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DPCL/ENV/MOECC/2018-155

20.11.2018

To

The Additional Principal Chief Conservator of Forests (C),  
Ministry of Environment, Forest and Climate Change,  
Eastern Regional Office (EZ),  
A/3, Chandrasekharpur,  
Bhubaneswar- 751023  
E-mail: [roez.bsr-mef@nic.in](mailto:roez.bsr-mef@nic.in)

**Sub :** Half yearly Compliance report of Environment and CRZ Clearance for expansion of Dhamra Port at Dhamra, Bhadrak District of Odisha by M/s Dhamra Port Company Limited for the period of April 2018 – September-2018

**Ref:** 1) Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4<sup>th</sup> January 2000 bearing No. PD/26017/8/98-PDZ (CRZ).  
2) CRZ recommendation letter for phase-II expansion vide letter dated 20<sup>th</sup> December, 2012 bearing no. OCZMA-1/2012-13/No.17  
3) Environmental and CRZ Clearance for expansion at Dhamra Port dated 1<sup>st</sup> January 2014 bearing F.No.11-104/2009-IA.III  
4) Amendment in Environmental and CRZ clearance vide letter dated 25<sup>th</sup> March 2015 bearing F.No.11-104/2009-IA.III

Dear Sir,

With reference to the above mentioned letters for the said subject matter, please find enclosed herewith the compliance to the conditions stipulated in the letters for the period of April 2018 – September-2018 in both hard & soft copy for your kind reference. The said period compliance is also being E-mailed on [roez.bsr-mef@nic.in](mailto:roez.bsr-mef@nic.in)

Thanking you,  
Yours Sincerely,

(Subrat Tripathy)  
Chief Executive Officer

Encl: As above

Copy to:

- 1) The Director (Monitoring –IA-III Division), Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003
- 2) Zonal Office, Central Pollution Control Board, Southern Conclave, Block 20, 4<sup>th</sup> & 5<sup>th</sup> Floors, 1582 Rajdanga Main Road, Kolkata - 700 107 (W. B.)
- 3) The Member Secretary, State Pollution Control Board, Odisha, Parivesh Bhawan, A/118, Unit 8, Nilakantha Nagar, Nayapalli, Bhubneswar-751012
- 4) The Regional Officer, State Pollution Control Board, Odisha, 160, Sahadev Khunta, Balasore – 756001
- 5) Member Secretary OCZMA & Director, Env-cum-Spl. Secretary to Govt., Forest & Env Dept., Govt. of Odisha, Plot No 108, Surya Nagar, Unit VII, Bhubaneswar-751003.

The Dhamra Port Company Ltd  
(A Wholly Owned Subsidiary of APSEZL)  
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Odisha, India  
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Received  
22/11/18

PS to APCCF (Central)  
GOI, M/o Env. & Forests  
Eastern Regional Office  
Bhubaneswar-751023

**Phase – I: Half yearly Compliance report of the conditions stipulated in Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4th January 2000 bearing No. PD/26017/8/98-PDZ (CRZ)**

Sr. No.	Conditions	Compliance Status
i	<p>All Construction design/drawings relating to construction activities must have the approval of the concerned Government Departments/ Agencies of the State Government of Odisha.</p> <p>Ground water should not be tapped for construction activities as the drawl of ground water for industrial use from the CRZ area is a prohibited activity.</p>	<p>Complied.</p> <p>The Project is under Operation phase inline to Phase-I development.</p>
ii	<p>Adequate provision for all infrastructural facilities such as water supply, fuel, sanitation etc. must be extended for laborers during the construction period in order to avoid damage to the environment.</p>	<p>Complied.</p> <p>The Project is under Operation phase inline to Phase-I development.</p>
iii	<p>Dredging operations if any should be undertaken in consultation with the Central Water and Power Research Station, Pune or National Institute of Oceanography, Goa or any other authorized agency to ensure that dredging operations do not cause adverse impact on water quality and marine productivity in the vicinity. Dredging operation as far as possible should be kept to the minimum for avoiding any adverse impact on marine life.</p>	<p>Complied.</p> <p>The capital dredging has been completed in 2010-11. Marine water quality and productivity is being monitored by MoEF &amp; CC accredited laboratory, there are no adverse impact on water quality and marine productivity in the vicinity. The details of Marine Water quality monitoring reports for the period Apr 2018 – Sep 2018 are enclosed as <b>Annexure I</b>. No impact on water quality and marine productivity has been envisaged during this period.</p>
iv	<p>Disposal sites for excavated material should be so designed that the revised land use after dumping and changes in the land use pattern do not interfere with the natural drainage.</p>	<p>Complied.</p> <p>Dredging activity has been completed and at present the Project is under Operation phase inline to Phase-I development</p>
v	<p>To meet with any emergency situation, adequate foam containers should be kept ready with supporting firefighting system and water pipeline.</p>	<p>Complied.</p> <p>DPCL has a fire fighting team consisting of 29 crews including 1 officer, 1 supervisor, equipped with two fire tenders having water storage capacity of 4500 L and foam storage capacity of 500 L for each, and</p>

**Phase – I: Half yearly Compliance report of the conditions stipulated in Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4th January 2000 bearing No. PD/26017/8/98-PDZ (CRZ)**

Sr. No.	Conditions	Compliance Status
		CO2 (210nos.) DCP (121nos.) & Foam (11 nos.) type of extinguishers. Detail list of fire extinguishers is attached as <b>Annexure-II.</b>
vi	Staff posted in sensitive areas should be trained in implementation of the Crisis Management Plan already drawn by the authorities. Mock Drill(s) for this purpose should be on a regular basis. Provisions of Dock Safety Act and the Guidelines issued by the DG, FASLI/CLI, and Mumbai for the safety and health of the workers should be followed.	Complied. No operation are being carried out in Sensitive areas. However, the employees of DPCL have been trained on safety guidelines. Regular Mock Drills are conducted as per the Crisis Management Plan. The details of drills conducted towards dock safety for the period Apr 2018 - Sep 2018 is enclosed as <b>Annexure III.</b>
vii	For development of Green Buffer including mangroves wherever feasible, the authorities should start growing large nursery of multipurpose species such as Eucalyptus, Casuarina, Dalbergia, Terminalia etc. The norm of about 2000-2500 trees per Hectare may be adopted for raising of green belt. Necessary permission may be obtained for cutting of trees, if any, for the project	Complied. A large nursery of multi species has been established for greenbelt development. DPCL has obtained Environment & CRZ clearance for Phase –II. Site is undergoing expansion inline to Immediate Development Plan (phase-II clearance). Greenbelt development shall also be developed inline to this. Port layout is enclosed as <b>Annexure IV.</b>  Plantation has been done along the both edges of the 62.5 km rail corridor and inside the port premises. Photographs are enclosed as <b>Annexure V.</b>
viii	To prevent discharge of sewage and other liquid wastes including ballast into marine environment, adequate system for collection, treatment and disposal of liquid wastes must be provided to the satisfaction of the Odisha Pollution Control Board, Bhubaneswar.	Complied. DPCL has two nos. of Sewage Treatment Plant (STP) to handle 140 KLD & 15 KLD of sewage generated at port site & township. The treated water is being used for horticulture. The monitoring reports for the period Apr 2018- Sep 2018 are enclosed as <b>Annexure I.</b> All results are well within the prescribed standards MARPOL and Ballast Water Convention

**Phase – I: Half yearly Compliance report of the conditions stipulated in Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4th January 2000 bearing No. PD/26017/8/98-PDZ (CRZ)**

Sr. No.	Conditions	Compliance Status
		guidelines are enforced by DPCL for visiting ships.
ix	Adequate noise control measures must be provided to noise levels at various work places within the standard prescribed by the competent authorities. If need be, ear plugs and ear muffs should be provided to the workers in the project area	Complied. Suitable personal protective equipment's (PPEs) (Ear muffs & ear plugs) are kept mandatory for workers in noise prone areas. Noise monitoring (once in a month) at site is being carried out by NABL and MoEF&CC accredited agency and levels have been found below the standards. The reports for the period Apr 2018 - Sep 2018 are enclosed as <b>Annexure I</b> .
x	The quality of treated effluents, solid wastes and emissions must confirm to the standards laid down by the competent authority including State Pollution Control Board, Govt. of Odisha, Bhubaneswar	Complied. DPCL has two nos. of Sewage Treatment Plant (STP) to handle 140 KLD & 15 KLD of sewage generated at port site & township. All the treated waste water from STP is being used for horticulture purpose. Monitoring is being carried out by NABL & MoEF&CC recognized laboratory. Monitoring reports for the period Apr 2018 - Sep 2018 are enclosed as <b>Annexure I</b> . All results are well within the prescribed standards. We have colour coded waste bins for segregating different category of solid waste. Waste generated is being handled in line to 5R concept of waste management, as per the vision of APSEZ to become "A Zero Waste Company" by the year 2020. Ambient Air Quality Monitoring (twice in a week) is also being carried out by NABL & MoEF & CC accredited agency, Reports for the period Apr 2018 - Sep 2018 is enclosed as <b>Annexure I</b> . All emissions are well with the prescribed standards.
xi	An Environmental Cell should be set up immediately and made operational with adequate laboratory facilities, equipments	Complied. DPCL has a well-structured Environmental Management Cell, staffed with qualified



**Phase – I: Half yearly Compliance report of the conditions stipulated in Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4th January 2000 bearing No. PD/26017/8/98-PDZ (CRZ)**

Sr. No.	Conditions	Compliance Status
	and a mobile van for collecting air samples. The record and data should be submitted with proper analysis and corrective measures required, if any, for maintaining the levels within the prescribed limits to the Eastern Regional Office, Ministry of Environment & Forests, Govt of India, Bhubaneswar. The Environment Cell should coordinate and monitor environmental mitigative measures executed in the project area. The Project Proponent is advised to institutionalize their Environmental Monitoring through some recognized Scientific Institution for the project.	man power at site supported by team at Head Office in Ahmedabad  Environment monitoring is being carried out by NABL & MoEF&CC accredited agency, the monitoring results for the period Apr 2018 - Sep 2018 (enclosed in <b>Annexures I</b> ) are well within the permissible limits. Monitoring data is being submitted along with half yearly compliance reports to the Eastern Regional Office, MoEF&CC, MoEF&CC New Delhi, CPCB-Kolkata and Odisha Pollution Control Board. Our Last Half Yearly compliance report was submitted on 10 <sup>th</sup> May 2018.
xii	Necessary leakage detection devices with early warning system must be provided at strategic locations.	Not applicable at present. As presently no gaseous cargo is being handled by the port.
xiii	Standby DG sets must be provided to ensure uninterrupted power supply (to) the pump house and the firefighting system	Complied. 5 nos of standby DG Sets of capacity ranging from 160 KVA to 200 KVA have been provided for emergency backups & uninterrupted power supply to the water supply system and firefighting system. DG set Monitoring (Half yearly basis) is being carried out by NABL & MoEF&CC recognized laboratory. Monitoring reports for the period Apr 2018 - Sep 2018 are enclosed as <b>Annexure I</b> . All results are well within the prescribed standards.
xiv	Third party inspection should be ensured during the construction and operational phases with adequate insurance cover. The Project authorities should confirm on regular intervals of six months to the Ministry about the implementation of the suggested safeguard measures and the data/report should be opened for inspection by the Team which would be	Complied. Six monthly compliance reports are regularly submitted to the Eastern Regional Office of MoEF&CC, Bhubaneswar, MoEF&CC-New Delhi, CPCB-Kolkata, Odisha Pollution Control Board and Odisha Coastal Zone Management Authority. The last report was submitted on 10 <sup>th</sup> May 2018.

**Phase – I: Half yearly Compliance report of the conditions stipulated in Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4th January 2000 bearing No. PD/26017/8/98-PDZ (CRZ)**

Sr. No.	Conditions	Compliance Status
	constituted by the Ministry, If found necessary	Officials from MoEF&CC Regional Office and OPCB are regularly inspecting the project site. Safeguard measures as advised by inspection team are taken into consideration for implementation.
xv	Full support should be extended to the Eastern Regional Office, Ministry of Environment & Forests, Govt. of India, Bhubaneswar during inspection of the project for monitoring purposes by the project proponents by furnishing full details and action plans including action taken report on mitigative measures.	Complied. Full support is being extended to the Eastern Regional Office of Ministry of Environment & Forests & Climate Change, Bhubaneswar during their visit. Details required are being submitted to the Authorities.
xvi	Adequate funding provisions, year-wise and item-wise, must be made for implementation of the above mentioned safeguard measures.	Complied. Separate budget for the Environment protection is earmarked every year. No separate bank account is maintained for the same however all the expenses are recorded in advanced accounting system of the organization. Budget for Environment Management measures for the FY 2018-19 is in the tune of Rs. 5.31 crore Detailed breakup of expenditure is enclosed as <b>Annexure-VI</b> .
xvii	The Rapid Environmental Impact Assessment Studies for the construction of the above project by M/s Kirloskar Consultants Ltd. should be expedited. The project proponent was advised to keep in mind the proneness of the coast of Odisha to severe cyclonic storms while going ahead with their project.	Complied. The Rapid Environmental Impact Assessment Study was conducted in time & submitted. DPCL has already formulated detailed Disaster Preparedness & Management Plan to handle any natural calamities such as cyclones, storms, quakes etc., along the Coast.
1	In case of any deviation or alteration in the project including the implementation agency, a fresh reference should be made to the Ministry for modification in the clearance condition or Imposition of new ones for ensuring environmental protection. The project authorities would	Complied and noted.

**Phase – I: Half yearly Compliance report of the conditions stipulated in Environmental Clearance for Expansion of Dhamra Port Project vide letter dated 4th January 2000 bearing No. PD/26017/8/98-PDZ (CRZ)**

Sr. No.	Conditions	Compliance Status
	be responsible for implementing the above suggested safeguard measures.	
2	The Ministry reserves the right to revoke clearance, if the conditions stipulated as above are not implemented to the satisfaction of the Ministry	Point noted
3	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 and the Public Liability (Insurance) Act, 1991 along with their amendments and rules from time to time.	Point noted

**Phase – II: Compliance report of the condition stipulated in CRZ recommendation for Phase II expansion vide letter dated 20th December, 2012 bearing no. OCZMA-1/2012-13/No. 17**

Sr. No.	Conditions	Compliance Status
1	The Ballast Water Management has to be scrupulously followed to ensure that no harmful exotic organisms or pathogens are transferred to the coastal/marine water. In this regard, the DPCL should approach the Ministry of Shipping, Govt. of India to evolve a suitable ballast water management plan to maintain the health of the coastal/marine ecosystems	Complied. DPCL ensure that the ships visiting at port are in compliance to guidelines issued by Ministry of Shipping Notification No 13/2001.
2	The marine water and sediment (biogeochemical parameters including phytoplankton community structure) should be monitored regularly by a reputed scientific institute/university	Complied. Monitoring of marine water and sediment (biogeochemical parameters including phytoplankton community structure) is being carried out by NABL & MoEF&CC accredited agency. Results of the same for the period Apr 2018 - Sep 2018 are enclosed as <b>Annexure – I.</b>
3	One of the objectives of the CRZ guidelines is to ensure the livelihood of	Complied. INCOIS display board has been installed

**Phase – II: Compliance report of the condition stipulated in CRZ recommendation for Phase II expansion vide letter dated 20th December, 2012 bearing no. OCZMA-1/2012-13/No. 17**

Sr. No.	Conditions	Compliance Status
	the fishermen community vis-à-vis developmental activities. Hence the DPCL should approach the Director, Indian National Centre for Ocean Information Services (INCOIS), Govt. of India, Hyderabad, to get PFZ advisories / installation of Electronic Display Board (EDB) to disseminate the prospective fishing ground information to the fishing community for their livelihoods. The DPCL is also to indicate any change that has occurred in the fishing zone due to operation of the Port.	at fishing harbor, Dhamra. The same is in working condition. (Please refer <b>Annexure VII</b> for Photograph of INCOIS displayed)  DPCL provides support for repair services as and when required.
4	The use of unclaimed/salvaged coal for local people may be explored.	Complied. DPCL has examined this issue. So far there has not been any unclaimed coal and the quantity of salvaged coal is negligible. The procedure required under relevant rules is to auction such unclaimed coal with custom's permission to meet unpaid duties and port charges; and to account salvaged coal back to the stock of original importer. Any other method would contravene customs and other laws.
5	DPCL shall ensure that the dust/fine grained particles of the jetty must be cleaned regularly and methodically so that there is no spillage to the coastal waters to avoid turbidity of the water column.	Complied. DPCL ensures that the dust/fine grained particles present on jetty are cleaned on regular basis both by mechanically and manually so to avoid spillage into the marine/coastal waters.
6	The mangrove vegetation around the port should be conserved both during construction and operation phase.	Complied. DPCL has taken great efforts by creating bamboo fencing around the present scattered mangroves towards southern boundary as well as carried out plantation of mangrove saplings in the blank patches since 2016 within the fenced area, as part of conservation efforts.  Continuous awareness is being created among the port employees and workers

**Phase – II: Compliance report of the condition stipulated in CRZ recommendation for Phase II expansion vide letter dated 20th December, 2012 bearing no. OCZMA-1/2012-13/No. 17**

Sr. No.	Conditions	Compliance Status
		<p>regarding importance of mangrove and its conservation needs.</p> <p>However, due to cyclonic storms and biotic interference of local population there have been some damages on southern side scattered mangrove patch.</p>
7	<p>Coastal erosion and accretion shall be monitored on a regular basis. The impact of dredging and dumping of the sediment on Dhamra Shoreline change and on the ecologically sensitive areas including the Kanika Sand Islands has to be assessed at regular interval by a recognized institute.</p>	<p>Complied.</p> <p>NIOT Chennai, has carried out shoreline change study alongside Dhamra and Kanika sand shore and also impact of dredging and dumping of sediment on Dhamra Shoreline Change and on ecologically sensitive areas. Both this studies concludes that there are no significant impacts observed on the shoreline and nearby ecologically sensitive areas because of this ongoing activity. Copy of the report is attached as <b>Annexure VIII.</b></p>
8	<p>Provision shall be made for treatment/recycle of toxic contents, such as used oil, fertilizers (if any) and similar other toxic materials</p>	<p>Complied.</p> <p>DPCL has made an agreement with OSPCB approved vendor for collection of used oil.</p> <p>Details of the same are submitted to OSPCB as a part of Hazardous waste annual return (Form 4) on regular basis.</p>
9	<p>Environmental Impact Assessment (EIA) study of dredging material should be done on a regular basis with special emphasis to turbidity.</p>	<p>Complied.</p> <p>Offshore water quality monitoring is being done on regular basis (including turbidity parameter) and the results for the period Apr 2018 - Sep 2018 can be referred at <b>Annexure-I.</b></p>
10	<p>The DPCL should ensure that the suspended sediments generated during excavation and during disposal of the dredged materials do not adversely affect the health of the coastal ecosystems within the port area including eco-sensitive areas along the coast.</p>	<p>Complied.</p> <p>No capital dredging was carried out during the period Apr 2018 - Sep 2018. Only Maintenance dredging was carried out during this period. This material is being disposed at approved location in the sea. Marine water quality monitoring is being carried out regularly &amp; submitted to</p>



**Phase – II: Compliance report of the condition stipulated in CRZ recommendation for Phase II expansion vide letter dated 20th December, 2012 bearing no. OCZMA-1/2012-13/No. 17**

Sr. No.	Conditions	Compliance Status
		OSPCB & MOEFCC Annexure - I.
11	A conservation plan for Kanika Island will be prepared and implemented by the Forest Department, the cost of which will be met by the DPCL.	Kanika Island Conservation Plan has been approved by Forest Department as per DFO Bhadrak letter no. 1889/3F-192/2018 dated 28.05.2018 and 3148/1F-256/2018 dated 31.08.2018. Copy enclosed as <b>Annexure-IX</b> .  We have already released an amount of Rs 40 Lakhs to DFO Bhadrak Wildlife Division as first phase payment of 1 <sup>st</sup> year contribution amount on 24.09.2018 for implementation of Kanika Island Conservation plan.
12	Mangrove plantation around the port will be protected by the DPCL under the supervision of the Forest Department.	Complied.
13	Shoreline Changes in and around Kanika Island shall be monitored on monthly basis	Complied. NIOT Chennai, has carried out shoreline change study at Dhamra and Kanika sand shore. Copy of the report is attached as <b>Annexure VIII</b> .

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
<b>6. Specific Condition</b>		
i	Consent to Establishment shall be obtained from Odisha Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at site	Complied. Consent to Establish has been obtained.
ii	Prior clearance from National Board of Wildlife shall be obtained	The project boundary falls outside the notified Eco sensitive zone of Bhitakranika and Gahirmatha Sanctuary, declared as per Gazette Notification 16.06.2015. The approved map from Forest department Govt of Odisha is enclosed as <b>Annexure-</b>

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
		X.
iii	The proponent shall submit undertaking that there shall be no acquisition of grazing/grave land for the project.	Complied. Undertaking has already been submitted vide our earlier compliance letter dated 20.11.2015.
iv	The Regional Office of MoEF may conduct a site visit every year to verify compliance.	Point noted.
v	The Natural creek and drainage pattern of the area should not be disturbed and the cross drainage passing through cargo stack yards shall be released into settling ponds as committed.	Complied. Drainage pattern is being maintained. The creeks are trained to ensure proper drainage both from outside and inside. Runoff from the cargo stack yard is diverted to settling pond. Supernatant water after primary treatment is being used for dust suppression.
vi	No housing component is permitted in CRZ area i.e. within 500m from HTL.	Complied. No housing constructed in CRZ area.
vii	The dredging materials shall be at depths 25m or more up to fill up of 30cm or less. Initial and final sounding records for depth of the disposal sites and GPS records shall be maintained for vessels carrying out disposal. The disposal shall be carried out in the ebb tides and shall be ensured that water quality (SS less than 500mg/l) is maintained during disposal near the vessel.	Complied. No capital dredging was carried out during the period Apr 2018 - Sep 2018. Only maintenance dredging was carried out during this period. This material is being disposed at approved location in the sea. Marine water quality monitoring is being carried out regularly & submitted to OSPCB. Copy enclosed as <b>Annexure I</b> .
viii	Commitment for all the recommendations provided by OCZMA and NIO for protection of Kanika island and earmark specific amount for the conservation plan. The plan can be prepared in consultation with the OCZMA and forest department.	Kanika Island Conservation Plan has been approved by Forest Department as per DFO Bhadrak letter no. 1889/3F-192/2018 dated 28.05.2018 and 3148/1F-256/2018 dated 31.08.2018. Copy enclosed as <b>Annexure-IX</b> . We have already released an amount of Rs 40 Lakhs to DFO Bhadrak Wildlife Division as first phase payment of 1 <sup>st</sup> year contribution amount on 24.09.2018 for implementation of Kanika Island Conservation plan.

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
ix	The village forest adjacent to the project site should be developed with tree plantation, in consultation with the revenue department/forest department	The permission has been granted by the District Forest Officer, Bhadrak Wildlife Division vide letter no. 2678/3F-161/2013 dated 24.07.2018 to carry out the plantation in the village forest patch adjacent to the port. The copy letter enclosed as <b>Annexure- XI</b>
x	As discussed during the meeting the dumping area should be at the latitude 20° 55' 5" and longitude 87° 10' 5" in the offshore region	Point noted.
xi	All the commitments made during the Public Hearing shall be complied with.	Commitments made during Public hearing are being complied.
xii	Regular air quality monitoring should be conducted at the site and all the parameters should be within limits.	Complied. Air quality monitoring is done by a MoEF&CC accredited agency and all parameters are well within standards Results of the monitoring carried out during the period Apr 2018 - Sep 2018 are enclosed as <b>Annexure –I</b> .
xiii	All the recommendation of the EIA/EMP & Risk Assessment and Disaster Management Report shall be complied with letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO.	Complied. Compliance towards mitigation plans are enclosed as <b>Annexure XII</b> .
xiv	All the recommendations and conditions stipulated by Odisha Coastal Zone Management Authority (OCZMA) No. OCZMA-1/2012-13 dated 20.12.2012 shall be complied with	Complied. Compliance report of the OCZMA recommendation is enclosed.
xv	The green belt shall be provided all around the periphery and storage yards.	Complied. Site is undergoing expansion inline to Immediate Development Plan (phase-II clearance). Greenbelt development shall

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
		<p>also be developed inline to this. Total 25,800 nos. of plantation has been carried out for the period Apr 2018 - Sep 2018. Layout enclosed as <b>Annexure IV</b>.</p> <p>Plantation has been done along the both edges of the 62.5 km rail corridor. Please refer <b>Annexure V</b> for photographs of the same.</p>
xvi	There shall be no ground water drawl within CRZ area	<p>Complied.</p> <p>No ground water withdrawal in the CRZ area is done</p>
xvii	Sewage shall be treated and the Treatment Facility shall be provided in accordance with the Coastal Regulation Zone Notification, 2011. The disposal of treated water shall confirm the regulation of State Pollution Control Board.	<p>Complied.</p> <p>DPCL has two nos. of Sewage Treatment Plant (STP) of capacity 140 KLD &amp; 15 KLD to treat sewage generated at port site &amp; township. Treated water of STP is regularly monitored and all the results are found to be well within the prescribed standard. The monitoring report for the period Apr 2018 - Sep 2018 is enclosed as <b>Annexure-I</b>.</p>
xviii	Solid Waste Management shall be as per Municipal Solid (Management and Handling) Rules, 2000	<p>Complied.</p> <p>DPCL has developed a vision for making itself – “A Zero Waste Port” by the year 2020. DPCL vision is based on adoption of 5R principle of waste management i.e Reduce, Reuse, Reprocess, Recycle &amp; Recover.</p> <p>We have colour coded bins for segregating different category of solid waste. Biodegradable wastes are used for compost preparation. Recyclable wastes are handed over to authorized recyclers.</p>
xix	The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.	<p>Complied.</p> <p>Approach channel of the port is from South to North east, whereas Fishing boats travels from South to East. Apart Fishing is carried out in deep Sea.</p> <p>Hence, no impact on fishing is envisaged because of this project.</p>

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

<b>Sr. No.</b>	<b>Conditions</b>	<b>Compliance Status</b>
xx	It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.	Complied. Proposed development is in intertidal area and henceforth there has not been any displacement of people and the houses. Suitable approaches are available for fishermen to conduct their activities and hence, there won't be any impact on fishing activities. DPCL is closely working with fishermen communities to provide them required support through its CSR activities.
xxi	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Complied. Construction work is being carried out inline to CRZ notification 2011, amended till date and Environment / CRZ clearances obtained for the project.
xxii	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a senior executive	Complied. DPCL has a well-structured Environmental Management Cell, staffed with qualified personnel at site supported by team at Head Office in Ahmedabad.
xxiii	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Complied. Separate budget for the Environment Protection is earmarked every year. All the expenses are recorded in advanced accounting system of the organization. Budget for Environment Management measures for the FY 2018-19 is in the tune of Rs. 5.31 crore. Detailed breakup of expenditure is enclosed as <b>Annexure-VI</b> .
<b>7. General Conditions</b>		
i	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied
ii	Full support shall be extended to the officers of this Ministry/Regional Office at Bhubaneswar by the project proponent during inspection of the project for	Complied. DPCL is always extending full support to the regulatory authorities during their visit to port site. Details sought for by the



**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
	monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Authorities are furnished as and when required.
iii	A six-monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhubaneswar regarding the implementation of the stipulated conditions.	Complied. Six monthly compliance report is regularly submitted to Regional Office of MoEF & CC, Bhubaneswar. Last compliance report for Oct 2017 – Mar 2018 period was submitted vide our letter dated 10.05.2018.
iv	Ministry of Environment & Forests 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.	Point noted
v	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Point noted
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 and Forests.	No change in the project profile or implementing agency of the development at Dhamra Port. However DPCL has now proposed Revised Master Plan for Dhamra Port for which, necessary procedure inline to the EIA notification 2006 & CRZ Notification 2011, has already been initiated.
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.	DPCL had informed the Regional Office MOEF& CC regarding the financial closure and the date of start of land development work. Date of last financial closure was on 30th September, 2014. The same has been submitted vide our earlier compliance submitted to RO-MOEF&CC, Bhubaneshwar
viii	A copy of the clearance letter shall be marked to concern Panchayat/local NGO,	Complied. Copy of clearance letter was submitted to

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
	if any, from whom any suggestion/representation has been made received while processing the proposal.	concerned panchayat office vide our letter dated 23.01.2014 for any suggestion. The copy is enclosed as <b>Annexure-XIII</b> .
ix	Odisha State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.	-
8	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 1994, including the amendments and rules made thereafter.	Point noted
9	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.	Complied. License on storage of explosives from PESO and NOC from Fire Dept. is enclosed as <b>Annexure-XIV</b> .
10	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 Odisha State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within 10 days from the date of receipt of the	Complied. Advertisement copies are attached as <b>Annexure-XV</b> .

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
	Clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bhubaneswar.	
11	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.	Point noted
12	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.	Point noted
13	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website	Complied. Compliance report for each period is uploaded on the company's website ( <a href="http://www.adaniports.com/ports-downloads">http://www.adaniports.com/ports-downloads</a> ) and the same is being updated twice in a year.
14	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/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.	Complied.
15	The proponent shall upload the status of compliance of the stipulated clearance 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 MoEF, the representative Zonal Office of CPCB and the SPCB.	Complied. Compliance report for each period is uploaded on the company's website and the same is being updated twice in a year. Results of environmental monitoring are enclosed as <b>Annexures-I</b> to the compliance report. Hard copy as well as soft copy of the same are submitted to all concerned authorities.
16	The project proponent shall also submit six monthly reports on the status of	Complied. Compliance report for each period is

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

Sr. No.	Conditions	Compliance Status
	compliance of the stipulated clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	uploaded on the company's website and the same is being updated twice in a year. Results of environmental monitoring are enclosed as <b>Annexures-I</b> to the compliance report. Hard copy as well as soft copy (Email) of the same are submitted to all concerned authorities.
17	The environmental statement for each financial year ending 31st 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 clearance conditions and shall also be sent to the respective Regional Office of MoEF by email.	Complied. Environmental Statement for FY 2017-18 was submitted to OSPCB with a copy to the Regional Office of MoEF & CC vide our letter no DPCL/ENV/OSPCB/2018-145 dated 19 <sup>th</sup> Sep 2018. Copy of the same is enclosed as <b>Annexure – XVI</b> .  All Submitted Environment Statements as well as Half Yearly Compliance Reports are available on our company website and can be viewed publicly
<b>Conditions stipulated in the amendment dated 25<sup>th</sup> March, 2015</b>		
i	The port shall ensure that the ships under operation follow the MARPOL Convention with regard to discharge or spillage of any toxic, hazardous or polluting material like ballast water, oily water or sludge, sewage, garbage etc.	Complied. MARPOL and Ballast Water Convention guidelines are enforced by DPCL for visiting ships.
ii	Dust screens shall be provided with height of two meter above the stack height. Water sprinkling shall be carried out for settling dust. Three layers of green belt of tall growing tress shall be provided on all sides of the stack area.	Complied. Site is undergoing expansion inline to Revised Master Plan. Stack yards expansions are planned accordingly. Detailed engineering design for dust screen will be prepared inline to Site condition and further be implemented. Water sprinkling is being done on regular basis to ensure dust suppression in cargo storage area and vehicular paths/roads. Greenbelt development shall also be developed inline Revised Master Plan.
iii	Transportation of iron ore shall be by covered conduit/closed trucks/rails only. Closed conveyor belt shall be used for	Complied. Transportation of Coal/Iron ore is done in covered conveyor belt system

**Phase – II: Compliance report of the condition stipulated in Environmental and CRZ Clearance for expansion at Dhamra Port dated 1st January, 2014 bearing F. No. 11-104/2009-IA.III and subsequent amendment dated 25<sup>th</sup> March, 2015**

<b>Sr. No.</b>	<b>Conditions</b>	<b>Compliance Status</b>
	unloading the product.	
iv	Water sprinklers will be provided in the area of ore storage and vehicular path/roads.	Complied. Water sprinkling is being done on regular basis to ensure dust suppression in coal storage area and vehicular paths/roads.
v	All the recommendations of EMP and Disaster Management Plan (DMP) shall be complied with	Complied. Compliance of EMP is enclosed as <b>Annexure XII.</b>



### LIST OF ANNEXURES

<u>S. No</u>	<u>Annexure Number</u>	<u>Details</u>
1	Annexure-I	Environment Monitoring Report
2	Annexure – II	Types and quantity of Fire Extinguishers
3	Annexure-III	Details of Mock Drills
4	Annexure-IV	Port Layout
5	Annexure-V	Green Belt Details
6	Annexure-VI	Cost Break up of Environment Expenditure
7	Annexure-VII	INCOIS Board
8	Annexure-VIII	NIOT Report
8	Annexure-IX	DFO Letter
9	Annexure-X	Approved Map from Forest Department Government of Odisha
10	Annexure- XI	Permission letter from DFO to carry out the plant in Forest village
11	Annexure-XII	EMP & Action Plan Compliance
12	Annexure-XIII	Environmental Clearance copy to Zillaparisad
13	Annexure-XIV	License and NOC from Fire Dept.
14	Annexure-XV	Advertisement in Local Newspapers intimating grant of Environmental & CRZ Clearance
15	Annexure-XVI	Environment Statement for FY 2017-18

## **ANNEXURE-I**

### **ENVIRONMENT MONITORING REPORT**



# CENTRE FOR ENVOTECH AND MANAGEMENT CONSULTANCY PVT. LTD.

An ISO 9001:2008 & OHSAS 18001:2007 Certified Company, Empanelled with OCCL, ORSAC and SPCB of Govt. of Odisha  
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Enlisted in Construction Industry Development Council (CIDC) established by the Planning Commission (Govt. of India)  
MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/030518/A1

Issued Date-03.05.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-03052018A1
Nature of Sampling	Ambient Air Sample
Sampling Location	Colony Area
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.04.2018 to 30.04.2018

### ANALYSIS RESULT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.04.2018	54.6	29.1	7.3	12.5	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.04.2018	53.2	27.3	7.2	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.04.2018	53.8	28.9	7.0	12.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.04.2018	53.9	27.5	7.2	12.6	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.04.2018	53.4	27.7	7.1	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.04.2018	53.1	27.2	7.3	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
26.04.2018	54.8	29.6	7.7	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.04.2018	54.1	29.3	7.3	12.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part- 10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part- 22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. S. Sahu, Ph.D. Env. Sc.

Authorised Signatory

Notes: (GAZETTE No. 7157 Dt-03-06-2016)

The result given above related to the tested sample, as received from the customer asked for the above test only.

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Report no. - CEMC/TDPCL/030518/A2

Issued Date-03.05.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-03052018A2
Nature of Sampling	Ambient Air Sample
Sampling Location	Kanakaprasad Village
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.04.2018 to 30.04.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.04.2018	52.3	29.4	7.0	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.04.2018	52.5	28.9	7.4	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.04.2018	51.3	29.2	7.4	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.04.2018	52.1	29.3	7.7	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.04.2018	52.7	29.6	7.3	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.04.2018	48.2	27.4	7.6	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
26.04.2018	51.4	28.1	7.2	12.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.04.2018	52.3	28.0	7.8	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophen ols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part- 22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part- 12)

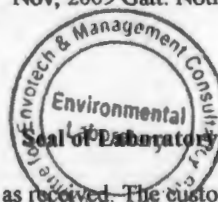
N.B- \*NAAQ- National Ambient Air Quality Standard as per 18<sup>th</sup> Nov, 2009 Gatt. Notification.

Dr. T. S. Sahoo, Env. Sc.  
Authorized Signatory  
Notes: Govt. Analyst

(GAZETTE No. 03/06/2016)

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Report no. - CEMC/TDPCL/030518/A5

Issued Date-03.05.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-03052018A5
Nature of Sampling	Ambient Air Sample
Sampling Location	Dosinga Village
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.04.2018 to 30.04.2018

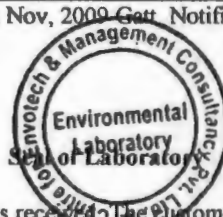
Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.04.2018	53.7	28.1	7.4	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.04.2018	53.2	27.9	7.2	12.5	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
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12.04.2018	52.7	27.2	7.3	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
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26.04.2018	50.3	27.4	7.7	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
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NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Govt. Notification.

Dr. J. S. Singh, Ph.D., Env. Sc.  
Authorized Signatory  
Govt. Analyst

Notes:  
(GAZETTE No. 1357 D.O. 03.06.2016)

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Report no. - CEMC/TDPCL/030518/A4

Issued Date-03.05.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

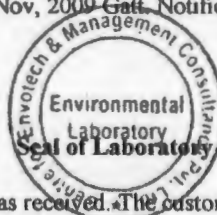
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-03052018A4
Nature of Sampling	Ambient Air Sample
Sampling Location	Near Jetty
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.04.2018 to 30.04.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
02.04.2018	71.5	39.4	7.9	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.04.2018	68.3	38.2	7.5	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.04.2018	70.9	39.1	7.6	13.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.04.2018	69.4	39.8	7.8	13.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.04.2018	72.1	41.5	7.7	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.04.2018	67.2	34.9	7.3	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
26.04.2018	74.8	42.2	7.9	13.3	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.04.2018	68.4	38.7	7.8	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB metho d followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Govt. Notification

Authorized Signatory  
Notes:

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Report no. - CEMC/TDPCL/030518/A3

Issued Date-03.05.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-03052018A3
Nature of Sampling	Ambient Air Sample
Sampling Location	Near BMH
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.04.2018 to 30.04.2018

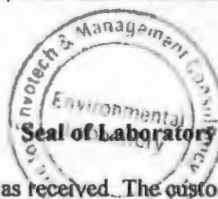
Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.04.2018	52.4	28.4	7.7	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.04.2018	52.1	27.7	7.6	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.04.2018	51.4	27.8	7.4	12.3	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.04.2018	53.7	28.1	7.8	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.04.2018	51.6	29.3	7.4	13.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.04.2018	52.3	28.5	7.2	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
26.04.2018	52.9	30.2	7.3	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.04.2018	52.6	28.2	7.9	13.2	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part- 10)	Indophe nol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. Sahu, PhD, Env. Sc.

Authorized Signatory  
Govt. ANALYST

GAZETTE No. 133, Dtd. 03.05.2016



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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/030518/A6

Issued Date-03.05.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-03052018A6
Nature of Sampling	Ambient Air Sample
Sampling Location	Bhitarkanika (Eco Sensitive)
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.04.2018 to 30.04.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.04.2018	46.6	23.7	6.6	11.2	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.04.2018	46.9	24.8	6.9	10.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.04.2018	48.7	24.4	6.7	10.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.04.2018	47.1	25.5	7.2	11.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.04.2018	44.3	23.8	6.8	10.7	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.04.2018	41.5	22.6	7.1	10.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
26.04.2018	45.9	23.4	6.4	10.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.04.2018	47.3	24.2	7.0	11.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov. 2009 Gatt. Notification.

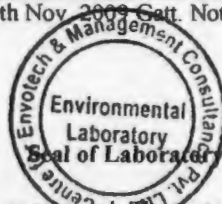
Dr. T. Saha, Env. Sc.

Authorized Signatory  
Notes: 1. As per T

(GAZETTE NO. 22-D-03-06-2016)

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Report no. - CEMC/TDPCL/030518/N

Issued Date-03.05.2018

## NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Analysis No.	CEMC/TDPCL-D00N1
Nature of Sampling	Noise Sample
Sampling By	Mr. Suryakanti Sen
Sampling Date	01.04.2018 to 30.04.2018

Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
03.04.2018	Colony Area (R)	53.6	51.1	52.3	42.9	38.7	40.8
10.04.2018	Kanakaprasad Village (R)	51.7	49.6	50.6	41.8	36.5	39.1
13.04.2018	Near BMH (I)	72.1	67.5	69.8	67.2	61.9	64.5
17.04.2018	Near Jetty (I)	70.4	63.8	67.1	68.6	59.1	63.8
24.04.2018	Dosinga village (R)	52.3	47.9	50.1	43.1	38.9	41.0
27.04.2018	Bhitarkanika (R)	51.2	42.8	47.0	41.9	39.1	40.5

\*NL- Noise Level, I- Industrial, R- Residential

## National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit in dB (A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Dr. T. S. Singh, Ph.D. Env. Sc.  
Authorized Signatory  
Govt. Analyst

Notes: (GAZETTE No. 1251, Dt. 03.06.2016)

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/030518/W1

Issued Date-03.05.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 13.04.2018 & 27.04.2018

Date of Receiving

: 14.04.2018 & 28.04.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Inlet)

Reference Number

: CEMC-03052018W1

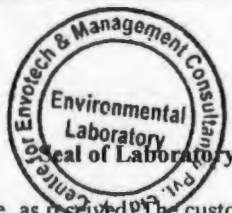
## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.69	7.06	6.0-8.5
5	Total Suspended Solids	mg/l	128.4	119.8	1000
6	B.O.D for 3 days @ 27°C	mg/l	260	236	300-350
7	Oil & Grease	mg/l	<5	<5	100
8	COD	mg/l	580	532	--
9	Ammonical Nitrogen	mg/l	5.7	5.4	--
10	Total Nitrogen	mg/l	37.5	35.7	--
11	Faecal Coliform	MPN/100ml	1600	1600	--

Dr. T. Sahu, PhD, Env. Sc.

Authorized Signatory

(GAZETTED No-1357, Dt-03-06-2016)



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Report no. - CEMC/TDPCL/030518/W2

Issued Date-03.05.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 13.04.2018 & 27.04.2018

Date of Receiving

: 14.04.2018 & 28.04.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Outlet)

Reference Number

: CEMC-03052018W2

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	—	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.41	7.37	6.5-9.0
5	Total Suspended Solids	mg/l	15.2	14.3	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.5	8.2	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	23	22	<50
9	Ammonical Nitrogen	mg/l	0.11	0.7	<5
10	Total Nitrogen	mg/l	7.7	6.3	<10
11	Faecal Coliform	MPN/100ml	22	23	<100

Dr. T. Sahu, Ph.D., Env. Sc.

Authorized Signatory

(GAZETTE No-1357-D1/03-06-2016)



related to the tested sample, as received. The customer asked for the above test only.

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/030518/W3

Issued Date-03.05.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 13.04.2018 & 27.04.2018

Date of Receiving

: 14.03.2018 & 28.04.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Inlet)

Reference Number

: CEMC-03052018W3

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1st Fortnight	2nd Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	7.12	7.17	6.0-8.5
5	Total Suspended Solids	mg/l	142.3	129.7	1000
6	B.O.D for 3 days @ 27°C	mg/l	240	260	300-350
7	Oil & Grease	mg/l	8.1	9.7	100
8	COD	mg/l	710	780	--
9	Ammonical Nitrogen	mg/l	7.7	8.4	--
10	Total Nitrogen	mg/l	35.7	28.0	--
11	Faecal Coliform	MPN/100ml	>1600	>1600	--

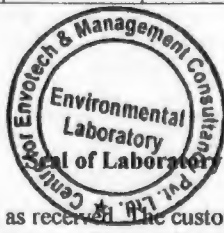
Dr. T. S. Singh, Env. Sc.

Notarized Signature

(GAZETTE No. 186 dated 03.05.2018)

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/030518/W4

Issued Date-03.05.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 13.04.2018 & 27.04.2018

Date of Receiving

: 14.04.2018 & 28.04.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Outlet)

Reference Number

: CEMC-03052018W4

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.32	7.33	6.5-9.0
5	Total Suspended Solids	mg/l	13.2	13.1	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.4	8.8	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	29	28	<50
9	Ammonical Nitrogen	mg/l	1.1	1.3	<5
10	Total Nitrogen	mg/l	7.0	6.3	<10
11	Faecal Coliform	MPN/100ml	23	21	<100

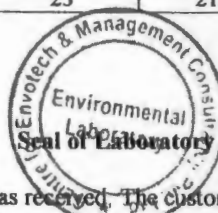
Dr. T. S. Sahoo, Env. Sc.

Authorized Signatory

Notes:

GAZETED No. 3322/03-06-2016

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Report no. - CEMC/TDPCL/020618/A1

Issued Date-02.06.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-02062018A1
Nature of Sampling	Ambient Air Sample
Sampling Location	Colony Area
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.05.2018 to 31.05.2018

### ANALYSIS RESULT

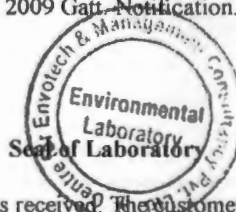
Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
03.05.2018	50.2	27.8	7.2	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.05.2018	51.8	28.2	7.4	12.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.05.2018	49.4	27.2	7.1	12.2	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.05.2018	54.6	29.7	7.6	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.05.2018	50.8	27.9	7.2	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.05.2018	55.3	27.3	7.9	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.05.2018	52.9	28.7	7.3	12.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.05.2018	56.2	28.2	7.7	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

*[Signature]*  
Authorized Signatory

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Report no. - CEMC/TDPCL/020618/A2

Issued Date-02.06.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

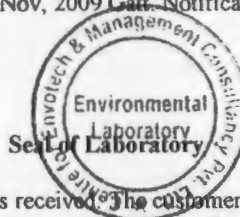
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-02062018A2
Nature of Sampling	Ambient Air Sample
Sampling Location	Kanakaprasad Village
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.05.2018 to 31.05.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.05.2018	49.4	27.2	6.9	11.8	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.05.2018	51.2	28.3	7.2	12.1	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.05.2018	50.6	27.9	7.5	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.05.2018	48.9	26.6	7.3	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.05.2018	53.4	30.1	7.5	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.05.2018	51.7	28.5	7.4	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.05.2018	54.1	29.6	7.7	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.05.2018	53.2	30.0	7.9	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophen ols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18<sup>th</sup> Nov, 2009 Govt. Notification.

Authorized Signatory  
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Report no. - CEMC/TDPCL/020618/A3

Issued Date-02.06.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

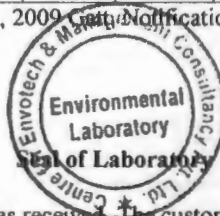
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-02062018A3
Nature of Sampling	Ambient Air Sample
Sampling Location	Near BMH
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.05.2018 to 31.05.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
03.05.2018	54.8	30.2	7.9	13.2	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.05.2018	52.6	28.1	7.7	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.05.2018	50.3	27.5	7.6	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.05.2018	52.9	28.6	7.5	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.05.2018	53.8	28.3	7.8	12.3	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.05.2018	55.6	27.6	7.4	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.05.2018	53.1	27.3	7.2	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.05.2018	52.9	27.9	7.0	12.3	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Central Notification.

Authorized Signatory  
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Report no. - CEMC/TDPCL/020618/A4

Issued Date-02.06.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-02062018A4
Nature of Sampling	Ambient Air Sample
Sampling Location	Near Jetty
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.05.2018 to 31.05.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.05.2018	64.3	36.7	7.7	13.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.05.2018	69.6	38.8	7.4	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.05.2018	62.4	35.3	7.4	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.05.2018	66.5	37.1	7.6	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.05.2018	70.4	40.9	7.5	13.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.05.2018	72.1	41.3	7.5	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.05.2018	69.7	40.2	7.3	12.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.05.2018	71.6	40.9	7.6	13.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB metho d followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt Notification

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Accredited by NABET, QCI for EIA Studies as 'A' Category Consultant Organization. Empanelled with PCCF(Wildlife) & CWLW, Odisha  
Enlisted in Construction Industry Development Council (CIDC) established by the Planning Commission (Govt. of India)  
MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/020618/A5

Issued Date-02.06.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-02062018A5
Nature of Sampling	Ambient Air Sample
Sampling Location	Dosinga Village
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.05.2018 to 31.05.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.05.2018	50.2	27.3	7.7	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.05.2018	52.7	27.6	7.8	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.05.2018	51.4	27.1	7.3	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.05.2018	50.8	27.4	7.6	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.05.2018	52.7	27.6	7.4	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.05.2018	52.3	28.2	8.0	13.2	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.05.2018	54.9	28.8	7.6	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.05.2018	52.8	27.6	7.8	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov. 2009 Gatt. Notification.

Notes:

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Report no. - CEMC/FDPCL/020618/A6

Issued Date-02.06.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

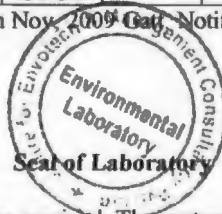
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-02062018A6
Nature of Sampling	Ambient Air Sample
Sampling Location	Bhitarkanika (Eco Sensitive)
Sampling By	Mr. Suryakanti Sen
Sampling Duration	01.05.2018 to 31.05.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.05.2018	45.2	23.1	6.5	10.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.05.2018	45.2	24.4	6.8	10.6	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.05.2018	46.9	23.9	6.9	10.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.05.2018	45.0	24.1	6.7	10.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.05.2018	47.8	24.6	6.9	10.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.05.2018	45.3	24.5	6.6	10.6	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.05.2018	46.7	23.9	6.5	10.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.05.2018	46.2	24.5	6.8	10.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov. 2009 Govt. Notification.

Authorized Signature  
Notes:

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Report no. - CEMC/TDPCL/020618/N

Issued Date-02.06.2018

## NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Analysis No.	CEMC/TDPCL-D00N1
Nature of Sampling	Noise Sample
Sampling By	Mr. Suryakanti Sen
Sampling Date	01.05.2018 to 31.05.2018

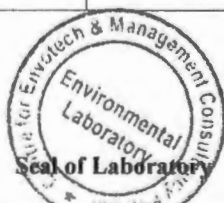
Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
08.05.2018	Near Jetty (I)	68.6	63.2	65.9	65.8	60.6	63.2
11.05.2018	Near BMH-I	69.2	64.6	66.9	63.8	60.5	62.2
15.05.2018	Colony Area (R)	53.7	49.2	51.5	43.6	38.1	40.9
18.05.2018	Kanakaprasad Village (R)	52.6	49.5	51.1	43.1	37.8	40.5
22.05.2018	Dosinga village (R)	53.8	48.7	51.3	44.2	39.3	41.8
25.05.2018	Ecosensitive Zone	49.4	40.2	44.8	39.9	37.4	38.7

\*NL- Noise Level, I- Industrial, R- Residential

## National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit in dB (A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Authorized Signatory  
Notes:



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Report no. - CEMC/TDPCL/020618/W1

Issued Date-02.06.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 11.05.2018 & 25.05.2018

Date of Receiving

: 12.05.2018 & 26.05.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Inlet)

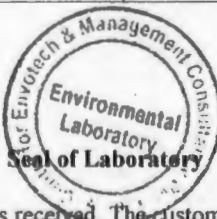
Reference Number

: CEMC-02062018W1

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.57	6.84	6.0-8.5
5	Total Suspended Solids	mg/l	137.2	128.5	1000
6	B.O.D for 3 days @ 27°C	mg/l	240	250	300-350
7	Oil & Grease	mg/l	<5	<5	100
8	COD	mg/l	610	620	--
9	Ammonical Nitrogen	mg/l	5.5	6.3	--
10	Total Nitrogen	mg/l	28.7	30.8	--
11	Faecal Coliform	MPN/100ml	1600	1600	--

Authorized Signature  
Notes:



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Report no. - CEMC/TDPCL/020618/W2

Issued Date-02.06.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 11.05.2018 & 25.05.2018

Date of Receiving

: 12.05.2018 & 26.05.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Outlet)

Reference Number

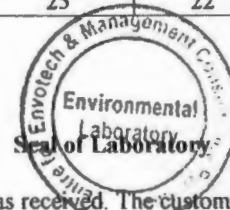
: CEMC-02062018W2

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.42	7.41	6.5-9.0
5	Total Suspended Solids	mg/l	15.1	14.8	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.0	8.8	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	22	23	<50
9	Ammonical Nitrogen	mg/l	0.84	0.91	<5
10	Total Nitrogen	mg/l	5.6	6.3	<10
11	Faecal Coliform	MPN/100ml	25	22	<100

Authorized Signature  
Notes:

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Report no. - CEMC/TDPCL/020618/W3

Issued Date-02.06.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 11.05.2018 & 25.05.2018

Date of Receiving

: 12.05.2018 & 26.05.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Inlet)

Reference Number

: CEMC-02062018W3

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1st Fortnight	2nd Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	7.06	7.18	6.0-8.5
5	Total Suspended Solids	mg/l	161.7	148.2	1000
6	B.O.D for 3 days @ 27°C	mg/l	250	230	300-350
7	Oil & Grease	mg/l	8.8	7.9	100
8	COD	mg/l	750	680	--
9	Ammonical Nitrogen	mg/l	8.4	7.0	--
10	Total Nitrogen	mg/l	28.0	26.8	--
11	Faecal Coliform	MPN/100ml	>1600	>1600	--

Authorized Signature

Notes:

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Report no. - CEMC/TDPCL/020618/W4

Issued Date-02.06.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Suryakanti Sen

Date of Sampling

: 11.05.2018 & 25.05.2018

Date of Receiving

: 12.05.2018 & 26.05.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Outlet)

Reference Number

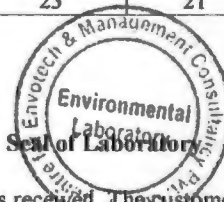
: CEMC-02062018W4

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.31	7.34	6.5-9.0
5	Total Suspended Solids	mg/l	13.5	13.2	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.6	8.4	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	30	32	<50
9	Ammonical Nitrogen	mg/l	0.84	0.91	<5
10	Total Nitrogen	mg/l	5.6	4.9	<10
11	Faecal Coliform	MPN/100ml	23	21	<100

Authorized Signature  
Notes:

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Report no. - CEMC/TDPCL/040718/A1

Issued Date-04.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

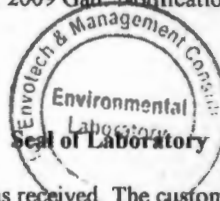
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A1
Nature of Sampling	Ambient Air Sample
Sampling Location	Colony Area
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.06.2018 to 30.06.2018

## ANALYSIS RESULT

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
04.06.2018	51.7	27.3	7.4	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.06.2018	52.6	28.4	7.5	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
11.06.2018	55.1	29.4	7.6	13.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.06.2018	53.2	28.6	7.4	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
18.06.2018	51.9	28.3	7.5	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.06.2018	52.8	28.4	7.4	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
25.06.2018	50.7	27.2	7.2	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.06.2018	49.1	27.0	7.3	12.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part- 10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part- 22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. *[Signature]*  
Authorized Signatory  
Env. Sc.



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Report no. - CEMC/TDPCL/040718/A2

Issued Date-04.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A2
Nature of Sampling	Ambient Air Sample
Sampling Location	Kanakaprasad Village
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.06.2018 to 30.06.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
04.06.2018	49.6	27.5	7.3	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.06.2018	50.4	28.7	7.6	12.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
11.06.2018	49.8	28.1	7.7	12.1	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.06.2018	52.3	29.8	7.5	12.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
18.06.2018	54.1	30.2	7.7	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.06.2018	50.2	28.3	7.5	12.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
25.06.2018	49.1	28.0	7.4	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.06.2018	47.3	27.2	7.4	12.5	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophen ols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18<sup>th</sup> Nov, 2009 Gatt. Notification.

Dr. T. S. ...

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Report no. - CEMC/TDPCL/040718/A3

Issued Date-04.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A3
Nature of Sampling	Ambient Air Sample
Sampling Location	Near BMH
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.06.2018 to 30.06.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
04.06.2018	52.2	27.8	7.6	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.06.2018	51.9	29.2	7.4	12.4	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
11.06.2018	52.7	28.3	7.3	12.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.06.2018	60.6	28.9	7.8	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
18.06.2018	55.4	28.4	7.2	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.06.2018	50.8	27.8	7.4	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
25.06.2018	50.3	27.6	7.2	12.4	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.06.2018	48.4	28.2	7.5	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. S. Singh, Env. Sc.

Authorized Signature

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Report no. - CEMC/TDPCL/040718/A4

Issued Date-04.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A4
Nature of Sampling	Ambient Air Sample
Sampling Location	Near Jetty
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.06.2018 to 30.06.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
04.06.2018	53.8	29.6	7.6	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.06.2018	57.9	31.3	7.7	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
11.06.2018	64.3	34.8	7.8	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.06.2018	67.8	37.4	7.9	13.1	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
18.06.2018	72.6	41.3	8.0	13.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.06.2018	66.9	37.2	7.8	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
25.06.2018	63.2	34.5	7.4	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.06.2018	54.1	29.2	7.4	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB metho d followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification

Dr. T. S. ... D. Env. Sc.

Authorized Signature

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Report no. - CEMC/TDPCL/040718/A5

Issued Date-04.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

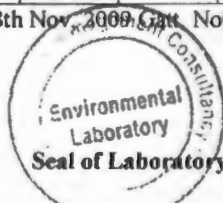
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A5
Nature of Sampling	Ambient Air Sample
Sampling Location	Dosinga Village
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.06.2018 to 30.06.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
04.06.2018	48.6	27.0	7.8	12.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.06.2018	49.9	27.1	7.7	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
11.06.2018	53.2	28.3	7.5	13.0	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.06.2018	54.7	28.2	7.8	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
18.06.2018	55.3	27.9	7.9	13.1	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.06.2018	50.2	28.3	7.6	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
25.06.2018	49.1	27.9	7.5	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.06.2018	46.4	27.2	7.3	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov. 2009, Govt. Notification.

Dr. T. Sahu PhD Env. Sc.

Authorized Signature  
Notes:



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Enlisted in Construction Industry Development Council (CIDC) established by the Planning Commission (Govt. of India)  
MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/040718/A6

Issued Date-04.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A6
Nature of Sampling	Ambient Air Sample
Sampling Location	Bhitarkanika (Eco Sensitive)
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.06.2018 to 30.06.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
04.06.2018	42.1	22.9	6.3	10.1	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
07.06.2018	41.6	22.7	6.5	10.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
11.06.2018	45.3	24.8	6.7	10.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
14.06.2018	43.8	23.6	6.4	10.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
18.06.2018	46.4	25.9	7.0	10.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
21.06.2018	42.1	23.4	6.5	10.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
25.06.2018	40.7	22.1	6.3	10.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
28.06.2018	39.0	21.8	6.3	10.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

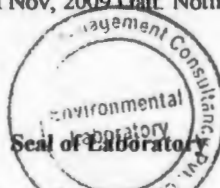
N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. S. B. D. Env. Sc.

Authorized Signatory

Notes: 1. The result given above related to the tested sample, as received. The customer asked for the above test only.

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Report no. - CEMC/TDPCL/040718/N

Issued Date-04.07.2018

## NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Analysis No.	CEMC/TDPCL-D00N1
Nature of Sampling	Noise Sample
Sampling By	Mr. Chandan Kumar
Sampling Date	01.06.2018 to 30.06.2018

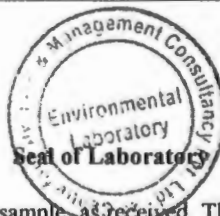
Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
01.06.2018	Near Jetty (I)	69.4	62.1	65.8	64.9	61.8	63.4
05.06.2018	Near BMH-1	70.3	62.8	66.6	64.6	59.3	62.0
08.06.2018	Colony Area (R)	54.1	50.3	52.2	42.9	38.3	40.6
12.06.2018	Kanakaprasad Village (R)	53.8	51.2	52.5	42.6	37.2	39.9
19.06.2018	Dosinga village (R)	54.1	49.8	51.9	43.1	38.5	40.0
21.06.2018	Ecosensitive Zone	48.8	43.1	45.9	40.1	36.9	38.5

\*NL- Noise Level, I- Industrial, R- Residential

## National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit in dB (A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Dr. T. Sanyal, PhD Env. Sc.  
Authorized Signatory  
G Notes: 03-06-2016



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Report no. - CEMC/TDPCL/040718/W1

Issued Date-04.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 08.06.2018 & 21.06.2018

Date of Receiving

: 09.06.2018 & 22.06.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Inlet)

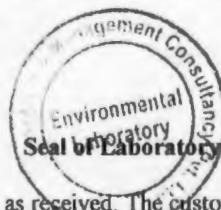
Reference Number

: CEMC-04072018W1

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.52	6.59	6.0-8.5
5	Total Suspended Solids	mg/l	142.7	139.9	1000
6	B.O.D for 3 days @ 27°C	mg/l	220	210	300-350
7	Oil & Grease	mg/l	<5	<5	100
8	COD	mg/l	720	650	--
9	Ammonical Nitrogen	mg/l	5.9	6.2	--
10	Total Nitrogen	mg/l	31.3	30.2	--
11	Faecal Coliform	MPN/100ml	1600	1600	--

Dr. J. J. Ph.D. Env. Sc.  
Authorized Signatory  
Notes: ETT/040718/04072018



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Report no. - CEMC/TDPCL/040718/W2

Issued Date-04.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 08.06.2018 & 21.06.2018

Date of Receiving

: 09.06.2018 & 22.06.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Outlet)

Reference Number

: CEMC-04072018W2

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.31	7.27	6.5-9.0
5	Total Suspended Solids	mg/l	13.9	13.6	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.4	8.0	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	20	18	<50
9	Ammonical Nitrogen	mg/l	0.91	0.87	<5
10	Total Nitrogen	mg/l	4.9	4.7	<10
11	Faecal Coliform	MPN/100ml	25	22	<100

Dr. [Signature] PhD Env. Sc.

Authorized Signatory

Notes:

04.07.2018



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Report no. - CEMC/TDPCL/040718/W3

Issued Date-04.07.2018

## STP TEST REPORT

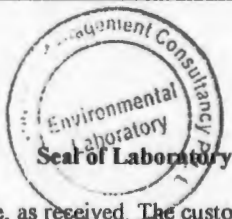
Name & Address of the Customer	: M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work order No.	: 4800026792, dtd-22.07.2017
Sampling by	: Mr. Chandan Kumar
Date of Sampling	: 08.06.2018 & 21.06.2018
Date of Receiving	: 09.06.2018 & 22.06.2018
Sampling & Testing Procedure	: APHA 23 <sup>rd</sup> Edition
Sample Description	: Waste Water
Sample Quantity	: 1.0 Ltr each
Sample Location with Job Code	: STP - 140 KLD (Inlet)
Reference Number	: CEMC-04072018W3

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1st Fortnight	2nd Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.93	7.05	6.0-8.5
5	Total Suspended Solids	mg/l	152.3	137.8	1000
6	B.O.D for 3 days @ 27°C	mg/l	220	240	300-350
7	Oil & Grease	mg/l	7.9	7.1	100
8	COD	mg/l	740	710	--
9	Ammonical Nitrogen	mg/l	7.1	6.7	--
10	Total Nitrogen	mg/l	31.3	28.6	--
11	Faecal Coliform	MPN/100ml	>1600	>1600	--

Dr. T. S. Singh, PhD Env. Sc.

Authorized Signatory  
Notes: 04.07.2018



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Report no. - CEMC/TDPCL/040718/W4

Issued Date-04.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 08.06.2018 & 21.06.2018

Date of Receiving

: 09.06.2018 & 22.06.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Outlet)

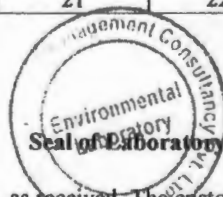
Reference Number

: CEMC-04072018W4

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.43	7.29	6.5-9.0
5	Total Suspended Solids	mg/l	13.1	13.2	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.2	8.0	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	24	28	<50
9	Ammonical Nitrogen	mg/l	0.76	0.72	<5
10	Total Nitrogen	mg/l	5.4	5.2	<10
11	Faecal Coliform	MPN/100ml	21	22	<100

Dr. T. S. S. Ph.D. Env. Sc.  
Authorized Signatory  
Notes: 07/08-2016



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Report no. - CEMC/TDPCL/040718/W

Issued Date-04.07.2018

## SEA WATER ANALYSIS REPORT

Name & Address of the Customer : M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak  
Work order No. : 4800026792, dtd-22.07.2017  
Date of Sampling : 12.06.2018  
Sampling by : Bikash Samantaray & Santosh Mohanty  
Sample Description : Sea Water

## STATION DESCRIPTION

SL. NO.	STATION	Sample Location	GPS COORDINATES
01	STATION-1	Dhamra river mouth	20°47'04.18" N 86°57'32.46" E
02	STATION-2	Dry bulk cargo birth face	20°48'58.35" N 86°58'08.52" E
03	STATION-3	Liquid/Gas cargo birth face	20°50'21.55" N 86°58'25.62" E
04	STATION-4	Along channel at 4 km	20°50'55.28" N 86°59'19.24" E
05	STATION-5	Along channel at 8 km	20°52'48.52" N 87°01'03.46" E
06	STATION-6	Along channel at 12 km	20°55'06.42" N 87°02'18.48" E
07	STATION-7	Dragging dumping site inside sea	20°50'02.48" N 86°58'21.64" E
08	STATION-8	Near Kanika Island	20°49'39.08" N 86°59'04.14" E

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Issued Date-04.07.2018

## SEA WATER ANALYSIS REPORT

WATER ANALYSIS DATA									
Locations		Temp. (°C)	Turbidity (NTU)	Conductivity (µS/cm)	pH	Salinity (ppt)	DO (mg/l)	BOD (mg/l)	COD (mg/l)
Station-1	SW	25	54	10486	7.4	25.64	7.1	3.8	28
	BW	20	60	11185	7.3	26.82	6.4	4.2	33
Station-2	SW	26	48	16258	7.9	26.32	6.7	4.6	38
	BW	20	57	16564	7.2	28.44	7.1	3.2	37
Station-3	SW	27	46	16325	7.7	22.56	7.2	3.6	35
	BW	20	52	16505	7.3	25.96	6.6	2.6	26
Station-4	SW	27	28	15312	7.9	26.4	7.5	3.6	40
	BW	21	48	15490	7.1	27.84	6.3	3.3	32
Station-5	SW	26	26	15865	8.1	27.2	6.6	3.3	38
	BW	21	45	16148	7.4	29.3	6.4	2.9	30
Station-6	SW	26	43	10288	7.8	25.56	7.6	3.8	28
	BW	20	48	10482	7.3	27.28	6.4	3.6	26
Station-7	SW	26	56	14624	7.8	26.48	7.3	3.8	36
	BW	20	64	13088	7.1	28.56	6.8	4.4	34
Station-8	SW	26	42	14986	7.8	24.85	7.1	4.4	48
	BW	21	68	15348	7.2	27.42	6.5	3.2	32

\*SW= Surface Water, BW= Bottom Water

WATER ANALYSIS DATA									
Locations		Copper (mg/l)	Cadmium (mg/l)	Mercury (mg/l)	Phosphate (mg/l)	Sulphate (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	TSS (mg/l)
Station-1	SW	< 0.03	< 0.01	< 0.001	< 0.05	1280	0.2	6.8	248.6
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1567	0.34	11.1	428.6
Station-2	SW	< 0.03	< 0.01	< 0.001	< 0.05	1598	0.08	5.9	312.5
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1768	0.32	14.1	342.6
Station-3	SW	< 0.03	< 0.01	< 0.001	< 0.05	1682	0.1	7.6	298.0
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1796	0.34	14.6	418.0
Station-4	SW	< 0.03	< 0.01	< 0.001	< 0.05	1682.0	0.24	7.6	178.5
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1852.0	0.3	12.8	484.2
Station-5	SW	< 0.03	< 0.01	< 0.001	< 0.05	1690.0	0.18	7.3	228.5
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1868.0	0.31	12.6	476.2
Station-6	SW	< 0.03	< 0.01	< 0.001	< 0.05	1640.0	0.20	5.8	220.0
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1848.0	0.26	13.2	524.0
Station-7	SW	< 0.03	< 0.01	< 0.001	< 0.05	1624	0.22	6.6	236.2
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1756	0.38	14.8	401.5
Station-8	SW	< 0.03	< 0.01	< 0.001	< 0.05	1618	0.14	6.7	342.5
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1844	0.28	11.8	441.6

\*SW= Surface Water, BW= Bottom Water

Dr. T. K. Sahoo, Env. Sc.  
Authorized Signatory  
(GAZETED No. 1003 of 2016)



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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Report no. - CEMC/TDPCL/040718/W

Issued Date-04.07.2018

## SEA WATER ANALYSIS REPORT

WATER ANALYSIS DATA							
Locations		Calcium Hardness (mg/l)	Magnesium Hardness (mg/l)	Total Hardness (mg/l)	Total Dissolved Solids (mg/l)	Ammonical Nitrogen (mg/l)	Total Nitrogen (mg/l)
Station-1	SW	1688.2	846.8	2535.0	5846.4	ND	10.1
	BW	1942.5	886.5	2829.0	6247.2	ND	14.8
Station-2	SW	4088.6	1688.4	5777.0	9242	ND	12.4
	BW	4178.5	1734.5	5913.0	9356	ND	15.6
Station-3	SW	4058.2	1708.8	5767.0	9148.5	ND	13.2
	BW	4214.5	1742.5	5957.0	9188.5	ND	15.8
Station-4	SW	3956.4	1642.6	5599.0	8564.2	ND	12.6
	BW	4012.6	1658.4	5671.0	8608.4	ND	15.2
Station-5	SW	4018.6	1756.4	5775.0	8875.0	ND	12.2
	BW	4156.5	1796.5	5953.0	9041.5	ND	15.9
Station-6	SW	1745.2	742.8	2488.0	5748.5	ND	10.8
	BW	1836.6	756.4	2593.0	5869.0	ND	12.6
Station-7	SW	2045.2	874.8	2920.0	8148.2	ND	10.6
	BW	2282.3	944.7	3227.0	7287.6	ND	14.1
Station-8	SW	3242.3	1142.7	4385.0	8452.4	ND	12.2
	BW	3456.2	1242.8	4699.0	8641.4	ND	14.1

\*SW= Surface Water, BW= Bottom Water

WATER ANALYSIS DATA							
Locations		Total Chromium (mg/l)	Phenolic Compounds (mg/l)	Hexavalent Chromium (mg/l)	Petroleum Hydrocarbon (mg/l)	Chlorinity (‰)	Oil and Grease (mg/l)
Station-1	SW	< 0.05	< 0.001	< 0.05	0.3	11.98	3.8
	BW	< 0.05	< 0.001	< 0.05	ND	13.78	ND
Station-2	SW	< 0.05	< 0.001	< 0.05	0.5	12.24	4.9
	BW	< 0.05	< 0.001	< 0.05	ND	13.48	ND
Station-3	SW	< 0.05	< 0.001	< 0.05	0.8	12.68	5.7
	BW	< 0.05	< 0.001	< 0.05	ND	13.72	ND
Station-4	SW	< 0.05	< 0.001	< 0.05	0.7	13.12	5.1
	BW	< 0.05	< 0.001	< 0.05	ND	14.42	ND
Station-5	SW	< 0.05	< 0.001	< 0.05	0.7	13.56	5.2
	BW	< 0.05	< 0.001	< 0.05	ND	14.15	ND
Station-6	SW	< 0.05	< 0.001	< 0.05	0.6	13.44	5.8
	BW	< 0.05	< 0.001	< 0.05	ND	14.24	ND
Station-7	SW	< 0.05	< 0.001	< 0.05	0.12	12.82	6.4
	BW	< 0.05	< 0.001	< 0.05	ND	13.52	ND
Station-8	SW	< 0.05	< 0.001	< 0.05	0.5	12.64	5.7
	BW	< 0.05	< 0.001	< 0.05	ND	13.98	ND

\*SW= Surface Water, BW= Bottom Water

Dr. T. S. S. Ph.D. Env. Sc.  
Authorized Signatory  
(GAZETTED) 06-06-2016



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## SEA WATER ANALYSIS REPORT

PHYTOPLANKTON MONITORING DATA					
Locations		Total Count/L	No. of Species	Chlorophyll-a (µg/L)	Major Species
Station-1	SW	1762	14	1.8208	<i>Pleurosigma, C.pentagonum, N.striata, Bacillaria</i>
	BW	1514	09	1.4022	<i>Pleurosigma, N.longisigma, C.pentagonum, N.striata</i>
Station-2	SW	4604	19	1.8231	<i>C.pentagonum, Skeletonema, N.longisigma, Bacillaria, N.striata</i>
	BW	3911	08	1.7804	<i>Podosira, C.pentagonum, N.striata, Pleurosigma</i>
Station-3	SW	7618	16	2.2128	<i>C.pentagonum, N.striata, C.furca, Ceratium, N.longisigma</i>
	BW	6940	10	2.0024	<i>C.pentagonum, Chaetoceros, Bacillaria</i>
Station-4	SW	3522	16	1.7416	<i>Podosira, Bacillaria, N.striata, Pleurosigma</i>
	BW	3149	09	1.4212	<i>C.furca, Pleurosigma, C.pentagonum, Bacillaria, Podosira</i>
Station-5	SW	1243	10	0.9832	<i>Bacillaria, Chaetoceros, Podosira, C.furca</i>
	BW	945	05	0.7272	<i>N.longisigma, Podosira, Ceratium, C.furca, C.pentagonum</i>
Station-6	SW	1508	14	1.4832	<i>C.pentagonum, Bacillaria, Podosira, N.striata</i>
	BW	1231	07	1.1743	<i>C.pentagonum, Chaetoceros, Bacillaria, N.striata</i>
Station-7	SW	1762	18	1.5627	<i>Bacillaria, Chaetoceros, Ceratium,</i>
	BW	1502	11	1.2631	<i>C.pentagonum, Bacillaria, Podosira, Skeletonema, C.furca</i>
Station-8	SW	1236	15	0.9902	<i>C.pentagonum, N.striata, C.furca, N.striata, N.longisigma</i>
	BW	1002	08	0.8642	<i>C.pentagonum, Pleurosigma, N.longisigma, Bacillaria, Chaetoceros</i>

\*SW= Surface Water, BW= Bottom Water.

ZOOPLANKTON MONITORING DATA				
Locations		Total Count/L	No. of Species	Major Species
Station-1	SW	1412	22	<i>Ostracoda, Protozoa, Copepod, Rotifera</i>
	BW	1243	13	<i>Protozoa, Rotifera, Copepod, Nematoda</i>
Station-2	SW	1396	18	<i>Cladocera, Crustacean Larvae, Protozoa, Nematoda</i>
	BW	1124	07	<i>Protozoa, Nematoda, Cladocera, Copepod</i>
Station-3	SW	2725	26	<i>Anostraca, Cladocera, Cladocera, Rotifera</i>
	BW	2356	14	<i>Rotifera, Protozoa, Nematoda, Crustacean Larvae</i>
Station-4	SW	2274	21	<i>Cladocera, Copepod, Rotifera, Ostracoda</i>
	BW	2014	12	<i>Ostracoda, Protozoa, Copepod, Rotifera</i>
Station-5	SW	1496	16	<i>Cladocera, Nematoda, Cladocera</i>
	BW	1123	09	<i>Nematoda, Copepod, Rotifera, Ostracoda</i>
Station-6	SW	1296	17	<i>Protozoa, Rotifera, Nematoda, Ostracoda</i>
	BW	1123	11	<i>Rotifera, Anostraca, Cladocera, Nematoda</i>
Station-7	SW	1147	12	<i>Crustacean Larvae, Protozoa, Nematoda</i>
	BW	943	06	<i>Rotifera, Nematoda, Cladocera, Ostracoda</i>
Station-8	SW	1199	19	<i>Ostracoda, Rotifera, Protozoa, Nematoda, Cladocera</i>
	BW	1042	12	<i>Cladocera, Nematoda, Rotifera, Ostracoda</i>

\*SW= Surface Water, BW= Bottom Water

DIT - 11/11/2016

Authorized Signatory: *[Signature]* 08-2016



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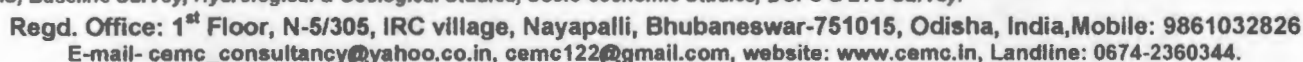
**Issued Date-04.07.2018**

## SEA WATER ANALYSIS REPORT

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## SEA WATER ANALYSIS REPORT

PRIMARY PRODUCTIVITY MONITORING DATA			
Locations		Gross Primary Productivity (mgC/ L/ day)	Net Primary Productivity (mgC/ L/ day)
Station-1	SW	2.6	1.6
	BW	1.9	1.3
Station-2	SW	2.8	1.7
	BW	2.6	1.2
Station-3	SW	2.2	1.8
	BW	1.7	1.7
Station-4	SW	2.5	2.0
	BW	2.0	1.6
Station-5	SW	2.6	1.7
	BW	1.9	1.4
Station-6	SW	2.1	1.7
	BW	1.8	1.5
Station-7	SW	2.2	1.9
	BW	2.0	1.4
Station-8	SW	1.8	1.6
	BW	1.4	1.3

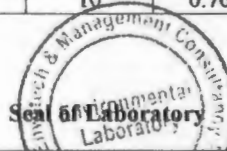
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PHYTOBENTHOS MONITORING DATA						
Locations		Fungus (CFU/1ml dry wt.)	Total Count/ 50g wet sediment	No. of Species	Diversity Index	Major Species
Station-1	SW	2792	245	9	0.9771	<i>N. longsigma</i>
	BW	2772	262	12	0.7799	<i>Podosira</i>
Station-2	SW	3892	272	9	0.6950	<i>Podosira, N. longsigma</i>
	BW	3789	201	6	0.4972	<i>Podosira, N. longsigma, Ditylum</i>
Station-3	SW	2482	176	10	0.6824	<i>Ditylum</i>
	BW	2371	144	7	0.5523	<i>Podosira, N. longsigma</i>
Station-4	SW	3922	245	11	0.6822	<i>Podosira</i>
	BW	3926	212	8	0.6242	<i>Ditylum</i>
Station-5	SW	2021	224	9	0.9742	<i>Podosira</i>
	BW	1072	384	5	0.9463	<i>Podosira</i>
Station-6	SW	1824	451	9	0.9828	<i>Podosira, Ditylum</i>
	BW	1702	312	6	0.9733	<i>Podosira, Ditylum</i>
Station-7	SW	3022	347	5	0.6472	<i>Podosira, N. longsigma, Ditylum</i>
	BW	2991	286	8	0.6873	<i>Podosira, N. longsigma, Ditylum</i>
Station-8	SW	3882	672	13	0.8656	<i>N. longsigma</i>
	BW	2318	714	10	0.7662	<i>Ditylum</i>

\*SW= Surface Water, BW= Bottom Water

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GAZETTE (2016)



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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## SEA WATER ANALYSIS REPORT

TOTAL FAUNA MONITORING DATA				
Locations		Name of Phylum, Class and Number of individuals encountered	Total number of species Encountered	Total Fauna per m <sup>3</sup>
Station-1	SW	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-3	32	102
	BW	1. Phylum- Arthropoda Class- Malacostraca-09 2. Phylum- Annelida Class- Polychaeta-29	23	172
Station-2	SW	1. Phylum- Annelida Class- Polychaeta-11 2. Phylum- Arthropoda Class- Copepoda-18	14	144
	BW	1. Phylum- Annelida Class- Polychaeta-15 2. Phylum- Arthropoda Class- Copepoda-19	18	152
Station-3	SW	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-27 3. Phylum- Mollusca Class- Gastropoda-16 Class- Pelecypoda-14	102	921
	BW	1. Phylum- Arthropoda Class- Malacostraca-29 2. Phylum- Annelida Class- Polychaeta-14 3. Phylum- Mollusca Class- Gastropoda-22 Class- Pelecypoda-02	98	886
Station-4	SW	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Gastropoda-15 Class- Pelecypoda-11 Class- Bivalvia-03	33	412
	BW	1. Phylum- Annelida Class- Polychaeta-24 2. Phylum- Mollusca Class- Gastropoda-32 Class- Pelecypoda-27 Class- Bivalvia-19	52	625
Station-5	SW	1. Phylum- Arthropoda Class- Amphipoda-33 2. Phylum- Annelida Class- Polychaeta-20	44	956

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		3. Phylum- Mollusca Class- Pelecypoda-19 Class- Bivalvia-10 Class- Gastropoda-9		
	BW	1. Phylum- Anthropoda Class- Amphipoda-10 2. Phylum- Annelida Class- Polychaeta- 11 3. Phylum- Mollusca Class- Pelecypoda-9 Class- Bivalvia-17 Class- Gastropoda-16	62	1018
Station-6	SW	1. Phylum- Annelida Class- Polychaeta-49 2. Phylum- Mollusca Class- Bivalvia-14	41	396
	BW	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Bivalvia-9	22	456
Station-7	SW	1. Phylum- Annelida Class- Polychaeta-20 2. Phylum- Mollusca Class- Gastropoda-14 Class- Bivalvia-16 Class- Scaphopoda-7	68	574
	BW	1. Phylum- Annelida Class- Polychaeta-19 2. Phylum- Mollusca Class- Gastropoda-15 Class- Bivalvia-21 Class- Scaphopoda-24	18	426
Station-8	SW	1. Phylum- Annelida Class- Polychaeta-29 2. Phylum- Mollusca Class- Bivalvia-16	38	348
	BW	1. Phylum- Annelida Class- Polychaeta-25 2. Phylum- Mollusca Class- Gastropoda-12 Class- Pelecypoda-6	22	416

\*SW= Surface Water, BW= Bottom Water

Authorized Signatory  
GAZETTED NO. 1352 D. 30-06-20161



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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E-mail- cemc\_consultancy@yahoo.co.in, cemc122@gmail.com, website: www.cemc.in, Landline: 0674-2360344.

Laboratory At: Plot No. 800/1274, Johal, Pahal, Bhubaneswar-752101,  
E-mail: cemclab@yahoo.in, Mobile. 7752014842





# CENTRE FOR ENVOTECH AND MANAGEMENT CONSULTANCY PVT. LTD.

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/040718/Sed

Issued Date-04.07.2018

## SEDIMENT ANALYSIS REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Date of Sampling

: 12.06.2018

Sampling by

: Bikash Samantaray & Santosh Mohanty

Sample Description

: Sediment

## SEA SEDIMENT ANALYSIS REPORT

### SEDIMENT ANALYSIS DATA

Locations	pH	Organic Matter	Moisture Content (%)	Conductivity (mS/cm)	Iron (%)	Sodium (%)	Copper (mg/kg)	Nickel (mg/Kg)	Zinc (mg/kg)
Station-1	6.6	3.9	5.8	5.16	3.9	23.24	< 5	< 1	< 3
Station-2	6.9	4.2	7.2	5.24	3.5	22.98	< 5	< 1	< 3
Station-3	6.8	4.5	7.8	5.15	3.7	21.42	< 5	< 1	< 3
Station-4	6.6	6.2	7.6	5.21	3.2	17.14	< 5	< 1	< 3
Station-5	6.5	6.4	7.2	5.32	3.1	17.22	< 5	< 1	< 3
Station-6	6.5	6.3	7.4	5.29	3.2	17.18	< 5	< 1	< 3
Station-7	6.9	5.1	6.9	2.88	3.4	15.75	< 5	< 1	< 3
Station-8	7.1	4.6	7.2	3.42	3.9	16.86	< 5	< 1	< 3

### SEDIMENT ANALYSIS DATA

Locations	Manganese (mg/kg)	Lead (mg/kg)	Boron (mg/kg)	Phosphate (mg/kg)	Chloride (mg/kg)	Sulphate (mg/kg)	Sulphide (mg/kg)	Pesticide (mg/kg)	Potassium (mg/kg)
Station-1	< 1	< 5	< 0.5	< 0.5	788	1842.5	ND	ND	1.42
Station-2	< 1	< 5	< 0.5	< 0.5	768	1782.8	ND	ND	1.28
Station-3	< 1	< 5	< 0.5	< 0.5	882	1844.1	ND	ND	0.88
Station-4	< 1	< 5	< 0.5	< 0.5	915	1882.5	ND	ND	0.91
Station-5	< 1	< 5	< 0.5	< 0.5	886	1756.8	ND	ND	0.89
Station-6	< 1	< 5	< 0.5	< 0.5	864	1785.6	ND	ND	0.85
Station-7	< 1	< 5	< 0.5	< 0.5	968	1808.5	ND	ND	0.88
Station-8	< 1	< 5	< 0.5	< 0.5	889	1842.5	ND	ND	0.84

### SEDIMENT ANALYSIS DATA

Locations	Total Chromium (mg/kg)	Petroleum Hydrocarbon (mg/kg)	Aluminium (mg/kg)	Total Nitrogen (mg/kg)	Organic Nitrogen (mg/kg)	Phosphorus (mg/kg)	Texture (%)		
							Sand	Silt	Clay
Station-1	< 1	0.28	< 0.1	4.2	1.4	5.2	0.04	18.6	81.36
Station-2	< 1	0.24	< 0.1	4.8	1.8	4.8	0.32	27.8	71.88
Station-3	< 1	0.28	< 0.1	4.1	1.6	5.2	0.59	46.6	52.81
Station-4	< 1	ND	< 0.1	3.9	1.4	4.8	0.1	18.4	81.5
Station-5	< 1	ND	< 0.1	4.1	1.6	4.2	0.64	27.4	71.96
Station-6	< 1	ND	< 0.1	3.8	1.2	4.1	1.24	34.56	64.2
Station-7	< 1	ND	< 0.1	4.3	2.3	4.5	0.12	17.84	82.04
Station-8	< 1	ND	< 0.1	4.5	2.4	4.4	1.56	26.42	72.02

D. T. S. D. Rev. Sc.  
Authorized Signature

Seal of Laboratory

Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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Report no. - CEMC/TDPCL/040718/Sed

Issued Date-04.07.2018

## SEA SEDIMENT ANALYSIS REPORT

PHYTOBENTHOS MONITORING DATA					
Locations	Fungus (CFU/1 g dry wt.)	Total Count/ 50g wet sediment	No. of Species	Diversity Index	Major Species
Station-1	3082	282	10	1.0923	<i>Podosira, Ditylum</i>
Station-2	1112	426	11	0.4282	<i>Podosira, N. longisigma</i>
Station-3	7010	402	12	0.9892	<i>Podosira</i>
Station-4	4982	512	9	0.7644	<i>Podosira, N. longisigma</i>
Station-5	1828	289	9	0.9716	<i>Podosira, N. longisigma</i>
Station-6	2939	212	10	0.3881	<i>Podosira, N. longisigma, Ditylum</i>
Station-7	2769	511	9	0.6845	<i>N. longisigma, Ditylum</i>
Station-8	1344	401	7	0.7421	<i>Podosira, Ditylum</i>

TOTAL FAUNA MONITORING DATA			
Locations	Name of Phylum, Class and Number of individuals encountered	Total number of species Encountered	Total Fauna per m <sup>3</sup>
Station-1	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-41	33	192
Station-2	1. Phylum- Annelida Class- Polychaeta-19 2. Phylum- Arthropoda Class- Copepoda-9	144	162
Station-3	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-14 3. Phylum- Mollusca Class- Gastropoda-9 Class- Pelecypoda-41	122	786
Station-4	1. Phylum- Annelida Class- Polychaeta-25 2. Phylum- Mollusca Class- Gastropoda-6 Class- Pelecypoda-7 Class- Bivalvia-12	82	486
Station-5	1. Phylum- Arthropoda Class- Amphipoda-25 2. Phylum- Annelida Class- Polychaeta-13 1. Phylum- Mollusca Class- Pelecypoda-18 Class- Bivalvia-7 Class- Gastropoda-22	76	912

Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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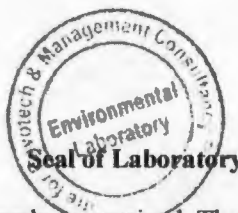
Station-6	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Bivalvia-9	52	701
Station-7	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Gastropoda-9 Class- Bivalvia-9 Class- Scaphopoda-22	32	412
Station-8	1. Phylum- Annelida Class- Polychaeta-41 2. Phylum- Mollusca Class- Gastropoda-11 Class- Bivalvia-9 Class- Pelecypoda-7	14	312

Dr. T. K. S. D. Env. Sc.

Authorized Signatory

Notes:

- The result given above related to the tested sample, as received. The customer asked for the above test only.
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Report no. - CEMC/TDPCL/040718/St1

Issued Date-04.07.2018

## DG STACK ANALYSIS REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018St1
Nature of Sampling	DG Stack Monitoring
Sampling Location	GSS DG Set (200KVA) 160KW-hr
Sampling By	Mr. B.K.Samantray
Sampling Date	11.06.2018

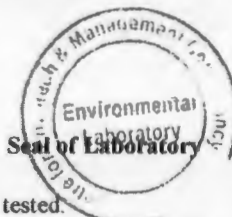
## ANALYSIS RESULT

Sl. No.	Parameters	Result	Standard as per MoEF & CC in g/kW-hr (2014)	Method of Testing
1.	Flue Gas Temp.(K)	477	--	IS:11255 (Part-3)
2.	Average Flue Gas Velocity(m/s)	9.7	--	IS:11255 (Part-3)
3.	PM (g/kwh)	0.11	0.2	IS:11255 (Part-1)
4.	SO <sub>2</sub> (g/kwh)	0	--	IS:11255 (Part-2)
5.	NO <sub>x</sub> +HC (g/kwh)	3.1	4.0	IS:11255 (Part-7)
6.	CO (g/kwh)	1.4	3.5	IS : 13270

$H = h + 0.2x (KVA)^{1/2}$  ( $H$  = Total height of stack in metre,  $h$  = Height of the building in metres where the generator set is installed,  $KVA$  = Total generator capacity of the set in KVA)

Dr. T. S. Choudhury, Env. Sc.

Authorized Signatory  
Notes: 03-06-2016



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**Issued Date-04.07.2018**

## DG STACK ANALYSIS REPORT

<b>Client Name &amp; Address</b>	<b>M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak</b>
<b>Work Order No.</b>	<b>4800026792, dtd-22.07.2017</b>
<b>Reference No.</b>	<b>CEMC-04072018St2</b>
<b>Nature of Sampling</b>	<b>DG Stack Monitoring</b>
<b>Sampling Location</b>	<b>Kalibhanja Guest House DG Set (63KVA) 50KW-hr</b>
<b>Sampling By</b>	<b>Mr. B.K.Samantray</b>
<b>Sampling Date</b>	<b>11.06.2018</b>

## ANALYSIS RESULT

Sl. No.	Parameters	Result	Standard as per MoEF & CC in g/kW-hr (2014)	Method of Testing
1.	Flue Gas Temp.(K)	429	--	IS:11255 (Part-3)
2.	Average Flue Gas Velocity(m/s)	9.1	--	IS:11255 (Part-3)
3.	PM (g/kwh)	0.14	0.3	IS:11255 (Part-1)
4.	SO <sub>2</sub> (g/kwh)	0	--	IS:11255 (Part-2)
5.	NO <sub>x</sub> +HC (g/kwh)	2.6	4.7	IS:11255 (Part-7)
6.	CO (g/kwh)	1.3	3.5	IS : 13270

$H = h + 0.2x \text{ (KVA)}^{1/2}$  ( $H$  = Total height of stack in metre,  $h$  = Height of the building in metres where the generator set is installed,  $KVA$  = Total generator capacity of the set in KVA)

Dr. J. S. P. D. Env. Sc.

Authorized Signatory

Notes: 4/13/16 01-03-06-2016



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Report no. - CEMC/TDPCL/040718/St3

Issued Date-04.07.2018

## DG STACK ANALYSIS REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018St3
Nature of Sampling	DG Stack Monitoring
Sampling Location	Township DG Set (180KVA) 144KW-hr
Sampling By	Mr. B.K.Samantray
Sampling Date	11.06.2018

## ANALYSIS RESULT

Sl. No.	Parameters	Result	Standard as per MoEF & CC (2014)	Method of Testing
1.	Flue Gas Temp.(K)	471	--	IS:11255 (Part-3)
2.	Average Flue Gas Velocity(m/s)	8.9	--	IS:11255 (Part-3)
3.	PM (g/kwh)	0.11	0.2	IS:11255 (Part-1)
4.	SO <sub>2</sub> (g/kwh)	0	--	IS:11255 (Part-2)
5.	NO <sub>x</sub> +HC (g/kwh)	2.9	4.0	IS:11255 (Part-7)
6.	CO (g/kwh)	1.3	3.5	IS : 13270

$H = h + 0.2x (KVA)^{1/2}$  ( $H$  = Total height of stack in metre,  $h$  = Height of the building in metres where the generator set is installed,  $KVA$  = Total generator capacity of the set in KVA)

Dr. T. K. S. PhD Env. Sc.  
Authorized Signatory  
Notes: 09-06-2016



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Report no. - CEMC/TDPCL/040718/St4

Issued Date-04.07.2018

## DG STACK ANALYSIS REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018St4
Nature of Sampling	DG Stack Monitoring
Sampling Location	MCC-1 ( 160KVA) 128 KW-hr
Sampling By	Mr. B.K.Samantray
Sampling Date	11.06.2018

## ANALYSIS RESULT

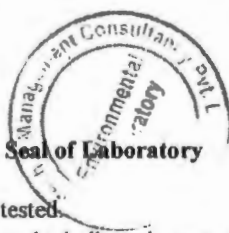
Sl. No.	Parameters	Result	Standard as per MoEF & CC (2014)	Method of Testing
1.	Flue Gas Temp.(K)	429	--	IS:11255 (Part-3)
2.	Average Flue Gas Velocity(m/s)	8.3	--	IS:11255 (Part-3)
3.	PM (g/kwh)	0.09	0.2	IS:11255 (Part-1)
4.	SO <sub>2</sub> (g/kwh)	0	--	IS:11255 (Part-2)
5.	NO <sub>x</sub> +HC (g/kwh)	2.8	4.0	IS:11255 (Part-7)
6.	CO (g/kwh)	1.4	3.5	IS : 13270

$H = h + 0.2x (KVA)^{1/2}$  ( $H$  = Total height of stack in metre,  $h$  = Height of the building in metres where the generator set is installed,  $KVA$  = Total generator capacity of the set in KVA)

Authorized Signatory

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**Report no. - CEMC/TDPCL/040718/St5**

**Issued Date-04.07.2018**

<b>Client Name &amp; Address</b>	<b>M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak</b>
<b>Work Order No.</b>	<b>4800026792, dtd-22.07.2017</b>
<b>Reference No.</b>	<b>CEMC-04072018St5</b>
<b>Nature of Sampling</b>	<b>DG Stack Monitoring</b>
<b>Sampling Location</b>	<b>PSS DG Set (160KVA) 128 KW-hr</b>
<b>Sampling By</b>	<b>Mr. B.K.Samantray</b>
<b>Sampling Date</b>	<b>11.06.2018</b>

Sl. No.	Parameters	Result	Standard as per MoEF & CC (2014)	Method of Testing
1.	Flue Gas Temp.(K)	443	--	IS:11255 (Part-3)
2.	Average Flue Gas Velocity(m/s)	8.9	--	IS:11255 (Part-3)
3.	PM (g/kwh)	0.12	0.2	IS:11255 (Part-1)
4.	SO <sub>2</sub> (g/kwh)	0	--	IS:11255 (Part-2)
5.	NO <sub>x</sub> +HC (g/kwh)	3.2	4.0	IS:11255 (Part-7)
6.	CO (g/kwh)	1.3	3.5	IS : 13270

Dr. K. J. ... B.Sc.

**Authorized Signatory**

Notes: 47ET (11-11-18) (11-06-2016)

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/040718/St6

Issued Date-04.07.2018

## DG STACK ANALYSIS REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018St6
Nature of Sampling	DG Stack Monitoring
Sampling Location	MCC-4 (160KVA) 128 KW-hr
Sampling By	Mr. B.K.Samantray
Sampling Date	11.06.2018

## ANALYSIS RESULT

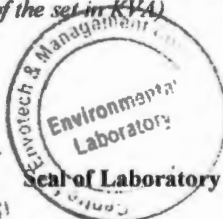
Sl. No.	Parameters	Result	Standard as per MoEF& CC (2014)	Method of Testing
1.	Flue Gas Temp.(K)	464	--	IS:11255 (Part-3)
2.	Average Flue Gas Velocity(m/s)	9.2	--	IS:11255 (Part-3)
3.	PM (g/kwh)	0.13	0.2	IS:11255 (Part-1)
4.	SO <sub>2</sub> (g/kwh)	0	--	IS:11255 (Part-2)
5.	NO <sub>x</sub> +HC (g/kwh)	2.8	4.0	IS:11255 (Part-7)
6.	CO (g/kwh)	1.5	3.5	IS : 13270

$H = h + 0.2x (KVA)^{1/2}$  ( $H$  = Total height of stack in metre,  $h$  = Height of the building in metres where the generator set is installed,  $KVA$  = Total generator capacity of the set in KVA)

Dr. P. K. S. Ph.D. Env. Sc.

Authorized Signatory

Notes: GAZETTE NO. D-03-06-2016



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Report no. - CEMC/TDPCL/040718/N

Issued Date-04.07.2018

## NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Analysis No.	CEMC/TDPCL-D00N
Nature of Sampling	Noise Sample
Sampling By	Mr. B.K.Samantray
Monitoring Date	11.06.2018

Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
11.06.2018	GSS DG Set (200KVA)	73.9	71.8	72.9	68.7	66.9	67.8
11.06.2018	Kalibhanja Guest House DG Set (63KVA)	74.1	70.3	72.2	69.6	65.2	67.4
11.06.2018	Township DG Set (180KVA)	73.8	70.9	72.4	69.2	62.8	66.0
11.06.2018	MCC-1 (160KVA)	74.2	71.6	72.9	69.8	66.1	67.9
11.06.2018	PSS DG Set (160KVA)	73.9	71.3	72.6	68.7	65.5	67.1
11.06.2018	MCC-4 DG Set (160KVA)	74.4	71.8	73.1	69.6	67.2	68.4

\*NL- Noise Level, I- Industrial, R- Residential

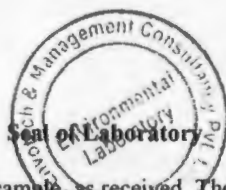
## National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit in dB (A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Dr. T. J. ... Env. Sc.

Authorized Signatory

Notarized by ... 06.06.2018



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Report no. - CEMC/TDPCL/310718/A1

Issued Date-31.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

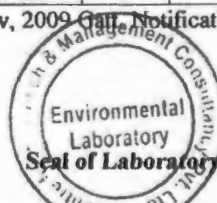
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-31072018A1
Nature of Sampling	Ambient Air Sample
Sampling Location	Colony Area
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.07.2018 to 19.07.2018

## ANALYSIS RESULT

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NOx ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
02.07.2018	49.7	26.9	7.5	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.07.2018	51.2	27.5	7.7	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.07.2018	50.4	27.2	7.7	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.07.2018	51.3	27.7	7.8	12.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.07.2018	49.4	26.7	7.4	12.5	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.07.2018	50.1	26.8	7.2	12.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Govt. Notification.

Authorized Signatory  
Notes: 03-06-2016



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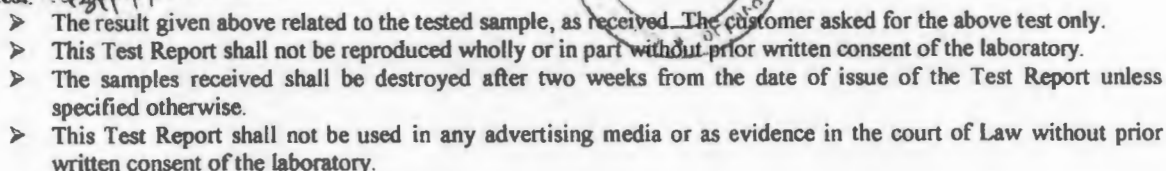
**Issued Date-31.07.2018**

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.07.2018	50.2	27.4	7.5	12.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.07.2018	49.6	27.1	7.3	11.8	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.07.2018	50.9	27.9	7.6	12.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.07.2018	51.1	28.2	7.7	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.07.2018	50.4	27.8	7.5	12.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.07.2018	48.6	26.7	7.3	11.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
<b>NAAQ* Standard</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>	<b>4</b>	<b>400</b>	<b>100</b>	<b>1.0</b>	<b>20</b>	<b>6</b>	<b>5</b>	<b>1</b>
<b>Methods of Analysis</b>	<b>IS: 5182 (Part-23)</b>	<b>Gravimetric Method as per CPCB method</b>	<b>IS: 5182 (Part-2)</b>	<b>IS: 5182 (Part-6)</b>	<b>IS: 5182 (Part-10)</b>	<b>Indophen ols Blue Method followed by CPCB</b>	<b>IS: 5182 (Part-9)</b>	<b>IS: 5182 (Part- 22)</b>	<b>As per CPCB method followe d by AAS</b>	<b>As per CPCB method followe d by AAS</b>	<b>IS: 5182 (Part-11)</b>	<b>IS: 5182 (Part- 12)</b>

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18<sup>th</sup> Nov, 2009 Gatt. Notification.

Authorized Signatory  
Notes: No. 1357, Dated 03-06-2016



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Report no. - CEMC/TDPCL/310718/A3

Issued Date-31.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-04072018A3
Nature of Sampling	Ambient Air Sample
Sampling Location	Near BMH
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.07.2018 to 19.07.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.07.2018	51.6	27.5	7.4	12.3	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.07.2018	50.2	26.9	7.3	12.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.07.2018	51.9	27.8	7.6	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.07.2018	49.4	26.7	7.3	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.07.2018	51.8	27.6	7.3	12.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.07.2018	49.2	27.2	7.2	12.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part- 10)	Indophe nol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

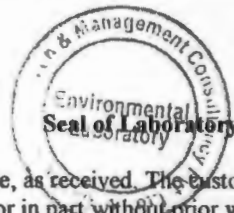
D.T. 31/07/18 Env. Sc.

Authorized Signatory

Notes:

GAZETED 13/07/2018 03-06-2016

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Report no. - CEMC/TDPCL/310718/A4

Issued Date-31.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

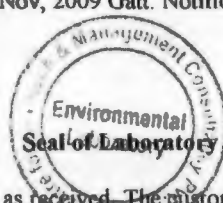
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-31072018A4
Nature of Sampling	Ambient Air Sample
Sampling Location	Near Jetty
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.07.2018 to 19.07.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
02.07.2018	54.9	32.1	7.8	12.9	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.07.2018	52.2	30.8	7.6	12.6	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.07.2018	50.7	29.5	7.4	12.5	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.07.2018	51.8	30.2	7.5	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.07.2018	50.4	29.6	7.4	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.07.2018	53.9	32.0	7.9	13.0	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB metho d followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification

Dr. T. S. P. D. Env. Sc.

Authorized Signature  
GAZENotes: 133/11/05-06-2016



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Report no. - CEMC/TDPCL/310718/A5

Issued Date-31.07.2018

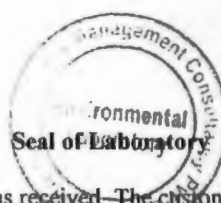
## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-31072018A5
Nature of Sampling	Ambient Air Sample
Sampling Location	Dosinga Village
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.07.2018 to 19.07.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
02.07.2018	50.1	27.2	7.7	12.2	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.07.2018	51.6	27.9	7.9	12.8	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.07.2018	49.5	26.7	7.5	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.07.2018	51.3	27.7	7.6	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.07.2018	50.4	27.5	7.7	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.07.2018	49.1	26.8	7.5	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. J. K. Singh  
Authorized Signatory  
Date: 01-03-2016



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Report no. - CEMC/TDPCL/310718/A6

Issued Date-31.07.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Reference No.	CEMC-31072018A6
Nature of Sampling	Ambient Air Sample
Sampling Location	Bhitarkanika (Eco Sensitive)
Sampling By	Mr. Chandan Kumar
Sampling Duration	01.07.2018 to 19.07.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
02.07.2018	41.3	22.1	6.2	9.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
05.07.2018	40.2	21.8	6.1	9.8	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
09.07.2018	41.8	22.4	6.3	10.1	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
12.07.2018	40.5	21.9	6.2	10.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.07.2018	39.7	21.4	6.1	9.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
19.07.2018	39.5	21.2	6.2	9.8	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

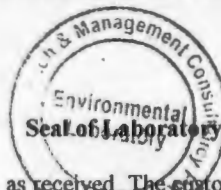
N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. S. S. D. Env. Sc.

Authorized Signatory

Notes: No. 1551, Dt-03-06-2016

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Report no. - CEMC/TDPCL/310718/N

Issued Date-31.07.2018

## NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800026792, dtd-22.07.2017
Analysis No.	CEMC/TDPCL-D00N1
Nature of Sampling	Noise Sample
Sampling By	Mr. Chandan Kumar
Sampling Date	01.07.2018 to 19.07.2018

Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
03.07.2018	Near Jetty (I)	68.9	61.7	65.3	64.2	60.6	62.4
06.07.2018	Near BMH-I	69.4	62.2	65.8	63.8	58.4	61.1
10.07.2018	Colony Area (R)	53.7	49.5	51.6	42.3	38.1	40.2
13.07.2018	Kanakaprasad Village (R)	54.1	50.8	52.4	42.9	37.8	40.4
17.07.2018	Dosinga village (R)	54.2	50.6	52.4	43.7	37.9	40.8
18.07.2018	Ecosensitive Zone(S)	49.2	42.8	46.0	41.2	37.4	39.3

\*NL- Noise Level, I- Industrial, R- Residential

## National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit in dB (A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Dr. T. S. Sahoo, Env. Sc.

Authorized Signatory

Notes: (GAZETTE NO-1357 dt-03-06-2016)



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Report no. - CEMC/TDPCL/310718/W1

Issued Date 31.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 04.07.2018 & 17.07.2018

Date of Receiving

: 05.07.2018 & 18.07.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Inlet)

Reference Number

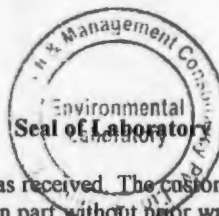
: CEMC-31072018W1

## STP INLET ANALYSIS RESULT

SL No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.41	6.47	6.0-8.5
5	Total Suspended Solids	mg/l	137.2	134.5	1000
6	B.O.D for 3 days @ 27°C	mg/l	210	190	300-350
7	Oil & Grease	mg/l	<5	<5	100
8	COD	mg/l	690	630	--
9	Ammonical Nitrogen	mg/l	5.1	5.7	--
10	Total Nitrogen	mg/l	28.6	27.1	--
11	Faecal Coliform	MPN/100ml	1600	1600	--

Dr. T. Sahu, P.D. Env. Sc.

Authorized Signature  
GAZETTE NO-1354-DT-03-06-2016



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Report no. - CEMC/TDPCL310718/W2

Issued Date-31.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 04.07.2018 & 17.07.2018

Date of Receiving

: 05.07.2018 & 18.07.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Outlet)

Reference Number

: CEMC-31072018W2

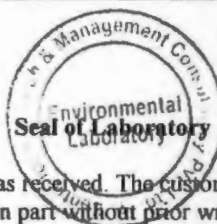
## STP OUTLET ANALYSIS RESULT

SL No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.43	7.31	6.5-9.0
5	Total Suspended Solids	mg/l	12.6	12.2	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.0	7.8	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	16	14	<50
9	Ammonical Nitrogen	mg/l	0.84	0.76	<5
10	Total Nitrogen	mg/l	4.2	3.8	<10
11	Faecal Coliform	MPN/100ml	22	18	<100

Dr. T. Sabu, Ph.D. Env. Sc.

Authorized Signature

GATEWAY NO-13510-03-06-2016



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Report no. - CEMC/TDPCL/310718/W3

Issued Date-31.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 04.07.2018 & 17.07.2018

Date of Receiving

: 05.07.2018 & 18.07.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Inlet)

Reference Number

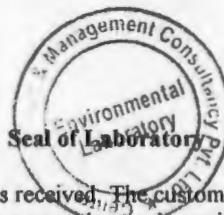
: CEMC31072018W3

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1st Fortnight	2nd Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.81	6.93	6.0-8.5
5	Total Suspended Solids	mg/l	139.7	131.2	1000
6	B.O.D for 3 days @ 27°C	mg/l	230	220	300-350
7	Oil & Grease	mg/l	8.2	6.9	100
8	COD	mg/l	760	690	--
9	Ammonical Nitrogen	mg/l	6.8	6.5	--
10	Total Nitrogen	mg/l	32.7	29.1	--
11	Faecal Coliform	MPN/100ml	>1600	>1600	--

Dr. T. Sahu, Ph.D. Env. Sc.

Authorized Signatory  
GATE NO. 511 OF 05-06-2016



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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/310718/W4

Issued Date-31.07.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800026792, dtd-22.07.2017

Sampling by

: Mr. Chandan Kumar

Date of Sampling

: 04.07.2018 & 17.07.2018

Date of Receiving

: 05.07.2018 & 18.07.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Outlet)

Reference Number

: CEMC-31072018W4

## STP OUTLET ANALYSIS RESULT

SL No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.52	7.46	6.5-9.0
5	Total Suspended Solids	mg/l	13.4	12.9	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.4	8.0	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	22	20	<50
9	Ammonical Nitrogen	mg/l	0.68	0.74	<5
10	Total Nitrogen	mg/l	5.6	5.3	<10
11	Faecal Coliform	MPN/100ml	26	24	<100

Dr. T. Sanku, Env. Sc.

Authorized Signatory

GAZETED NO-13311/03-06-2016



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Report no. - CEMC/TDPCL/040918/A2

Issued Date-04.09.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4900035134, dtd-30.07.2018
Reference No.	CEMC-04092018A2
Nature of Sampling	Ambient Air Sample
Sampling Location	Kanakaprasad Village
Sampling By	Mr. P. Anand Dora
Sampling Duration	01.08.2018 to 31.08.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
13.08.2018	48.3	26.9	7.4	12.3	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.08.2018	49.6	27.6	7.3	12.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.08.2018	47.9	26.7	7.5	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.08.2018	51.9	29.1	7.3	12.6	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.08.2018	46.8	26.2	7.6	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.08.2018	49.8	27.9	7.4	12.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophen ols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B. \*NAAQ- National Ambient Air Quality Standard as per 18<sup>th</sup> Nov, 2009 Gatt. Notification.

Dr. T. S. ... Env. Sc  
Authorized Signatory

Notes: (GAZETTE NOTIFIED Dt-03-06-2016)

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Report no. - CEMC/TDPCL/040918/A3

Issued Date-04.09.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04092018A3
Nature of Sampling	Ambient Air Sample
Sampling Location	Near BMH
Sampling By	Mr. P. Anand Dora
Sampling Duration	01.08.2018 to 31.08.2018

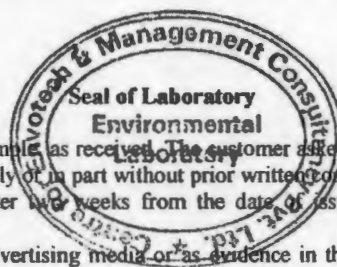
Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
13.08.2018	54.8	30.1	7.9	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.08.2018	53.2	29.8	7.6	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.08.2018	53.9	29.9	7.5	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.08.2018	55.1	30.4	7.7	13.0	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.08.2018	50.2	28.8	7.6	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.08.2018	52.7	28.2	7.5	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe not Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. S. ...  
Notes: ...

GAZETTE NO- ...  
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Report no. - CEMC/TDPCL/040918/A4

Issued Date-04.09.2018

### AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04092018A4
Nature of Sampling	Ambient Air Sample
Sampling Location	Near Jetty
Sampling By	Mr. P. Anand Dora
Sampling Duration	01.08.2018 to 31.08.2018

Date	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Benzene ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )
13.08.2018	58.4	30.8	7.8	13.3	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.08.2018	56.5	29.9	7.9	12.8	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.08.2018	55.8	30.4	7.6	13.0	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.08.2018	59.6	29.3	7.9	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.08.2018	52.7	28.6	8.2	13.2	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.08.2018	57.3	29.9	7.9	12.8	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB metho d followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

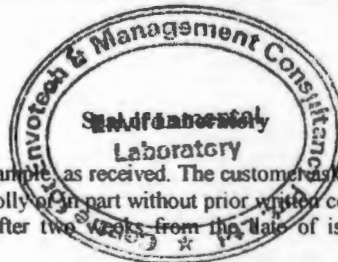
N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification

Dr. T. P. Singh, P.D. Env. Sc

Authorized Signatory

Notes: (GAZETTE NO. 1357 DI-03-06-2016)

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Report no. - CEMC/TDPCL/040918/A5

Issued Date-04.09.2018

### AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04092018A5
Nature of Sampling	Ambient Air Sample
Sampling Location	Dosinga Village
Sampling By	Mr. P. Anand Dora
Sampling Duration	01.08.2018 to 31.08.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
13.08.2018	51.4	28.9	8.0	13.1	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.08.2018	52.6	30.2	7.9	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.08.2018	50.8	28.4	7.5	13.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.08.2018	53.5	30.9	7.9	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.08.2018	49.2	27.6	7.7	13.0	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.08.2018	52.7	30.4	7.5	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

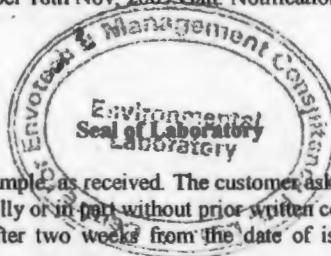
N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov. 2009 Gatt. Notification.

Dr. T. Satish, Ph.D., Env. Sc

Authorized Signatory

(GAZETTED NO. 133, Dt: 03-06-2016)

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/040918/A6

Issued Date-04.09.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

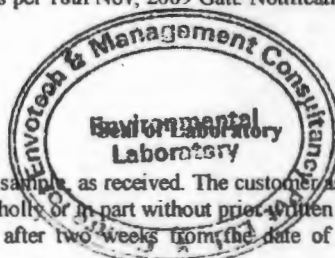
Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04092018A6
Nature of Sampling	Ambient Air Sample
Sampling Location	Bhitarkanika (Eco Sensitive)
Sampling By	Mr. P. Anand Dora
Sampling Duration	01.08.2018 to 31.08.2018

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
13.08.2018	47.5	27.1	6.9	10.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
16.08.2018	45.8	26.5	6.4	9.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.08.2018	44.9	25.3	6.6	10.2	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
23.08.2018	46.3	26.9	6.8	10.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.08.2018	47.2	27.4	7.0	9.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
30.08.2018	44.7	25.8	6.6	9.7	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. S. Sahoo, Env. Sc  
Authorized Signatory  
Govt. of Odisha

(GAZETTE NOTIFICATION Dt-03-06-2016)



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Regd. Office: 1<sup>st</sup> Floor, N-5/305, IRC village, Nayapalli, Bhubaneswar-751015, Odisha, India, Mobile: 9861032826  
E-mail- cemc\_consultancy@yahoo.co.in, cemc122@gmail.com, website: www.cemc.in, Landline: 0674-2360344.

Laboratory At: Plot No. 800/1274, Johal, Pahal, Bhubaneswar-752101,  
E-mail: cemclab@yahoo.in, Mobile: 7752014842



## CENTRE FOR ENVOTECH AND MANAGEMENT CONSULTANCY PVT. LTD.

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Enlisted in Construction Industry Development Council (CIDC) established by the Planning Commission (Govt. of India)  
MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/040918/N

Issued Date-04.09.2018

### NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Analysis No.	CEMC/TDPCL-D00N1
Nature of Sampling	Noise Sample
Sampling By	Mr. P. Anand Dora
Sampling Date	01.08.2018 to 31.08.2018

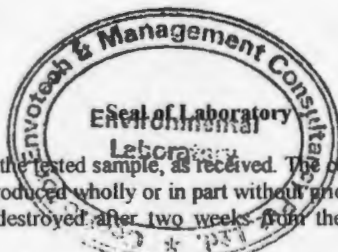
Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
17.08.2018	Near Jetty (I)	71.3	63.8	67.5	66.7	62.3	64.5
21.08.2018	Near BMH-I	70.8	63.6	67.2	65.7	62.4	64.1
24.08.2018	Colony Area (R)	53.9	49.9	51.9	43.1	40.7	41.9
31.08.2018	Kanakaprasad Village (R)	52.8	50.6	51.7	43.4	39.8	41.6
28.08.2018	Dosinga village (R)	54.2	48.6	51.4	42.3	39.7	41.0
14.08.2018	Ecosensitive Zone	49.5	38.1	43.8	40.8	37.6	39.2

\*NL- Noise Level, I- Industrial, R- Residential

### National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit in dB (A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Dr. T. S. ... Env. Sc  
Authorized Signatory  
Notes: Dt-03-06-2016  
(GAZETTE No. 109)



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Report no. - CEMC/TDPCL/040918/W1

Issued Date-04.09.2018

### STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800035134, dtd-30.07.2018

Sampling by

: Mr. P. Anand Dora

Date of Sampling

: 14.08.2018 & 22.08.2018

Date of Receiving

: 16.08.2018 & 23.08.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Inlet)

Reference Number

: CEMC-04092018W1

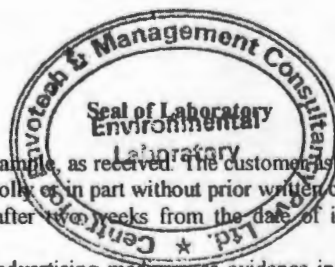
### STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.41	6.52	6.0-8.5
5	Total Suspended Solids	mg/l	137.9	128.6	1000
6	B.O.D for 3 days @ 27°C	mg/l	200	216	300-350
7	Oil & Grease	mg/l	<5	<5	100
8	COD	mg/l	760	720	--
9	Ammonical Nitrogen	mg/l	5.2	4.9	--
10	Total Nitrogen	mg/l	26.8	24.3	--
11	Faecal Coliform	MPN/100ml	1600	1600	--

Dr. T. S. Singh, Env. Sc  
Authorized Signatory

Notes:  
(GAZETTE No. 1367 Dt. 03-06-2016)

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Report no. - CEMC/TDPCL/040918/W2

Issued Date-04.09.2018

### STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800035134, dtd-30.07.2018

Sampling by

: Mr. P. Anand Dora

Date of Sampling

: 14.08.2018 & 22.08.2018

Date of Receiving

: 16.08.2018 & 23.08.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 15 KLD (Outlet)

Reference Number

: CEMC-04092018W2

### STP OUTLET ANALYSIS RESULT

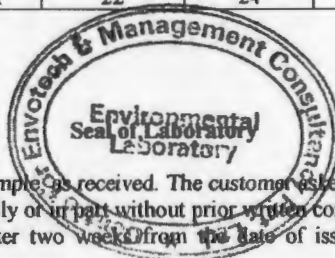
SL No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.28	7.37	6.5-9.0
5	Total Suspended Solids	mg/l	14.2	12.9	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.8	8.4	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	16	20	<50
9	Ammonical Nitrogen	mg/l	0.82	0.93	<5
10	Total Nitrogen	mg/l	4.2	5.1	<10
11	Faecal Coliform	MPN/100ml	22	24	<100

Dr. T. S. Sahoo, Ph.D. Env. Sc

Authorized Signatory

(GAZETTE No. 257, Dt-03-06-2016)

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Report no. - CEMC/TDPCL/040918/W3

Issued Date-04.09.2018

## STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800035134, dtd-30.07.2018

Sampling by

: Mr. P. Anand Dora

Date of Sampling

: 14.08.2018 & 22.08.2018

Date of Receiving

: 16.08.2018 & 23.08.2018

Sampling & Testing Procedure

: APHA 23<sup>rd</sup> Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Inlet)

Reference Number

: CEMC-04092018W3

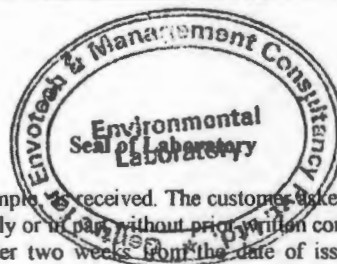
## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1st Fortnight	2nd Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.77	6.81	6.0-8.5
5	Total Suspended Solids	mg/l	146.3	139.4	1000
6	B.O.D for 3 days @ 27°C	mg/l	250	230	300-350
7	Oil & Grease	mg/l	7.2	6.8	100
8	COD	mg/l	810	780	--
9	Ammonical Nitrogen	mg/l	6.9	6.5	--
10	Total Nitrogen	mg/l	30.2	29.7	--
11	Faecal Coliform	MPN/100ml	>1600	>1600	--

Dr. T. S. Singh, Env. Sc

Authorized Signature

(GAZETTE No. 4057, Dt-03-06-2016)



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Report no. - CEMC/TDPCL/040918/W4

Issued Date-04.09.2018

### STP TEST REPORT

Name & Address of the Customer

: M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak

Work order No.

: 4800035134, dtd-30.07.2018

Sampling by

: Mr. P. Anand Dora

Date of Sampling

: 14.08.2018 & 22.08.2018

Date of Receiving

: 16.08.2018 & 23.08.2018

Sampling & Testing Procedure

: APHA 23rd Edition

Sample Description

: Waste Water

Sample Quantity

: 1.0 Ltr each

Sample Location with Job Code

: STP - 140 KLD (Outlet)

Reference Number

: CEMC-04092018W4

### STP OUTLET ANALYSIS RESULT

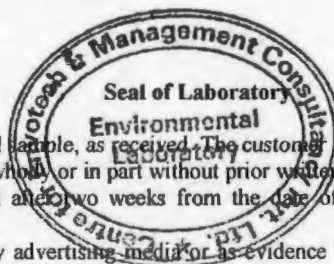
Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.54	7.43	6.5-9.0
5	Total Suspended Solids	mg/l	14.3	13.9	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.6	8.8	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	20	22	<50
9	Ammonical Nitrogen	mg/l	0.71	0.69	<5
10	Total Nitrogen	mg/l	6.1	5.6	<10
11	Faecal Coliform	MPN/100ml	22	22	<100

Dr. Authorized Signatory  
Noted  
Govt. ANALYST

(GAZETTE NO. 137, D.O. No. 2018)

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Report no. - CEMC/TDPCL/041018/A1

Issued Date-04.10.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04102018A1
Nature of Sampling	Ambient Air Sample
Sampling Location	Colony Area
Sampling By	Mr. Sunil Kumar Samal
Sampling Duration	01.09.2018 to 30.09.2018

### ANALYSIS RESULT

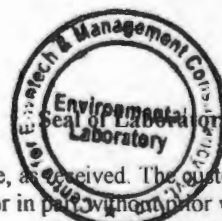
Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.09.2018	53.7	29.1	7.5	12.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
06.09.2018	48.2	26.7	7.3	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.09.2018	49.9	28.6	7.4	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
13.09.2018	56.4	30.8	7.8	13.0	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.09.2018	54.5	28.9	7.6	12.7	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.09.2018	49.1	27.8	7.3	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.09.2018	49.7	28.7	7.5	12.6	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.09.2018	55.1	30.1	7.9	13.2	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. Sahoo, B.Sc. Env. Sc

Authorized Signatory  
Notes: No. 1557, Dt. 03.06.2016

GAZE



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Report no. - CEMC/TDPCL/041018/A2

Issued Date-04.10.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04102018A2
Nature of Sampling	Ambient Air Sample
Sampling Location	Kanakaprasad Village
Sampling By	Mr. Sunil Kumar Samal
Sampling Duration	01.09.2018 to 30.09.2018

### ANALYSIS RESULT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.09.2018	46.9	26.4	7.2	12.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
06.09.2018	45.2	25.9	7.1	11.8	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.09.2018	48.5	26.9	7.3	12.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
13.09.2018	49.6	27.3	7.2	12.2	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.09.2018	47.1	26.2	7.1	12.0	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.09.2018	46.8	26.1	7.0	11.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.09.2018	46.2	25.9	7.1	11.9	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.09.2018	50.8	26.9	7.4	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophen ols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18<sup>th</sup> Nov, 2009 Gatt. Notification.

Dr. T. Sahu, PhD, Env. Sc

Authorized Signatory

GAZETTE No-1357 (01-03-06-2016)



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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/041018/A3

Issued Date-04.10.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04102018A3
Nature of Sampling	Ambient Air Sample
Sampling Location	Near BMH
Sampling By	Mr. Sunil Kumar Samal
Sampling Duration	01.09.2018 to 30.09.2018

### ANALYSIS RESULT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.09.2018	56.4	32.5	8.1	13.4	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
06.09.2018	49.8	29.4	7.5	12.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.09.2018	54.8	31.1	7.8	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
13.09.2018	50.3	29.7	7.5	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.09.2018	52.9	30.7	7.7	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.09.2018	50.4	29.9	7.6	12.4	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.09.2018	50.9	30.1	7.5	12.5	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.09.2018	55.6	32.2	7.9	13.2	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetric Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophenol Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followed by AAS	As per CPCB method followed by AAS	IS: 5182 (Part-11)	IS: 5182 (Part-12)

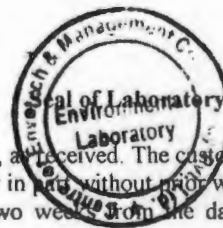
N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. J. S. Bhandari, Env. Sc  
Authorized Signatory  
Notes: (GAZETTED)

18.09.2018

The result given above related to the tested sample, as received. The customer asked for the above test only.

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E-mail: ccmclab@yahoo.in, Mobile: 7752014842



**Report no. - CEMC/TDPCL/041018/A4**

# AMBIENT AIR QUALITY MONITORING TEST REPORT

<b>Client Name &amp; Address</b>	<b>M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak</b>
<b>Work Order No.</b>	<b>4800035134, dtd-30.07.2018</b>
<b>Reference No.</b>	<b>CEMC-04102018A4</b>
<b>Nature of Sampling</b>	<b>Ambient Air Sample</b>
<b>Sampling Location</b>	<b>Near Jetty</b>
<b>Sampling By</b>	<b>Mr. Sunil Kumar Samal</b>
<b>Sampling Duration</b>	<b>01.09.2018 to 30.09.2018</b>

## ANALYSIS RESULT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.09.2018	60.3	33.8	8.2	13.5	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
06.09.2018	50.6	29.7	7.5	12.4	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.09.2018	53.9	30.1	7.8	12.6	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
13.09.2018	58.2	32.5	8.1	12.9	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.09.2018	51.6	29.8	7.7	12.5	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.09.2018	50.5	29.4	7.6	12.3	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.09.2018	52.4	30.0	7.5	12.4	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.09.2018	59.7	33.4	8.1	13.3	0.5	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part-23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB metho d followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

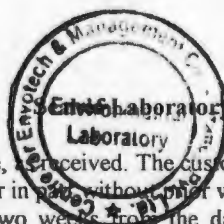
N.B- \*NAAO- National Ambient Air Quality Standard as per 18th Nov. 2009 Gatt. Notification

Dr. T. Sahi, Env. Sc  
Authorized Signature  
Govt. ANALYST

GAZETTE No 1257 Dt 03.06.2016

E-Notar: The results are not related to the tested sample, received. The customer asked for the above test only.

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Report no. - CEMC/TDPCL/041018/A5

Issued Date-04.10.2018

## AMBIENT AIR QUALITY MONITORING TEST REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Reference No.	CEMC-04102018A5
Nature of Sampling	Ambient Air Sample
Sampling Location	Dosinga Village
Sampling By	Mr. Sunil Kumar Samal
Sampling Duration	01.09.2018 to 30.09.2018

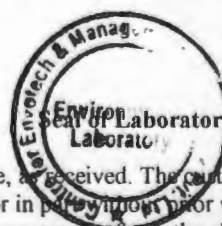
### ANALYSIS RESULT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.09.2018	53.2	29.5	7.9	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
06.09.2018	48.9	28.7	7.3	12.4	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.09.2018	51.7	29.2	7.4	12.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
13.09.2018	52.8	30.2	7.7	12.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.09.2018	53.1	30.5	7.9	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.09.2018	49.1	28.9	7.5	12.3	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.09.2018	51.7	29.8	7.8	12.7	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.09.2018	52.9	30.4	8.0	12.9	0.4	<20	<10	<0.06	<0.6	<0.44	<1	<1
NAAQ* Standard	100	60	80	80	4	400	100	1.0	20	6	5	1
Methods of Analysis	IS: 5182 (Part- 23)	Gravimetri c Method as per CPCB method	IS: 5182 (Part-2)	IS: 5182 (Part-6)	IS: 5182 (Part-10)	Indophe nols Blue Method followed by CPCB	IS: 5182 (Part-9)	IS: 5182 (Part-22)	As per CPCB method followe d by AAS	As per CPCB method followe d by AAS	IS: 5182 (Part- 11)	IS: 5182 (Part- 12)

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.

Dr. T. Sanjay Kumar, Ph.D., Env. Sc  
Authorized Signatory  
Govt. Analyst

GAZETTE No. 1351, Dtd-03-09-2018



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**Issued Date-04.10.2018**


## AMBIENT AIR QUALITY MONITORING TEST REPORT

<b>Client Name &amp; Address</b>	<b>M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak</b>
<b>Work Order No.</b>	<b>4800035134, dtd-30.07.2018</b>
<b>Reference No.</b>	<b>CEMC-04102018A6</b>
<b>Nature of Sampling</b>	<b>Ambient Air Sample</b>
<b>Sampling Location</b>	<b>Bhitarkanika (Eco Sensitive)</b>
<b>Sampling By</b>	<b>Mr. Sunil Kumar Samal</b>
<b>Sampling Duration</b>	<b>01.09.2018 to 30.09.2018</b>

## ANALYSIS RESULT

Date	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> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Benzene (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )
03.09.2018	48.6	29.4	7.1	11.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
06.09.2018	44.2	26.4	6.5	9.7	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
10.09.2018	47.7	28.5	6.9	10.8	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
13.09.2018	48.9	29.2	7.0	11.1	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
17.09.2018	46.8	28.7	6.8	10.9	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
20.09.2018	43.6	26.1	6.5	9.6	0.2	<20	<10	<0.06	<0.6	<0.44	<1	<1
24.09.2018	47.1	28.3	6.9	11.0	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
27.09.2018	49.1	29.7	7.2	11.2	0.3	<20	<10	<0.06	<0.6	<0.44	<1	<1
<b>NAAQ Standard</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>	<b>4</b>	<b>400</b>	<b>100</b>	<b>1.0</b>	<b>20</b>	<b>6</b>	<b>5</b>	<b>1</b>
<b>Methods of Analysis</b>	<b>IS: 5182 (Part-23)</b>	<b>Gravimetric Method as per CPCB method</b>	<b>IS: 5182 (Part-2)</b>	<b>IS: 5182 (Part-6)</b>	<b>IS: 5182 (Part-10)</b>	<b>Indophenol Blue Method followed by CPCB</b>	<b>IS: 5182 (Part-9)</b>	<b>IS: 5182 (Part-22)</b>	<b>As per CPCB method followed by AAS</b>	<b>As per CPCB method followed by AAS</b>	<b>IS: 5182 (Part-11)</b>	<b>IS: 5182 (Part-12)</b>

N.B- \*NAAQ- National Ambient Air Quality Standard as per 18th Nov, 2009 Gatt. Notification.



GAZETTE Noted as given above. Related to the tested sample, as received. The customer asked for the above test only.

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MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

Report no. - CEMC/TDPCL/041018/N

Issued Date-04.10.2018

## NOISE LEVEL MONITORING REPORT

Client Name & Address	M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work Order No.	4800035134, dtd-30.07.2018
Analysis No.	CEMC/TDPCL-D00N1
Nature of Sampling	Noise Sample
Sampling By	Mr. Sunil Kumar Samal
Sampling Date	01.09.2018 to 30.09.2018

### ANALYSIS RESULT

Date	Location	NL Day Time dB (A)			NL Night Time dB (A)		
		Max	Min.	Avg.	Max.	Min.	Avg.
04.09.2018	Near Jetty (I)	70.8	64.6	67.7	64.2	60.6	62.4
07.09.2018	Near BMH-1	71.2	62.4	66.8	64.9	59.7	62.3
11.09.2018	Colony Area (R)	54.1	49.3	51.7	42.7	38.3	40.5
14.09.2018	Kanakaprasad Village (R)	53.7	49.1	51.4	43.1	40.7	41.9
18.09.2018	Dosinga village (R)	54.0	49.4	51.7	41.9	38.3	40.1
21.09.2018	Ecosensitive Zone	50.2	42.6	46.4	40.2	38.2	39.2

\*NL- Noise Level, I- Industrial, R- Residential

### National Standard of Noise Level

Area Code	Category of Area/Zone	Permissible Limit (dB(A))	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

Dr. T. Sahoo, Ph.D. Env. Sc

Authorized Signatory

(GAZETTE No-1331, Dt-03-06-2016)

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Report no. - CEMC/TDPCL/041018/W1

Issued Date-04.10.2018

## STP TEST REPORT

Name & Address of the Customer	: M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work order No.	: 4800035134, dtd-30.07.2018
Sampling by	: Mr. Sunil Kumar Samal
Date of Sampling	: 12.09.2018 & 25.09.2018
Date of Receiving	: 13.09.2018 & 26.09.2018
Sampling & Testing Procedure	: APHA 23 <sup>rd</sup> Edition
Sample Description	: Waste Water
Sample Quantity	: 1.0 Ltr each
Sample Location	: STP - 15 KLD (Inlet)
Reference Number	: CEMC-04102018W1

## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.49	6.61	6.0-8.5
5	Total Suspended Solids	mg/l	127.3	133.6	1000
6	B.O.D for 3 days @ 27°C	mg/l	190	210	300-350
7	Oil & Grease	mg/l	<5	<5	100
8	COD	mg/l	680	700	--
9	Ammonical Nitrogen	mg/l	5.1	5.7	--
10	Total Nitrogen	mg/l	27.9	28.5	--
11	Faecal Coliform	MPN/100ml	1600	1600	--

Dr.T. Sahu, PhD. Env. Sc

Govt. of Odisha  
Authorized Signatory  
GAZETTE No-135110-VS-06-2016



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Report no. - CEMC/TDPCL/041018/W2

Issued Date-04.10.2018

## STP TEST REPORT

Name & Address of the Customer	: M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work order No.	: 4800035134, dtd-30.07.2018
Sampling by	: Mr. Sunil Kumar Samal
Date of Sampling	: 12.09.2018 & 25.09.2018
Date of Receiving	: 13.09.2018 & 26.09.2018
Sampling & Testing Procedure	: APHA 23rd Edition
Sample Description	: Waste Water
Sample Quantity	: 1.0 Ltr each
Sample Location	: STP - 15 KLD (Outlet)
Reference Number	: CEMC-04102018W2

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.16	7.41	6.5-9.0
5	Total Suspended Solids	mg/l	13.2	13.8	<20
6	B.O.D for 3 days @ 27°C	mg/l	9.0	8.6	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	20	16	<50
9	Ammonical Nitrogen	mg/l	0.72	0.81	<5
10	Total Nitrogen	mg/l	3.8	4.2	<10
11	Faecal Coliform	MPN/100ml	17	22	<100

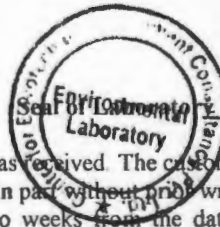
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Authorized Signatory  
Govt. of Odisha

Notes: 3/25/18, 06.10.2018

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Report no. - CEMC/TDPCL/041018/W3

Issued Date-04.10.2018

## STP TEST REPORT

Name & Address of the Customer	: M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work order No.	: 4800035134, dtd-30.07.2018
Sampling by	: Mr. Sunil Kumar Samal
Date of Sampling	: 12.09.2018 & 25.09.2018
Date of Receiving	: 13.09.2018 & 26.09.2018
Sampling & Testing Procedure	: APHA 23 <sup>rd</sup> Edition
Sample Description	: Waste Water
Sample Quantity	: 1.0 Ltr each
Sample Location	: STP - 140 KLD (Inlet)
Reference Number	: CEMC-04102018W3

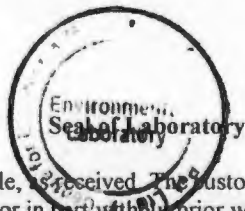
## STP INLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Design parameter for Raw Sewage
			1st Fortnight	2nd Fortnight	
1	Appearance	--	Turbid	Turbid	-
2	Colour	--	Blackish	Blackish	-
3	Odour	--	Foul	Foul	-
4	pH Value @ 25°C	--	6.68	6.73	6.0-8.5
5	Total Suspended Solids	mg/l	131.2	127.6	1000
6	B.O.D for 3 days @ 27°C	mg/l	230	210	300-350
7	Oil & Grease	mg/l	6.9	6.4	100
8	COD	mg/l	780	740	--
9	Ammonical Nitrogen	mg/l	6.2	5.8	--
10	Total Nitrogen	mg/l	28.4	26.2	--
11	Faecal Coliform	MPN/100ml	>1600	>1600	--

Dr. T. Sahu, Ph.D. Env. Sc

Authorised Signatory

(GAZETTE No. 1157 Dt. 03.06.2016)



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Report no. - CEMC/TDPCL/041018/W4

Issued Date-04.10.2018

## STP TEST REPORT

Name & Address of the Customer	: M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak
Work order No.	: 4800035134, dtd-30.07.2018
Sampling by	: Mr. Sunil Kumar Samal
Date of Sampling	: 12.09.2018 & 25.09.2018
Date of Receiving	: 13.09.2018 & 26.09.2018
Sampling & Testing Procedure	: APHA 23rd Edition
Sample Description	: Waste Water
Sample Quantity	: 1.0 Ltr each
Sample Location	: STP - 140 KLD (Outlet)
Reference Number	: CEMC-04102018W4

## STP OUTLET ANALYSIS RESULT

Sl. No.	Parameter	Unit of Measurement	Result		Standards for New STPs Design after notification 2015
			1 <sup>st</sup> Fortnight	2 <sup>nd</sup> Fortnight	
1	Appearance	--	Clear	Clear	-
2	Colour	--	Colorless	Colorless	-
3	Odour	--	Odourless	Odourless	-
4	pH Value @ 25°C	--	7.61	7.56	6.5-9.0
5	Total Suspended Solids	mg/l	12.8	14.6	<20
6	B.O.D for 3 days @ 27°C	mg/l	8.8	9.0	<10
7	Oil & Grease	mg/l	<5	<5	--
8	COD	mg/l	18	24	<50
9	Ammonical Nitrogen	mg/l	0.62	0.58	<5
10	Total Nitrogen	mg/l	5.7	4.5	<10
11	Faecal Coliform	MPN/100ml	17	17	<100

Jr. T. Sahu, Ph.D., Env. Sc.

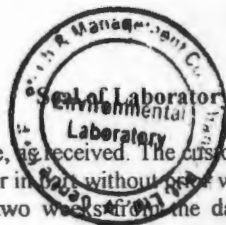
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Notes:

GAZETTE No. 1357 Dt. 03-06-2016

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Report no. - CEMC/TDPCL/111018/W

Issued Date-11.10.2018

## SEA WATER ANALYSIS REPORT

Name & Address of the Customer : M/s. The Dhamra Port Company Ltd., Dosinga,  
Bhadrak  
Work order No. : 4800035134, dtd-30.07.2018  
Date of Sampling : 29.09.2018  
Sampling by : Mr. Sunil Kumar Samal  
Sample Description : Sea Water

## STATION DESCRIPTION

SL. NO.	STATION	Sample Location	GPS COORDINATES
01	STATION-1	Dhamra river mouth	20°47'04.42" N 86°57'32.87" E
02	STATION-2	Dry bulk cargo birth face	20°48'57.82" N 86°58'08.73" E
03	STATION-3	Liquid/Gas cargo birth face	20°50'25.10" N 86°58'24.40" E
04	STATION-4	Along channel at 4 km	20°50'56.09" N 86°59'20.43" E
05	STATION-5	Along channel at 8 km	20°52'48.18" N 87°01'03.53" E
06	STATION-6	Along channel at 12 km	20°53'13.48 N 87°03'10.88" E
07	STATION-7.	Dragging dumping site inside sea	20°50'04.18" N 86°58'20.86" E
08	STATION-8	Near Kanika Island	20°49'39.56" N 86°59'05.53" E

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Issued Date-11.10.2018

## SEA WATER ANALYSIS REPORT

WATER ANALYSIS DATA									
Locations		Temp. (°C)	Turbidity (NTU)	Conductivity (µS/cm)	pH	Salinity (ppt)	DO (mg/l)	BOD (mg/l)	COD (mg/l)
Station-1	SW	29.1	52	13281	7.36	20.63	6.8	3.9	22
	BW	28.2	64	14275	7.31	21.52	6.1	4.1	30
Station-2	SW	29.0	44	13112	7.71	22.02	6.9	3.5	34
	BW	28.3	51	13961	7.68	23.12	6.6	3.8	36
Station-3	SW	29.2	48	12962	7.25	20.89	7.1	3.4	38
	BW	28.2	57	13422	7.21	21.61	6.7	3.9	40
Station-4	SW	29.1	29	13024	7.82	23.42	7.2	3.6	30
	BW	28.3	47	13952	7.79	24.03	6.5	3.9	34
Station-5	SW	29.3	29	12862	7.85	21.54	6.8	4.2	30
	BW	28.3	41	13427	7.81	22.55	6.5	4.4	36
Station-6	SW	29.2	48	13210	7.62	20.86	7.2	3.7	28
	BW	28.1	41	14026	7.57	21.56	6.5	4.0	30
Station-7	SW	29.0	51	12856	7.5	21.56	7.2	4.1	38
	BW	28.2	62	13382	7.47	22.03	6.8	4.6	42
Station-8	SW	29.2	48	13128	7.84	20.86	7.2	3.8	40
	BW	28.1	63	14121	7.81	21.86	6.7	4.2	46

\*SW= Surface Water, BW= Bottom Water

WATER ANALYSIS DATA									
Locations		Copper (mg/l)	Cadmium (mg/l)	Mercury (mg/l)	Phosphate (mg/l)	Sulphate (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	TSS (mg/l)
Station-1	SW	< 0.03	< 0.01	< 0.001	< 0.05	1342	0.28	7.2	340.8
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1486	0.36	10.9	431.2
Station-2	SW	< 0.03	< 0.01	< 0.001	< 0.05	1521	0.12	6.4	322.8
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1648	0.22	13.8	362.2
Station-3	SW	< 0.03	< 0.01	< 0.001	< 0.05	1562	0.18	6.9	302.0
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1702	0.31	14.1	412.0
Station-4	SW	< 0.03	< 0.01	< 0.001	< 0.05	1713	0.21	7.2	262.8
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1826	0.36	12.4	384.6
Station-5	SW	< 0.03	< 0.01	< 0.001	< 0.05	1346	0.3	7.5	288.2
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1506	0.36	12.4	376.8
Station-6	SW	< 0.03	< 0.01	< 0.001	< 0.05	1602	0.28	5.2	260.2
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1749	0.36	13.0	444.2
Station-7	SW	< 0.03	< 0.01	< 0.001	< 0.05	1511	0.32	6.2	312.6
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1616	0.38	14.4	411.2
Station-8	SW	< 0.03	< 0.01	< 0.001	< 0.05	1675	0.24	6.5	242.3
	BW	< 0.03	< 0.01	< 0.001	< 0.05	1864	0.31	12.2	422.1

\*SW= Surface Water, BW= Bottom Water

Dr. T. Sahu  
Authorised Signatory  
Date: 03-06-2016  
Ref No-1357



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Report no. - CEMC/TDPCL/111018/W

Issued Date-11.10.2018

## SEA WATER ANALYSIS REPORT

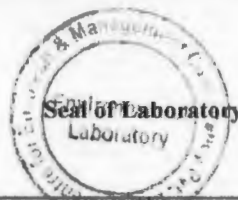
WATER ANALYSIS DATA							
Locations		Calcium Hardness (mg/l)	Magnesium Hardness (mg/l)	Total Hardness (mg/l)	Total Dissolved Solids (mg/l)	Ammonical Nitrogen (mg/l)	Total Nitrogen (mg/l)
Station-1	SW	2254	966	3220	8632.7	ND	11.4
	BW	3098.2	1327.8	4426	9278.8	ND	13.8
Station-2	SW	3665.2	1570.8	5236	8522.8	ND	12.1
	BW	4067	1743	5810	9074.7	ND	15.4
Station-3	SW	3962	1698	5660	8425.3	ND	13.8
	BW	4158	1782	5940	8724.3	ND	15.4
Station-4	SW	3703	1587	5290	8465.6	ND	13.1
	BW	3976	1704	5680	9068.8	ND	15.4
Station-5	SW	3948	1692	5640	8360.3	ND	12.6
	BW	4109	1761	5870	8727.6	ND	15.7
Station-6	SW	2548	1092	3640	8586.5	ND	11.8
	BW	2801.4	1200.6	4002	9116.9	ND	12.2
Station-7	SW	2394	1026	3420	8356.4	ND	10.4
	BW	2720.2	1165.8	3886	8698.3	ND	13.5
Station-8	SW	2979.2	1276.8	4256	8533.2	ND	12.6
	BW	3375.4	1446.6	4822	9178.7	ND	14.3

\*SW= Surface Water, BW= Bottom Water

WATER ANALYSIS DATA							
Locations		Total Chromium (mg/l)	Phenolic Compounds (mg/l)	Hexavalent Chromium (mg/l)	Petroleum Hydrocarbon (mg/l)	Chlorinity (‰)	Oil and Grease (mg/l)
Station-1	SW	< 0.05	< 0.001	< 0.05	0.2	12.12	3.5
	BW	< 0.05	< 0.001	< 0.05	ND	13.38	ND
Station-2	SW	< 0.05	< 0.001	< 0.05	0.4	13.21	5.2
	BW	< 0.05	< 0.001	< 0.05	ND	13.53	ND
Station-3	SW	< 0.05	< 0.001	< 0.05	0.6	12.55	5.9
	BW	< 0.05	< 0.001	< 0.05	ND	13.84	ND
Station-4	SW	< 0.05	< 0.001	< 0.05	0.5	13.43	5.4
	BW	< 0.05	< 0.001	< 0.05	ND	14.61	ND
Station-5	SW	< 0.05	< 0.001	< 0.05	0.8	13.73	5.3
	BW	< 0.05	< 0.001	< 0.05	ND	14.21	ND
Station-6	SW	< 0.05	< 0.001	< 0.05	0.5	13.56	5.4
	BW	< 0.05	< 0.001	< 0.05	ND	14.38	ND
Station-7	SW	< 0.05	< 0.001	< 0.05	0.3	13.06	6.2
	BW	< 0.05	< 0.001	< 0.05	ND	13.82	ND
Station-8	SW	< 0.05	< 0.001	< 0.05	0.7	12.92	5.3
	BW	< 0.05	< 0.001	< 0.05	ND	13.88	ND

\*SW= Surface Water, BW= Bottom Water

Dr. T. Sahu, Ph.D. Env. Sc  
Authorized Signatory  
(GAZETTE No-1357, Dt-03-06-2016)



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS & GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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**Report no. - CEMC/TDPCL/111018/W**

## SEA WATER ANALYSIS REPORT

\*SW= Surface Water, BW= Bottom Water.

\*SW= Surface Water, BW= Bottom Water



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Report no. - CEMC/TDPCL/111018/W

Issued Date-11.10.2018

## SEA WATER ANALYSIS REPORT

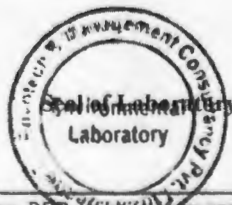
MICROBIOLOGICAL MONITORING DATA					
Locations		Total Bacterial Count (CFU/ml)	Total Coliform (CFU/ml)	Faecal Coliform (CFU/ml)	E.coli (CFU/ml)
Station-1	SW	480	76	5.1	ND
	BW	510	52	4.2	ND
Station-2	SW	290	62	3.9	ND
	BW	240	41	4.3	ND
Station-3	SW	410	81	7.1	ND
	BW	224	65	6.6	ND
Station-4	SW	272	42	2.4	ND
	BW	420	61	3.1	ND
Station-5	SW	250	73	4.2	ND
	BW	240	53	<1.8	ND
Station-6	SW	390	92	6.8	ND
	BW	340	75	<1.8	ND
Station-7	SW	370	65	4.3	ND
	BW	410	52	6.4	ND
Station-8	SW	320	62	<1.8	ND
	BW	370	51	4.4	ND

\*SW= Surface Water, BW= Bottom Water

MICROBIOLOGICAL MONITORING DATA					
Locations		Enterococcus (CFU/ml)	Salmonella (CFU/ml)	Shigella (CFU/ml)	Vibrio (CFU/ml)
Station-1	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-2	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-3	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-4	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-5	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-6	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-7	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND
Station-8	SW	ND	ND	ND	ND
	BW	ND	ND	ND	ND

\*SW= Surface Water, BW= Bottom Water

Dr. T. Sahu, PhD, Eng. Sc  
Authorized Signatory  
(GAZETTED)



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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## SEA WATER ANALYSIS REPORT

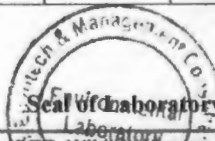
PRIMARY PRODUCTIVITY MONITORING DATA			
Locations		Gross Primary Productivity (mgC/ L/ day)	Net Primary Productivity (mgC/ L/ day)
Station-1	SW	2.4	1.9
	BW	1.7	1.4
Station-2	SW	2.7	2.2
	BW	2.8	2.4
Station-3	SW	2.8	2.0
	BW	1.9	1.6
Station-4	SW	2.8	2.2
	BW	2.2	1.8
Station-5	SW	2.4	1.7
	BW	2.0	1.6
Station-6	SW	2.9	2.3
	BW	2.4	1.8
Station-7	SW	2.6	2.0
	BW	2.1	1.7
Station-8	SW	2.3	1.8
	BW	1.6	1.4

\*SW= Surface Water, BW= Bottom Water

PHYTOBENTHOS MONITORING DATA						
Locations		Fungus (CFU/1ml dry wt.)	Total Count/ 50g wet sediment	No. of Species	Diversity Index	Major Species
Station-1	SW	2812	231	11	0.9723	<i>N.longisigma</i>
	BW	2846	242	10	0.7923	<i>Podosira</i>
Station-2	SW	3746	286	8	0.6752	<i>Podosira, N. longisigma</i>
	BW	3621	244	12	0.5162	<i>Podosira, N. longisigma, Ditylum</i>
Station-3	SW	2563	188	8	0.6728	<i>Ditylum</i>
	BW	2441	162	9	0.5621	<i>Podosira, N. longisigma</i>
Station-4	SW	3412	264	13	0.6926	<i>Podosira</i>
	BW	3122	232	12	0.6543	<i>Ditylum</i>
Station-5	SW	2246	176	10	0.9842	<i>Podosira</i>
	BW	1879	281	8	0.9642	<i>Podosira</i>
Station-6	SW	1903	356	10	0.9722	<i>Podosira, Ditylum</i>
	BW	1822	311	14	0.9836	<i>Podosira, Ditylum</i>
Station-7	SW	2946	241	11	0.6579	<i>Podosira, N. longisigma, Ditylum</i>
	BW	2826	213	7	0.6952	<i>Podosira, N. longisigma, Ditylum</i>
Station-8	SW	3742	650	7	0.8552	<i>N. longisigma</i>
	BW	3623	702	5	0.7534	<i>Ditylum</i>

\*SW= Surface Water, BW= Bottom Water

Authorized Signatory



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & EGS Survey.

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Report no. - CEMC/TDPCL/111018/W

Issued Date-11.10.2018

## SEA WATER ANALYSIS REPORT

TOTAL FAUNA MONITORING DATA				
Locations		Name of Phylum, Class and Number of individuals encountered	Total number of species Encountered	Total Fauna per m <sup>3</sup>
Station-1	SW	1. Phylum- Arthropoda Class- Amphipoda-33 2. Phylum- Annelida Class- Polychaeta- 20 3. Phylum- Mollusca Class- Pelecypoda-19 Class- Bivalvia-10 Class- Gastropoda-9	44	126
	BW	1. Phylum- Arthropoda Class- Amphipoda-10 2. Phylum- Annelida Class- Polychaeta- 11 3. Phylum- Mollusca Class- Pelecypoda-9 Class- Bivalvia-17 Class- Gastropoda-16	31	162
Station-2	SW	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-3	18	123
	BW	1. Phylum- Arthropoda Class- Malacostraca-09 2. Phylum- Annelida Class- Polychaeta-29	11	136
Station-3	SW	1. Phylum- Annelida Class- Polychaeta-11 2. Phylum- Arthropoda Class- Copepoda-18	88	522
	BW	1. Phylum- Annelida Class- Polychaeta-15 2. Phylum- Arthropoda Class- Copepoda-19	104	756
Station-4	SW	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-27 3. Phylum- Mollusca Class- Gastropoda-16 Class- Pelecypoda-14	21	380
	BW	1. Phylum- Arthropoda Class- Malacostraca-29 2. Phylum- Annelida Class- Polychaeta-14 3. Phylum- Mollusca Class- Gastropoda-22	48	520

Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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		Class- Pelecypoda-02		
Station-5	SW	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Gastropoda-15 Class- Pelecypoda-11 Class- Bivalvia-03	23	726
	BW	1. Phylum- Annelida Class- Polychaeta-24 2. Phylum- Mollusca Class- Gastropoda-32 Class- Pelecypoda-27 Class- Bivalvia-19	56	952
Station-6	SW	1. Phylum- Annelida Class- Polychaeta-29 2. Phylum- Mollusca Class- Bivalvia-16	21	342
	BW	1. Phylum- Annelida Class- Polychaeta-25 2. Phylum- Mollusca Class- Gastropoda-12 Class- Pelecypoda-6	18	412
Station-7	SW	1. Phylum- Annelida Class- Polychaeta-49 2. Phylum- Mollusca Class- Bivalvia-14	66	522
	BW	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Bivalvia-9	21	402
Station-8	SW	1. Phylum- Annelida Class- Polychaeta-20 2. Phylum- Mollusca Class- Gastropoda-14 Class- Bivalvia-16 Class- Scaphopoda-7	42	288
	BW	1. Phylum- Annelida Class- Polychaeta-19 2. Phylum- Mollusca Class- Gastropoda-15 Class- Bivalvia-21 Class- Scaphopoda-24	26	360

\*SW= Surface Water, BW= Bottom Water

Dr. T. Sahoo, M.D. Env. Sc

Authorized Signatory  
GAZETTE No. 1017 D.O. 03-06-2016



Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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Report no. - CEMC/TDPCL/111018/Sed

Issued Date-11.10.2018

## SEDIMENT ANALYSIS REPORT

Name & Address of the Customer : M/s. The Dhamra Port Company Ltd., Dosinga, Bhadrak

Work order No. : 4800035134, dtd-30.07.2018

Date of Sampling : 29.09.2018

Sampling by : Mr. Sunil Kumar Samal

Sample Description : Sediment

## SEA SEDIMENT ANALYSIS REPORT

SEDIMENT ANALYSIS DATA									
Locations	pH	Organic Matter	Moisture Content (%)	Conductivity (mS/cm)	Iron (%)	Sodium (%)	Copper (mg/kg)	Nickel (mg/Kg)	Zinc (mg/kg)
Station-1	6.7	3.7	7.4	5.38	4.3	26.13	< 5	< 1	< 3
Station-2	6.7	3.9	7.8	5.71	3.9	24.64	< 5	< 1	< 3
Station-3	6.9	4.1	8.2	5.82	4.1	20.83	< 5	< 1	< 3
Station-4	6.8	5.4	7.9	4.94	4.4	19.72	< 5	< 1	< 3
Station-5	6.6	5.6	8.1	5.69	3.9	21.37	< 5	< 1	< 3
Station-6	6.9	5.3	7.4	6.11	3.8	19.88	< 5	< 1	< 3
Station-7	7.0	4.8	7.7	3.53	3.9	17.46	< 5	< 1	< 3
Station-8	6.9	5.1	8.0	4.27	4.2	19.51	< 5	< 1	< 3

SEDIMENT ANALYSIS DATA									
Locations	Manganese (mg/kg)	Lead (mg/kg)	Boron (mg/kg)	Phosphate (mg/kg)	Chloride (mg/kg)	Sulphate (mg/kg)	Sulphide (mg/kg)	Pesticide (mg/kg)	Potassium (mg/kg)
Station-1	< 1	< 5	< 0.5	< 0.5	842	1938.4	ND	ND	1.42
Station-2	< 1	< 5	< 0.5	< 0.5	816	1758.9	ND	ND	1.28
Station-3	< 1	< 5	< 0.5	< 0.5	798	1924.6	ND	ND	0.88
Station-4	< 1	< 5	< 0.5	< 0.5	847	1896.9	ND	ND	0.91
Station-5	< 1	< 5	< 0.5	< 0.5	803	1786.3	ND	ND	0.89
Station-6	< 1	< 5	< 0.5	< 0.5	864	1807.2	ND	ND	0.85
Station-7	< 1	< 5	< 0.5	< 0.5	752	1891.7	ND	ND	0.88
Station-8	< 1	< 5	< 0.5	< 0.5	904	1908.5	ND	ND	0.84

SEDIMENT ANALYSIS DATA									
Locations	Total Chromium (mg/kg)	Petroleum Hydrocarbon (mg/kg)	Aluminium (mg/kg)	Total Nitrogen (mg/kg)	Organic Nitrogen (mg/kg)	Phosphorus (mg/kg)	Texture (%)		
							Sand	Silt	Clay
Station-1	< 1	0.26	< 0.1	4.6	1.6	4.9	0.22	21.3	77.5
Station-2	< 1	0.29	< 0.1	4.3	1.4	4.4	0.29	24.5	74.6
Station-3	< 1	0.24	< 0.1	4.4	1.3	4.7	0.41	39.2	59.4
Station-4	< 1	0.19	< 0.1	3.7	1.7	4.5	0.24	23.8	75.1
Station-5	< 1	ND	< 0.1	3.5	1.5	4.6	0.51	27.9	70.2
Station-6	< 1	ND	< 0.1	3.2	1.6	4.3	0.87	29.1	69.2
Station-7	< 1	0.13	< 0.1	4.1	2.1	4.8	0.36	19.6	79.3
Station-8	< 1	ND	< 0.1	3.9		4.5	1.08	23.7	74.7

Dr. T. Samal, PhD, Env. Sc

Authorized Signatory

Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & GPS Survey.

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## SEA SEDIMENT ANALYSIS REPORT

PHYTOBENTHOS MONITORING DATA					
Locations	Fungus (CFU/1 g dry wt.)	Total Count/ 50g wet sediment	No. of Species	Diversity Index	Major Species
Station-1	2916	282	10	1.0923	<i>Podosira, Ditylum</i>
Station-2	1065	426	11	0.4282	<i>Podosira, N. longsigma</i>
Station-3	7256	402	12	0.9892	<i>Podosira</i>
Station-4	5049	512	9	0.7644	<i>Podosira, N. longsigma</i>
Station-5	2163	289	9	0.9716	<i>Podosira, N. longsigma</i>
Station-6	2864	212	10	0.3881	<i>Podosira, N. longsigma, Ditylum</i>
Station-7	2924	511	9	0.6845	<i>N. longsigma, Ditylum</i>
Station-8	1517	401	7	0.7421	<i>Podosira, Ditylum</i>

TOTAL FAUNA MONITORING DATA			
Locations	Name of Phylum, Class and Number of individuals encountered	Total number of species Encountered	Total Fauna per m <sup>3</sup>
Station-1	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-41	41	203
Station-2	1. Phylum- Annelida Class- Polychaeta-19 2. Phylum- Arthropoda Class- Copepoda-9	151	156
Station-3	1. Phylum- Arthropoda Class- Malacostraca-12 2. Phylum- Annelida Class- Polychaeta-14 3. Phylum- Mollusca Class- Gastropoda-9 Class- Pelecypoda-41	131	802
Station-4	1. Phylum- Annelida Class- Polychaeta-25 2. Phylum- Mollusca Class- Gastropoda-6 Class- Pelecypoda-7 Class- Bivalvia-12	89	504
Station-5	1. Phylum- Arthropoda Class- Amphipoda-25 2. Phylum- Annelida Class- Polychaeta-13 1. Phylum- Mollusca Class- Pelecypoda-18 Class- Bivalvia-7 Class- Gastropoda-22	79	993

Environmental Studies (EIA & EMP), Monitoring, Forest Diversion Planning, DPR, Wildlife Management Plan, Hazardous & Safety Studies, RS& GIS, Baseline Survey, Hydrological & Geological Studies, Socio-economic Studies, DGPS & ETS Survey.

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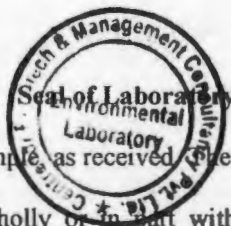
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Station-6	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Bivalvia-9	61	751
Station-7	1. Phylum- Annelida Class- Polychaeta-14 2. Phylum- Mollusca Class- Gastropoda-9 Class- Bivalvia-9 Class- Scaphopoda-22	39	489
Station-8	1. Phylum- Annelida Class- Polychaeta-41 2. Phylum- Mollusca Class- Gastropoda-11 Class- Bivalvia-9 Class- Pelecypoda-7	21	401

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**ANNEXURE - II**  
**TYPES AND QUANTITY OF FIRE**  
**EXTINGUISHERS**

## TYPES AND QUANTITY OF FIRE EXTINGUISHERS

### The Dhamra Port Company Limited Fire Extinguisher Details

The Dhamra Port Company Limited		
Fire Extinguisher Details		
Sl No	Location	Type of Extinguishers & Quantity
1	SWITCH YARD	DCP-5KG-4nos
2	MCC -1	(CO2-4.5KG)-4nos (CO2 -3KG)-2nos, (FOAM-50ltrs)-01no
3	MCC -2	(CO2-4.5KG)-2nos
4	MCC -2(A)	(CO2-4.5KG)-1nos (CO2 -3KG)-1nos
5	MCC -3	(CO2-4.5KG)-2nos (CO2 -3KG)-1no (FOAM-50ltrs)-01no
6	MCC -4	(CO2-4.5KG)-02 (DCP- 5KG)-1nos
7	TP - 1(A)	CO2-4.5KG-1no
8	TP - 1(B)	CO2-4.5KG-1nos
9	TP - 2	CO2-4.5KG-1no
10	TP - 2(A)	CO2-4.5KG-1no
11	TP - 3	CO2 -4.5KG-1no
12	TP - 3(A)	CO2 -4.5KG-1no
13	NEW TP-3	CO2 -4.5KG-1no
14	TP - 4	CO2 -4.5KG-1no
15	TP - 4 (A)	CO2 -4.5KG-1no
16	TP - 5	CO2 -4.5KG-1no
17	TP - 6	CO2 -4.5KG-1no
18	TP-7	CO2 -4.5KG-1nos
19	TP-8	CO2 -4.5KG-1no
20	TP-9	CO2 -4.5KG-1no (DCP- 5KG)-1nos
21	TP-10	CO2 -4.5KG-1no
22	TP-11	CO2 -4.5KG-1nos
23	TP - 12	CO2 -4.5KG-1no
24	TP - 13	CO2 -4.5KG-1no
25	JETTY	CO2 -4.5KG-2nos DCP-5KG-5nos
26	SL	CO2 -4.5KG-4nos DCP-5KG-1no
27	SUL-1	CO2 -4.5KG-5nos (CO2 -3KG)-1no (DCP- 5KG)-2nos
28	SUL-2	CO2 -4.5KG-5nos (CO2 -3KG)-1no (DCP- 5KG)-2nos
29	SUL-3	CO2 -4.5KG-6nos (DCP-2KG)-3no
30	SUL-4	CO2 -4.5KG-6nos (DCP- 5KG)-3nos
31	SUL-5	CO2 -4.5KG-6nos (DCP-2KG)-1no (DCP- 5KG)-2nos
32	LIBHERR-11	CO2 -4.5KG-2no, DCP-10KG-1no, DCP-5KG-1no DCP-2KG-2no
33	LIBHERR-12	CO2 -4.5KG-2no, DCP-10KG-1no, DCP-5KG-2no DCP-2KG-1no
34	SILO - 1	CO2 -4.5KG-3nos DCP-5KG-1no
35	SILO - 2	CO2 -4.5KG-3nos
36	FIRE PUMP HOUSE	CO2 -4.5KG-2nos

37	WTC -1	CO2 -4.5KG-1no DCP-5KG-2Nos, CO2 -3KG-1no
38	WTC -2	CO2 -4.5KG-1no DCP-5KG-2nos CO2 -3KG-2no
39	SR -1	CO2 -4.5KG-1nos CO2 -3KG-1no DCP-5KG-1nos
40	R - 1	CO2 -4.5KG-1no CO2 -3KG-1no DCP-5KG-1nos
41	SR -2	CO2 -4.5KG-1nos CO2 -3KG-1no, DCP-5KG-1no
42	SR -3	CO2 -4.5KG-1nos CO2 -3KG-1no, DCP-5KG-1no
43	SR -4	CO2 -4.5KG-1nos CO2 -3KG-1nos, DCP-5KG-1no
44	SR-5	CO2- 4.5KG-2nos, DCP-5KG-1nos
45	SR-6	CO2- 4.5KG-2nos, DCP-5KG-1nos
46	Fire & Security Barrack	CO2-4.5KG-3nos, DCP-5KG-2nos
47	JETTY CONTAINER	CO2-4.5KG-1nos, DCP-5KG-1nos
48	F.L SMIDTH OFFICE	CO2-4.5KG-2No
49	PSS	CO2 -4.5KG-3nos
50	BMH WORK SHOP	CO2 -4.5KG-1no DCP-5KG-2nos (FOAM-50ltrs)-01no
51	All Equipment	DCP-5KG-08nos
52	LOCO SHED	CO2 -4.5KG-1nos DCP-5KG-1nos
53	DIESEL FILLING STATION	Foam-9ltr-1no
54	IOCL	Foam-9ltr-1no
55	WTP	CO2 -4.5KG-3nos
56	DPCL OFFICE(SALANDI)	CO2-4.5KG-1no DCP-5KG-2nos,
57	REWA OFFICE	CO2-4.5KG-2No DCP-5KG-1No
58	CUSTOMS OFFICE	CO2-4.5KG-1No DCP-5KG-1No
59	DPCL STORE	CO2 -4.5KG-1no
60	Lubricant Store	Foam-9ltr-1no
61	SS-01	CO2 -4.5KG-1no
62	SS-02	CO2 -4.5KG-1no
63	SS-03	CO2 -4.5KG-1no
64	SS-04	CO2 -4.5KG-1no
65	SS-05	CO2 -4.5KG-1no
66	NEW CANTEEN	CO2 -3KG-01no DCP-5KG-1no
67	DHAMRA HOUSE	DCP-5KG-5nos DCP-2KG-01no
68	KANIKA GUEST HOUSE	CO2 -4.5KG-01no DCP-5KG-2nos
69	DAV SCHOOL, KUAMARA	CO2 -4.5KG-07nos DCP-5KG-5no
70	TOWNSHIP	CO2 -4.5KG-11nos
71	COMMUNITY HALL	CO2 -4.5KG-1nos DCP-5KG-2nos
72	PREFAB	CO2 -4.5KG-4nos DCP-5KG-4nos
73	PMC OFFICE(HR)	CO2 -4.5KG-1nos
74	DHAMRA GUEST HOUSE	CO2 -4.5KG-2nos CO2 -3KG-2nos
75	RAILWAY OFFICE	CO2 -4.5KG-02noS DCP-5KG-3nos
76	BHATATIRA STATION	CO2(4.5kg)-2Nos DCP-5KG-1no
77	BHATATIRA LC-5	DCP-5KG-1no
78	BHATATIRA- SP	CO2(4.5kg)-1Nos
79	GURUDASPUR STATION	CO2-4.5KG-1No DCP-5KG-1No
80	GURUDAS PUR TSS	CO2 -4.5KG-1no DCP-5KG-2nos
81	GURUDAS PUR SUB STATION	DCP-5KG-2Nos
82	INTAKE	CO2 -4.5KG-3nos DCP-5KG-1nos
83	RANITAL	CO2 -4.5KG-1nos

84	GURUDAS PUR LC-19	DCP-5KG-1no
85	IMWB	CO2-4.5KG-1nos
86	LOCO TRANSFORMER	CO2-4.5KG-2nos, DCP-5KG-2nos
87	HEALTH CENTRE	CO2-4.5KG-1nos, DCP-5KG-1nos
88	PAINT STORE(near TP-7)	DCP-5KG-1nos
89	TOWER WAGON	DCP-5KG-3nos
90	TIHIDI STATION	CO2 -4.5KG-1nos DCP-5KG-1nos
91	BANSADA STATION	CO2 -4.5KG-3nos
92	LC-26,NEAR DI ROAD	CO2 -4.5KG-1no
93	KOCHILA OFFICE	CO2-4.5KG-2Nos DCP-5KG-2nos
94	BRAMHANI OFFICE	CO2 -4.5KG-1nos DCP-5KG-1nos
95	KANIKA TRANSFORMER	CO2 -4.5KG-1no
96	SECURITY CONTAINER, NEAR MAIN GATE	CO2 -4.5KG-1nos DCP-5KG-1nos
97	FIRST AID CENTER	CO2 -4.5KG-1nos
98	DPCL AMBULANCE(OLD)	DCP-5KG-1nos
99	DPCL AMBULANCE(NEW)	DCP-5KG-1nos
100	RAILWAY GSS	CO2 -4.5KG-1no DCP-5KG-1no
101	RUNNING ROOM	CO2 -4.5KG-1no DCP-5KG-1no
102	INDUCTION HALL	CO2 -4.5KG-1no
103	FCC GODOWN	CO2 -4.5KG-20no DCP-4KG-1no Foam-9ltr-4nos
104	FCC OFFICE	CO2 -4.5KG-1no DCP-5KG-1no
105	FCC CANTEEN	DCP-5KG-1no
106	TM HARBOUR	CO2 -4.5KG-1no DCP-5KG-3noS
107	WOISTAGE OIL STORE	Foam-9ltr-1nos
108	LABOUR REST HOUSE	CO2 -4.5KG-1no
109	SS-6	CO2 -4.5KG-1no DCP-5KG-1no
110	COLONY PUMP HOUSE	CO2 -4.5KG-1no
111	BHADRAK GUEST HOUSE	CO2 -4.5KG-1no DCP-5KG-1no
112	BBSR OFFICE	CO2 -4.5KG-1no DCP-5KG-1no
<b>Total Fire Extinguisher Installed at site</b>		<b>Co2-4.5kg=195nos,CO2-3kg =15nos, DCP-10kg= 02nos, DCP-5kg=111nos,DCP-2kg=08nos &amp; Foam-9ltrs=08nos , Foam -50ltrs -03nos</b>
<b>STOCK BALANCE FIRE TENDER WITH FIRE STORE &amp; DPCL STORE</b>		<b>DCP(ABC)-6kg-22nos,DCP(2kg)-04nos,DCP(25kg)- 06nos,CO2(4.5kg)= 43nos,Foam(9ltrs)-05nos &amp; Foam(50ltrs)-05nos,</b>

**ANNEXURE - III**  
**DETAILS OF MOCK DRILLS**



### DETAILS OF MOCK DRILLS

SL.NO	Description of mock drills and training	Numbers of training & mock drill conducted	Numbers of participants
1	Emergency Rescue mock drill	02	53
2	Safety Induction Training	152	2635
3	Portable fire Extinguishers training	17	618
4	Contractor safety training	51	1609
5	Defensive driving training	10	297
6	Tool box training	23724	185389
7	On the Job Safety Awareness	300	5383

### FIRE EXTINGUISHER TRAINING



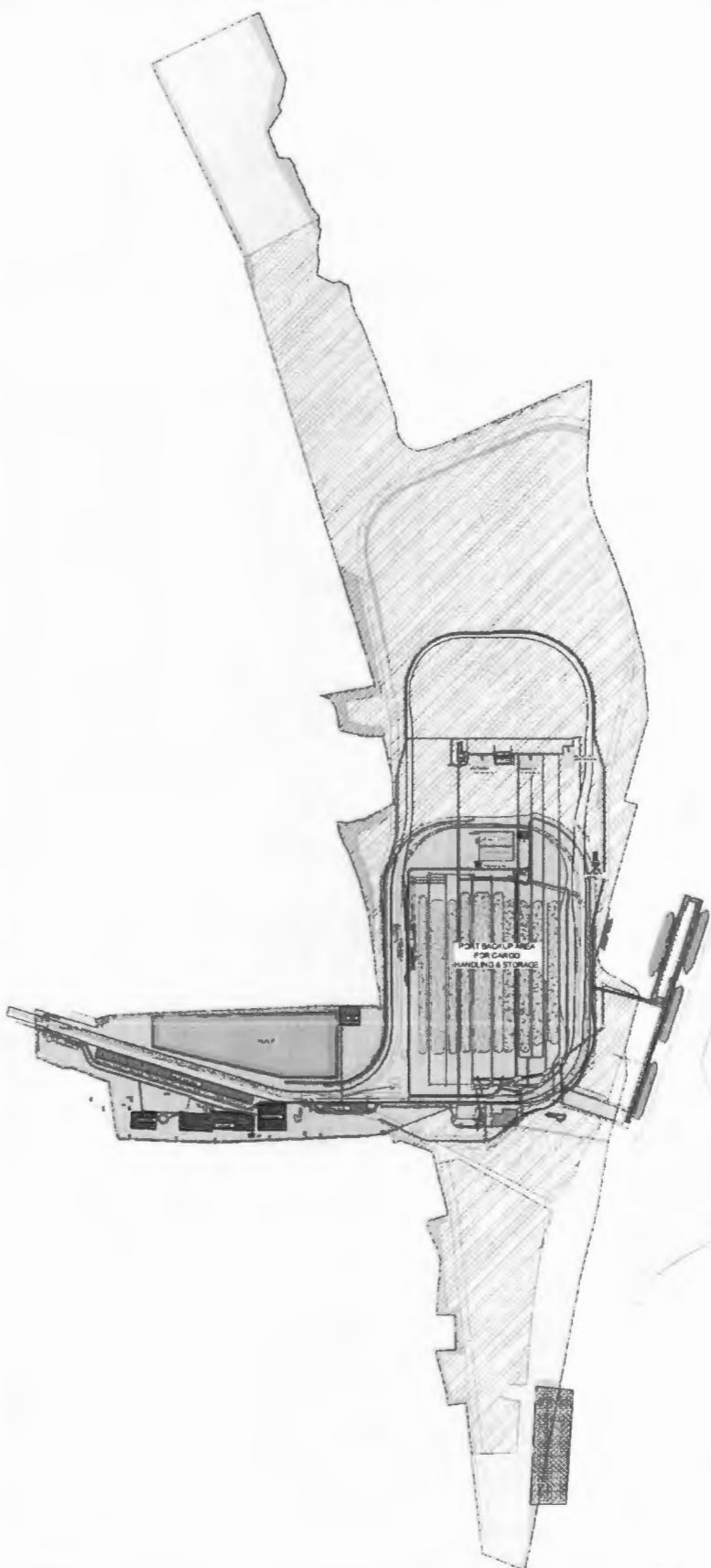
### FIRE MOCK DRILL AT SITE



### EMERGENCY RESCUE MOCK DRILL AT SITE



**ANNEXURE - IV**  
**PORT LAYOUT**



# **LEGEND:-**

- Land boundary Area
- Level raising/reclamation for port backup area
- Railway Corridor
- Port Office, Township STP & WTP area
- Waste Yard (Temporary)
- ETP
- Green Belt Existing
- Green Belt (As per Master plan)
- Protected Mangrove

## **ISSUE FOR INFORMATION**

Rev.	Description	By	Verified	Date

A - ISSUE FOR INFORMATION  
 Date: 08-Nov-2017 10:10 PM

SCALE: SHOWN ARE FOR A1 SIZE DRAWING

**HOWE**  
 Benchmarking Infrastructure



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Drawing Title  
**DHAMRA PORT DEVELOPMENT PLAN**  
**IMMEDIATE DEVELOPMENT PLAN**

Sheet Drawing No.  
 SK-004/11-17

Rev.  
 A

**ANNEXURE – V**  
**GREEN BELT DETAILS**



## GREEN BELT DETAILS



**Fig 1 : Nursery with 1 Lakh Sapling Stock**



**Fig 2: Railway Corridor Edge Plantation**



**Fig 3: Greenbelt around the Port**



**Fig 4: Greenbelt around the Port**



**Fig 5: Greenbelt around the Port**



**Fig 6: Greenbelt around the Port**

**ANNEXURE – VI**  
**ENVIRONMENT EXPENSES**

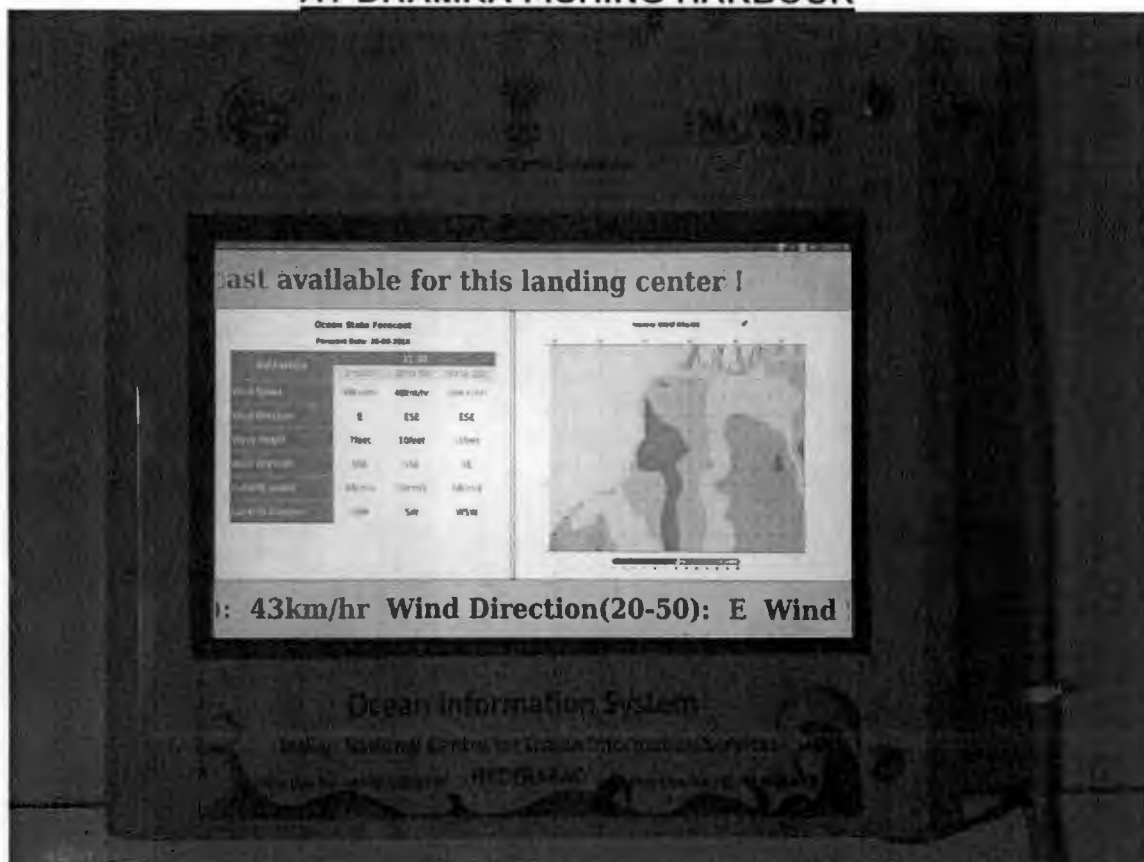
## **ENVIRONMENT EXPENSES**

<b>ENVIRONMEN PROTECTION EXPENDITURES FY 2018-19</b>		
<b>S. No.</b>	<b>Activity/ Category</b>	<b>Expenditure</b>
		<b>in lacs</b>
1	Environmental Study / Audit	0.99
2	Legal & Statutory Expenses	189.0
3	Environmental Monitoring Services	10.00
4	Hazardous & Non- Hazardous Waste Management & Disposal	33.57
5	Environment Day Celebration	1.70
6	Mangrove conservation	0.86
7	Horticulture/Plantation	90.02
8	O&M of Sewage Treatment Plant	5.76
9	Water Treatment Plant	33.60
10	Turtle conservation (Trawler for patrolling)	12.12
11	Port Housekeeping Operation	101.75
12	Port housekeeping Environment	50.43
13	Biomedical Waste Management	1.40
<b>Total Environmental Expenditures (in Lakhs)</b>		<b>531.2</b>

**ANNEXURE – VII**  
**PICTURE OF INCOIS ELECTRONIC**  
**DISPLAY BOARD**



**PICTURE OF INCOIS ELECTRONIC DISPLAY BOARD INSTALLED  
AT DHAMRA FISHING HARBOUR**



**ANNEXURE- VIII**  
**NIOT REPORT**

**SHORELINE STUDIES AT DHAMRA AND ECO-SENSITIVE AREAS, ODISHA COAST (2016 -2018)**



Submitted to

**adani**

**THE DHAMRA PORT COMPANY PORT PVT. LTD.,  
DHAMRA, ODISHA.**



ESSO



**National Institute of Ocean Technology  
Ministry of Earth Sciences, Govt. of India  
Chennai - 600100**

**August 2018**

## **EXECUTIVE SUMMARY**

The shoreline between land and sea is dynamic and undergoes frequent changes, short term and long term, caused by hydrodynamic changes (e.g., river cycles, sea level rise), geomorphological changes (e.g., barrier island formation, spit development) and other factors (e.g., sudden and rapid seismic and storm events). The study of the rate of change in shoreline position is important for assessing erosion-accretion, planning setback, hazard zoning, regional sediment budgets and conceptual or predictive modeling of coastal morphodynamics due to natural and man-made activities.

The Dhamra port is located on the northern part of Odisha and is developed as the most modern all weather, deep water, multi user port, in Bhadrak district on BOOST (Build, Own, Operate, Share and Transfer) basis. Ministry of Surface Transport (MoST), Government of India accorded the environmental clearance (Phase I) for Dhamra port vide their Office Memorandum No. PD/26017/8/98-PDZ (CRZ) dated 4th January, 2000. DPCL has implemented Phase I facility by construction and operation of 2 berths. Later, M/s Dhamra Port Company Ltd had obtained the Environment & CRZ clearance vide letter dated 1st January, 2014 for Phase – II expansion of port.

As a part of Phase – II Environment clearance, MoEF& CC has recommended DPCL to monitor coastal erosion and accretion on a regular basis. Also the impact of dredging and dumping of the sediment on Dhamra shoreline change and on the ecologically sensitive areas including the Kanika island has to be assessed at regular interval by a recognized institute. In this regard, National Institute of Ocean Technology (NIOT) was requested to study the shoreline changes along Dhamra Port. The shoreline change study along 26.9km along Dhamra Port and 7 km along Kanika island was carried out in long term for the period of four decades(1975 to 2016) and in short term (2012 to 2016) to assess the impact of dredging and reclamation.

In continuation to the study, it is proposed to study the shoreline change in recent years (2016 -2018) for the study area covering total length of 35.1km in and around port area and also Eco sensitive areas ( Bhitarkanika, North side Mangroves) and 7 km along Kanika island and 7km along wheeler island .The study is carried out using remote sensing, GIS and field based

studies to quantify the shoreline change rates. Temporal and spatial variability shoreline is investigated using multi-date satellite images from 2016 to 2018. The study area has been divided into various zones and transects at uniform interval have been chosen for each zone. Positive shoreline change rates were noticed along the study area due to land reclamation and increase in mangrove cover.

**DR.M.A.ATMANAND**

**Director**



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## 1.INTRODUCTION

The shoreline, occurring between land and sea, is dynamic in nature. It undergoes frequent changes, short term and long term, caused by hydrodynamic changes (e.g., river cycles, sea level rise), geomorphological changes (e.g., barrier island formation, spit development) and other factors (e.g., sudden and rapid seismic and storm events) (Scott, 2005). The study of the rate of change in shoreline position is important for a wide range of coastal studies, such as development of setback planning, hazard zoning, erosion-accretion studies, regional sediment budgets and conceptual or predictive modeling of coastal morphodynamics

The natural character of sandy beaches is to change shape constantly and to move landward (retreat) or seaward (advance). The changes are caused by changes in the forces that move the sand, namely wind, waves, and currents, and by the supply of sand. Short and long-term relative sea-level changes also control shoreline movement. The setting of the shoreline and the supply of sand determine how the shoreline changes at a particular location. Setting refers to whether a beach is sheltered from waves, adjacent to a tidal or storm channel, or next to a jetty or seawall. To understand and predict the rate of change, we need to distinguish between long-term, short-term, and episodic changes and to understand their causes. Long-term change occurs over tens to thousands of years, short-term change refers to movement occurring over several seasons to 5 or 10 years, and episodic change is that which occurs in response to a single storm.

M/s DPCL is undergoing developmental and construction activities in line to Phase II Environment & CRZ Clearances. As a part of Phase – II Environment clearance condition compliance, it is very much required to understand the impact of dredging and dumping of the sediment on Dhamra shoreline change and on the ecologically sensitive areas including the Kanika island. Capital dredging was carried out between April 2016 to March 2018, which was utilized for reclamation and ground improvement. Regular Maintenance dredging was also done during this period and all the dredged material was dumped to the identified approved disposal area.

In this regard, National Institute of Ocean Technology (NIOT) was requested to study the shoreline changes along Dhamra Port in long term for the period of four decades (1975 - 2016) and in short term from 2013 to 2016. The main purpose of these studies was to identify impact, if

any, because of the Port related activity on Shoreline changes of Dhamra and nearby eco sensitive areas. The study area covered 26.9 km along Dhamra port and 7 km of Kanika island. Temporal and spatial variability shoreline was investigated using multi-date satellite images from 2013 to 2016 and submitted to DPCL. The spatial and temporal analysis of Kanika island (1975 -2016 ) indicate the landward shift of 1.1 km and change in area of the island from 0.5 sq.km to 9.0 sq.km when compared with oldest Toposheet of 1975. The study result showed 57% of transects exhibiting high accretion rate due to reclamation activities that was carried out under Phase II expansion CRZ/Environment clearance. Further it was recommended to assess the shoreline change post reclamation at regular intervals. Based on the recommendation, the shoreline change study is continued for the recent years (2016 to 2018) to study the impact of post reclamation on shoreline of Dhamra port and eco sensitive areas around Dhamra including Kanika island and Wheeler island.

## 2. STUDY AREA

The study area covers total length of 35.3 km along Dhamra port (North and South region),eco sensitive areas which includes Bhitarkanika and Gahirmatha marine sanctuary and national park. The study also cover the Eastern region of Kanika Island and Southern region of Wheeler Island (Figure 1).

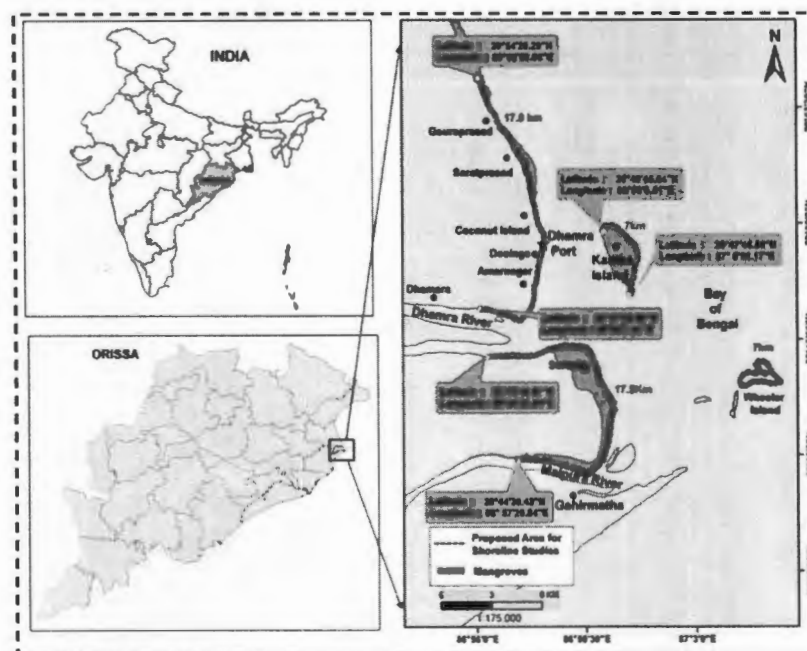
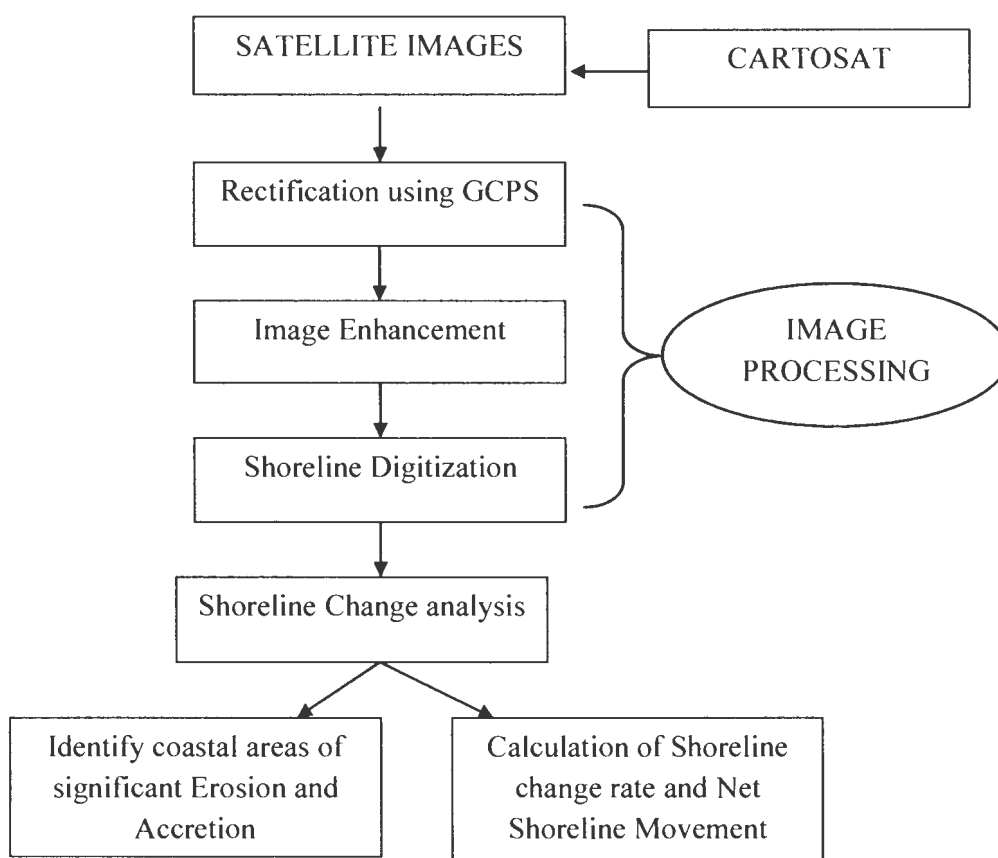


Figure 1 Study Area

### 3. METHODOLOGY ADOPTED FOR SHORELINE CHANGE ANALYSIS

Changes in shoreline through processes of accretion and erosion can be analyzed in a Geographic information system (GIS) by measuring differences in past and present shoreline locations. The areas which were covered by mangroves were not accessible to carry out field surveys. Recent advancements in remote sensing and geographical information system (GIS) techniques have led to improvements in shoreline change analysis. The image processing on satellite remote sensing data can provide a suitable tool for updating shoreline maps over large areas at relatively low costs. The methodology of shoreline change analysis involves the use of satellite remote sensing images and statistics as shown in Figure 2. Multi-date satellite images have been used to demarcate shoreline positions, from which shoreline change rates have been estimated using linear regression.



**Figure 2** Methodology for Shoreline change analysis



### 3. DATA SOURCES

#### 3.1 FIELD DATA

Field survey was carried out during March 22-27, 2018 and shorelines were marked using Real Time Kinematic positioning system (RTK).GPS was also used to collect data over inaccessible areas. Kanika island, eastern shore was mapped using RTK and as the western Kanika was inaccessible, survey was carried out using GPS mounted on the boat. Both are represented in the Figure 3 below.



**Figure 3** Field data collection of Ground Control Points

#### 3.2 SATELLITE IMAGES

In the present study, satellite images, procured from National Remote Sensing Centre (NRSC), is utilized to demarcate shoreline positions for shoreline change analysis. Satellite images over the study area based on availability, Cartosat 1, Sentinel was acquired, over the chosen period (2016 to 2018) and corrected with the data collected from the field.

**Table 1** List of different satellite data with acquisition date and time

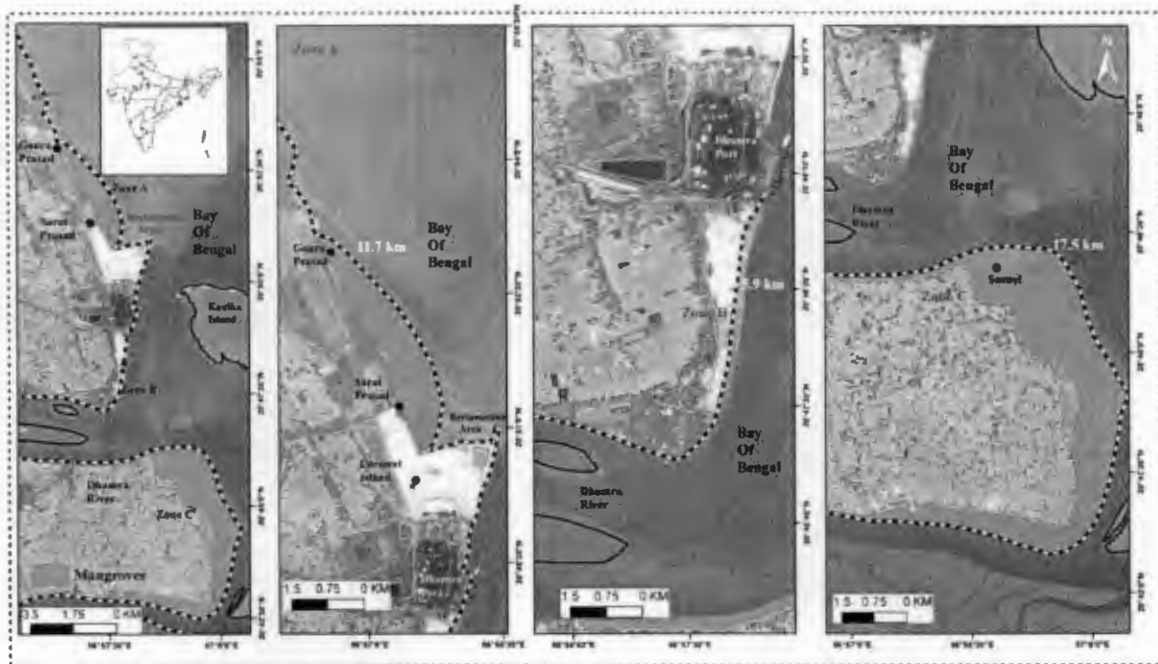
No	Satellite Image	Resolution(m)	Date
1	Cartosat 1-Mono	2.5	23-03-2016
2	Sentinel	10	21-12-2017
3	Cartosat 1-Mono	2.5	14-02-2018
4	Rapid Eye-4	3	19-06-2018

#### **4. CALCULATION OF SHORELINE CHANGE RATE**

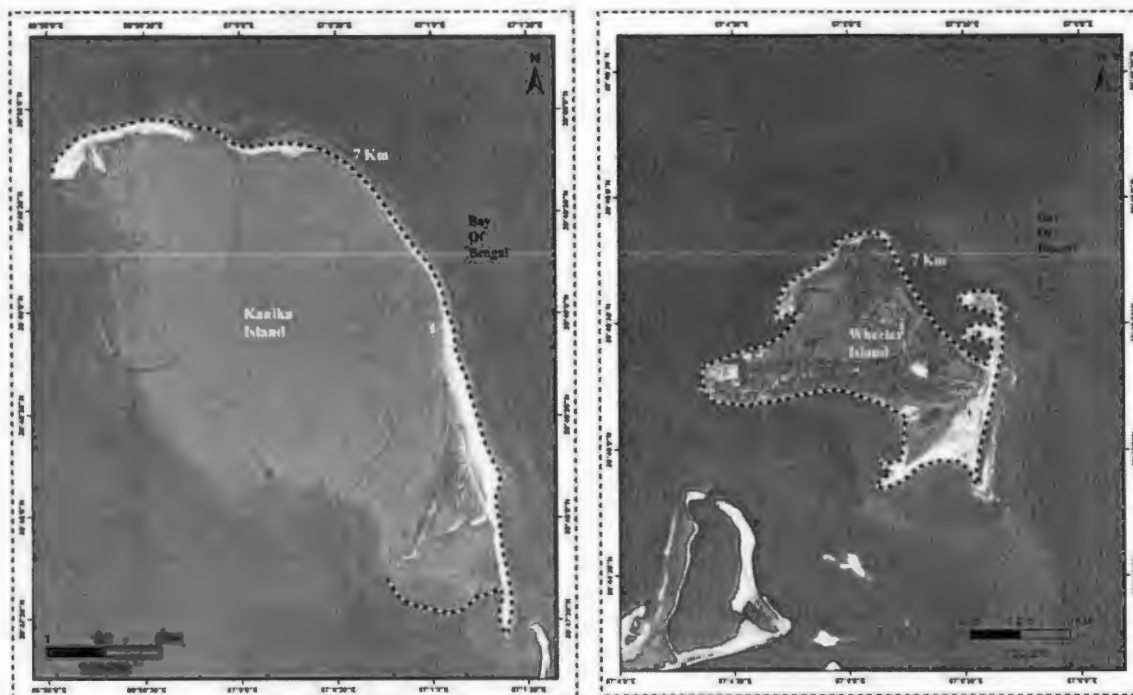
In GIS environment the sharp shorelines were digitized and the layers of multi date shorelines were prepared for 2016 to 2018 in the line feature class. Digital Shoreline Analysis System (DSAS) software was used to computes rate of change statistics from multiple historic shoreline positions. The digitized shorelines from 2016 to 2018 were used as an input into the DSAS model to calculate the temporal and spatial change.

To study the spatial change pattern along the shoreline, total of 167 cross sections were taken arbitrarily almost at the 90° angle across all the digitized shorelines at an equal interval of 200m. A baseline/buffer line is created 100m buffer to the shoreline digitized from 1975 Toposheet. With reference to the baseline, seaward shifting of the shoreline along transect is considered as a positive value, while landward shifting is considered as a negative value. The study area of 35.3 km is divided into three zones A, B, C. Figure 4 represent the various zones of shoreline and Figure 5 shows the Kanika island and wheeler island,

- Zone A – Coastal stretch North of Dhamra Port (11.7km)
- Zone B – Coastal stretch South of Dhamra Port (5.9 km)
- Zone C – Coastal stretch South of Dhamra River (17.5 km)
- Kanika – Coastal Stretch of 7 km.
- Wheeler Island - Coastal Stretch of 7 km.



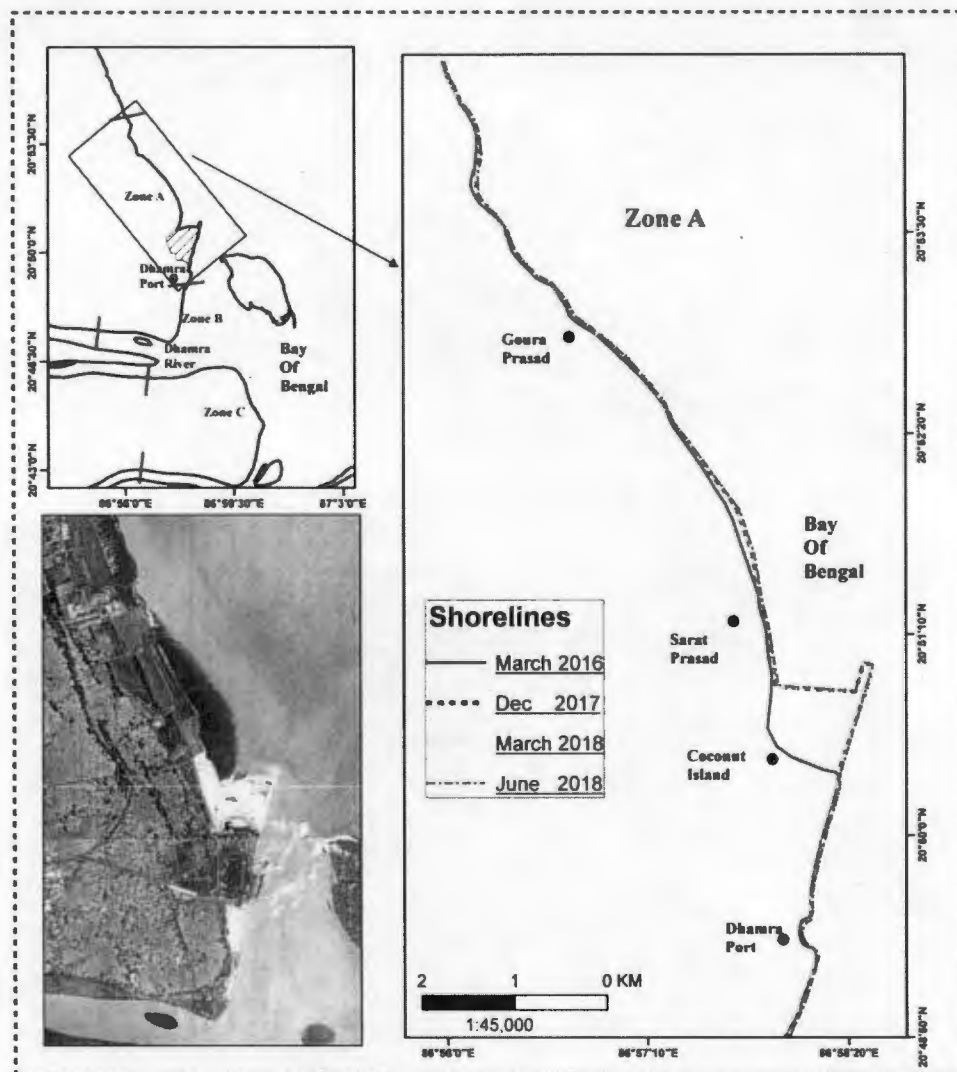
**Figure 4** Classification of study area into various zones



**Figure 5** Kanika and Wheeler Island

#### 4.1 ZONE A (NORTH OF DHAMRA PORT)

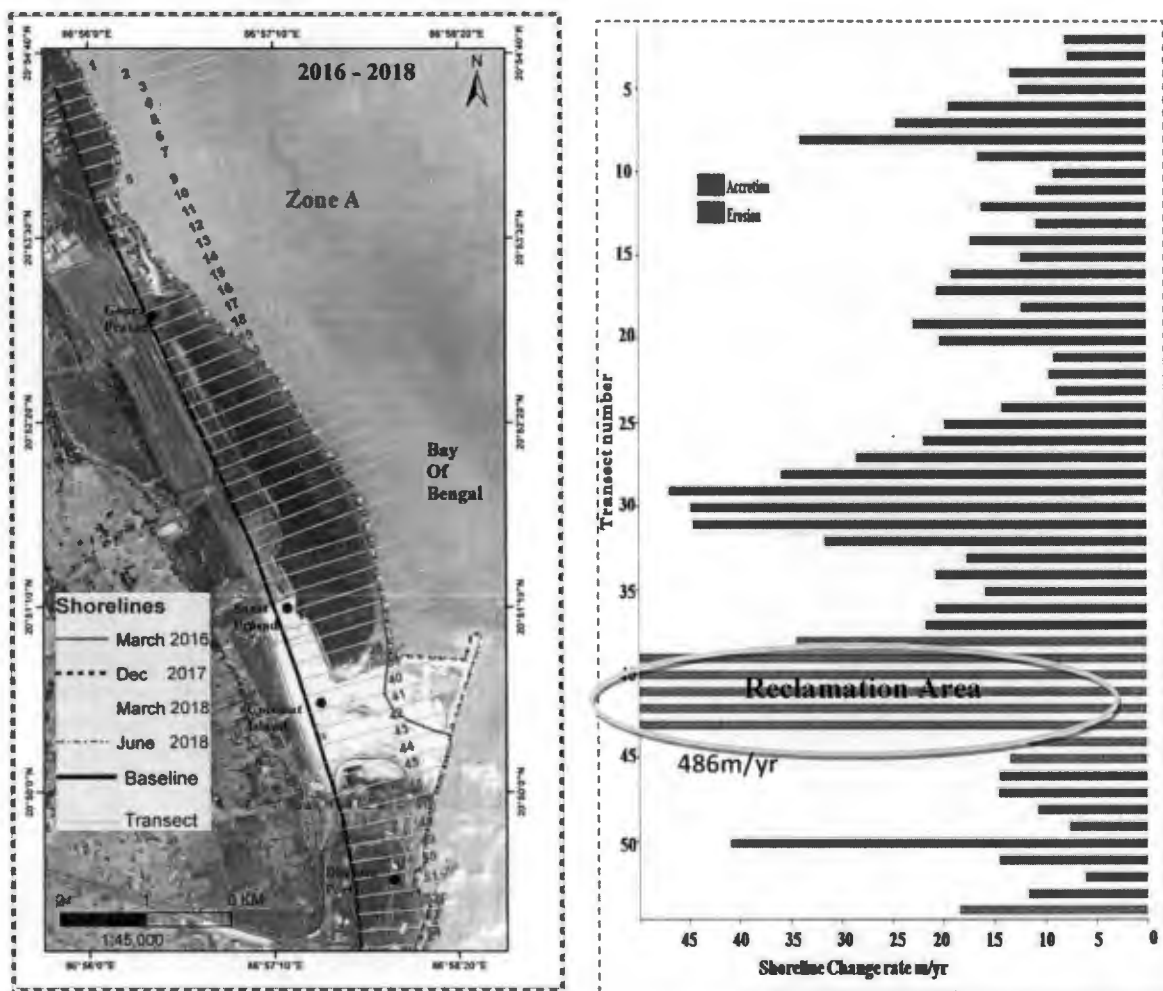
The coastal stretch of 11.7km on the north of Dhamra Port is considered as Zone A. Based on the regression analysis; it was observed a positive change in growth of mangroves from 2016 to 2018 (June 2018). Peak accretion rates were due to Reclamation area just north of the port.



**Figure 6** a) Zone A (June 2018) b) Digitized shorelines (2016 to 2018) in Zone A

The increase in growth of mangroves was due to calm wave environment which helped in deposition of sediments. The multi date shorelines prepared for Zone A from 2016 to 2018 in the line feature class is shown in Figure 6.

Zone A is divided into 54 transects of equal spacing with an interval of 200m as shown in Figure 7. Transects are laid 1800m perpendicular to the shore from the baseline. Shoreline change of entire stretch of Zone A has been calculated and plotted transect-wise. Average positive shoreline change rate of 47m/yr is observed in Zone A ( 1 to 54) during the year 2016 to 2018 due to reclamation (carried out as per Phase II CRZ/Environment clearance) and mangrove growth. It is observed that the positive shoreline change rate due to reclamation (Transects 38-49 & 50-54) alone is around 142 m/year and the remaining transects calculates around 19.6 m/year (1-37) which is due to increase in mangrove cover.



**Figure 7** a) Cross shore transects b) Shoreline change rate (m/year) in Zone A

The Net shoreline movement along the zone A has been calculated for 2016 and 2018 shoreline (Figure 8). The net shoreline movement reports a distance, not a rate. Maximum shoreline movement of 995m is observed at transect 40 and an average distance of 294.5m is observed in



reclamation area (Transects 38 to 49). The average net increase in shoreline accretion due to growth of mangroves ( Transects 1 to 37) in the north of the reclamation is about 43m with the maximum shoreline movement of 47m at transect 29.

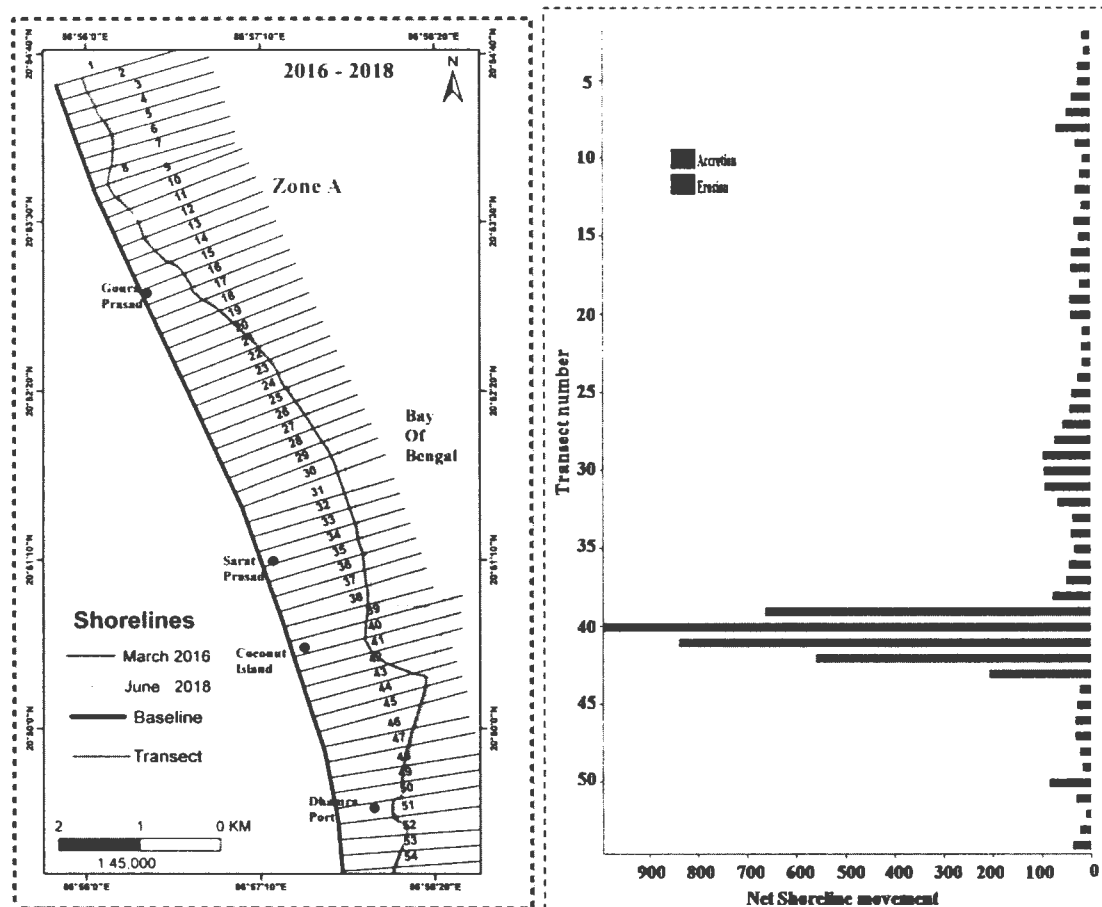


Figure 8 a) Cross shore transects b) Net Shoreline movement in Zone A (2016-2018)

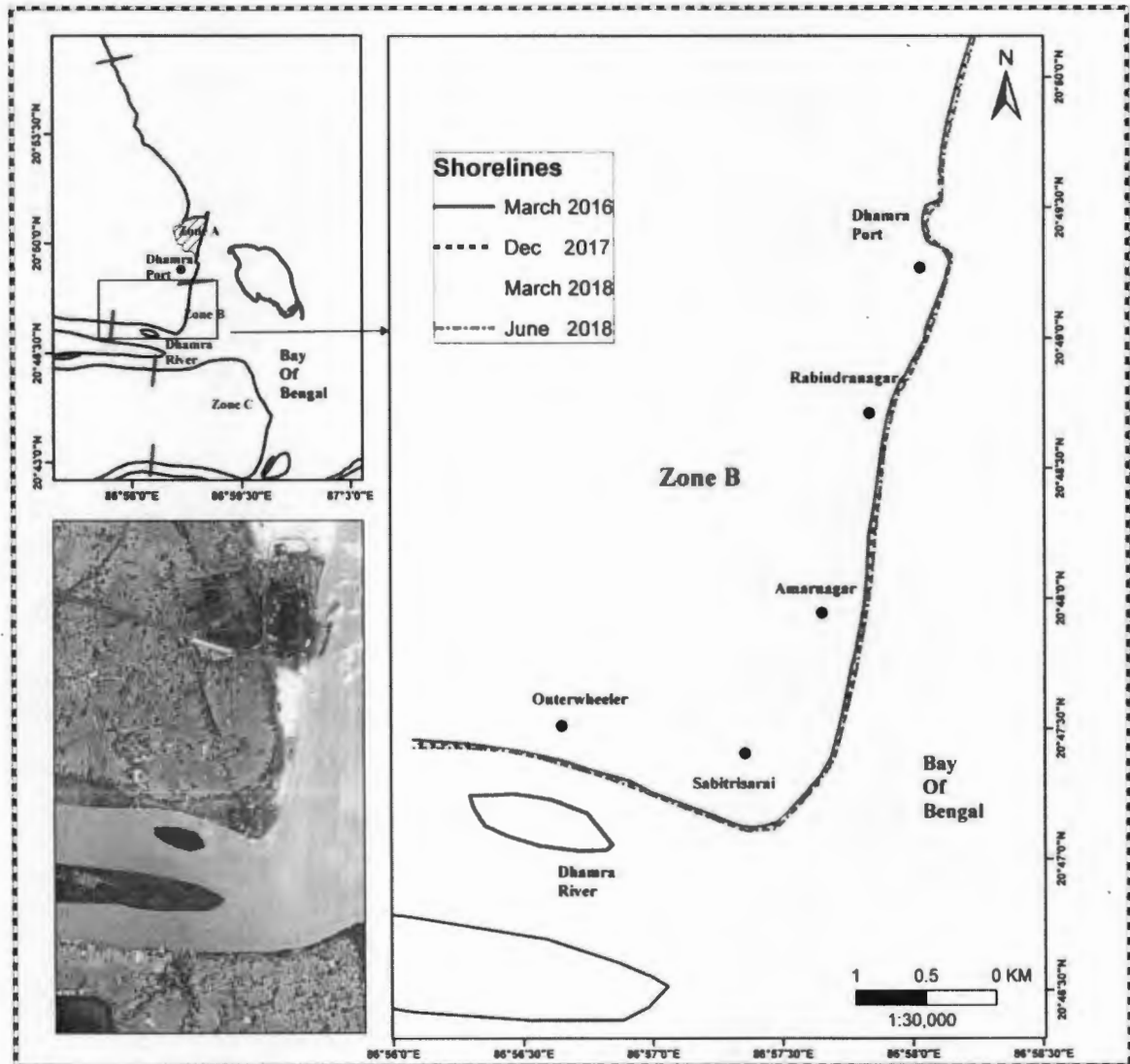
Table 2 Average Shoreline change rate-Zone A

Transect Number	Shoreline change rate(m/yr)		Net Shoreline Movement(m)		Remarks
	Max	Average	Max	Average	
1-37	47	20.5	100	44.4	Growth of Mangroves
38-49	486	142	995	294.5	Reclamation carried out as per Phase II CRZ/EC
50-54	18.4	13.2	39.3	28.7	Reclamation carried out as per Phase II CRZ/EC

\*(-/+ indicates Erosion/Accretion)

#### 4.2 ZONE B (SOUTH OF DHAMRA PORT)

The Zone B is about 5.9km which covers the Port area and the southern side extending till Dhamra river mouth.

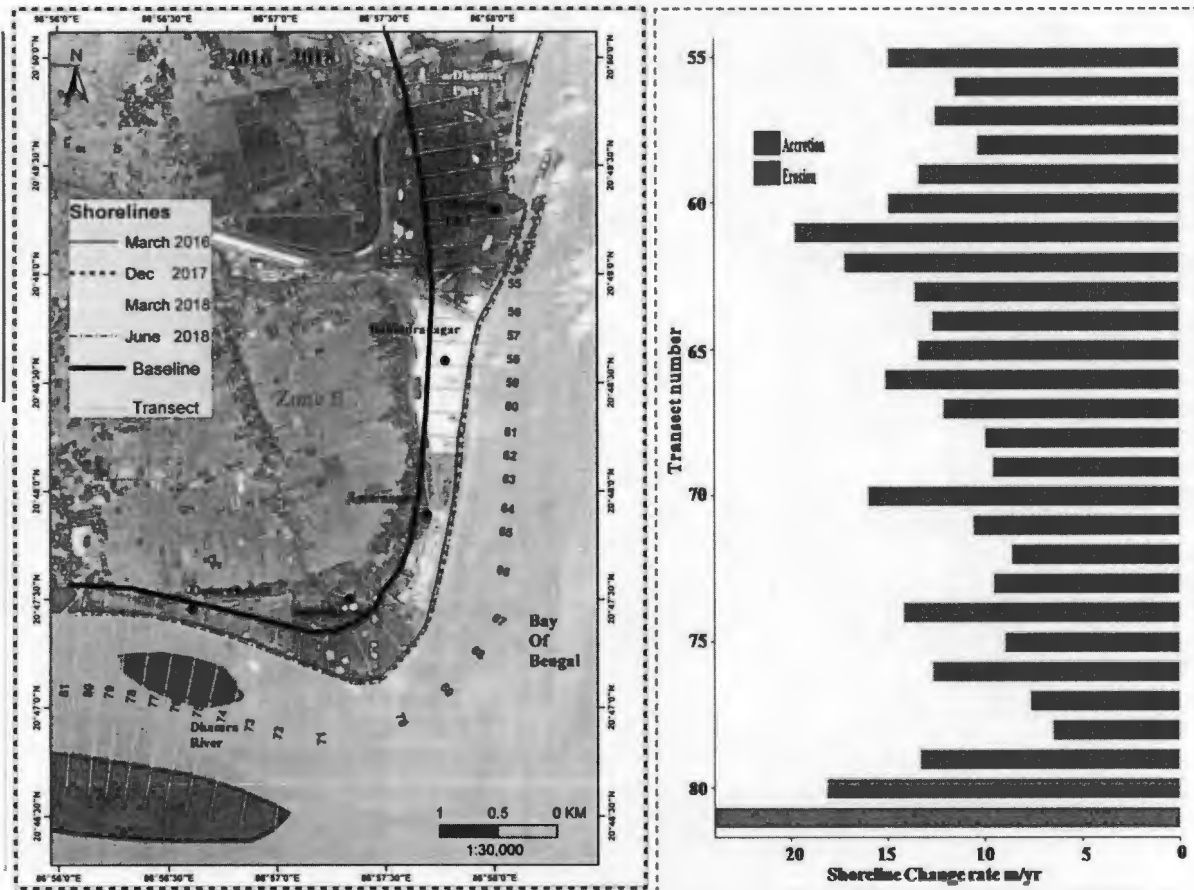


**Figure 9** Zone B - South of Dhamra port (June 2018)

Figure 8a shows the digitized shorelines prepared for Zone B from 2016 to 2018 in the line feature class. Zone B is divided into 26 transects of equal spacing with an interval of 200m as shown in Figure 10.

For the entire stretch of the coastline under Zone B, the transect-wise information of shoreline change rate has been calculated and plotted. Shoreline change analysis of zone B shows positive

shoreline change rate with the average of 13m/yr from 2016 to 2018. Transect 55 to 70 covers the southern part of Dhamra Port which shows the average positive shoreline change rate of 13.6m/yr due to sedimentation. Transects 71 to 81 lies along the northern bank of Dhamra river and shows positive shoreline change rate of 12.3m/yr due to increase in mangrove growth.



**Figure 10 a) Cross shore transects b) Shoreline change rate (m/year) in Zone B**

The net shoreline movement along the zone B for 2016 and 2018 shoreline is calculated as shown in Figure 11. Average shoreline movement of 30m(55-70) and 24m(71-81) is observed along south of the Dhamra Port and north bank of Dhamra river due to deposition of sediments along the coast and increase in mangrove growth respectively.

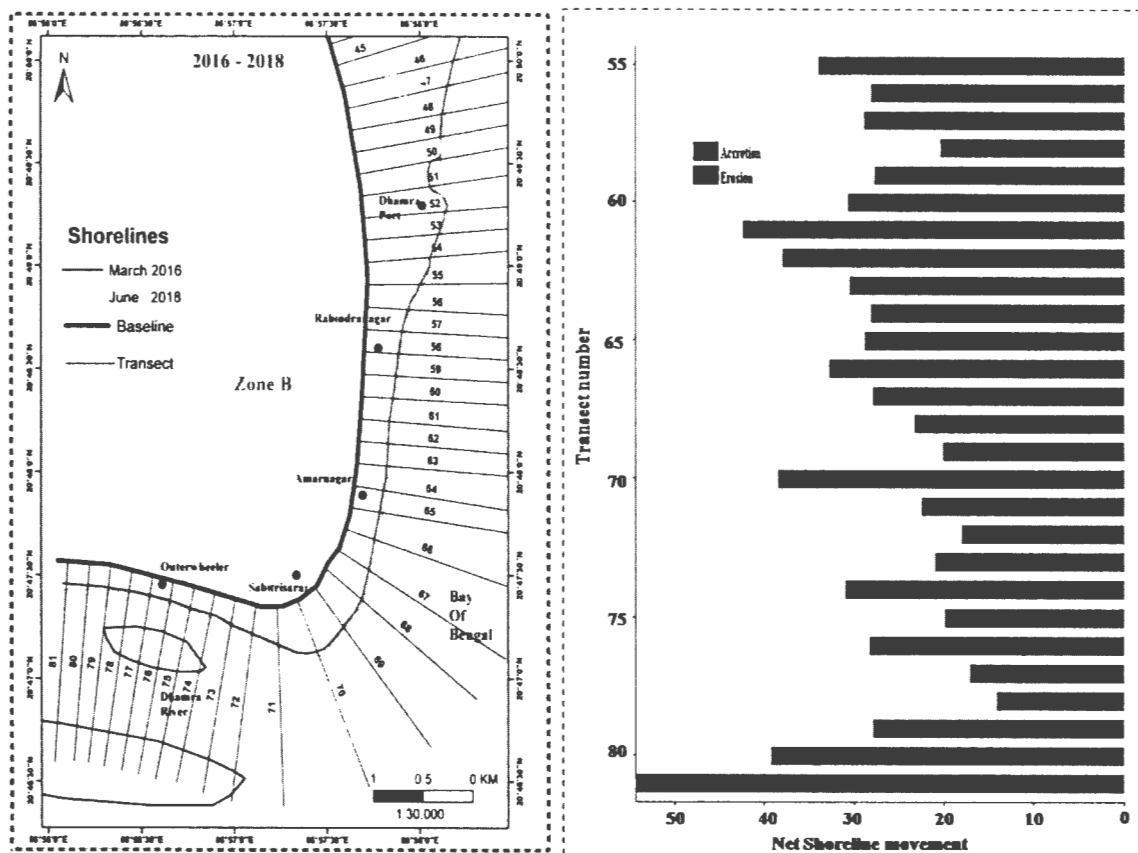


Figure 11 a) Cross shore transects b) Net Shoreline movement in Zone B (2016-2018)

#### 4.3 ZONE C (SOUTH OF DHAMRA RIVER)

Dhamra River is a joint stream in Odisha that is formed by the confluence of the Brahmani and Baitarani rivers south of the town of Chandabali. It lies in the Bhadrak district and empties into the Bay of Bengal. The coastal stretch of total 17.5 km, south of Dhamra River was analyzed for spatial and temporal changes using satellite data from 2016 to 2018. This area is mostly dominated by mangroves, with rivers both above and below it. It covers the ecologically sensitive area of Bhitarkanika & Gahirmatha marine sanctuary and national park. From 2016 to 2018, it shows accreting trend due to natural dynamics of the coast and increase in Mangrove cover.

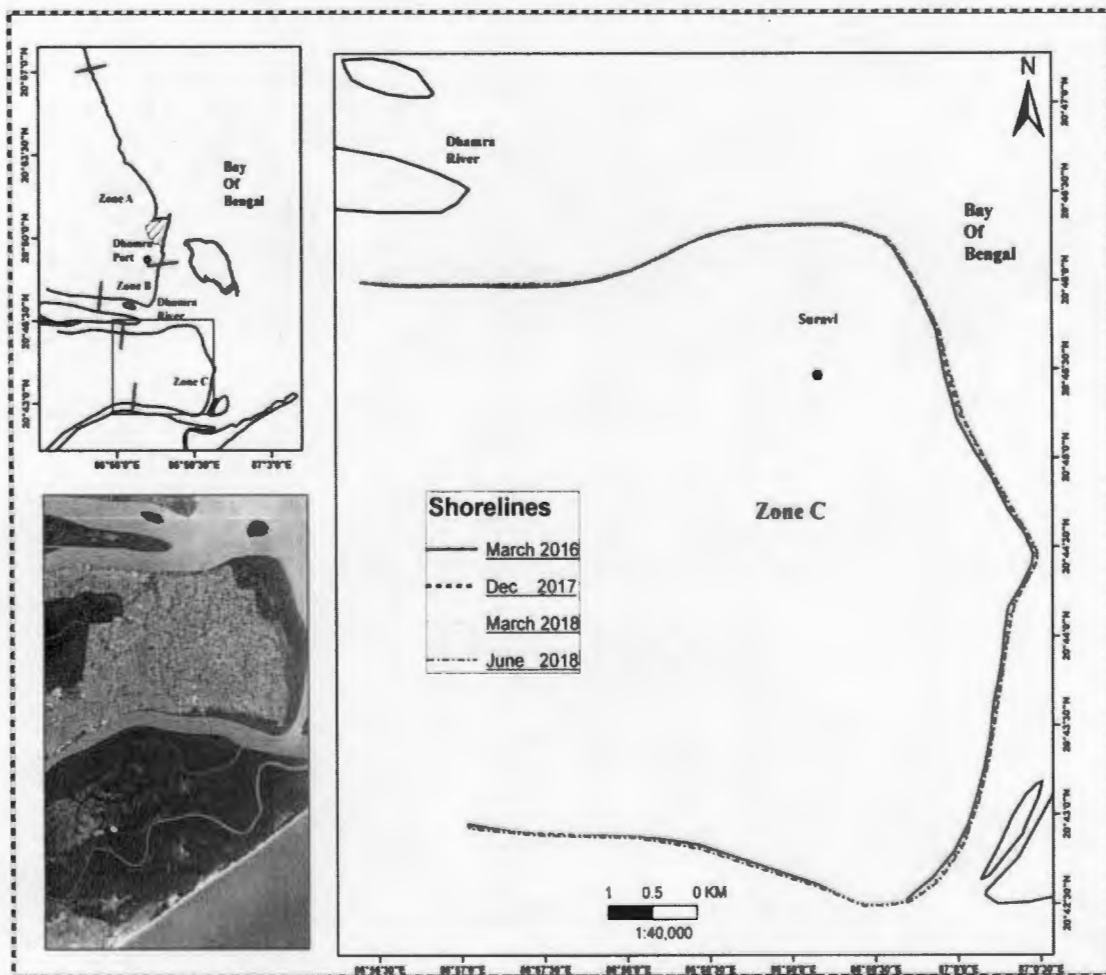
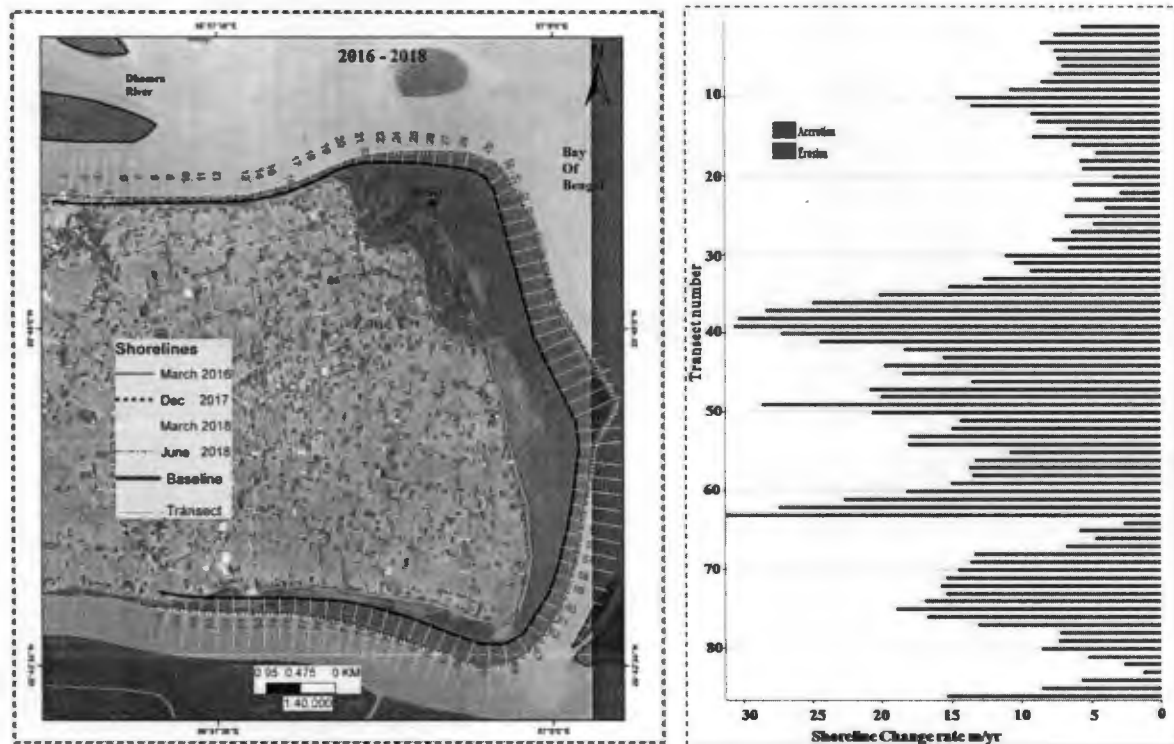


Figure 12 Zone C - South of Dhamra river (June 2018)

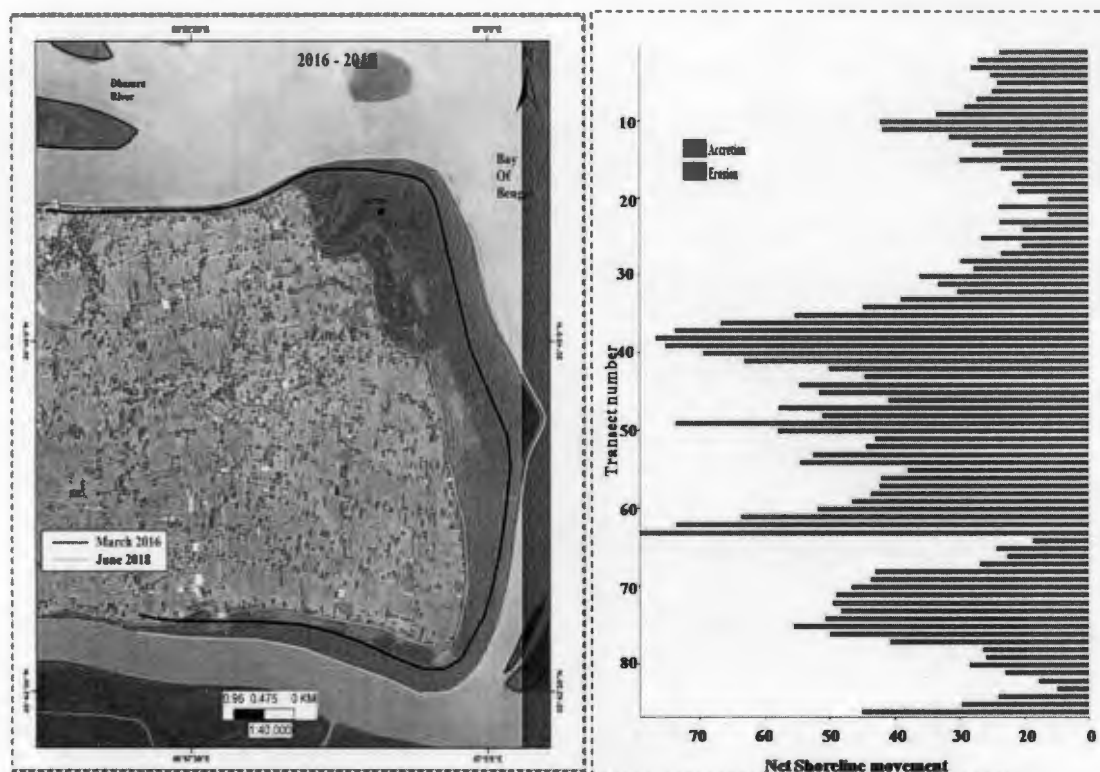


Figure 12 shows the digitized shorelines prepared for Zone C from 2016 to 2018 in the line feature class. Zone C is divided into 86 transects of equal spacing with an interval of 200m. The transects are laid 700m perpendicular to the shore from the baseline. For the entire stretch of the coastline under Zone C, the transect-wise information of shoreline change rate has been calculated and plotted from 2016 to 2018 (Figure 13). The transects 1 to 21 follows the accreting trend due to natural deposition of sediment at the rate of 8m/yr. The transects 22 to 86 falls in mangrove cover and the growth rate of mangroves is estimated at an average rate of 14.4 m/yr.



**Figure 13** Cross shore transects b) Shoreline change rate (m/year) in Zone C

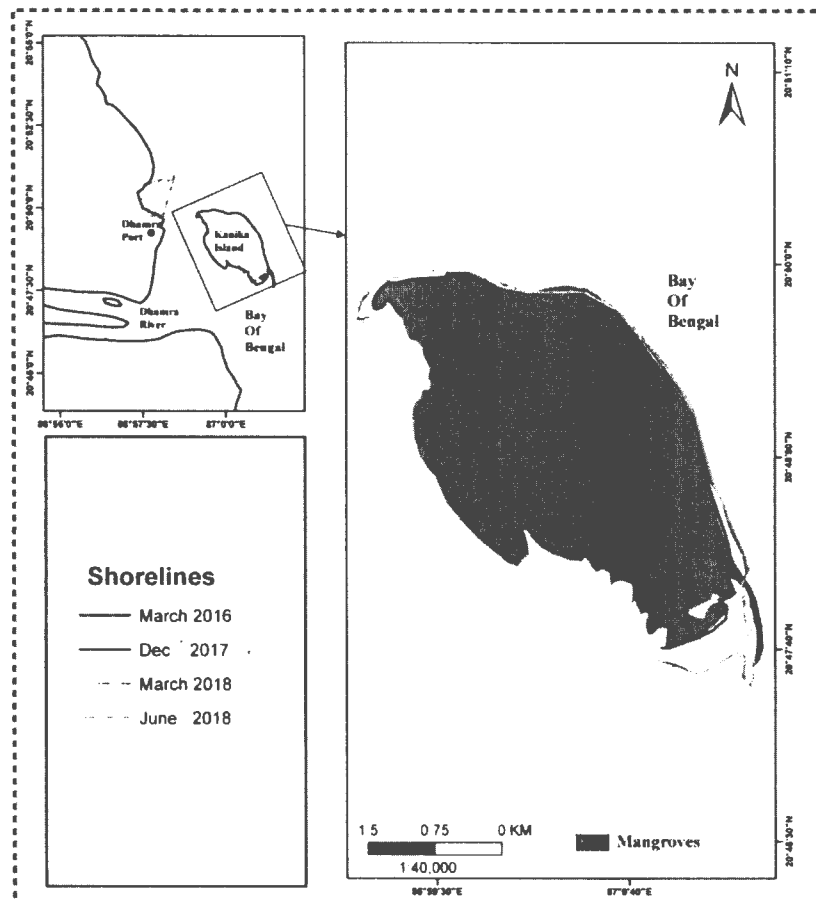
The net shoreline movement along the zone C for 2016 and 2018 shoreline is calculated as shown in Figure 14. Average positive shoreline movement of 17m(1-21) is observed along south of the Dhamra river due to deposition of sediments from river along the coast and 33.4m from transect 22 to 86 due to increase in mangrove growth.



**Figure 14** a) Cross shore transects b) Net Shoreline movement in Zone C (2016-2018)

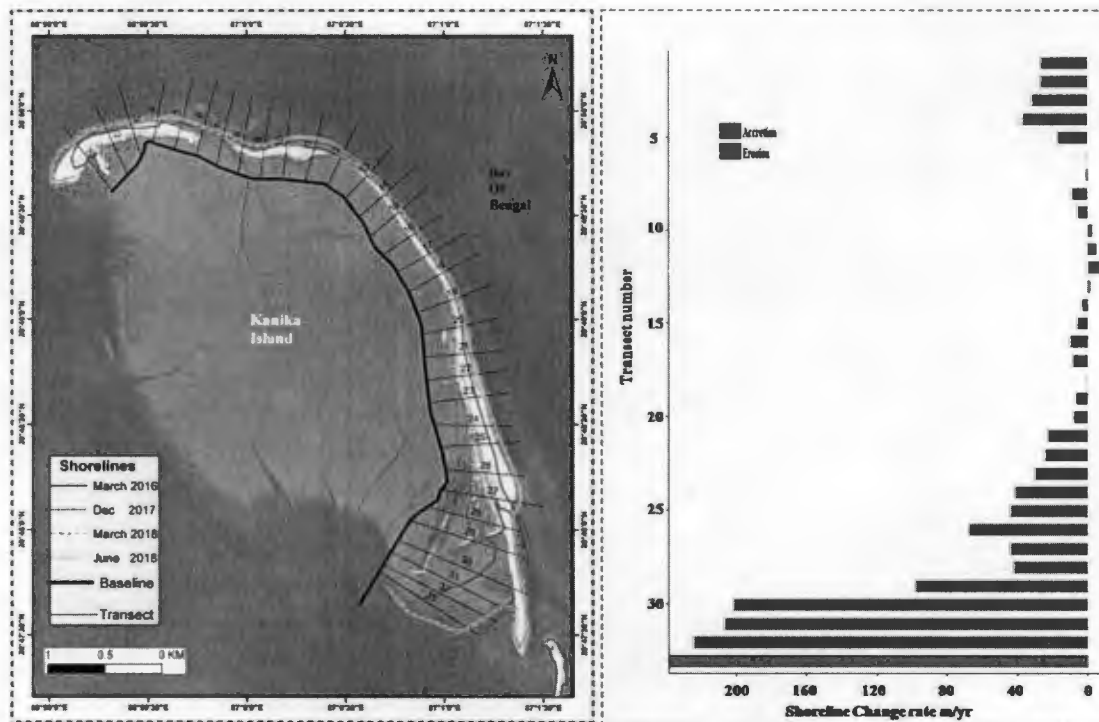
#### 4.4 KANIKA ISLAND

Kanika island having a coast of 7km shows a quantitative growth of mangroves from 2016 to 2018 (Figure 14). This could be due to deposition of minerals from Dhamra river which is favorable for the mangroves growth.

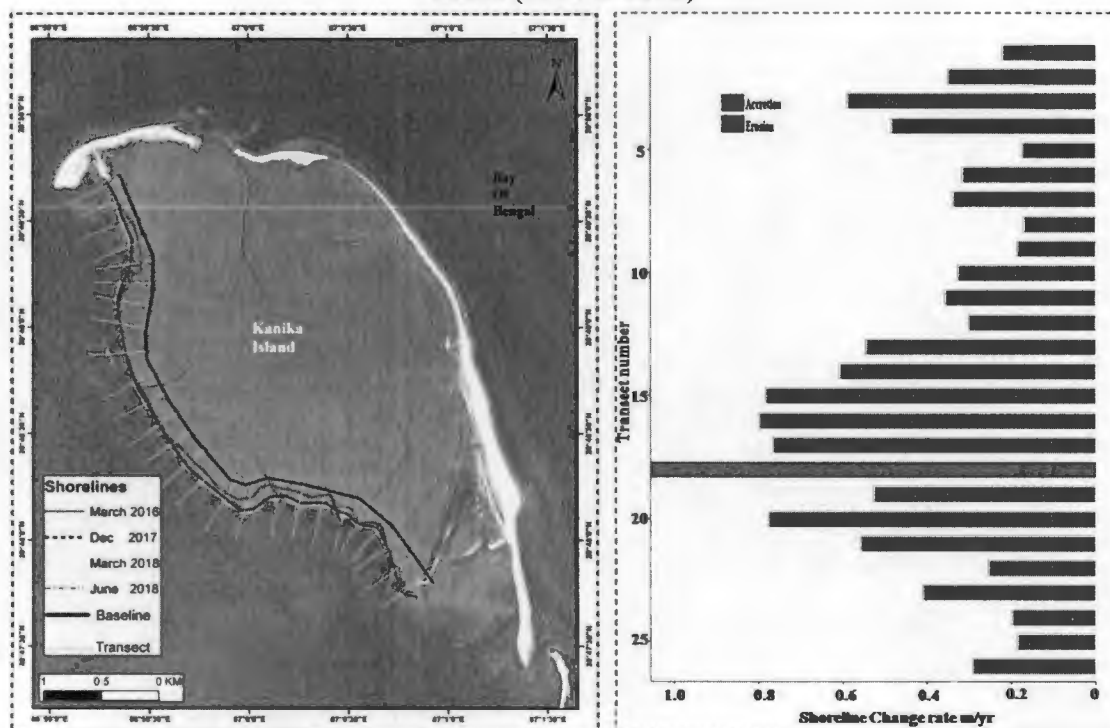


**Figure 15** Digitized shorelines (2016 to 2018) -East of Kanika Sands

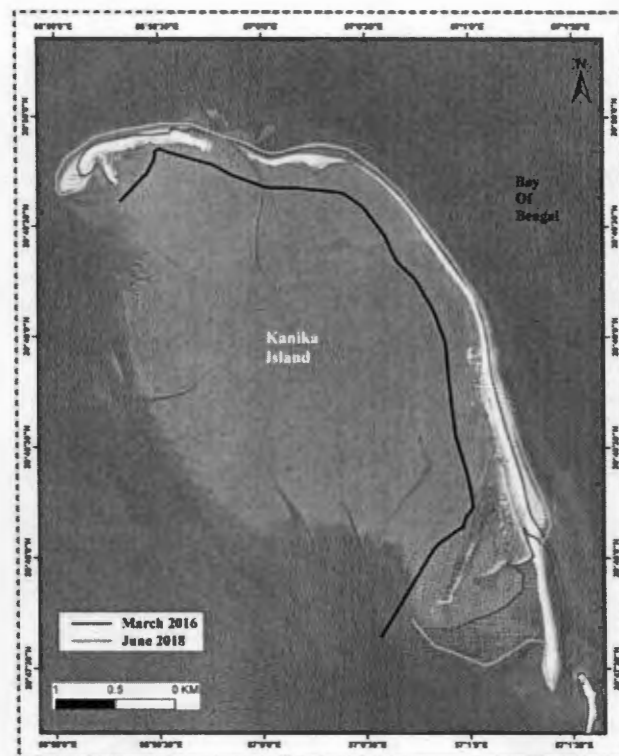
For the entire stretch of the coastline, the transect-wise information of shoreline change rate has been calculated and plotted (Figure 16) for Kanika island from 2016 to 2018. Coastline of Eastern Kanika is divided into 33 transects of equal spacing with an interval of 200m. The transects are laid 700m perpendicular to the shore from the baseline. The shoreline change rate is estimated at an average rate of 44.6m/yr from 2016 to 2018 with the maximum of 238.4m/yr at the southern end, where the large increase in mangrove growth is noticed.



**Figure 16** a) Cross-shore transects- Kanika island b) Shoreline Change rate (m/year) in Kanika island (2016 to 2018)

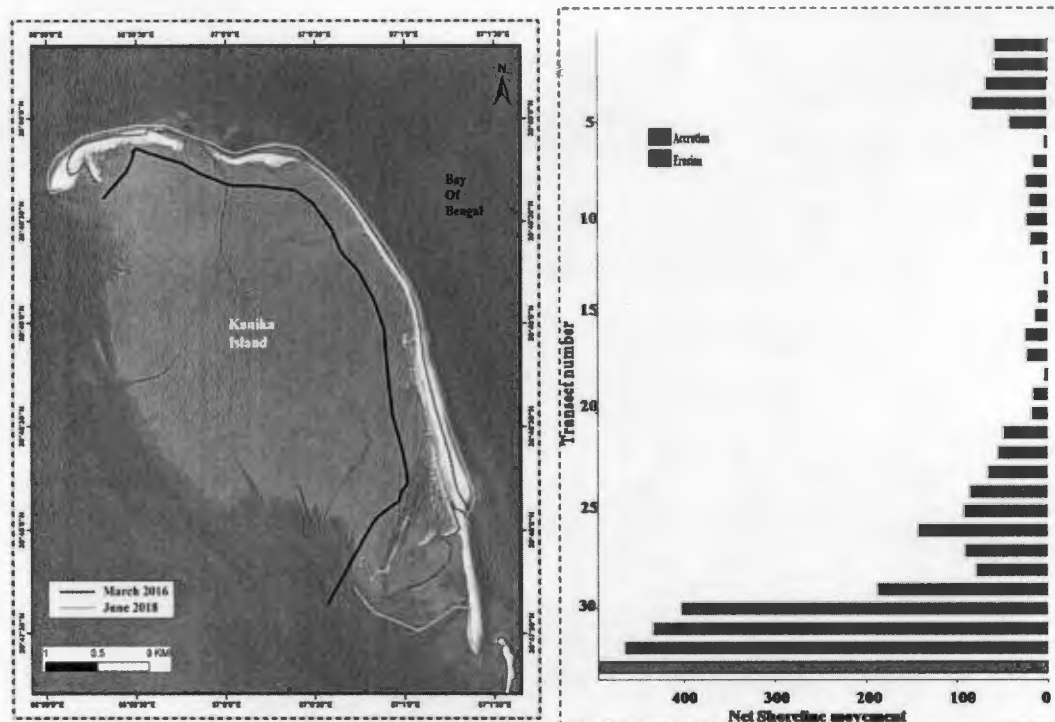


**Figure 17** a) Cross-shore transects- Kanika island(west coast) b) Shoreline Change rate (m/year) in Kanika island (2016 to 2018)



**Figure 18** Mangrove growth of Kanika island (2016 to 2018)

The average growth rate of mangroves along the Kanika west is 0.45m/yr (2016 -2018) and there is no significant shift observed towards west. Based on the digitized shorelines from satellite images ,the area of Kanika island between 2016 to 2018 is found to be increased from 9 km<sup>2</sup> to 9.618 km<sup>2</sup> as shown in Figure 17.



**Figure 19** a) Cross shore transects b) Net Shoreline movement along Kanika island (2016-2018)

The net shoreline movement along the kanika island for 2016 and 2018 shoreline is calculated as shown in Figure 18. Average positive net shoreline movement of 97m is observed along the eastern side of Kanika with the maximum of 495m due to increase in mangrove growth in the southern end.

#### 4.5 WHEELER ISLAND

Wheeler island has coastline of around 4km and located near the Gahirmatha coast. The island shows positive trend throughout the coast between 2016 to 2018 . For the entire stretch of the coastline, the transect-wise information of shoreline change rate has been calculated and plotted (Figure 20) for Wheeler island from 2016 to 2018. Coastline is divided into 27 transects of equal spacing with an interval of 200m. The transects are laid 300m perpendicular to the shore from the baseline.



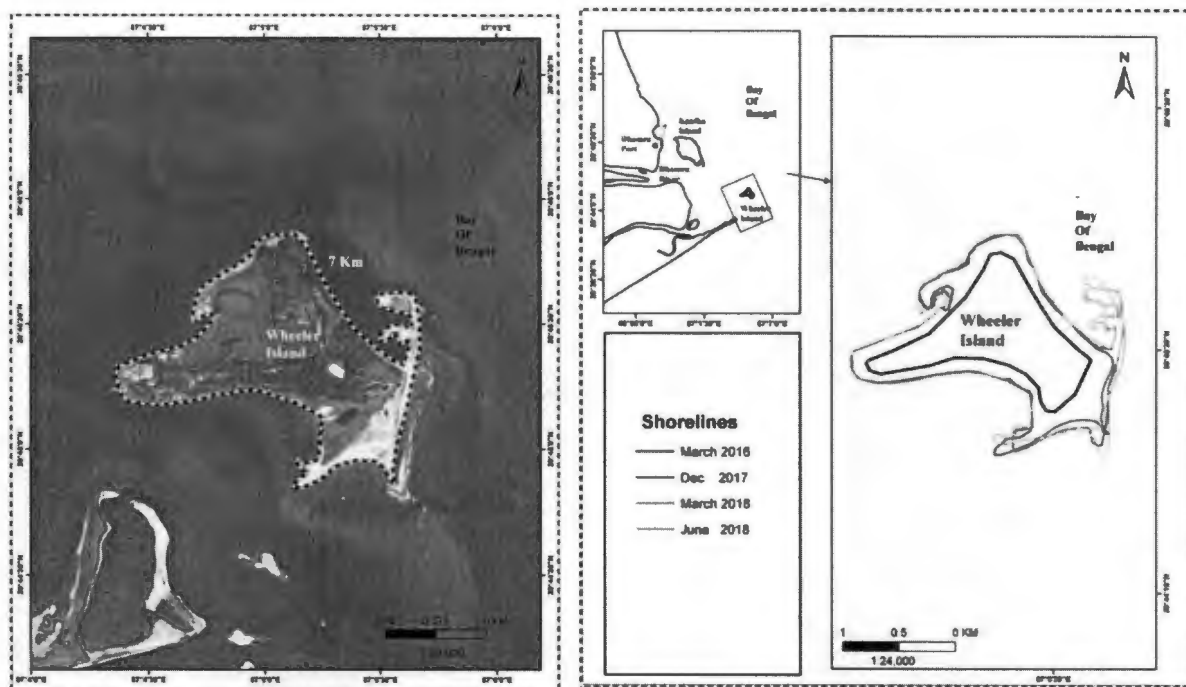


Figure 20 a) Wheeler island b) Digitized shorelines (2016 to 2018) –Wheeler island

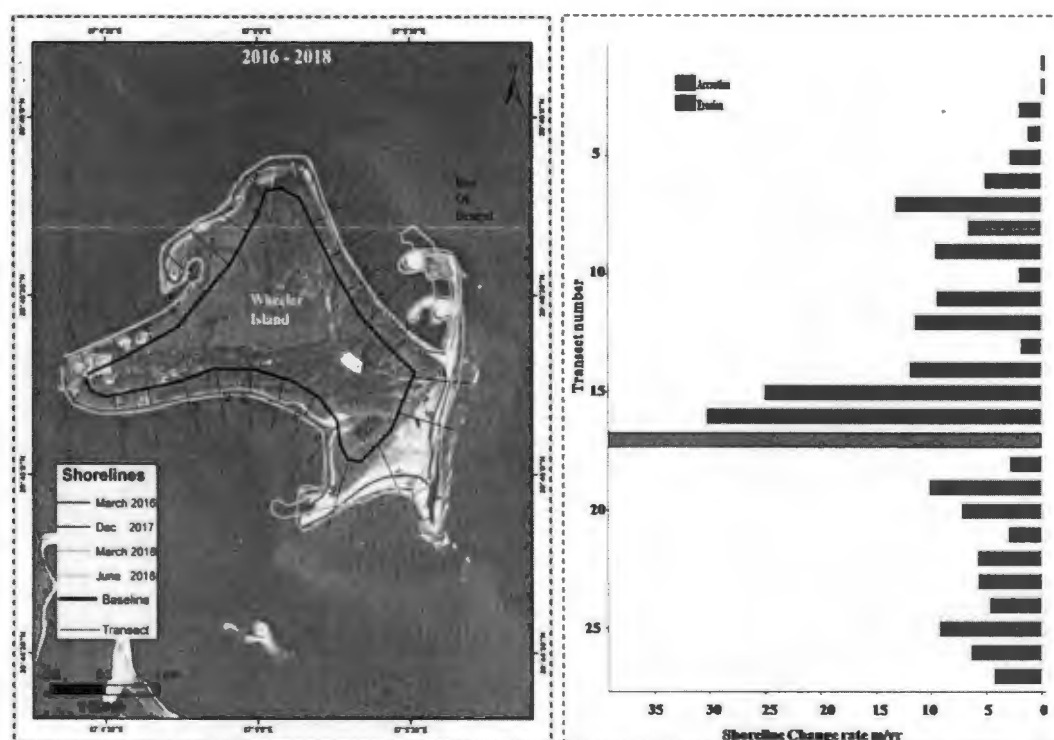


Figure 21 a) Cross-shore transects- Wheeler island b) Shoreline Change rate (m/year) in Wheeler island (2016 to 2018)

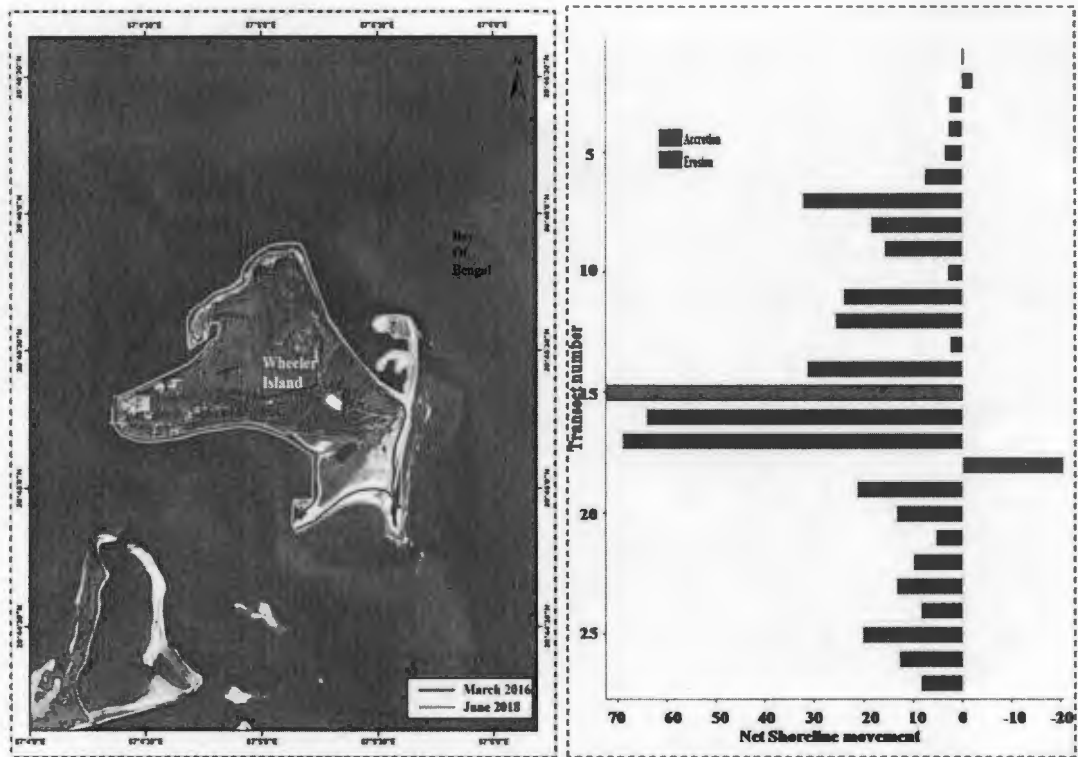


Figure 22 a) Cross shore transects b) Net Shoreline movement in Wheeler island (2016-2018)



Figure 23 Increase in area- Wheeler island(2016-2018)

The shoreline change rate is estimated at an average positive rate of 8.6m/yr from 2016 to 2018. The net positive shoreline movement of 17.2m is observed between 2016 and 2018 along Wheeler island (Figure 22). It is also observed that there is a sedimentation on the eastern side with the approximate area of 8394 m<sup>2</sup> as shown in Figure 23.

## 5. CONCLUSIONS

Dhamra port is built in an estuarine environment without breakwaters and hence the impact of coastal structure on shoreline change is negligible. In continuation to the study carried out by NIOT on shoreline changes along Dhamra and eco sensitive areas including Kanika island in long term (1975 to 2016) and in short term (2013 to 2016), a study was conducted on shoreline changes in recent times from 2016 to 2018 and the results are as under,

Morphological changes adjoining the port and Dhamra river mouth and eco-sensitive areas including Kanika and Wheeler island were analyzed using multispectral satellite images from 2016 to 2018. The analysis indicate,

- In Zone A, positive shoreline change with a rate of 142m/yr is observed between the period 2016 to 2018 due to reclamation activities carried out as per phase II CRZ/Environment Clearances and 19.6m/yr due to increase in mangrove land cover.
- The shoreline south of the port, Zone B shows accretion trend at the rate of 13m/yr from 2016 to 2018 due to deposition of sediments driven by waves and currents. The reclamation on north and south of the Port indicated positive shoreline change .
- In Zone C, the south of the Dhamra river bank shows accretional trend at the rate of 8m/yr due to natural causes, and the Suravi coast and north of the Maipura river mouth, shows positive shoreline change due to the growth of mangroves at the rate of 14.4m/yr.
- Based on the shoreline positions from satellite images, the southern area of the Kanika island is found to be increased due to increase in Mangrove growth.

- The spatial and temporal analysis of Kanika island indicate change in area of the island from 9.0 in 2016 to 9.618 sq.km in 2018 due to increase in mangrove cover on the southern end of Kanika island. The average shift is observed south of the Kanika at the rate of 44.6m/yr from 2016 to 2018. This is mainly due to growth of mangroves which is influenced by the deposition of fine sediments brought by river discharge.
- The spatial and temporal analysis of wheeler island (2016 to 2018) indicate positive shoreline change rate of 8.6m/yr due to natural deposition of sediments with the formation of spit along the eastern side of Wheeler island.

The port site and adjoining port area is experiencing positive shoreline change mostly due to reclamation activities as per Phase II expansion CRZ/Environment clearance and also due to increase in mangrove growth. The net shoreline change rate along the Port and adjoining mangrove areas shows no significant erosion. The present analysis shows that, proposed port expansion has no adverse impacts on the adjoining shorelines. However, similar shoreline change assessment need to be carried out only after substantial development activities are undertaken.

**ANNEXURE- IX**  
**DFO LETTER**

**OFFICE OF THE  
DIVISIONAL FOREST OFFICER, BHADRAK WILDLIFE DIVISION,  
AT/P.O/P.S.-CHANDBALI, DISTRICT-BHADRAK, PIN-756133  
Phone/Fax- 06786-220472, Mob- +91 9437041541, Email-dfobhadrakwlod@gov.in**

**Letter No. 1889/3F-192/2018, Dated 28/05/2018**

To,

The Chief Executive Officer,  
Dhamara Port Company Limited,  
At-Dosinga, P.O-Dhamara, Dist-Bhadrak.

Sub: Phase-II Expansion of Dhamara Port- Compliance to OCZMA recommendation and Expert Appraisal Committee (EAC) observation- Kanika Sand Conservation Plan-reg.

Ref This office letter no. 1734 dated.15.05.2018.


Sir,

In inviting a reference to this office letter number cited above and No. EE-16/2018-10054/F&E dated 01.05.2018 of the Forest and Environment Department, as requested vide your letter no. DPCL/Env/DFO/2018-102 dated 28.05.2018, enclosed please find herewith a copy of the amended conservation plan for Kanika Sand Island prepared at this end after incorporation of necessary changes in the plan as suggested by the PCCF (WL) & Chief Wildlife Warden, Odisha during presentation of the plan at his office on 08.02.2018.

Further, in partial modification to this office letter no cited above, it is to intimate you that the cost of 1<sup>st</sup> year operation comes to Rs.141.70 lakhs which is mentioned in Chapter-V of the said conservation plan.

Accordingly, you are requested to be in readiness for release of funds for the first year to the undersigned for implementation of the conservation plan at this end.

Yours faithfully,

  
Divisional Forest Officer,  
Bhadrak Wildlife Division.

Memo No. Dt.

Copy forwarded to the Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha, Bhubaneswar in continuation to this office memo no.1867 dt.25.05.2018 for necessary instruction on modalities for implementation of the conservation plan as requested by the undersigned.

Divisional Forest Officer,  
Bhadrak Wildlife Division.

Memo No. Dt.

Copy forwarded to the Additional Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, F.C Act) O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar for favour of kind information and necessary in continuation to this office memo no.1868 dt.25.05.2018.

Divisional Forest Officer,  
Bhadrak Wildlife Division.

Memo No. Dt.

Copy alongwith a copy of the revised conservation plan as amended during the presentation at the O/o the Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Odisha, Bhubaneswar held on 08.02.2018 forwarded to the Regional Chief Conservator of Forests, Bhubaneswar Circle for favour of kind information and necessary action in continuation to this office memo no.1869 dt.25.05.2018.

Divisional Forest Officer,  
Bhadrak Wildlife Division.



ଖଣ୍ଡବଳି ବନାୟକାରୀ, ଭଦ୍ରକ ବନାୟକାରୀ ବନଖଣ୍ଡ, ଚାନ୍ଦବାଲି କାର୍ଯ୍ୟାଳୟ  
OFFICE OF THE DIVISIONAL FOREST OFFICER, BHADRAK WILDLIFE DIVISION,  
AT/P.O/P.S.-CHANDBALI, DISTRICT-BHADRAK, PIN-756133  
Phone/Fax- 06786-220472, Mob- +91 9437041541, Email-dfobhadrakwl.od@gov.in

Letter No. 3148 -IF- 256/2018, Dated, Chandbali the 31<sup>st</sup>, August, 2018

To

The Chief Executive Officer,  
Dhamara Port Company Limited,  
At – Dosinga, Post – Dhamara, Dist – Bhadrak.

Sub:

Implementation of Conservation Plan of Kanika Island.  
-regarding Placement of Funds.

Ref:

1. Memo No.17845 dated.14.08.2018 of Senior Scientist, Forest & Environment Deptt., Govt. of Odisha to your address.
2. Your Office Letter No.113 dated. 09.07.2018.

Sir,

With reference to above cited memo on the captioned subject, it is to intimate you that an exclusive Savings bank Account with following details has been opened by the undersigned as per instructions issued by Forest & Environment Dept., Govt. of Odisha vide their letter under reference for implementation of Conservation Plan of Kanika Sand Island.

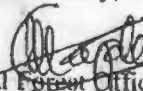
An early action is requested.

Account Details:

Account Name:	DFO BHADRAK WILDLIFE DIVISION
Bank Name:	State Bank of India
Branch Name:	Chandbali
Account No:	37903083739
IFSC:	SBIN0002039
Mobile No:	9437041541


You are requested to place funds as per annual breakup of cost in the approved project proposal.

Yours faithfully,

  
Divisional Forest Officer,  
Bhadrak (WL) Division.

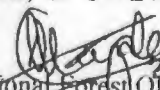
Memo No. 3149 Date- 31/08/2018

Copy forwarded to the Senior Scientist, Forest & Environment Deptt., Govt. of Odisha for favour of kind information.

  
Divisional Forest Officer,  
Bhadrak (WL) Division.

Memo No. 3150 Date- 31/08/2018

Copy forwarded to the Principal CCF (WL) & CWLW, Odisha for favour of kind information.

  
Divisional Forest Officer,  
Bhadrak (WL) Division.

**ANNEXURE- X**  
**APPROVED MAP FROM FOREST**  
**DEPARTMENT GOVERNMENT OF**  
**ODISHA**



# MAP INDICATING DISTANCE OF BHITARKANIKA SANCTUARY FROM THE PROJECT SITE



Submitted to the  
Wildlife Dept.  
Chennai  
20/01/2018

Administrative use  
Purpose of the boundary  
area is to protect the  
Bhitarkanika area and  
the Bay of Bengal

20/01/2018  
Wildlife Dept.  
Chennai



**ANNEXURE- XI**  
**PERMISSION LETTER FROM DFO TO**  
**CARRY OUT THE PLANT IN FOREST**  
**VILLAGE**

OFFICE OF THE  
DIVISIONAL FOREST OFFICER, BHADRAK WILDLIFE DIVISION,  
AT/P.O/P.S.-CHANDBALI, DISTRICT-BHADRAK, PIN-756133  
Phone/Fax- 06786-220472, Mob- +91 9437041541, Email-dfobhadrakwld@a.gov.in

Letter No. 2678 /3F-161/2013, Dated 24 /07/2018

To,

The Chief Executive Officer,  
Dhamara Port Company Limited,  
At-Dosinga, P.O-Dhamara, Dist-Bhadrak.

Sub: Expression of interest by DPCL for plantation of trees in village forest land adjacent to the port boundary as per stipulation of Environment and CRZ clearance for expansion of Dhamara Port.

Ref: Your Office letter No. DPCL/ENV/DFO/2018-112 Dated 09.07.2018 and Letter No. 1600/Rev dated 26.06.2018 of Addl. District Magistrate, Bhadrak in your office address & this Office memo no.325 dt.18.01.2018.

Sir,

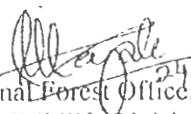
In inviting a reference to aforesaid subject and memo under reference, you may go ahead with plantation of trees in village forest land adjacent to the port boundary as per scheme submitted by you in consultation and supervision of the Range Officer, Chandbali Wildlife Range adhering to the stipulation of Environment and CRZ clearance issued by MoEF vide letter F.No.11-104/2009-IA-III dated 01.01.2014.

Yours faithfully,

  
Divisional Forest Officer,  
Bhadrak Wildlife Division.

Memo No. 2679 Dated. 24.07.2018

Copy forwarded to the Addl. District Magistrate, Bhadrak for information and necessary action with reference to his office memo no.1601/Rev dtd 26.06.2018

  
Divisional Forest Officer,  
Bhadrak Wildlife Division.

Memo No. 2680 Dated. 24.07.2018

Copy forwarded to the Range Officer, Chandbali (WL) Range for information and necessary action. He is instructed to inspect the plantation project of DPCL and submit report on achievement of plantation work fortnightly.

  
Divisional Forest Officer,  
Bhadrak Wildlife Division.

**ANNEXURE - XII:**  
**EMP AND ACTION PLAN**



## EMP AND ACTION PLAN

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
<b>Constructional Phase</b>					
1.	Development / Expansion of Port	Existing land use	Impact on nearby mangrove areas	<p>Scattered mangroves identified near southern boundary of the port in phase I development needs to be conserved.</p> <p>The port boundary will be at a minimum distance of 50 m from the mangrove area on the northern side. Awareness will be created amongst port workers about the importance of mangroves and their conservation</p>	<p>Scattered mangroves identified near southern boundary of Phase I development spread over an area of 9 ha. Bamboo fencing has been done at southern boundary over an area of 9 ha for conservation of mangroves.</p> <p>A buffer of 50m is being maintained between the project boundary and mangrove vegetation.</p> <p>Awareness programs for mangrove conservation for port workers are being undertaken</p>
		Impact on turtle nesting	Glare of Port Light may cause disturbance to hatchlings	<p>Install specialized illumination system in line with "International Dark Sky Association (IDA)" to avoid illuminating the sky or focusing light towards sea.</p> <p>Mercury vapour and metal halides will not be used Sodium vapour lamps will be used</p>	DPCL has already implemented the suggested mitigation measures during Phase I and these measures shall also be implemented during Phase II Expansion of port.
2.	Capital dredging and	Marine water quality	Increase in turbidity Change in marine	Checking of turbidity levels with baseline levels as reference	DPCL regularly monitoring the turbidity levels as a part of marine

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
	reclamation		water	during entire monitoring programme	Environmental monitoring by NABL & MoEF & CC accredited organization to ensure that the turbidity levels are well within the baseline level.
3	Material transport and construction activities	Air Quality	Exhaust emissions from vehicles Dust suspension during site preparation and construction	<p>Providing adequately sized construction yard for storage of construction materials, equipment tools, earthmoving equipment, etc</p> <p>Provide enclosures on all sides of construction site.</p> <p>Movement of material will be mostly during non-peak hours.</p> <p>On-site vehicle speeds will be controlled to reduce excessive dust suspension in air and dispersion by traffic.</p> <p>Construction equipment and transport vehicles will be periodically washed to remove accumulated dirt</p> <p>Water sprinkling will be carried out to suppress fugitive dust</p> <p>Environmental awareness training</p>	<p>We have a regular air monitoring protocol twice a week to ensure air quality parameters never exceed the prescribed limits.</p> <p>Vehicular Traffic Speed is kept limited to 20 kmph</p> <p>Regular water sprinkling on roads are being carried out by water tankers.</p> <p>Environment Awareness/training programme is being conducted on regular basis by Environment Department to personnel involved in developmental works.</p>

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
				will be imparted to personnel involved in developmental works.	
		Noise	<p>Noise from following activities</p> <p>Vehicles transporting construction material</p> <p>Diesel run engines of construction machinery and dredgers</p> <p>Pile driving activities during construction of cargo berths</p>	<p>Procurement of machinery / construction equipment will be done in accordance with specifications conforming to source noise levels less than 85 dB (A)</p> <p>Well-maintained construction equipment, which meets the regulatory standards for source noise levels, will be used</p> <p>Noise attenuation will be practiced for noisy equipment by employing suitable techniques such as acoustic controls, insulation and vibration dampers</p> <p>Personnel exposed to noise levels beyond threshold limits will be provided with protective gear like earplugs, muffs, etc.</p> <p>Ambient noise levels will be monitored</p>	<p>We have a strict maintenance regimen for all plant machinery and equipment which is reviewed by the management every day.</p> <p>PPE's like Earplug, muffs are being used in noise prone areas.</p> <p>Noise level monitoring is being carried out by a MoEF &amp; CC accredited agency.</p>
		Disturbance to Natural Drainage pattern	Impact to natural flow of runoff due to blockage and change of drainage course	Adequate storm water drainage system will be provided. If natural drainage disturbed, it will be reinstated	Storm water drainage network is planned to facilitate proper drainage of the area and requirement of local villager for tide water and boat movement has

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
					been duly considered in the drainage plan.
		Vegetation and Strain on existing	Loss of vegetation and strain on existing infrastructure	There will be no loss of vegetation as the area does not contain any tree growth.  Temporary workers camp will be provided with sufficient infrastructure and other provisions	Worker camps have been provided with sufficient infrastructure and electricity
		Existing Traffic	Traffic addition	The existing road will be strengthened to cater the increased traffic	Government of Odisha has already started widening this road to a two lane road with paved shoulder which shall cater the increased traffic
4	Land Reclamation	Existing Water Resources like Groundwater and surface water	The land reclaimed is saline mud and is separated from the adjoining land mass through the salt dyke.  This being an intertidal zone, there will be no impact on groundwater quality	Protective bunds (salt dyke) already exists which will prevent inundation of salt water to the adjoining land.  Return seawater will be channeled back to sea.	Reclamation activity is being done within reclamation bunds and it is physically separated from the adjoining land mass.
5	Solid Waste Management	Soil quality	Impacts due to disposal of solid waste on ground	Construction waste will be used within port site for filling of low lying areas.  Composted bio-degradable waste	Under the inspiration of Prime Minister's Clean India Mission, APSEZ has developed a vision for making itself – "A Zero Waste Company" by the year 2020.

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
				<p>will be used as manure in greenbelt. Other recyclable wastes will be sold.</p> <p>General refuse generated on-site will be collected in waste skips and separated from construction waste.</p> <p>Burning of refuse at construction sites will be prohibited.</p>	<p>APSEZ's vision is based on adoption of 5 R's principle of waste management, i.e Reduce, Reuse, Reprocess, Recycle &amp; Recover.</p> <p>Construction waste generated was used in low lying areas as a standard practice</p> <p>Bio- degradable waste is being used as manure for horticulture activities and for development of nursery</p> <p>Waste Segregation is being done at Point of Generation and Color Coded bins are in use in the Port Residential Area</p> <p>Burning of wastes is prohibited within the premises</p>
6	Handling of hazardous wastes	Human safety and property loss	Accidents during construction	<p>Adequate safety measures as per OSHA standards will be adopted.</p> <p>Construction site will be secured by fencing with controlled/limited entry points.</p> <p>Hazardous materials such as lubricants, paints, compressed</p>	<p>DPCL has got the authorization from OSPCB vide letter no. IND-IV-HW-894/9967 on dated 24.08.2018 for handling of hazardous waste used oil, waste oil, Waste residues containing oil, cargo residue and sludge containing chemical, Sludge &amp; filters contaminated with oil valid</p>

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
				<p>gases, and varnishes etc., will be stored as per the prescribed/approved (MSIHC) safety norms.</p> <p>Medical facilities including first-aid will be available for attending to injured workers.</p>	<p>till 31.03.2020.</p> <p>DPCL had made an agreement with OSPCB approved vendor for collection of used oil. Vendor shall take care of treatment &amp; disposal at their site premises as per OSPCB norms.</p> <p>We have a strict safety regimen with the motto "Safety First"</p> <p>Safety Observations are mandatory from every department of the port and immediate measures are undertaken to rectify the shortcoming.</p> <p>OHSAS Guidelines and MSIHC Guidelines are followed for Hazardous wastes</p>
7	Fishing	Fishermen and fishing villages	Impact on fishing due to Construction works	Signboards will be placed at the construction sites in order to make fishermen aware of the ongoing activities	Our navigational channel is well marked with marker buoys and fishermen community are regularly sensitized via our well-staffed CSR Team on Port Activities
<b>Operational Phase</b>					
1.	Cargo handling and	Air Quality	Emissions from loading/unloading	Use of specialized ship loaders/unloaders, wagon tippler,	Noted and complied.



S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
	Inland Cargo movement and storage areas		equipment, DG sets, vehicular dust emissions, fugitive emissions from storage areas, spillage of cargo	covered conveyors and rapid loading system through silos  Dust suppression measures at loading/unloading points, wagon tippler complex, transfer points, stockyards, rapid loading system and at internal roads  Periodic cleaning of cargo spills and speed regulations for vehicles engaged in transportation	
		Noise	Due to equipment handling and vehicular movement Ship (un)loading operations	Acoustic Barriers and Enclosures  Personal Protection Equipment (PPE)  Counseling and traffic regulation	Noted and complied.
		Traffic Addition	Cargo movement from/to port	A dedicated rail corridor of 62.5 km has been developed and cargo is being transported through rail. A dedicated four lane road and doubling of rail link along the rail corridor has been proposed in the Phase II	Majority of the cargo is being transported through rail.
2.	Aqueous discharges in harbor basin	Marine water quality and ecology	Change in marine water quality/ecology due to discharge of ship wastes, sewage,	Ships should comply with the MARPOL convention.  As a mitigation measure for accidental spillages, Oil spill	Noted and complied.  MARPOL and Ballast Water Convention guidelines are enforced by DPCL for visiting

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
			ballast water, bilge water, solid waste etc.	contingency plan will be implemented.  Carrier will be required to exchange ballast water in a deep sea location prior to arrival in the harbor  Provision of waste reception facility for bilge oily water and waste oil will be provided	ships.
3.	Accidental Cargo and Oil spills	Marine water quality and ecology	Change in marine water quality	In case of any cargo spillage during transfer from/to ships, it will be attempted to recover the spills.  Oil spill control equipment such as booms / barriers will be provided for containment and skimmers will be provided for recovery  Response time for shutting down the fueling, containment and recovery will be quicker.	Noted and complied. Marine water quality and productivity is being monitored by MoEF & CC accredited laboratory, there are no adverse impact on water quality and marine productivity in the vicinity. No impact on water quality and marine productivity has been envisaged during this period.  Oil Spill Containment equipment in readiness.  Oil Spill drills are conducted on a regular basis
4.	Maintenance dredging	Marine water quality	Increase in turbidity	It will be ensured that the dumping of the maintenance dredge spoil would be uniform. Turtle deflectors on dredge head will be provided	Noted and complied. Marine water quality and productivity is being monitored by MoEF & CC accredited laboratory, there are no adverse impact on

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
				Environmental Monitoring Programme comprising of monitoring of marine water quality, marine sediment quality and marine ecology will be initiated one week prior to commencement of dredging and will be continued during the dredging period.	water quality and marine productivity in the vicinity. No impact on water quality and marine productivity has been envisaged during this period.
		Marine Ecology	Due to decrease in DO levels which effect marine ecology and disturbance to benthic communities.		
5.	Water Supply	Water resources	Impact on existing water resources	Government of Odisha has accorded permission for water intake of 5 MLD from Matai River which can cater requirement for port expansion. Water Treatment Plant (WTP) of 5 MLD and water distribution system developed for Phase I.  Distribution system shall be extended to cater to the requirement of expansion project.	Complied.
6.	Wastewater Discharge	Water Quality	Impact due to discharge of runoff from stock piles	Collection of runoff from stock piles in settling ponds.	Complied.

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
			and disposal of untreated sewage	Sewage treatment plant will be provided.  Treated wastewater from STP will be used for irrigating the greenbelt	
7.	Solid Waste Management	Groundwater and Soil quality	Impact due to disposal of untreated solid waste on ground	Composted bio-degradable waste will be used as manure in greenbelt.  Other recyclable wastes will be sold.	Garbage Yard Space allocated for Phase II Operational Phase work is in progress.  Solid Waste Management would be done by Segregation at Generation Points
8.	Cargo Movement	Existing infrastructure	Increase in Traffic Addition	A dedicated rail corridor of 62.5 km has been developed and cargo are being transported through rail  A dedicated four lane road and doubling of rail link along the rail corridor has been proposed in the Phase II	Rail Road Corridor infrastructure would be augmented to cater the increased traffic

S. No.	Activity	Relevant Environmental components likely to be impacted	Likely Impacts in absence of Mitigation Measures	Mitigation Measures	Compliance
9.	Handling of hazardous materials	Accidents due to products handling	Human life and loss of property	<p>Hazardous materials will be stored as per the prescribed/approved (MSIHC) safety norms.</p> <p>Operation areas will be secured by fencing with controlled/limited entry points.</p> <p>Hazardous wastes (used oil &amp; used battery) will be sent to OPCB approved recyclers.</p> <p>Medical facilities including first aid will be available for attending to injured workers.</p> <p>Regular check of pipelines and tank farms</p> <p>Emergency alarms, provision of fire hydrant system and fire station.</p> <p>Effective Disaster Management Plan (DMP) which covers onsite and offsite emergency plans.</p>	<p>The types of hazardous waste are used oil, waste oil, Waste residues containing oil, cargo residue and sludge containing chemical, Sludge &amp; filters contaminated with oil are being handled presently on our port premises.</p> <p>Used oil is being recycled through authorized recyclers.</p> <p>Proper Care is taken when handling of this waste and a well-marked storage shed is used for storage of hazardous waste.</p> <p>Hazardous Waste Storage and Handling Facilities will be upgraded during the advance stage of Phase II operation.</p>
10.	Fishing activity	Fishermen livelihood	Impact on fishing due to vessel movement	Creation of awareness among the fisher folk about orientation of approach channel	<p>Fishermen Community are a part of the port community and we have regular and positive interactions with them.</p> <p>Oriental of Navigational Channel is well marked with marker buoys and known to the fishing community</p>

**ANNEXURE-XIII**  
**ENVIRONMENT CLEARANCE COPY TO**  
**ZILLA PARISAD**



## ENVIRONMENT CLEARANCE COPY TO ZILLA PARISAD

### **The Dhamra Port Company Limited**

Second Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar - 751023.  
Tel : 0674 - 2303829, Fax : 0674-2303828, E-mail : dpcl@dhampirport.com  
Website : www.dhampirport.com, CIN-U45205OR1998PLC005448



23.01.2014

To

The Chairman, Zilla Parishada, Bhadrak / Sarpanch, Dosinga Panchayat / NGO (Local)

Sub: Environmental Clearance for Phase- II Expansion of Dhamra Port

Dear Sir,

The Dhamra Port has been granted Environmental Clearance by the Government of India on 1<sup>st</sup> Jan 2014 for its second phase expansion. The copy of the EC is enclosed here with for your kind reference.

Yours Sincerely,

Himansu S. Sahoo  
AGM - CC & CSR  
Dhamra Port Company Limited  
Mob - 9777453847

( Jagannath Swam )  
President, Zilla Parishad,

**ANNEXURE-XIV**  
**LICENSE AND NOC FROM FIRE DEPT**  
**LICENSE OF STORAGE OF EXPLOSIVES**

**LICENSE AND NOC FROM FIRE DEPT**  
**LICENSE OF STORAGE OF EXPLOSIVES**



भारत सरकार  
Government of India  
वणिज्य और उद्योग मंत्रालय  
Ministry of Commerce & Industry  
पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पैसी)  
Petroleum & Explosives Safety Organisation (PESO)  
F-35/A, बी. जे. ई. नगर,  
भुवनेश्वर - 751014  
F-35/A, BJB Nagar,  
Bhubaneswar - 751014

E-mail: dyccbhhub@explosives.gov.in  
Phone/Fax No: 0674-2433370, 2433390 Fax: 2430605

संख्या /No: P/EC/OR/14/1687 (P237780)

दिनांक /Dated: 27/12/2018

लेन में /To

The Dharma Port Company Limited,  
2nd. Floor, Fortune Towers,  
Chandrasekharpur,  
Bhubaneswar (M. Corp.),  
Taluka: Bhubaneswar (M. Corp.),  
District: KHURDA,  
State: Odisha  
PIN: 751023

27 DEC 2018

विषय /Subject: Plot No, Plot No.696(P), Khata No.183, Mouza - Doshinga, Tahasil - Chandabali, District: BHADRAK, State: Odisha, PIN: 999999 में स्थित विद्युत्तन स्टोरेज यूनिट्स को A.B Consumer Pump की स्तुतिनी हेतु P/EC/OR/14/1587 (P237780) - स्तुतिनी के अंतर्गत में।  
Existing Petroleum Class A,B Consumer Pump Plot No, Plot No.696(P), Khata No.183, Mouza - Doshinga, Tahasil - Chandabali, District: BHADRAK, State: Odisha, PIN: 999999 - Licence No: P/EC/OR/14/1687 (P237780) - Reg. Renewal of Licence

संज्ञा/नोट /Note  
(3).

कृपया आपने उपरोक्त विषय से संबंधित सब संख्या DIN93748 दिनांक 27/12/2018 का एक प्रतिलिपि भेज दी है।  
Please refer to your letter No. DIN93748 dated 27/12/2018 on the subject.

स्तुतिनी में P/EC/OR/14/1587 (P237780) दिनांक 04/10/2010 दिनांक 31/12/2018 तक नवीनीकृत की गई थी।  
Licence No: P/EC/OR/14/1587 (P237780) dated 04/10/2010 is returned herewith duly renewed upto 31/12/2018

कृपया पेट्रोलियम नियम, 2012 के अधिनियमित रूप से विषय 148 में दी गई प्रक्रिया का पालन करें। स्तुतिनी के नवीकरण हेतु  
कृपया स्तुतिनी के दिनांक 31/12/2018 या उससे पहले इस कार्यलय में प्रस्तुत करें।

Please follow the procedure strictly as laid down in rule 148 of the Petroleum Rules, 2012 and submit complete documents for the Renewal of the licence as soon as possible by office or otherwise 31/12/2018

कृपया ध्यान दें। Please acknowledge the receipt.

आपका विश्वासपूर्वक  
Yours faithfully

(सुभाष राय)  
(Subash Ray)  
विस्फोटक नियंत्रक  
Controller of Explosives  
प्र. प्र. मुख्य विस्फोटक नियंत्रक  
For Dy. Chief Controller of Explosives  
भुवनेश्वर  
Bhubaneswar

(अधिक जानकारी के लिए भुवनेश्वर में स्थित, एक तथा अन्य विभाग के लिए हमारी वेबसाइट: bhupesa.gov.in पर जाएं)  
(For more information regarding status, fees and other details please visit our website: bhupesa.gov.in)

**NO OBJECTION CERTIFICATE FROM OFS, ODISHA GOVT. TO DPCL ON FIRE  
SAFETY**



OFFICE OF THE FIRE PREVENTION OFFICER:  
ODISHA, BHUBANESWAR

No. 293 /FPW,BBSR

Dt. 05-04.2013

To

**The Manager Environment Health Safety,  
The Dhamra Port Company Ltd.**

Ref:- Your letter No. DPCL/EHS/SO-287 dtd.08.12.2010.

Sub:- Grant of NOC from fire safety point of view to Dhamra Port.

\*\*\*

Dear Sir,

With reference to the letter on the subject cited above this is to intimate that on your request the fire protection system of Dhamra Port was inspected on 09.03.2013 by a joint team comprising of Deputy Fire Officer, Fire Prevention Wing, Bhubaneswar and Deputy Fire Officer, Bhubaneswar Circle. The observations are as under.

**Observations**

The team inspected the following establishments/areas of Dhamra Port which are important from fire safety point of view.

1. Motor Control Center-1,2,3,4(Single storied).
2. Fire water Pump house- Single floor.
3. Water treatment Plant-G+1 floor.
4. Administrative Office-Single floor.
5. Rail loading system for coal.
6. Rail loading system for Lime stone.
7. Switch yard.
8. Coal stack pile area.
9. Jetty area.
10. Transfer points.

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The following fire protection measures have been provided in the above mentioned areas as indicated against each.

Sl No.	Name of area	No. of external hydrant	No. of internal hydrant.	No. of Monitors	Smoke detectors	Manual call point with hooters
01	Motor Control Center-1	1 no.	-----	-----	32 nos	02 nos
02	Motor Control Center-2	2nos	-----	-----	18 nos	02 nos
03	Motor Control Center-3	2nos	-----	-----	09 nos	01 no.
04	Motor Control Center-4	2nos	-----	-----	06 nos	01 no.
05	Fire water Pump house	01 no.	-----	---	--	-----
06	Water treatment Plant	-----	-----	---	---	---
07	Administrative Office	04 nos	06 nos	---	-----	---
08	Rail loading system for Coal	---	06 nos	01 no.	-----	---
09	Rail loading system for Lime stone	---	05 nos	01 no.	--	--
10	Switch yard.	01 no.	---	---	---	---
11	Coal stack pile area	59 nos	-----	13 nos	---	-----
12	Jetty area.	16 nos	-----	---	-----	-----
13	Transfer points	-----	03nos. in each	---	-----	---

The entire Port area have been provided with hydrant system. Near each external/ internal hydrant point 01 hose box containing 02 delivery hoses of 15 mtrs' length each and 01 branch pipe has been provided. Besides the entire Coal stack pile area has been provided with water sprinkling system. The control room has been set up and a panel board connecting all the Smoke detectors has been installed there. One fire pump house has been setup where one electric pump and one diesel pump of 4555 ltrs/min capacity each and one Jockey pump of 450 ltrs/min capacity have been installed to supply water to the hydrant and sprinkling system. Two nos. Fire water reservoir of 6,00,000 ltrs capacity each have been provided to supply

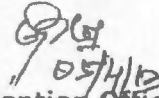
FP  
2

water to the fire fighting system. Besides 34 nos Co<sub>2</sub> (4.5 kg), 22 nos Co<sub>2</sub> (3.2 kg), 08 nos DCP (5 kg) and 10 nos DCP (10 kg) fire extinguishers have been installed at required places.

All the above mentioned fire protection measures were test checked and found working properly.

The stacking of coal in the pile area should be done as per IS: 3595/2002

Yours sincerely,



Fire Prevention Officer  
Odisha, Bhubaneswar

Memo No. \_\_\_\_\_/FPW,BBSR

Date .03.2013

Copy submitted to the I/C Chief Fire Officer, Odisha, Cuttack/D.G & I.G of Police, Fire Service, Odisha, Cuttack for favour of information.



Fire Prevention Officer  
Odisha, Bhubaneswar



**ANNEXURE-XV**  
**ADVERTISEMENT IN LOCAL**  
**NEWSPAPER INTIMATING GRANT OF**  
**ENVIRONMENTAL & CRZ CLEARANCE**

ADVERTISEMENT IN LOCAL NEWSPAPER INTIMATING GRANT OF  
ENVIRONMENTAL & CRZ CLEARANCE

SAMBAD, Bhubaneswar  
17 Jan 2014, P. 5

**ବିଜ୍ଞପ୍ତି**

ଧାନ୍ୟା ପୋର୍ଟ ବିକାସ ପର୍ଯ୍ୟାୟ ଉତ୍ସବର  
ପାଇଁ ଉତ୍ତର ସରକାରଙ୍କ ପରିଶେଷ ଓ ଚକ୍ର  
ବିକାସ ଗିଠି ସଂଖ୍ୟା F.No. 11-104/2009-  
IA-III/60 ଡି.ଏ.ଏ. ୨୦୧୪ ଉପରେ  
ପରିଶେଷ ଓ ଉତ୍ତର ସରକାରଙ୍କ ମଞ୍ଜୁର ପ୍ରକାର  
କରିଛନ୍ତି । ଏହାପରେ ପରିଶେଷ ତଥା [http://  
www.envfor.nic.in](http://www.envfor.nic.in)ରେ ଉପଲବ୍ଧ ଅଛି ।



SAMAJ - 16.01.14  
P. 5  
୧୭ ଜାନୁଆରୀ ୨୦୧୪

**ବିଜ୍ଞପ୍ତି**

ଧାନ୍ୟା ପୋର୍ଟ ବିକାସ ପର୍ଯ୍ୟାୟ ଉତ୍ସବର  
ପାଇଁ ଉତ୍ତର ସରକାରଙ୍କ ପରିଶେଷ ଓ ଚକ୍ର  
ବିକାସ ଗିଠି ସଂଖ୍ୟା F.No. 11-104/2009-  
IA-III/60 ଡି.ଏ.ଏ. ୨୦୧୪ ଉପରେ  
ପରିଶେଷ ଓ ଉତ୍ତର ସରକାରଙ୍କ ମଞ୍ଜୁର ପ୍ରକାର  
କରିଛନ୍ତି । ଏହାପରେ ପରିଶେଷ ତଥା [http://  
www.envfor.nic.in](http://www.envfor.nic.in)ରେ ଉପଲବ୍ଧ ଅଛି ।

**ANNEXURE-XVI**  
**ENVIRONMENT STATEMENT FOR FY 2017-18**



DPCL/ENV/OSPCB/2018-135

19<sup>th</sup> September, 2018

To  
The Member Secretary  
State Pollution Control Board, Odisha  
A/118, Nilakantha Nagar, Unit -VIII,  
Bhubaneswar - 751012

Dear Sir,

Sub: Environmental Statement for the financial year ending 31<sup>st</sup> March, 2018 for  
M/s The Dhamra Port Company Limited.

Ref: Consent Order No. 12090/IND-I-CON-6348 dated 13.09.2017

With reference to the above mentioned subject, please find enclosed Environmental Statement in Form V prescribed under Rule 14 of the Environment (Protection) Rules 1986, for M/s The Dhamra Port Company Limited for the financial year ending 31<sup>st</sup> March 2018.

Thanking you,

Yours faithfully,  
For The Dhamra Port Company Limited

Subrat Tripathy  
Chief Executive Officer

Encl: As above.

Copy to: The Regional Officer,  
State Pollution Control Board, Odisha,  
160, Sahadev Khunta,  
Balasore, Odisha

The Dharma Port Company Ltd  
(A Wholly Owned Subsidiary of APSEZ)  
At: Durgam, PO: Durgam,  
Bhindli, Zilla: Jharkhand,  
India  
CIN: U35205OR1998PLC005443

$1.91 \pm 0.001$  (1.90–1.92)  
 $0.19 \pm 0.001$  (0.18–0.20)  
 0.0000000000  
 0.0000000000

[illegible]

Rec'd  
S  
19/9/18



DPCL/ENV/OSPCB/2018-135

19<sup>th</sup> September, 2018

To  
The Member Secretary  
State Pollution Control Board, Odisha  
A/118, Nilakantha Nagar, Unit –VIII,  
Bhubaneswar - 751012

Dear Sir,

**Sub: Environmental Statement for the financial year ending 31<sup>st</sup> March, 2018 for  
M/s The Dhamra Port Company Limited.**

**Ref: Consent Order No. 12090/IND-I-CON-6348 dated 13.09.2017**

With reference to the above mentioned subject, please find enclosed Environmental Statement in Form V prescribed under Rule 14 of the Environment (Protection) Rules 1986, for M/s The Dhamra Port Company Limited for the financial year ending 31<sup>st</sup> March 2018.

Thanking you,

Yours faithfully,  
For The Dhamra Port Company Limited

  
Subrat Tripathy  
Chief Executive Officer

Encl: As above.

Copy to: The Regional Officer,  
State Pollution Control Board, Odisha,  
160, Sahadev Khunta,  
Balasore, Odisha

The Dhamra Port Company Ltd  
(A Wholly Owned Subsidiary of APSEZL)  
At: Dosinga, PO: Dhamra  
Bhadrak 756 171  
Odisha, India  
CIN: U45205OR1998PLC005448

Tel: +91 674 230 4500  
Fax: +91 674 230 3828  
info@adani.com  
www.adani.com

Registered Office: H/C 20, BDA Colony, Jayadev Vihar, Bhubaneswar 751 014, Odisha, India

Environment Statement for 2017-18

**FORM V**  
(See Rule 14)

Environmental Statement for the Financial Year ending 31<sup>st</sup> March 2018

**PART – A**

- (i) Name and address of the Owner/  
Occupier of the Industry Operation  
or Process : Subrat Tripathy  
Chief Executive Officer  
M/s The Dhamra Port Company Limited  
Village-Dosinga, Po.-Dhamra, Dist-Bhadrak  
Odisha - 756171
- (ii) Industry Category : Red-B  
Primary (STC Code) NA  
Secondary (STC Code) NA
- (iii) Production Capacity : 71.84 Million MT/Annum Cargo & 1 Million  
TEU/Annum Containerized Cargo
- (iv) Year of Establishment : 2000
- (v) Date of last Environment Statement  
submitted : 18<sup>th</sup> September, 2017

**PART – B**

**Water and Raw Material Consumption**

**(i) Water Consumption**

Water Consumption Cu. Mtr./Day	
Process	Nil
Cooling	Nil
Domestic	271.92 m <sup>3</sup> /day
Dust suppression	1119.70 m <sup>3</sup> /day
Fire fighting	467.09 m <sup>3</sup> /day



**Environment Statement for 2017-18**

Name of Products	Process Water Consumption per unit of Product Output	
	During the current financial year (2016-17)	During the current financial year (2017-18)
Handling of Iron Ore, Coal, Limestone*	0.026 m <sup>3</sup> /Ton	0.027 m <sup>3</sup> /Ton

**(ii) Raw Material Consumption**

Name of Raw Material	Name of Products	Consumption of Raw Material per Unit of output	
		During the previous financial year (2016-17)	During the current financial year (2017-18)
NIL*	Not Applicable	Nil	Nil

\* Unit does not have any manufacturing process

**PART – C**

**Pollutants discharged to Environment/Unit of Output**  
**(Parameters as specified in consent issued)**

Pollutants	Quantity of pollutants discharged (Mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) Water	Nil*		
(b) Air	Monitoring data attached as Annexure-1		

\*Unit does not manufacture anything, as it is a service industry (Port) engaged in handling and storage of cargo. No effluents are generated from the port. Treated water from the STP is used for horticulture purposes.

Environment Statement for 2017-18

PART – D

Hazardous Wastes

(As specified under Hazardous Wastes Management and Handling Rules 1989)

Hazardous Wastes	Total Quantity	
	During the previous financial year (2016-17)	During the current financial year (2017-18)
(a) From Process (Used oil)	5.045 KL	6.068 KL
(b) From Process (Waste Containing Oil)	0.886 MT	0.683 MT
(c) From Process (Oil Contaminated Filters)	124 Nos.	547 nos.
(d) From Pollution Control facilities	Nil	Nil

PART – E

Solid Waste

Solid Waste	Total Quantity Generated (MT/Annum)	
	During the previous financial year (2016-17)	During the current financial year (2017-18)
(a) From Process (Ash)	Nil	Nil
(b) From Pollution Control facilities	1.56 MT/Annum	2.075 MT/Annum
(C-1) Quantity recycled or reutilized within the unit	1.56 MT/Annum	2.075 MT/Annum
(C-2) Sold	Nil	Nil
(C-3) Disposed	Nil	Nil

Environment Statement for 2017-18

PART - F

Please specify the characterization (in terms of Composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes:

Hazardous Waste			
Sl. No	Name of waste	Generation quantity	Disposal method
1	Used oil	6.068 KL	Sold to Authorized Recyclers /Reprocessors
2	Waste containing oil	0.683 MT	Send to ACC Ltd. for co-Processing /energy recovery
3	Oil contaminated filter elements	547 nos.	ACC for co-processing /energy recovery

DPCL has got the authorization from OSPCB vide letter no. IND-IV-HW-894/1460 on dated 09.09.2015 for handling of hazardous waste used oil, waste containing oil, oil contaminated filters elements valid till 31.03.2020.

Solid Waste			
Sl. No	Name of waste	Generation quantity	Disposal method
1	Metallic waste	41.850	Sold to scrap vendor for recycling
2	Rubber waste	59.400	Sold to scrap vendor for reuse
3	Paper waste	9.183	Recycled for making note pad through third party recycler
4	Plastic waste	9.944	Sent to M/s ACC for co-processing/energy recovery
5	Glass Waste	2.170	Sold to scrap vendor for recycling.
6	Food waste	95.178	Used for making compost for horticulture use.
7	STP Sludge	2.075	Used for horticulture purpose as manure.
8	Wooden Waste	1.900	Reused in house construction work

## Environment Statement for 2017-18

### PART – G

#### **Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production**

- DPCL has two nos. of Sewage Treatment Plant (STP) of capacity 140 KLD & 15 KLD each, so as to handle sewage generated from port & township. The STP treated water is being used for horticulture and gardening purpose.
- Two no's of settling ponds of capacity 25216 m3 each have been constructed to treat the water from the port area. In settling ponds, the suspended materials (coal and iron fines) will be arrested and treated water is used for dust suppression purpose.
- 2 nos of Mechanized road sweeping machine has been deployed for cleaning of road
- Regular monitoring of Ambient Air Quality by a MOEFCC accredited agency to meet the prescribed standard by concerned authority.
- Green belt has been developed inside & outside of the port.
- During the financial year 2017-18, the total amount of Rs. 1.30 Crores was incurred on environmental protection measures.

### PART – H

#### **Additional measures /investment/ proposal for environmental protection including abatement of pollution, prevention of pollution.**

- Green belt has been developed inside the port premises and along the Rail /Road corridor of 62 km length. Strip plantation on both the edges of railway corridor has been taken up and 2,11,000 plants have been planted along the north & south edges of the corridor till date. Plantation of suitable species has been taken up in and around the port area and admin/Residential area with effect from 2010 & is continuing. So far 14611 plants suitable for the site have been planted at Port site apart from the rail road corridor plantation mentioned above.
- 3485 no's of plantation have been done in nearby village area & 12000 nos. of avenue plantation has been done.
- We are also conserving the natural patch of mangrove situated at south side of our port premises by bamboo fencing within area of 9 ha. We have also developed a nursery with massive numbers of mangrove sapling.

### PART – I

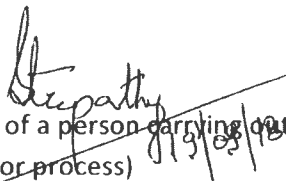
#### **Any other particulars for improving the quality of environment:**

- Specialized illumination system in line with "International Dark Sky Association (IDA)" has been installed to avoid illuminating the sky or focusing light towards sea. Sodium vapour lamps are being used instead of mercury lamp. All area lighting, roadway lighting and lighting mounted on masts or other elevated structures are of full cutoff luminaries.

Environment Statement for 2017-18

- Deflectors are installed on drag-head of dredgers to keep turtles out of path of dredger. Screens are also installed in inflow/overflow pipes of dredgers to monitor turtle entrainment. There are observers on Dredgers to ensure implementation of IUCN Dredging Protocol.
- Trawler has been provided to Forest Department, Govt. of Odisha for patrolling purpose for conservation of Olive Ridley turtle.
- DPCL has made an effective contribution towards Environment Protection, management and conservation during this year.
- Under the inspiration of Prime Minister's Clean India Mission, APSEZ has developed a vision for making itself – "A Zero Waste Company" by the year 2020. APSEZ's vision is based on adoption of 5 R's principle of waste management, i.e Reduce, Reuse, Reprocess, Recycle & Recover.
- 100 % waste water generated is being reused and recycled.
- Waste camps are being organized in township for collection of waste materials from township residents so as to collect other waste apart from garbage. The main intention is to make the area waste free and for creating awareness among resident.
- DPCL believe in sustainable development and are working in close harmony of biodiversity rich area. We are regularly monitoring our foot prints on environment.

Date : 19-09-2018

  
(Signature of a person carrying out an industry,  
operation or process)

Name : Subrat Tripathy

Designation : CEO

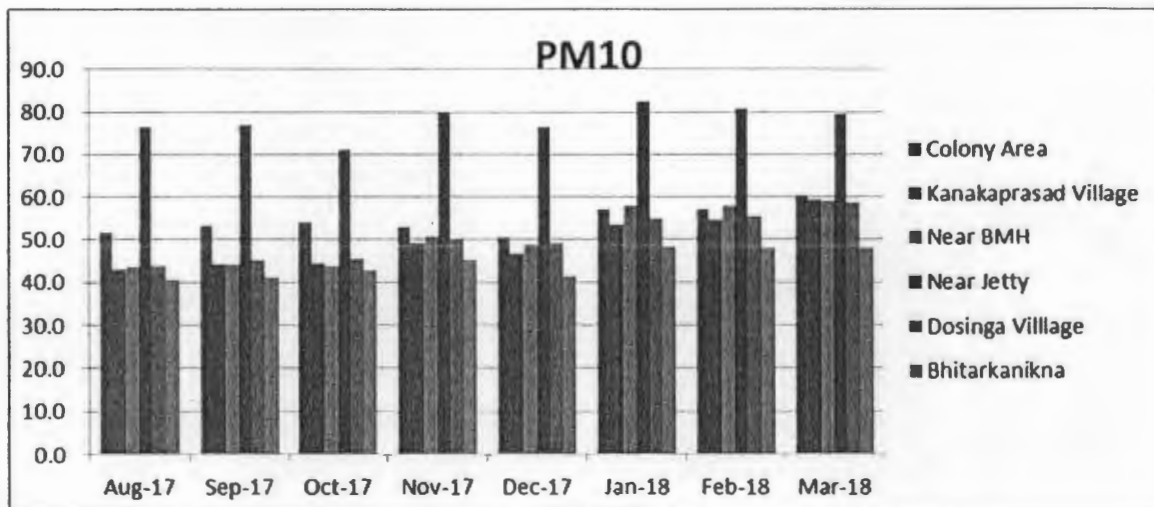
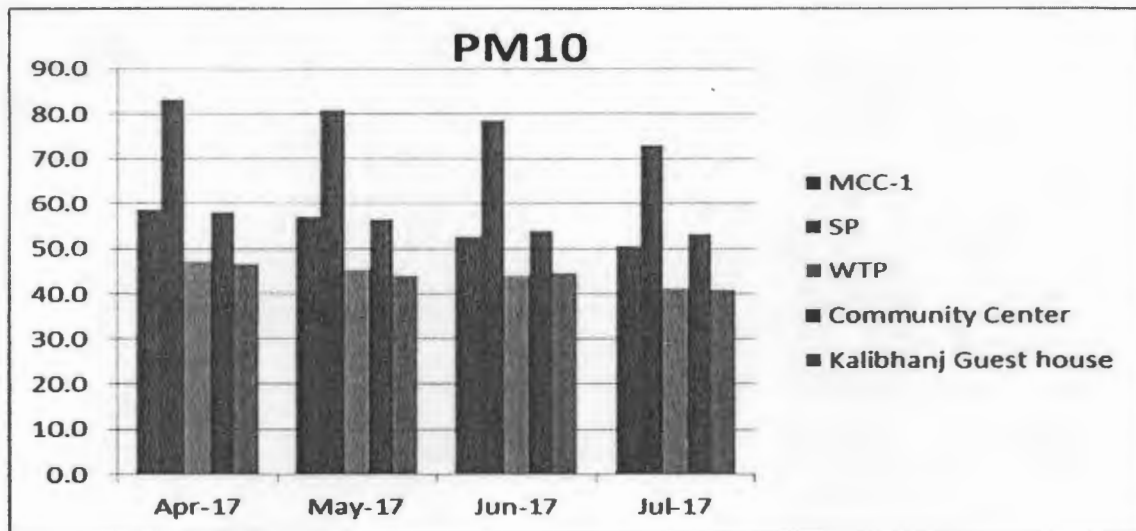
Address : M/s The Dhamra Port Company Limited

Village-Dosinga, Po. Dhamra,

Dist- Bhadrak, Odisha

Environment Statement for 2017-18

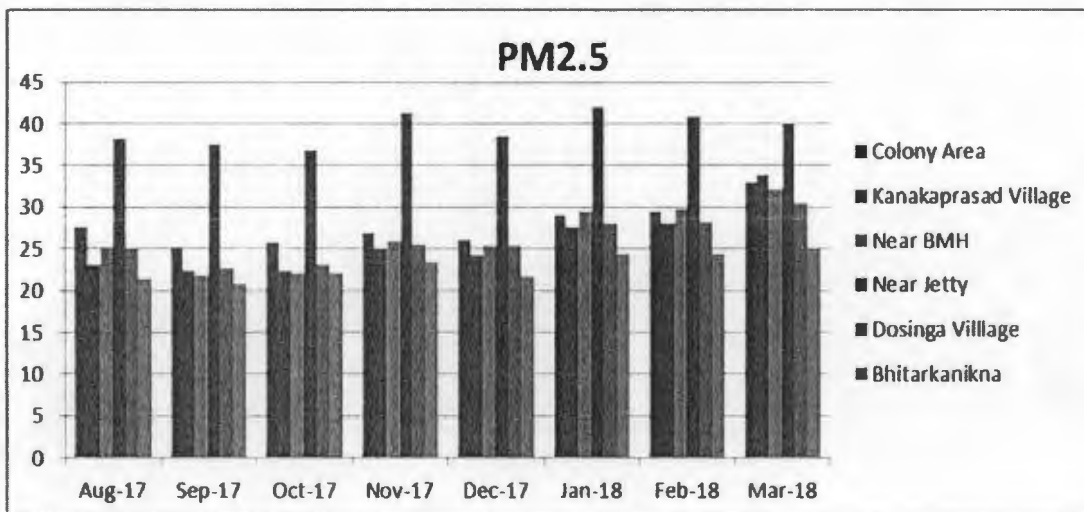
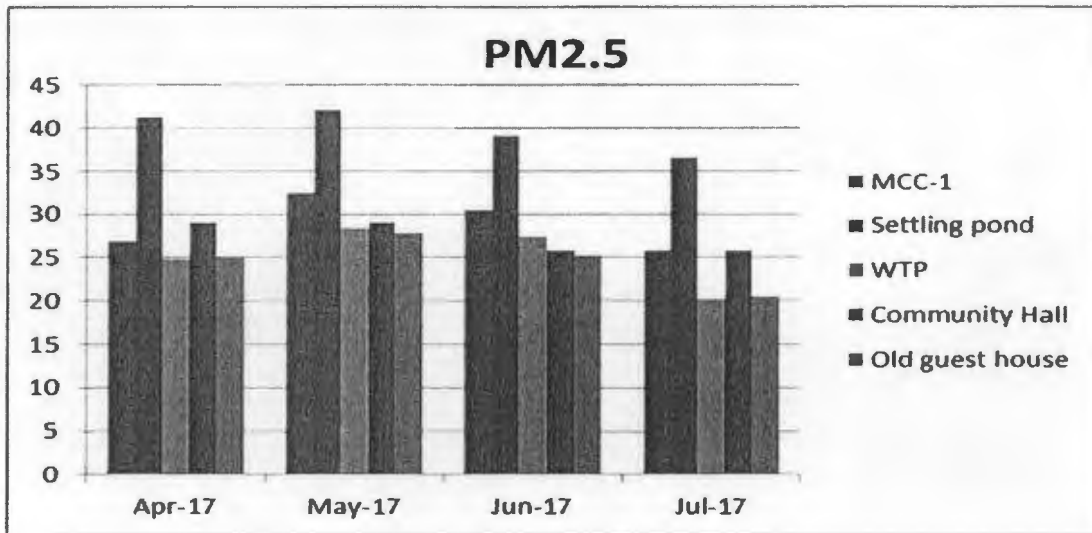
Annexure 1



**Note: The monitoring locations have been revised as per the CTO.**

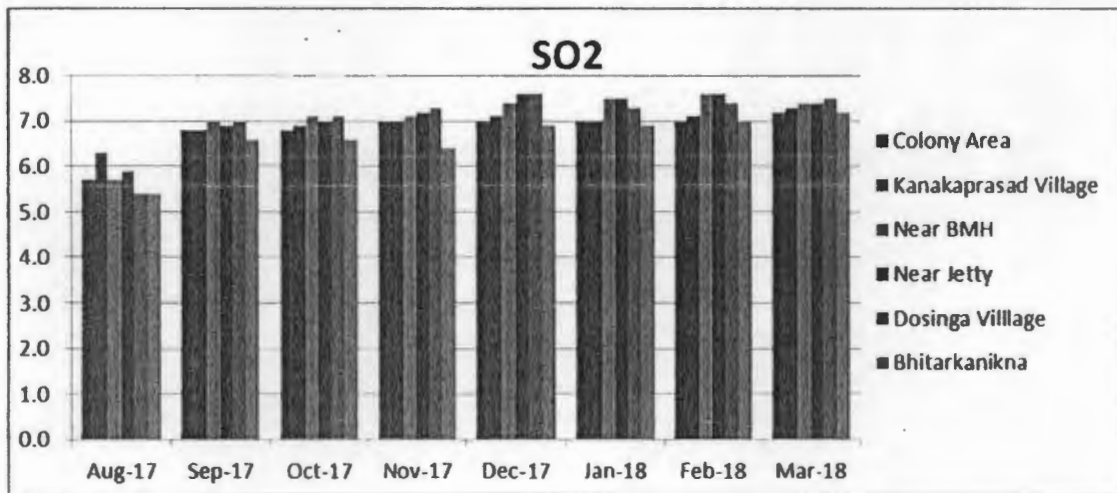
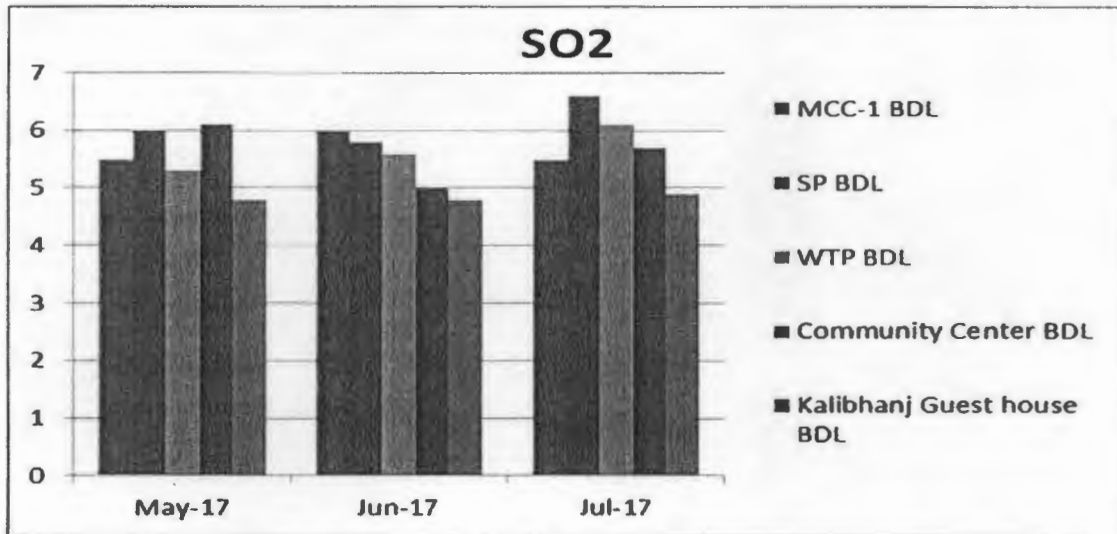


**Environment Statement for 2017-18**



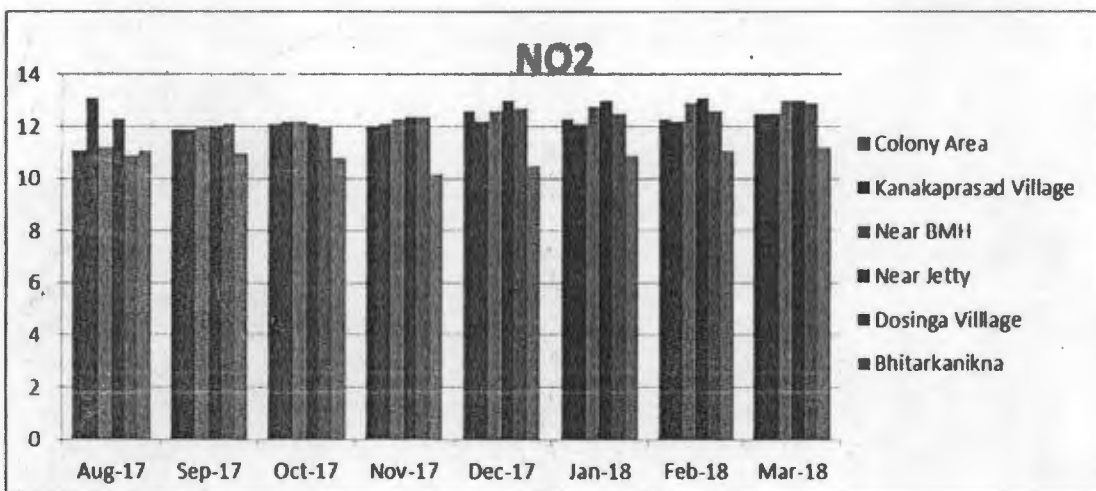
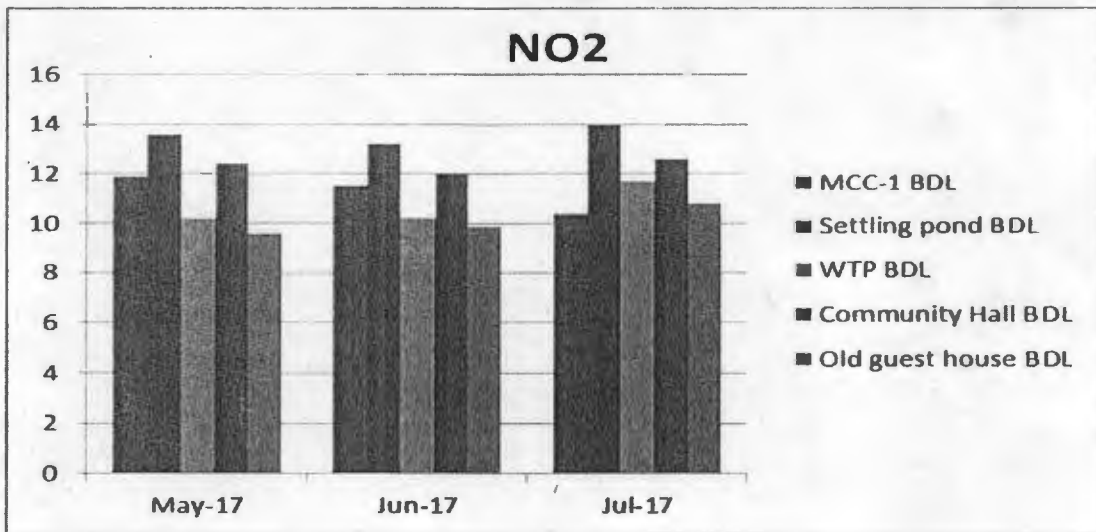
**Note: The monitoring locations have been revised as per the CTO.**

Environment Statement for 2017-18



**Note:** The monitoring locations have been revised as per the CTO.

**Environment Statement for 2017-18**



**Note: The monitoring locations have been revised as per the CTO.**