</sup> respondent is engaged in making some construction in the CRZ Zone without getting necessary clearance from the authorities, he filed an Original Application as O.A. No.238 of 2016 before this Tribunal and this Tribunal had disposed of the case by Annexure – A4 Judgment which reads as follows:-

*“5. In our order dated 18.01.2017, we have directed the 12<sup>th</sup> respondent to immediately stop its operations carried on at No.1,2 & 3, S.N. Chetty Street, Thondiarpet, Chennai 600 081 and also directed the 6<sup>th</sup> respondent – Board to ensure that the 12<sup>th</sup> respondent unit stopped its operations and file status report. Accordingly, the Board has filed the status report dated 14.02.2017 in which it is stated that the Board has issued direction by proceedings dated 31.01.2017 for closure of the unit and stoppage of power supply to the unit. It is also stated that accordingly the power supply to the 12<sup>th</sup> respondent was disconnected on 07.02.2017. The learned counsel appearing for the 12<sup>th</sup> respondent would submit that*

37. Para 3 of the Coastal Regulation Zone Notification, 2011 deals with the prohibited activities within the CRZ which reads as follows:-

**“3. Prohibited activities within CRZ - The following are declared as prohibited activities within the CRZ,-**

*(i) Setting up of new industries and expansion of existing industries except,-*

*(a) those directly related to waterfront or directly needing foreshore facilities;*

*Explanation: The expression “foreshore facilities” means those activities permissible under this notification and they require waterfront for their operations such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, lighthouses, navigational safety facilities, coastal police stations and the like.;*

*(b) projects of Department of Atomic Energy;*

*(c) facilities for generating power by non-conventional energy sources and setting up of desalination plants in the areas not classified as CRZ-I(i) based on an impact assessment study including social impacts.;*

*(d) development of green field Airport already permitted only at Navi Mumbai;*

*(e) reconstruction, repair works of dwelling units of local communities including fishers in accordance with local town and country planning regulations.*

***(ii) manufacture or handling oil storage or disposal of hazardous substance as specified in the notification of Ministry of Environment and Forests, No. S.O.594 (E), dated the 28th July***

1989, S.O.No.966(E), dated the 27th November, 1989 and GSR 1037 (E), dated the 5th December, 1989 except,-

(a) transfer of hazardous substances from ships to ports, terminals and refineries and vice versa;

(b) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II appended to this notification and facilities for regasification of Liquefied Natural Gas (hereinafter referred to as the LNG) in the areas not classified as CRZ- I(i) subject to implementation of safety regulations including guidelines issued by the Oil Industry Safety Directorate in the Ministry of Petroleum and Natural Gas and guidelines issued by MoEF and subject to further terms and conditions for implementation of ameliorative and restorative measures in relation to environment as may be stipulated by in MoEF.

Provided that facilities for receipt and storage of fertilizers and raw materials required for manufacture of fertilizers like ammonia, phosphoric acid, sulphur, sulphuric acid, nitric acid and the like, shall be permitted within the said zone in the areas not classified as CRZ-I(A).

(iii) Setting up and expansion of fish processing units including warehousing except hatchery and natural fish drying in permitted areas:

(iv) Land reclamation, bunding or disturbing the natural course of seawater except those,-

(a) required for setting up, construction or modernisation or expansion of foreshore facilities like ports, harbours, jetties, wharves, quays, slipways, bridges, sealink, road on stilts, and such as meant for defence and security purpose and for other facilities

that are essential for activities permissible under the notification;

(b) measures for control of erosion, based on scientific including Environmental Impact Assessment (hereinafter referred to as the EIA) studies

(c) maintenance or clearing of waterways, channels and ports, based on EIA studies;

(d) measures to prevent sand bars, installation of tidal regulators, laying of storm water drains or for structures for prevention of salinity ingress and freshwater recharge based on carried out by any agency to be specified by MoEF.

(v) Setting up and expansion of units or mechanism for disposal of wastes and effluents except facilities required for,-

(a) discharging treated effluents into the water course with approval under the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);

(b) storm water drains and ancillary structures for pumping;

(c) treatment of waste and effluents arising from hotels, beach resorts and human settlements located in CRZ areas other than CRZ-I and disposal of treated wastes and effluents;

(vi) Discharge of untreated waste and effluents from industries, cities or towns and other human settlements. The concerned authorities shall implement schemes for phasing out existing discharge of this nature, if any, within a time period not exceeding two years from the date of issue of this notification.

(vii) Dumping of city or town wastes including construction debris, industrial solid wastes, fly ash for the purpose of land filling and the like and the concerned authority shall implement schemes for phasing out any existing practice, if any, shall be

*phased out within a period of one year from date of commencement of this notification.*

*Note:-The MoEF will issue a separate instruction to the State Governments and Union territory Administration in respect of preparation of Action Plans and their implementation as also monitoring including the time schedule thereof, in respect of paras (v), (vi) and (vii). (viii) Port and harbour projects in high eroding stretches of the coast, except those projects classified as strategic and defence related in terms of EIA notification, 2006 identified by MoEF based on scientific studies and in consultation with the State Government or the Union territory Administration.*

*(ix) Reclamation for commercial purposes such as shopping and housing complexes, hotels and entertainment activities.*

*(x) Mining of sand, rocks and other sub-strata materials except,-*

*(a) those rare minerals not available outside the CRZ area,*

*(b) exploration and exploitation of Oil and Natural Gas.*

*(xi) Drawl of groundwater and construction related thereto, within 200mts of HTL; except the following:-*

*(a) in the areas which are inhabited by the local communities and only for their use.*

*(b) In the area between 200mts-500mts zone the drawl of ground water shall be permitted only when done manually through ordinary wells for drinking, horticulture, agriculture and fisheries and where no other source of water is available.*

*Note:-Restrictions for such drawl may be imposed by the Authority designated by the State Government and Union territory Administration in the areas affected by sea water intrusion.*

*(xi) Construction activities in CRZ-I except those specified in para 8 of this notification.*

*(xiii) Dressing or altering the sand dunes, hills, natural features including landscape changes for beautification, recreation and other such purpose.*

*(xiv) Facilities required for patrolling and vigilance activities of marine/coastal police stations."*

38. It is clear from the Para 3 (ii) of the Notification that though manufacture or handling oil storage or disposal of hazardous substance as specified in the Notification of Ministry of Environment, Forest & Climate Change (MoEF&CC) is prohibited but the exception says that the transfer of hazardous substance from ship to port, terminals and refineries and vice versa is permissible. Similarly, facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure – II appended to this notification and facilities for re-gasification of Liquefied Natural Gas (herein after refer to as LNG) in the area not classified as CRZ-I (i) subject to implementation of safety regulation including guidelines issued by the Oil Industry Safety Directorate in the Ministry of Petroleum and Natural Gas and guidelines issued by the MoEF&CC and subject to further terms and condition for implementation of ameliorative and restorative measures in relation as may be stipulated by the MoEF&CC. Provided that facilities for

receipt and storage of fertilizers and raw materials required for manufacture of fertilizers like ammonia, phosphoric acid, sulphur, sulphuric acid, nitric acid and the like, shall be permitted within the said zone in the areas not classified as CRZ-I (A).

39. So, it is clear from this that in respect of petroleum products, storage is not permissible but facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II appended to this notification and facilities for re-gasification of Liquefied Natural Gas (hereinafter referred to as LNG) is permissible in the areas not classified as CRZ- I and the facilities for receipt and storage of fertilizers and raw materials required for manufacture of fertilizers like ammonia, phosphoric acid, sulphur, sulphuric acid, nitric acid and the like, shall be permitted within the said zone in the areas not classified as CRZ-I(A).

40. Para 4 of the Notification deals with the regulation of permissible activities in CRZ Zone and Para 7 deals with the classification of CRZ Zones.

41. Para 8 of the Notification deals with norms for regulation of activities permissible under this notification which reads as follows:-

**“8. Norms for regulation of activities permissible under this notification,-** (i) The development or construction activities in different categories of CRZ shall be regulated by the concerned CZMA in accordance with the following norms, namely:-

*Note:- The word existing use hereinafter in relation to existence of various features or existence of regularisation or norms shall mean existence of these features or regularisation or norms as on 19.2.1991 wherein CRZ notification, was notified.*

**I. CRZ-I,-**

(i) no new construction shall be permitted in CRZ-I except,-

(a) projects relating to Department of Atomic Energy;

**(b) pipelines, conveying systems including transmission lines;**

(c) facilities that are essential for activities permissible under CRZ-I;

(d) installation of weather radar for monitoring of cyclones movement and prediction by Indian Meteorological Department;

(e) construction of trans harbour sea link and without affecting the tidal flow of water, between LTL and HTL.

(f) development of green field airport already approved at only Navi Mumbai;

(ii) Areas between LTL and HTL which are not ecologically sensitive, necessary safety measures will be incorporated while permitting the following, namely:-

(a) exploration and extraction of natural gas;

(b) construction of dispensaries, schools, public rainshelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are required for traditional inhabitants living within the biosphere

reserves after obtaining approval from concerned CZMA.

(c) necessary safety measure shall be incorporated while permitting such developmental activities in the area falling in the hazard zone;

(d) salt harvesting by solar evaporation of seawater;

(e) desalination plants;

**(f) storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports;**

(g) construction of trans harbour sea links, roads on stilts or pillars without affecting the tidal flow of water.

## **II. CRZ-II,-**

(i) buildings shall be permitted only on the landward side of the existing road, or on the landward side of existing authorized structures;

(ii) buildings permitted on the landward side of the existing and proposed roads or existing authorized structures shall be subject to the existing local town and country planning regulations including the 'existing' norms of Floor Space Index or Floor Area Ratio: Provided that no permission for construction of buildings shall be given on landward side of any new roads which are constructed on the seaward side of an existing road:

(iii) reconstruction of authorized building to be permitted subject with the existing Floor Space Index or Floor Area Ratio Norms and without change in present use;

**(iv) facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure-II appended to this notification and facilities for regasification of Liquefied Natural Gas subject to the conditions**

**as mentioned in sub-paragraph (ii) of paragraph 3;**

*(v) desalination plants and associated facilities;*

**(vi) storage of non-hazardous cargo, such as edible oil, fertilizers and food grain in notified ports;**

*(vii) facilities for generating power by non-conventional power sources and associated facilities;"*

42. It is seen from the Para 8 – (I)(i)(b),(ii)(f), (II)(iv) & (vi) of the notification deals with storage of non-hazardous cargo such as edible oil, fertilizers and food grains within and in the notified ports respectively. So, as regards storage of non-hazardous cargo such as edible oil, fertilizers and food grains are permissible even in CRZ-I Zone but with a qualification “within notified ports”. But when it comes to CRZ-II, there is some difference which says storage of non-hazardous cargo such as edible oil, fertilizers and food grains “in notified ports”.

43. So, this Tribunal has to consider as to how these two clauses can be harmoniously construed for the purpose of making both of them more congenial and conducive.

44. No two different meanings can be given for these same words which have been used in different context unless it was intended by the legislature that the same has to be interpreted or understood with a different meaning.

45. It is settled law of interpretation of statutes that when a particular word has been used in different provisions whether it carries the same meaning or not has to be understood considering the nature and intention of the legislature in enacting that statute.
46. If the intention of the legislature was that it has to be interpreted in a different way considering the context in which those words were used, Court cannot import its own meaning different from the intention of the legislature so as to give the purpose for which the Court want to use the same against the intention and purport of the legislature.
47. If there is no ambiguity or confusion in understanding the words, then Courts will have to interpret that word in a same manner in which it was intended by the legislature and no different meaning can be imported by the Courts.
48. The principle of Hyden's Rule of interpretation (remove the mischief and advance the purpose) can be used by the Courts while interpreting the particular provision of enactment only if the Court feels that unless it was differently interpreted, the purpose and intention of the legislature in enacting the provision itself will be defeated or end in absurdity. In such cases, the Court can import a different meaning so as to make

the provision workable in the manner in which it was intended by the legislature.

49. The above principles are reiterated in the following decisions, **Workmen of Jimithi Tea Estate Vs. Management of Jimithi Tea Estate AIR 1958 SC 353, R.L. Arora Vs. State of Uttar Pradesh & Ors. AIR 1964 SC 1230, Thampanoor Ravi Vs. Charupara Ravi & Ors. 1999 (8) SCC 74, Utkal Contractors and Joinery Private Limited & Ors. Vs. State of Orissa & Other connected case 1987 (3) SCC 279, Thakker Shipping Pvt. Ltd. Vs. Commissioner of Customs (General) 2012 (12) SCC 189, State Bank of Travancore Vs. Mohammed Mohammed Khan 1981 (4) SCC 82, Competition Commission of India Vs. Steel Authority of India Limited and others 2010 (10) SCC 744, Union of India Vs. Elphinstone Spinning & Weaving Company Limited and Ors. 2001 (4) SCC 139, Ameer Trading Corporation Ltd. Vs. Shapoorji Data Processing Ltd. 2004 (1) SCC 702, Badshah Vs. Urmila Badshah Godse & Anr. 2014 (1) SCC 188, Padma Sundara Rao (Dead) & Ors. Vs. State of Tamil Nadu & Ors. 2002 (3) SCC 533, Bharath Aluminium Company Vs. Kaiser Aluminium Technical Services INC and connected cases 2012 (9) SCC 552.**

50. With these principles in mind, this Tribunal has to consider the question of interpretation of the word “in notified port” and “within notified port” mentioned in Para 8 and 3 of the Coastal Regulation Zone Notification, 2011 respectively.
51. It is also settled law that as far as possible, interpretation of statutes will have to be done in a strict sense with its literal meaning, without resorting to the external or internal aids but considering the object of the legislation from the statute itself. If the Court felt that without substituting something or some words are to be interpreted in a different way, the implementation of the statute itself will become absurd and end in absurdity, then alone the Courts can supply the causes omises and make the statute workable.
52. As far as environmental laws are concerned, it was intended for the purpose of the protecting environment and it must be interpreted strictly in its literal sense. Any liberal interpretation given for any of the provision of the statute relating to environment protection then, it will have adverse impact on the environment.
53. It is true that while balancing development and environment, the principle of ‘Sustainable Development’ has to be considered but at the same time when these two things are weighed and if it is found that providing liberal

interpretation to promote development will result in disaster to the environment or affect the very purpose of the enactment for which it has been enacted then, such interpretation should be avoided.

54. In compact Oxford English Dictionary, the meaning of the word '**in**' is defined as follows:-

*"in Preposition 1) so as to enclosed, surrounded, or inside. 2) expressing a period of time during which an event takes place. 3) expressing the length of time before an event is expected to happen. 4) expressing a state, condition, or quality. 5) expressing inclusion or involvement. 6) indicating the means of expression used: put in writing. 7) indicating a person's occupation or profession. 8) expressing a value as a proportion of whole. Adverb 1) expressing movement that results in being inside or surrounded. 2) expressing the state of being enclosed or surrounded. 3) present at one's home or office. 4) expressing arrival at a destination. 5) [of the tide] rising or at its highest level. Adjective informal fashionable. – Phrases **be in for** be going to experience something, especially something unpleasant. **in on** knowing a secret. **in that** for the reason that. **in with** informal enjoying friendly relations with. **the ins and outs** informal all the details. – Origin Old English"*

55. The word '**within**' has been defined in the same Dictionary as follows:-

*"within Preposition 1) inside. 2) inside the range or bounds of: we were within sight of the finish. 3) occurring inside a particular period of time. 4) not further off than*

58. It gives power to the Board to execute such work within or without the limits of the port and the nature of activities will include providing storage facility for goods as well. Those are all relating to the general things and not relating to the specified goods or other activities.
59. Coastal Regulation Zone Notification restricts certain activities within the CRZ Zone and if such activities are to be done within the port area or in the notified port then, it can be done in those areas alone and not beyond that area.
60. Further, in the decision reported in ***Dr. T.K. Mohan Vs. Chennai Port Trust and Ors. 2009 SCC Online Madras 907***, the Hon'ble Madras High Court while considering the question as to whether the storage facility in the property belonging to the port trust requires any further permission under the regulations framed under Development Regulations of 2<sup>nd</sup> Master Plan for Chennai Metropolitan Area, 2006 under the Tamil Nadu Town and Country Planning Act, 1971 held that it is not necessary.
61. Further, a reading of that decision will go to show that the port trust has to provide such facilities either within the port or near to the port belonging to them and that was a case where the storage facility for edible oil was provided in the

property belonging to the Chennai Port in Royapuram area and that was very near to the port and the property belonged to them.

62. So that interpretation will not be helpful to the respondents to come to the conclusion that the storage terminal can be provided outside the port area or outside the notified port area.

63. Further, the legislature was very careful in using the word while permitting certain activities in the Coastal Zone Regulation restricted and regulated areas and if that is liberally construed and it was allowed to provide beyond that area without any restriction then, it is likely to be misused by the authorities and such facilities will be permitted in such zone indiscriminately throughout the foreshore area of the Coastal Zone which will have a great adverse impact on coastal environment and also it will affect the interest of the traditional fishermen community as such.

64. Further, the dictum laid down in the decision reported in ***M. Nizamudeen Vs. Chemplast Sanmar Ltd. & Ors 2010 (4) SCC 240*** is not applicable to the facts of this case for the purpose of extending the principle of purposive interpretation, considering the facts of this case. That was dealing with transfer of hazardous substance from ships to the port and

the word except in the port area has been interpreted so as to read "in or through" the port areas. There also it was not beyond the port area or outside the port area.

65. Drawing of pipeline is different from establishment of storage terminal outside the port. In this case, storage facility will have to be provided outside the port area in the land not belonging to the port but to the industrial estate which was allotted to the 4<sup>th</sup> respondent.

66. These aspects were not considered by the authorities, while granting the clearance to the 4<sup>th</sup> respondent for the project. Further, it was an ex-post facto clearance and this was clear from the proceedings itself, but it was treated as a fresh proposal which itself is not a legal procedure. If it is treated as a violation case then, the procedure to be adopted by them is different.

67. So it is clear from this that if the words provided in the notification are literally construed then it can only be possible to come to a conclusion that such activity of establishing a storage terminal for edible oil can be permissible either within the port area or in the notified port or area belonging to the notified port and it cannot be possible to extend the provision beyond the notified port area.

in the absence of which it can only be presumed that they did not have such an intention and as such intention cannot be inferred by the Court or Tribunal.

69. In view of the discussions made above, it can be safely concluded that the activity is not a permissible activity within the CRZ -II Zone as it has to be established beyond the port area and as such even assuming that the amended notification of 2018 can be made applicable for granting ex-post facto clearance, if such application were filed within the specified time mentioned therein, even then it cannot be treated as a category permissible activity falling under that notification as it is not a permissible activity in the CRZ-II Zone except in notified port and not outside the port area.

70. So under such circumstances, the authorities were not justified in considering the application under the amended Notification, 2018 and granting ex-post facto clearance to an activity which is not permissible and wrongly interpreting Para 3 & 8 of the Notification and the same is unsustainable in law and hence, the ex-post facto clearance granted as per the impugned clearance F.No. 11-18/2016-IA-III dated 08.03.2019 is liable to be set aside.

71. Though this Tribunal while disposing of O.A. No.238 of 2016 restraining the 4<sup>th</sup> respondent from carrying out the

activity till CRZ clearance is obtained, no environmental compensation was awarded. Since it is an illegally activity done by the 4<sup>th</sup> respondent without getting prior clearance they must be liable to pay environmental compensation for the violation committed and this Tribunal also found now that the Coastal Regulation Zone Clearance granted is not sustainable and as such they are liable to pay environmental compensation which this Tribunal fixes at Rs.25 Lakhs as in a similar case this Tribunal had awarded that much amount as environmental compensation against the sister concern of the 4<sup>th</sup> respondent unit.

72. So, the 4<sup>th</sup> respondent is liable to pay an environmental compensation of Rs.25 Lakhs for the violation committed by them by commencing the operation without getting prior CRZ Clearance.

73. In the result, the appeal is allowed and the impugned CRZ Clearance issued to the 4<sup>th</sup> respondent by the 1<sup>st</sup> respondent by Proceeding No. F. No. 11-18/2016-IA-III dated 08.03.2019 is set aside.

**(ii)** the 4<sup>th</sup> respondent is directed to pay an environmental compensation of Rs.25,00,000/- (Rupees Twenty Five Lakhs only) for the violation committed by them in commencing the work without getting prior CRZ Clearance and they are

directed to deposit the amount with the Tamil Nadu State Pollution Control Board, Chennai within a period of 2 (Two) months and if the amount is not paid, the Tamil Nadu State Pollution Control Board is at liberty to recover the amount from them in accordance with law.

**(iii)** the 4<sup>th</sup> respondent is directed to remove the structures constructed by them in the CRZ Zone within a period of 3 (Three) months and if it is not removed within a period of 3 (Three) months, then the Tamil Nadu Coastal Zone Management Authority (TNCZMA) is directed to remove the same and recover the cost from the 4<sup>th</sup> respondent incurred by them for this purpose.

**(iv)** Considering the circumstances, the parties are directed to bear their respective costs in the appeal.

.....**J.M.**  
**(Justice K. Ramakrishnan)**

.....**E.M.**  
**(Shri. Saibal Dasgupta)**

**Appeal No.04/2019,  
30th September, 2020. Mn.**