

#### Ref: AKBTPL-EC&CRZ/2015-16/01

01.12.15

The Director (S),

Western Regional Office,

Ministry of Environment, Forest & Climate Change

E-5, Arera colony, Link Road-3,

Ravishankar Nagar, Bhopal-462016 (M.P.)

E-mail: rowz.bpl-mef@nic.in

#### Kind Attn: Dr. A. Mehrotra

#### Dear Sir,

Sub : Half yearly Compliance report of Environment and CRZ clearance for the period from Apr to Sep. 2015.

Ref: 1) Environment and CRZ clearance issued to M/s Kandla Port Trust (KPT) vide letter no. 10-10/2008-IA-III dated 1st November, 2011 and transferred to M/s Adani Kandla bulk Terminal Private Limited (AKBTPL) vide letter no. 10-10/2008-IA-III dated 10th November, 2014

2) CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23<sup>rd</sup> June, 2010.

कार्यालय / OFFICE

पर्यावरण एवं वन मंत्रालय (केन्हीय) Ministry of Environment & Forests (C) क्षेत्रीय कार्यालय (पश्चिम क्षेत्र)

Regional Office (Western Region)

भोपाल (भ.प्र.)—168013

Please find enclosed herewith point wise compliance reports (Hard copy as well as in a CD) of conditions stipulated in the above referred letters.

Thank you,

Yours Faithfully,

For M/s Adani Kandla Bulk Terminal Pvt. Ltd.

(Col. Parag Srivastava)

Chief Operating Officer

#### Copy to:

- The Director (Monitoring –IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003
- 2. The Director, Forests & Environment Department, Block 14, 8th floor, Sachivalaya, Gandhi Nagar, Gujarat - 382 010
- The Zonal Officer, Central Pollution Control Board, Zonal OfficeVadodra, Parivesh Bhawan, 3. Opposite VMC Ward office No. 10, Subhanpura, Vadodra-390023
- 4. The Chairman, Gujarat Pollution Control Board, Parvayaran Bhawan, Sector 10A, Gandhinagar-382010(Guj.)
- The Regional Officer, Regional Office, GPCB Katira Complex-1, Mangalam Char Rasta, Sanskar Nagar, Bhuj (Kutch), Gujarat - 370 001
- The Chief Engineer, Administrative Building, Kandla Port Trust, Gandhidham

Adani Kandla Bulk Terminal Pvt Ltd Adani House Nr Mithakhali Circle, Navrangpura Ahmedabad 380 009 Gujarat, India CIN: U63090GJ2012PTC069305

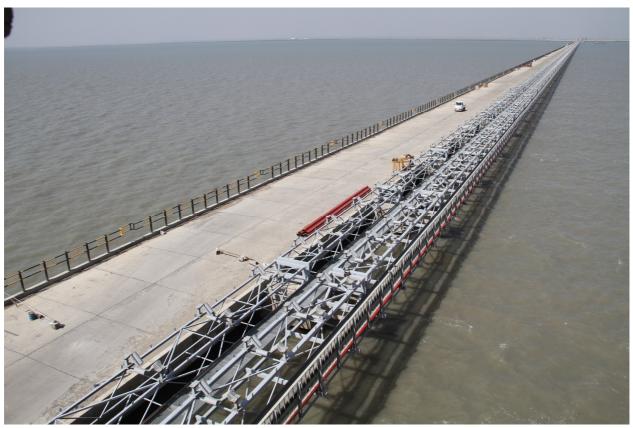
Tel +91 79 2656 5801 Fax +91 79 2555 6490 info@adani.com www.adani.com

Registered Office: Adani House, Nr Mithakhali Circle, Navrangpura, Ahmedabad 380 009, Gujarat, India



## Environmental and CRZ Clearance Compliance Report

of



Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

of

Adani Kandla Bulk Terminal Pvt. Ltd.

For Period:

April – 2015 to September – 2015



From : Oct,14 To : March,15

## Compliance to Environmental and CRZ Clearance Letter issued by MOEF&CC



From: Oct,14 To: March,15

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1<sup>st</sup> November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Guiarat

	ities off Tekra near Tuna, Gujarat	
Sr. No	Condition	Compliance status
5.	Specific Conditions	
(i)	"Consent for Establishment" shall be obtained from State 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. Details related to Consent to Establishment as well as Consent to Operate are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
(ii)	Scientific studies shall be carried out by some expert and reported organization like BNHS focusing among other things the marine environment in general and preservation of mangroves in particular against any possible adverse impact due to creation of the proposed facilities.	Complied. M/s. Gujarat Institute of Desert Ecology, Bhuj has conducted scientific studies for preservation of mangroves.  Details related to the same are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
(iii)	Proponent shall explore the possibilities of plantation of mangrove in the entire mud flat areas and submit the action plan to the Ministry prior to the commencement of the activity.	Complied. AKBTPL has completed Mangrove plantation in 250 ha area at Sat Saida bet. Balance 250 ha. Mangrove plantation shall be carried out by KPT.  Details related to mangrove plantation are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
(iv)	The dredged material shall be reused for low level rising whenever possible and excess shall be dumped into sea at the designated dumping areas identified based on mathematical model studies.	Capital dredging was done by KPT and the dredge material was disposed at a location identified by M/s. CWPRS, Pune in their study report.
(v)	Though the project proponent has carried out EIA for individual components and it were examined by the committee before the issue of clearance, it is suggested that proponent shall update and submit a comprehensive EMP for the whole	Complied. EMP was updated by AKBTPL and submitted to KPT. KPT has submitted the same to MoEF&CC.  Details related to EMP are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015.



From: Oct,14 To: March,15

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1<sup>st</sup> November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Guiarat

faciliti	ilities off Tekra near Tuna, Gujarat		
Sr. No	Condition	Compliance status	
	project and submit to the Ministry and Regional Office of the Ministry at Bhopal prior to commencement of the activity.		
(vi)	The project proponent shall set up environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied. M/s APSEZL has a well structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan of AKBTPL. The Environment Management Cell is headed by Sr. Executive who directly reports to the top management.	
(vii)	The funds earmarked for environmental management plan shall be included in the budget and this shall not be diverted for any other purpose.	<ul> <li>Environmental Management Plan is in place and the funds earmarked are being utilized for effective implementation of environmental safeguards and environment monitoring.</li> <li>Expenditure on environmental safeguards is approx. INR 200 cr.</li> <li>Details of the expenditure on environmental safeguards is enclosed as Annexure – 1</li> </ul>	
6	General Conditions		
(i)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	No digging activities are carried out. Construction of the project is completed in March, 2015 and project is now in operation phase.	
(ii)	Full support shall be extended to the officers of this Ministry/Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation	Complied. Full support is always given to official from MoEF & CC, Bhopal during their visit to the project site.  Last visit by Regional Officer, MoEF & CC, Bhopal was on 17 <sup>th</sup> September, 2014.	
	measures and other environmental protection activities.		
(iii)	A six monthly monitoring report shall need to be submitted by the project	Complied. Six monthly compliance reports are being submitted to MoEF & CC regularly.	



From: Oct,14 To: March,15

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1<sup>st</sup> November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna. Guiarat

faciliti	lities off Tekra near Tuna, Gujarat	
Sr. No	Condition	Compliance status
	proponent to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.	Last compliance report was submitted by AKBTPL vide letter no. AKBTPL-Out/2015-16/001 dated 11 <sup>th</sup> May, 2015.
(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.	All applicable conditions in the interest of environment will be complied.
(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 the project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Complied. Details related to transfer of EC/CRZ clearance in the name of AKBTPL are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
(vii)	The project proponent 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 date of start of land development work.	Complied. KPT has informed about the Financial closure vide their letter no. EG/WK/4604(EC)/562 dated 26 <sup>th</sup> December, 2012
(viii)	A copy of the clearance letter shall be marked to concern Panchayat /local NGO, if any, from whom any suggestion /representation has been made, received while processing the proposal.	Condition does not belong to AKBTPL
(ix)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/ Tehsildar's office for 30 days.	Condition does not belong to AKBTPL
7	These stipulations would be enforced among others under the provisions of	All the applicable stipulations will be ensured for compliance.



From: Oct,14 To: March,15

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1<sup>st</sup> November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

faciliti	ies off Tekra near Tuna, Gujarat	
Sr. No	Condition	Compliance status
NO	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.	
8	All other statutory clearances such as the approvals for the storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980, Wildlife (Protection) Act, 1972 etc. shall be obtained as applicable by the project proponents from the respective competent authorities.	All applicable statutory clearances have been obtained from the respective competent authorities.
9	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 Env. Clearance and copies of clearances letters are available with the 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 Clearance letter and a copy of the same should be forwarded to RO of this Ministry at Bhopal.	Complied. Details related to advertisement are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
10	Environmental Clearance is subject to final order of the Hon'ble Supreme	Point noted
	Court of India in the matter of Goa Foundation Vs. Union of India in Writ	



From: Oct,14 To: March,15

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1<sup>st</sup> November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

	ies off Tekra near Tuna, Gujarat	
Sr. No	Condition	Compliance status
	Petition (Civil) No. 460 of 2004 as may be applicable to this project.	
11	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Complied. Last six monthly compliance report is uploaded on website of Adani Ports.
12	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila 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. Clearance letter is uploaded on website of Adani Ports.
13	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied. Last six monthly compliance report (along with environmental monitoring data) is submitted to MoEF & CC vide letter dated 11.05.2015. Same report is also uploaded on website of Adani Ports.  Environmental monitoring report for the April – September, 2015 period is attached as <b>Annexure – 2</b> .
14	The environmental statement for each financial year ending 31 <sup>st</sup> March in Form – V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environmental (Protection) Rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to	Being complied with. Last environmental statement (for year ending on 31.03.2015) was submitted to GPCB (HO as well as RO) vide our letter dated 18.09.2015. Copy of the same will also be uploaded on the website of Adani ports (along with the six monthly compliance report). Please refer to Annexure – 3 for a copy of the environmental statement.



From: Oct,14 To: March,15

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1<sup>st</sup> November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
	the respective Regional Offices of	
	MoEF by e-mail.	

From: Oct,14

: March,15



## Compliance to CRZ Recommendation Letter issued by Forest and Environment Department, Govt. of Gujarat



From: Oct,14 To: March,15

bearin	g no. ENV-10-2009-1543-E dated 23rd June	2010
Sr. No	Condition	Compliance
1	The provisions of the CRZ notification of 1991 and subsequent amendments issued from time to time shall be strictly adhered to by the KPT. No activity in contradiction to the provisions of the CRZ Notification shall be carried out by the KPT.	Complied. All activities are in line with the CRZ Notification 1991 and its subsequent amendment.
2	No dredging reclamation or any other project related activities shall be carried out in the CRZ area categorized as CRZ I (i) and it shall have to be ensured that the mangroves habitats and other ecologically important and significant areas, if any, in the region are not affected due to any of the project activities.	<ul> <li>Construction of the project is completed in March, 2015. During construction capital dredging was done by KPT and the dredge material was disposed at a location identified by M/s. CWPRS, Pune in their study report.</li> <li>There is no special spill over of project activity in the vicinity/surrounding project area.</li> <li>No maintenance dredging activity is carried out so far.</li> <li>6 culverts and 3 bridges have been provided on the approach road for free flow of water to protect mangroves in the area.</li> </ul>
3	The KPT shall participate financially for installing and operating the Vessel Traffic Management System in the Gulf of Kuchchh and shall also take lead in preparing and operational sing the Regional Oil Spill Contingency plan in the Gulf of Kuchchh.	Complied. Details related to participation of KPT for VTMS in GoK are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
4	The KPT shall strictly ensure that no creeks or rivers are blocked due to any activity at Kandla.	Complied. Details related to creeks, bridges and culverts are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015
5	Mangrove plantation in an area of 1000 ha. Shall be carried out by the KPT within 5 years in a time bound manner on	Complied. AKBTPL has completed Mangrove plantation in 250 ha area at Sat Saida bet. Balance 250 ha. Mangrove



From: Oct,14 To: March,15

	ring no. ENV-10-2009-1543-E dated 23rd June, 2010		
Sr. No	Condition	Compliance	
	Gujarat coastline either within or outside the Kandla Port Trust area and six monthly compliance reports along with the satellite images shall be submitted to Ministry of Environment and Forests as	plantation shall be carried out by KPT.  Details related to mangrove plantation are submitted (as part of half yearly compliance report) to MoEF & CC vide	
6	well as to this department without fail.  No activities other than those permitted	letter dated 11.05.2015  Complied. All activities are in line with the	
	by the competent authority under the CRZ Notification shall be carried out.	CRZ Notification 1991 and its subsequent amendment.	
7	No ground water shall be tapped for any purpose during the proposed expansion/modernization activities.	Complied. Ground water is not being used. Source of water is Gujarat Water Infrastructure Limited.	
8	All necessary permission from different Government Departments/ agencies shall be obtained by the KPT before commencing the expansion activities.	Complied. All the necessary permissions have been obtained. Construction activity is completed in March, 2015.	
9	No effluent or sewage shall be discharged into the sea/creek or in the CRZ area and it shall be treated to conform to the norms prescribed by the Gujarat Pollution Control Board and would be reused/recycled within the plant premises.	No effluent is generated at the project site. Sewage generated is collected by an external agency for its ultimate disposal at a site identified by Gandhidham Municipality.	
10	All the recommendations and suggestions given by the NIOT in their Comprehensive Environment Impact Assessment report for conservation /protection and betterment of environment shall be implemented strictly by the KPT.	Complied. EMP was updated by AKBTPL and submitted to KPT. KPT has submitted the same to MoEF&CC.  Details related to EMP are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015.	
11	The construction and operation activities shall be carried out in such a way that there is no negative impact on mangroves and other coastal/marine habitats. The construction activities and dredging shall be carried out only under the constant supervision and guidelines of the NIOT.	<ul> <li>Construction activities including capital dredging have been completed in March, 2015.</li> <li>No maintenance dredging activity is carried out so far.</li> <li>6 culverts and 3 bridges have been provided on the approach road for free</li> </ul>	



From: Oct,14 To: March,15

bearin	bearing no. ENV-10-2009-1543-E dated 23rd June, 2010		
Sr. No	Condition	Compliance	
		flow of water to protect mangroves in	
		the nearby area.	
12	The KPT shall contribute financially for	Point noted and agreed.	
	any common study or project that may be		
	proposed by this Department for		
	environmental management/conservation		
	/ improvement for the Gulf of Kutchchh.		
13	The construction debris and/or any other	Complied. Construction of the project is	
	type of waste shall not be disposed off	completed in March, 2015. All	
	into the sea, creek or in the CRZ areas.	construction wastes are removed from the	
	The debris shall be removed from the	CRZ area.	
	construction site immediately after		
1.4	construction is over.	Occupation of the constant is	
14	The construction camps shall be located	Complied. Construction of the project is	
	outside the CRZ area and the	completed in March, 2015.	
	construction labour shall be provided		
	with the necessary amenities, including		
	sanitation, water supply and fuel and it		
	shall be ensured that the environmental		
	conditions are not deteriorated by the construction labours.		
15	The KPT shall regularly update its Local	Complied. KPT is already having updated	
13	Oil Spill Contingency and Disaster	Disaster Management Plan as well as Oil	
	Management Plan in consonance with	Spill Contingency Plan.	
	the National Oil Spill and Disaster		
	Contingency Plan and shall submit the	KPT has also executed MoU with oil	
	same to the MoEF, GOI and this	companies i.e. IOCL, HPCL, BPCL etc. for	
	Department after having it vetted	setting up of their Tier I facility for	
	through the Indian Coast Guard.	combating Oil Spill at Kandla.	
16	The KPT shall bear the cost of the	Point noted and agreed.	
	external agency that may be appointed	-	
	by this Department for supervision/		
	monitoring of proposed activities and the		
	environmental impacts of proposed		
	activities.		
17	The KPT shall take up massive greenbelt	Being complied. Plantation activity is on-	
	development activities in and around	going at the project site. As part of the	



From: Oct,14 To: March,15

	ring no. ENV-10-2009-1543-E dated 23rd June, 2010	
Sr. No	Condition	Compliance
	Kandla and also within the KPT limits.	same, greenbelt along the periphery of the back-up area is being developed.
18	The KPT shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forest and Environment Department and the District Collector/District Development Officer.	Being complied. Various activities related to socio-economic upliftment of surrounding villages are being carried out by AKBTPL Please refer to <b>Annexure – 4</b> for further details.
19	A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to this Department as well as the MoEF, Gol. The details with respect to the expenditure from this budget head shall also be furnished.	Being complied. Main constituents of the environmental management plan are environmental monitoring; greenbelt development; mangrove plantation; construction of bridges/culverts for protection of creeks; treatment and disposal of wastes; mechanization of operations etc. Approximately INR 200 Cr is spent for various activities mentioned here.  Please refer to Annexure – 4 for details of activities related to socio-economic
20	A separate environmental management cell with qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	upliftment of surrounding areas.  Complied. M/s APSEZL has a well structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan of AKBTPL. The Environment Management Cell is headed by Sr. Executive who directly reports to the top management.
21	An Environmental report indicating the changes, if any, with respect to the baseline environment quality in the coastal and marine environment shall be submitted every year by the KPT to this Department as well as to the MoEF, Gol.	Regular environmental monitoring is being carried out and results of the same are enclosed as <b>Annexure – 2</b>



From: Oct,14 To: March,15

-	aring no. ENV-10-2009-1543-E dated 23rd June, 2010		
Sr. No	Condition	Compliance	
22	The KPT shall have to contribute financially to support the National Green Corps Scheme being implemented in the Gujarat by GEER Foundation, Gandhinagar, in consultation with Forest and Environment Department.	Details related to National Green Corps Scheme are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015.	
23	A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by the KPT on a regular basis to this Department/MoEF, GOI.	Complied. Last compliance report was submitted by AKBTPL vide letter no. AKBTPL-Out/2015-16/001 dated 11 <sup>th</sup> May, 2015.	
24	The KPT before commencing any activity, at the location under the consideration, shall have the latest CRZ map prepared through one of the authorized agencies and the map shall have land use features within the area of 5 km radius from the location along with the HTL and LTL and CRZ boundary and inland if any or mangroves area shall be used for the proposed development.	Complied. Details related to CRZ map are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015.	
25	The entire jetty and approach shall be constructed on piles to ensure the free flow of water and that no creeks are blocked in any way.	Complied. Details related to jetty and approach road are submitted (as part of half yearly compliance report) to MoEF & CC vide letter dated 11.05.2015.	
26	The KPT shall create a full-fledged and environmental cell for implementation of the Environment Management Programme and monitoring of the environmental parameters/post project monitoring.	Complied. M/s APSEZL has a well structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan of AKBTPL. The Environment Management Cell is headed by Sr. Executive who directly reports to the top management.	
27	The KPT shall have to take up in-situ biodiversity conservation project for mangroves at least in 5 ha. of area in addition to plantation of mangrove in	Biodiversity conservation project for mangroves will be carried out once the required land is allocated to AKBTPL by KPT.	



From: Oct,14 To: March,15

	ig no. ENV-10-2009-1543-E dated 23rd June	2, 2010
Sr. No	Condition	Compliance
	1000 ha.	
	General conditions	
28	A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to this Department as well as the MoEF, Gol. The details with respect to the expenditure from this budget head shall also be furnished.	Being complied. Main constituents of the environmental management plan are environmental monitoring; greenbelt development; mangrove plantation; construction of bridges/culverts for protection of creeks; treatment and disposal of wastes; mechanization of operations etc. Approximately INR 200 Cr is spent for various activities mentioned here.
		Please refer to <b>Annexure – 4</b> for details of activities related to socio-economic upliftment of surrounding areas.
29	Any other condition that may be stipulated by this Department from time to time for environment protection/management purpose shall also have to be complied with by the KPT.	Point noted

# Annexure - 1



From: Oct,14 To: March,15

## <u>Annexure – 1: Expenditure Details on Environmental Safeguards</u>

Sr.	Activity	Cost incurred
no.	Activity	(INR in Lakh)
1	Environmental Monitoring	16.00
2	Greenbelt development	53.00
3	Mangrove plantation	125.00
4	Construction of bridges on creeks	
	Road Bridge	897.93
	Rail Bridge	952.00
5	Construction of box culverts (Raod & Rail)	160.09
6	Construction of STP	23.34
7	Disposal of wastes	4.50
8	Fire fighting and safety equipments	455.82
9	Water sprinkler system for dust suppression	243.12
10	Conveyor system for bulk cargo handling to mitigate air	16976.00
	pollution	10770.00
11	Temporary pipes on the Main Approach road	130.00
	Total	20,036.80

## Annexure - 2

Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986

## "ENVIRONMENTAL MONITORING REPORT"

For

ADANI KANDLA BULK TERMINAL PRIVATE LIMITED. KANDLA, KUTCH.

**APRIL 2015 TO SEPTEMBER 2015** 

H. T. Shah Lab Manager

Recognised by MoEF. New Delhi Under Sec. 12 of Environmental (Protection) Act-1986

#### **EQUIPMENTS USED FOR SAMPLING AND ANALYSIS**

SR. NO.	Monitoring Details	Equipments Used	Sampling and Analysis Method		
1	Ambient Air Quality Monitoring	RDS,FDS, Impinger, Gas Analyser	CPCB Guideline/IS 5182		
2	Noise Monitoring	Noise Meter	IS 11702		
3	Sea Water Monitoring	Depth Sampler	IS/APHA/USEPA/ASTM		
4	Sea Sediment Monitoring	Grab Sampler	CPCB Guideline/ IS/APHA/USEPA/ASTM		
5	Drinking Water Analysis	Sealed & Steriled Bottle	IS:10500:2012		

H. T. Shah Lab Manager

Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986

## National Ambient Air Quality Standards Dated 16<sup>th</sup> Nov.2009, CPCB New Delhi.

SR. NO.	TEST PARAMETER	UNIT	Concentration in ambient air	Method Of Measurement
1	Particulate Matter (PM <sub>10</sub> )	μg/m³	100	IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)
2	Particulate Matter (PM <sub>2.5</sub> )	μg/m³	60	Gravimetric- CPCB - Method (Vol.I,May-2011)
3	Lead as Pb	μg/m³	1.0	CPCB Method (Vol.I,May-2011)
4	Benzo (a) Pyrene (BaP)- particulate phase only	ng/m³	1.0	CPCB Method (Vol.I,May-2011)
5	Arsenic as As	ng/m³	6.0	CPCB Method (Vol.I,May-2011)
6	Nickel as Ni	ng/m³	20	CPCB Method (Vol.I,May-2011)
7	Carbon Monoxide as CO	mg/m <sup>3</sup>	4.0	NDIR Digital Gas Analyzer
8	Benzene as C <sub>6</sub> H <sub>6</sub>	μg/m³	5.0	IS 5182 (Part XI):2006/CPCB Method
9	Ammonia (NH <sub>3</sub> )	μg/m³	400	CPCB Method (Vol.I,May-2011)
10	Sulphur Dioxide (SO <sub>2</sub> )	μg/m³	80	IS:5182(Part 2): Improved West and Gaeke
11	Oxides of Nitrogen (NO <sub>2</sub> )	μg/m³	80	IS:5182(Part 6):Modified Jacob & Hochheiser (Na-Arsenite)
12	Ozone (O <sub>3</sub> )	μg/m³	180	IS 5182 (PART IX) 1974 / CPCB Method (Vol.I,May-2011)

NS#: Not Specified, \*\* National Ambient Air Quality Standards Dated: 18/11/2009 as per Central Pollution Control Board, New Delhi.

Date of Sampling : As Per Table Sampling Location : As Per Table

Sampling By : Pollucon Laboratories Pvt. Ltd. Protocol (purpose) : Ambient Air Quality Monitoring

H. T. Shah Lab Manager



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#### Table No. 1 Ambient Air Quality Monitoring Results for Zero Point

Sampling   (yg/m²)   (yg	Date of	$PM_{10}$	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	CO	NH <sub>3</sub>	O <sub>3</sub>	Lead	BaP	As	Ni	$C_6H_6$
1004/2015   65.25   30.68		(µg/m³)	(µg/m³)				(µg/m³)	(µg/m³)				(ng/m <sup>3</sup> )	
13/04/2015   65.50   32.39   22.53   65.50   63.50   15.01   25.25   80.1*	10/04/2015												BDL*
1604/2015   65.50   32.39   22.53   36.50   0.50   15.01   22.52   BDL*   BDL	11/04/2015	76.52	38.78	18.14	28.11	0.19	17.24	21.43	BDL*	BDL*	BDL*	BDL*	BDL*
2004/2015   72.41   40.06   20.15   29.63   0.39   39.59   24.52   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   27/04/2015   94.61   56.25   12.55   26.47   0.53   32.97   20.38   BDL*	13/04/2015	85.42	46.22	19.47	22.55	0.36	31.29	27.41	BDL*	BDL*	BDL*	BDL*	BDL*
	16/04/2015	65.50	32.39	22.53	36.50	0.50	15.01	22.52	BDL*	BDL*	BDL*	BDL*	BDL*
27/04/2015   94.61   56.25   12.55   26.47   0.53   32.97   20.38   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   D0L*   D0	20/04/2015	72.41	40.06	20.15	29.63	0.39	39.59	24.52	BDL*	BDL*	BDL*	BDL*	BDL*
1909/4/2015   56.83   29.41   13.56   38.57   0.16   30.85   23.20   BDL*   B	23/04/2015	87.60	50.29	24.16	32.36	0.23	24.58	18.57	BDL*	BDL*	BDL*	BDL*	BDL*
14/05/2015   66.79   32.39   17.69   26.49   0.34   40.87   26.41   BDL*   BD	27/04/2015	94.61	56.25	12.55	26.47	0.53	32.97	20.38	BDL*	BDL*	BDL*	BDL*	BDL*
	30/04/2015	56.83	29.41	13.56	38.57	0.16	30.85	23.20	BDL*	BDL*	BDL*	BDL*	BDL*
11/05/2015   87.31   45.60   11.41   24.32   0.54   35.12   21.73   8DL*   8D	04/05/2015	96.53	54.55	14.30	32.56	0.61	22.69	22.74	BDL*	BDL*	BDL*	BDL*	BDL*
14/05/2015   78.79   42.19   18.62   20.33   0.29   30.65   23.35   BDL*   BD	07/05/2015	66.79	32.39	17.69	26.49	0.34	40.87	26.41	BDL*	BDL*	BDL*	BDL*	BDL*
18/05/2015   92.61   50.50   16.32   34.37   0.38   43.74   28.60   BDL*   BD	11/05/2015	87.31	45.60	11.41	24.32	0.54	35.12		BDL*	BDL*	BDL*	BDL*	BDL*
\$\frac{2}{2}\sqrt{9}\sqrt{2}\sqrt{1}\$ 68.50   31.54   20.41   31.59   0.49   23.31   20.11   8DL*   8DL*   8DL*   8DL*   8DL*   8DL*   25\sqrt{9}\sqrt{2}\sqrt{0}\sqrt{2}\sqrt{0}\sqrt{2}\sqrt{0}\sqrt{2}\sqrt{0}\sq	14/05/2015	78.79	42.19	18.62	20.33	0.29	30.65	23.35	BDL*	BDL*	BDL*	BDL*	BDL*
25/05/2015   94.50   52.85   12.57   27.37   0.52   38.63   25.22   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   28/05/2015   84.50   46.45   23.54   35.51   0.39   26.82   17.13   BDL*		92.61	50.50	16.32	34.37	0.38	43.74	28.60	BDL*	BDL*	BDL*	BDL*	BDL*
28/05/2015   80.90   46.45   23.54   35.51   0.39   26.82   17.13   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*													
D1/06/2015													
04/06/2015   56.50   32.46   22.28   33.65   0.50   43.57   28.55   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BD(\$08/06/2015   74.82   40.05   17.43   42.64   0.74   56.58   25.44   BDL*													
08/06/2015													
11/06/2015   90.69   48.48   21.73   32.65   0.82   42.27   29.59   BDL*   BD													
15/06/2015   82.51   50.38   11.37   36.47   0.73   37.39   30.63   BDL*   BD													
18/06/2015													
22/06/2015         92.60         54.81         19.51         30.35         0.76         46.50         21.52         BDL*													
25/06/2015         65.68         25.30         12.66         25.55         0.65         52.35         23.74         BDL*													
29/06/2015         85.11         52.28         18.71         34.23         0.69         44.36         27.56         BDL*													
02/07/2015         80.08         49.33         19.52         37.31         0.82         43.43         24.55         BDL*													
O6/07/2015   73.42   39.63   22.18   41.76   0.60   53.65   18.29   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDV*   BD													
09/07/2015   82.31   35.41   14.38   38.45   0.94   32.19   20.59   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   13/07/2015   77.70   48.48   12.61   40.54   0.78   35.12   16.51   BDL*													
13/07/2015													
16/07/2015   92.31   51.65   33.35   34.59   0.87   41.62   25.27   BDL*   BD													
20/07/2015         72.61         38.37         18.62         42.56         0.77         54.30         19.04         BDL*													
23/07/2015         87.37         46.38         21.36         32.52         0.80         45.20         28.29         BDL*         BDL*         BDL*         BDL*           30/07/2015         61.22         24.03         13.63         27.35         0.72         50.21         23.41         BDL*													
30/07/2015         61.22         24.03         13.63         27.35         0.72         50.21         23.41         BDL*													
03/08/2015         69.53         33.73         16.36         40.51         0.37         39.82         26.58         BDL*													
06/08/2015         55.11         23.61         22.45         28.24         0.31         18.53         22.70         BDL*													
10/08/2015         68.79         30.36         19.69         37.45         0.39         31.11         19.45         BDL*													
13/08/2015         58.49         26.56         15.49         25.36         0.84         35.08         23.39         BDL*													
17/08/2015         86.38         48.69         20.75         21.78         0.32         28.79         27.58         BDL*													
20/08/2015         62.49         29.51         17.69         35.61         0.25         20.85         21.41         BDL*													
24/08/2015         81.53         40.47         10.43         31.47         0.76         24.82         28.50         BDL*													
27/08/2015         61.27         28.25         18.49         24.67         0.44         22.84         18.54         BDL*													
31/08/2015         89.48         37.52         13.43         36.54         0.69         41.39         29.58         BDL*													
03/09/2015         85.31         35.84         8.66         28.75         0.78         38.50         27.34         BDL*													
07/09/2015         56.50         26.56         20.49         20.37         0.88         48.45         22.53         BDL*													
10/09/2015         65.32         34.57         14.39         39.43         0.72         59.18         29.28         BDL*         BDL*         BDL*         BDL*         BDL*           14/09/2015         58.42         25.30         22.50         21.73         0.56         45.52         26.62         BDL*         BDL*         BDL*         BDL*           15/09/2015         90.69         52.08         16.52         32.42         0.64         55.60         30.60         BDL*         BDL*         BDL*         BDL*         BDL*           22/09/2015         67.49         32.46         19.46         37.48         0.87         35.44         28.14         BDL*         BDL*         BDL*         BDL*         BDL*           24/09/2015         76.48         40.47         13.37         35.53         0.38         39.34         25.26         BDL*         BDL*         BDL*         BDL*         BDL*													
14/09/2015         58.42         25.30         22.50         21.73         0.56         45.52         26.62         BDL*           24/09/2015         76.48         40.47         13.37         35.53         0.38         39.34         25.26         BDL*         BDL*         BDL*         BDL*         BDL*													
15/09/2015         90.69         52.08         16.52         32.42         0.64         55.60         30.60         BDL*         BDL*         BDL*         BDL*         BDL*           22/09/2015         67.49         32.46         19.46         37.48         0.87         35.44         28.14         BDL*         BDL*         BDL*         BDL*         BDL*           24/09/2015         76.48         40.47         13.37         35.53         0.38         39.34         25.26         BDL*         BDL*         BDL*         BDL*         BDL*													
22/09/2015         67.49         32.46         19.46         37.48         0.87         35.44         28.14         BDL*           24/09/2015         76.48         40.47         13.37         35.53         0.38         39.34         25.26         BDL*         BDL*         BDL*         BDL*         BDL*													
24/09/2015 76.48 40.47 13.37 35.53 0.38 39.34 25.26 BDL* BDL* BDL* BDL* BDL*													

BDL\*: Below Detection Limit, Minimum Detection Limit, Lead as Pb ( $\mu g/m^3$ ):0.5, Benzo (a) Pyrene (BaP) - particulate phase only ( $ng/m^3$ ): 0.5, Nickel as Ni ( $ng/m^3$ ):10, Arsenic as As ( $ng/m^3$ ):2, Benzene as  $C_6H_6$  ( $\mu g/m^3$ ): 2

H. T. Shah Lab Manager

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#### Table No. 2 Ambient Air Quality Monitoring Results for Starting of pile Approach

	$PM_{10}$	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	CO	NH <sub>3</sub>	O <sub>3</sub>	Lead	BaP	As	Ni	$C_6H_6$
Sampling	(µg/m³)	(µg/m³)	(µg/m³)	$(\mu g/m^3)$	(mg/m <sup>3</sup> )	$(\mu g/m^3)$	(µg/m³)	$(\mu g/m^3)$	(ng/m³)	(ng/m³)	(ng/m³)	(µg/m³)
11/04/2015	58.62	26.42	15.21	31.85	0.42	30.01	28.53	BDL*	BDL*	BDL*	BDL*	BDL*
13/04/2015	64.49	28.52	12.95	26.80	0.17	42.04	19.35	BDL*	BDL*	BDL*	BDL*	BDL*
16/04/2015	86.59	48.23	18.34	32.54	0.38	27.22	29.57	BDL*	BDL*	BDL*	BDL*	BDL*
20/04/2015	80.50	32.71	22.49	34.50	0.44	22.35	20.69	BDL*	BDL*	BDL*	BDL*	BDL*
23/04/2015	76.57	36.90	14.30	22.44	0.24	36.90	21.50	BDL*	BDL*	BDL*	BDL*	BDL*
27/04/2015	56.48	22.64	20.61	38.46	0.49	16.64	27.32	BDL*	BDL*	BDL*	BDL*	BDL*
30/04/2015	60.22	25.58	17.00	35.53	0.08	21.71	18.57	BDL*	BDL*	BDL*	BDL*	BDL*
04/05/2015	63.70	34.39	10.43	21.64	0.19	35.44	23.53	BDL*	BDL*	BDL*	BDL*	BDL*
07/05/2015	76.33	42.35	19.65	31.48	0.44	26.18	18.84	BDL*	BDL*	BDL*	BDL*	BDL*
14/05/2015	61.78	33.55	11.41	25.58	0.25	42.65	25.43	BDL*	BDL*	BDL*	BDL*	BDL*
18/05/2015	75.62	40.68	13.39	30.49	0.27	24.50	16.65	BDL*	BDL*	BDL*	BDL*	BDL*
25/05/2015	70.19	41.52	8.34	23.30	0.48	41.51	21.18	BDL*	BDL*	BDL*	BDL*	BDL*
28/05/2015	68.39	38.16	12.45	29.58	0.22	39.62	27.52	BDL*	BDL*	BDL*	BDL*	BDL*
01/06/2015	78.43	34.72	15.69	32.60	0.64	18.52	28.73	BDL*	BDL*	BDL*	BDL*	BDL*
04/06/2015	68.48	41.42	18.69	29.37	0.60	24.70	24.79	BDL*	BDL*	BDL*	BDL*	BDL*
08/06/2015	59.40	31.79	10.48	33.50	0.37	41.27	20.14	BDL*	BDL*	BDL*	BDL*	BDL*
11/06/2015	70.57	39.32	13.67	27.50	0.45	23.70	27.63	BDL*	BDL*	BDL*	BDL*	BDL*
15/06/2015	67.60	29.70	19.70	20.62	0.63	40.64	21.08	BDL*	BDL*	BDL*	BDL*	BDL*
18/06/2015	71.50	32.63	11.43	35.46	0.40	21.55	26.36	BDL*	BDL*	BDL*	BDL*	BDL*
22/06/2015	80.39	38.49	17.62	28.33	0.31	31.52	29.29	BDL*	BDL*	BDL*	BDL*	BDL*
25/06/2015	56.37	22.59	14.60	21.54	0.54	28.32	19.08	BDL*	BDL*	BDL*	BDL*	BDL*
29/06/2015	74.59	36.40	12.52	26.84	0.66	34.17	25.50	BDL*	BDL*	BDL*	BDL*	BDL*
02/07/2015	88.37	45.60	13.40	29.60	0.70	33.47	19.49	BDL*	BDL*	BDL*	BDL*	BDL*
06/07/2015	69.28	32.21	12.37	38.46	0.42	20.15	24.76	BDL*	BDL*	BDL*	BDL*	BDL*
13/07/2015	82.61	28.45	21.62	24.52	0.66	38.48	28.40	BDL*	BDL*	BDL*	BDL*	BDL*
16/07/2015	78.18	46.44	24.38	28.39	0.47	22.47	21.41	BDL*	BDL*	BDL*	BDL*	BDL*
20/07/2015	66.00	29.70	11.64	36.49	0.39	39.40	25.75	BDL*	BDL*	BDL*	BDL*	BDL*
23/07/2015	76.58	35.56	19.05	30.79	0.32	30.55	26.79	BDL*	BDL*	BDL*	BDL*	BDL*
30/07/2015	52.58	21.34	15.66	23.15	0.56	27.40	27.68	BDL*	BDL*	BDL*	BDL*	BDL*
03/08/2015	76.33	40.58	12.63	30.77	0.79	45.64	24.64	BDL*	BDL*	BDL*	BDL*	BDL*
06/08/2015	85.63	44.34	17.73	34.56	1.01	23.81	28.88	BDL*	BDL*	BDL*	BDL*	BDL*
10/08/2015	90.61	48.53	10.32	24.54	0.82	37.71	22.61	BDL*	BDL*	BDL*	BDL*	BDL*
13/08/2015	83.19	42.67	7.30	22.81	0.72	27.57	20.44	BDL*	BDL*	BDL*	BDL*	BDL*
17/08/2015	64.81	30.54	16.46	17.68	0.77	44.81	29.41	BDL*	BDL*	BDL*	BDL*	BDL*
20/08/2015	75.51	38.49	15.58	26.61	0.63	41.67	30.29	BDL*	BDL*	BDL*	BDL*	BDL*
24/08/2015	55.70	36.40	13.41	37.55	0.54	29.77	21.47	BDL*	BDL*	BDL*	BDL*	BDL*
27/08/2015	92.43	46.02	20.41	36.52	0.92	26.63	26.50	BDL*	BDL*	BDL*	BDL*	BDL*
31/08/2015	81.41	41.42	11.44	33.50	0.80	47.63	23.41	BDL*	BDL*	BDL*	BDL*	BDL*
03/09/2015	67.40	28.45	11.35	34.47	0.61	25.67	22.48	BDL*	BDL*	BDL*	BDL*	BDL*
07/09/2015	87.59	49.36	17.42	38.43	0.76	36.39	26.17	BDL*	BDL*	BDL*	BDL*	BDL*
10/09/2015	79.30	43.51	6.55	29.53	0.65	21.77	20.41	BDL*	BDL*	BDL*	BDL*	BDL*
14/09/2015	94.61	50.62	16.12	32.55	0.41	24.01	23.97	BDL*	BDL*	BDL*	BDL*	BDL*
15/09/2015	68.39	36.40	13.06	26.66	0.54	30.48	24.64	BDL*	BDL*	BDL*	BDL*	BDL*
22/09/2015	75.50	51.46	15.72	30.45	0.73	19.39	25.46	BDL*	BDL*	BDL*	BDL*	BDL*
24/09/2015	86.49	48.53	10.47	27.46	0.47	35.74	21.43	BDL*	BDL*	BDL*	BDL*	BDL*
28/09/2015	76.52	35.56	9.48	33.44	0.37	28.63	27.54	BDL*	BDL*	BDL*	BDL*	BDL*

BDL\*: Below Detection Limit, Minimum Detection Limit, Lead as Pb ( $\mu$ g/m³):0.5, Benzo (a) Pyrene (BaP) - particulate phase only (ng/m³): 0.5, Nickel as Ni (ng/m³):10, Arsenic as As (ng/m³):2, Benzene as C<sub>6</sub>H<sub>6</sub> ( $\mu$ g/m³): 2

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## Table No. 3 Ambient Air Quality Monitoring Results for South West Corner of Back up Area

Date of	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	CO	NH₃	O <sub>3</sub>	Lead	BaP	As	Ni	C <sub>6</sub> H <sub>6</sub>
Sampling	$(\mu g/m^3)$	$(\mu g/m^3)$	(µg/m³)	(µg/m³)	$(mg/m^3)$	(µg/m³)	(µg/m³)	$(\mu g/m^3)$	(ng/m³)	(ng/m³)	(ng/m³)	$(\mu g/m^3)$
02/04/2015	90.60	56.20	19.15	39.22	0.33	46.58	19.28	BDL*	BDL*	BDL*	BDL*	BDL*
03/04/2015	70.50	32.58	23.34	35.42	0.27	35.09	23.34	BDL*	BDL*	BDL*	BDL*	BDL*
06/04/2015	84.30	46.48	18.05	38.24	0.41	40.23	22.47	BDL*	BDL*	BDL*	BDL*	BDL*
07/04/2015	94.22	55.27	20.47	34.21	0.14	34.48	28.38	BDL*	BDL*	BDL*	BDL*	BDL*
13/04/2015	76.70	40.61	16.49	30.61	0.32	51.40	24.16	BDL*	BDL*	BDL*	BDL*	BDL*
16/04/2015	97.69	58.35	14.30	28.65	0.45	32.25	27.77	BDL*	BDL*	BDL*	BDL*	BDL*
20/04/2015	86.17	48.22	8.42	22.55	0.47	37.04	21.39	BDL*	BDL*	BDL*	BDL*	BDL*
23/04/2015	95.61	52.56	21.45	36.22	0.29	44.46	26.23	BDL*	BDL*	BDL*	BDL*	BDL*
27/04/2015	77.42	28.74	15.54	31.49	0.38	22.35	18.40	BDL*	BDL*	BDL*	BDL*	BDL*
30/04/2015	87.39	36.49	10.88	27.56	0.18	23.90	20.65	BDL*	BDL*	BDL*	BDL*	BDL*
04/05/2015	77.72	42.47	18.23	35.63	0.36	44.46	19.76	BDL*	BDL*	BDL*	BDL*	BDL*
07/05/2015	81.20	38.66	7.47	22.61	0.46	32.37	25.64	BDL*	BDL*	BDL*	BDL*	BDL*
11/05/2015	71.41	24.33	13.50	27.41	0.37	25.71	16.78	BDL*	BDL*	BDL*	BDL*	BDL*
14/05/2015	68.17	35.59	14.53	32.35	0.31	53.32	28.24	BDL*	BDL*	BDL*	BDL*	BDL*
18/05/2015	84.22	46.47	9.55	24.23	0.15	29.37	18.48	BDL*	BDL*	BDL*	BDL*	BDL*
21/05/2015	92.06	39.47	12.47	28.55	0.45	36.40	24.24	BDL*	BDL*	BDL*	BDL*	BDL*
25/05/2015	86.28	48.65	17.66	34.08	0.32	49.17	17.40	BDL*	BDL*	BDL*	BDL*	BDL*
28/05/2015	91.06	52.56	19.44	30.18	0.26	45.07	23.85	BDL*	BDL*	BDL*	BDL*	BDL*
01/06/2015	66.92	22.38	12.56	25.63	0.42	24.27	23.42	BDL*	BDL*	BDL*	BDL*	BDL*
04/06/2015	74.62	35.73	8.39	23.63	0.52	31.33	20.61	BDL*	BDL*	BDL*	BDL*	BDL*
08/06/2015	65.26	36.60	13.67	37.47	0.48	48.53	28.28	BDL*	BDL*	BDL*	BDL*	BDL*
11/06/2015	82.63	45.36	11.63	21.99	0.27	28.86	24.42	BDL*	BDL*	BDL*	BDL*	BDL*
15/06/2015	91.63	44.52	16.21	32.53	0.49	46.69	19.68	BDL*	BDL*	BDL*	BDL*	BDL*
18/06/2015	85.58	50.79	18.76	29.51	0.36	42.48	22.66	BDL*	BDL*	BDL*	BDL*	BDL*
22/06/2015	86.51	42.27	14.53	33.43	0.53	38.58	18.11	BDL*	BDL*	BDL*	BDL*	BDL*
25/06/2015	75.60	30.50	19.36	18.50	0.61	45.46	21.46	BDL*	BDL*	BDL*	BDL*	BDL*
29/06/2015	68.21	43.47	15.37	22.54	0.55	29.51	29.41	BDL*	BDL*	BDL*	BDL*	BDL*
02/07/2015	65.69	32.71	16.53	24.24	0.61	28.57	26.68	BDL*	BDL*	BDL*	BDL*	BDL*
06/07/2015	79.84	47.93	20.18	32.45	0.33	39.63	28.42	BDL*	BDL*	BDL*	BDL*	BDL*
09/07/2015	64.46	20.92	22.47	27.54	0.44	23.35	18.41	BDL*	BDL*	BDL*	BDL*	BDL*
13/07/2015	89.18	41.58	17.14	34.93	0.53	42.48	23.41	BDL*	BDL*	BDL*	BDL*	BDL*
16/07/2015	70.38	35.28	19.26	23.18	0.27	27.24	17.22	BDL*	BDL*	BDL*	BDL*	BDL*
20/07/2015	80.42	43.90	14.30	30.38	0.45	46.69	22.52	BDL*	BDL*	BDL*	BDL*	BDL*
23/07/2015	91.42	48.37	15.65	36.22	0.57	36.31	24.80	BDL*	BDL*	BDL*	BDL*	BDL*
30/07/2015	69.51	29.27	21.02	20.27	0.64	43.45	21.43	BDL*	BDL*	BDL*	BDL*	BDL*
03/08/2015	84.31	46.48	9.44	33.65	0.56	37.52	21.59	BDL*	BDL*	BDL*	BDL*	BDL*
06/08/2015	66.53	31.38	13.50	39.53	0.46	34.39	19.34	BDL*	BDL*	BDL*	BDL*	BDL*
10/08/2015	76.52	37.48	22.37	29.54	0.58	48.46	17.58	BDL*	BDL*	BDL*	BDL*	BDL*
13/08/2015	65.52	30.66	18.70	35.50	0.65	46.53	22.81	BDL*	BDL*	BDL*	BDL*	BDL*
17/08/2015	71.60	38.22	12.63	28.31	0.40	52.47	20.59	BDL*	BDL*	BDL*	BDL*	BDL*
20/08/2015	69.56	34.43	8.56	31.47	0.34	56.43	25.43	BDL*	BDL*	BDL*	BDL*	BDL*
24/08/2015	74.31	22.66	23.58	22.53	0.47	47.52	18.49	BDL*	BDL*	BDL*	BDL*	BDL*
27/08/2015	80.48	36.60	15.50	22.65	0.29	43.46	23.61	BDL*	BDL*	BDL*	BDL*	BDL*
31/08/2015	75.41	33.57	17.59	31.58	0.48	58.41	26.79	BDL*	BDL*	BDL*	BDL*	BDL*
03/09/2015	77.56	33.57	5.65	16.28	0.49	18.74	19.48	BDL*	BDL*	BDL*	BDL*	BDL*
07/09/2015	68.37	29.63	11.56	31.50	0.69	20.89	24.43	BDL*	BDL*	BDL*	BDL*	BDL*
10/09/2015	71.48	38.35	8.58	24.55	0.36	30.72	22.48	BDL*	BDL*	BDL*	BDL*	BDL*
14/09/2015	66.67	30.66	13.53	27.26	0.30	19.13	20.49	BDL*	BDL*	BDL*	BDL*	BDL*
15/09/2015	76.68	41.58	9.84	20.64	0.53	27.24	26.62	BDL*	BDL*	BDL*	BDL*	BDL*
22/09/2015	59.49	27.55	12.47	25.45	0.48	16.86	18.32	BDL*	BDL*	BDL*	BDL*	BDL*
24/09/2015	65.48	36.60	7.35	22.36	0.60	21.40	23.55	BDL*	BDL*	BDL*	BDL*	BDL*
28/09/2015	54.57	25.71	15.48	18.57	0.50	35.32	25.31	BDL*	BDL*	BDL*	BDL*	BDL*
BDL*: Below Det	action Limit N	linimum Dotos	tion Limit Los	nd ac Ph (ug/n	3).0 F Bonzo	(a) Durana (Pa	D) - particulat	o phaco only (	na/m³). 0 E	Nickel ac Ni (a	a/m <sup>3</sup> \110 Arc	onio no Ao

BDL\*: Below Detection Limit, Minimum Detection Limit, Lead as Pb ( $\mu$ g/m³):0.5, Benzo (a) Pyrene (BaP) - particulate phase only (ng/m³): 0.5, Nickel as Ni (ng/m³):10, Arsenic as As (ng/m³):2, Benzene as C<sub>6</sub>H<sub>6</sub> ( $\mu$ g/m³): 2

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#### Table No. 4 Ambient Air Quality Monitoring Results for North East Corner of Back up Area

Date of	$PM_{10}$	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	CO	NH₃	O <sub>3</sub>	Lead	BaP	As	Ni	C <sub>6</sub> H <sub>6</sub>
Sampling	(µg/m³)	(µg/m <sup>3</sup> )	$(\mu g/m^3)$	$(\mu g/m^3)$	(mg/m <sup>3</sup> )	$(\mu g/m^3)$	(µg/m³)	$(\mu g/m^3)$	(ng/m <sup>3</sup> )	(ng/m³)	(ng/m³)	(µg/m³)
06/04/2015	76.21	40.60	8.43	30.18	0.19	25.71	18.76	BDL*	BDL*	BDL*	BDL*	BDL*
07/04/2015	82.39	48.55	10.70	24.15	0.15	20.57	24.90	BDL*	BDL*	BDL*	BDL*	BDL*
13/04/2015	95.51	38.51	7.48	33.46	0.21	34.18	19.31	BDL*	BDL*	BDL*	BDL*	BDL*
16/04/2015	56.22	30.55	12.45	26.22	0.25	16.33	25.34	BDL*	BDL*	BDL*	BDL*	BDL*
20/04/2015	64.30	25.22	14.62	20.37	0.41	24.58	20.42	BDL*	BDL*	BDL*	BDL*	BDL*
23/04/2015	58.70	22.60	17.32	28.65	0.11	29.95	23.63	BDL*	BDL*	BDL*	BDL*	BDL*
27/04/2015	68.42	34.32	9.38	34.38	0.17	11.19	21.39	BDL*	BDL*	BDL*	BDL*	BDL*
30/04/2015	80.27	31.52	6.35	23.64	0.22	13.91	27.50	BDL*	BDL*	BDL*	BDL*	BDL*
04/05/2015	71.59	30.55	7.60	27.18	0.16	27.46	17.46	BDL*	BDL*	BDL*	BDL*	BDL*
07/05/2015	57.66	23.54	12.47	18.61	0.40	24.27	20.37	BDL*	BDL*	BDL*	BDL*	BDL*
01/06/2015	55.60	27.74	7.50	29.60	0.29	16.57	21.42	BDL*	BDL*	BDL*	BDL*	BDL*
04/06/2015	61.52	25.75	12.73	16.70	0.44	12.67	26.56	BDL*	BDL*	BDL*	BDL*	BDL*
08/06/2015	50.66	30.26	8.51	26.95	0.21	34.48	22.62	BDL*	BDL*	BDL*	BDL*	BDL*
11/06/2015	66.25	24.38	9.69	19.46	0.39	18.16	20.50	BDL*	BDL*	BDL*	BDL*	BDL*
15/06/2015	72.62	34.05	13.40	28.45	0.18	20.32	25.60	BDL*	BDL*	BDL*	BDL*	BDL*
18/06/2015	56.47	23.54	14.38	23.84	0.23	32.01	19.63	BDL*	BDL*	BDL*	BDL*	BDL*
22/06/2015	68.75	28.70	11.29	20.50	0.34	24.37	24.35	BDL*	BDL*	BDL*	BDL*	BDL*
25/06/2015	48.61	16.39	5.52	15.60	0.47	25.24	17.54	BDL*	BDL*	BDL*	BDL*	BDL*
29/06/2015	60.29	29.84	10.59	18.77	0.46	19.39	23.60	BDL*	BDL*	BDL*	BDL*	BDL*
02/07/2015	56.52	25.64	9.38	20.75	0.40	18.52	26.61	BDL*	BDL*	BDL*	BDL*	BDL*
06/07/2015	62.43	21.53	16.73	25.28	0.24	28.27	19.47	BDL*	BDL*	BDL*	BDL*	BDL*
09/07/2015	53.23	27.32	18.59	23.44	0.30	15.39	25.65	BDL*	BDL*	BDL*	BDL*	BDL*
13/07/2015	68.79	32.79	14.50	29.38	0.34	19.70	22.48	BDL*	BDL*	BDL*	BDL*	BDL*
16/07/2015	58.61	28.58	11.41	21.44	0.41	16.93	23.34	BDL*	BDL*	BDL*	BDL*	BDL*
20/07/2015	64.76	23.54	19.43	26.45	0.21	32.32	20.60	BDL*	BDL*	BDL*	BDL*	BDL*
23/07/2015	65.82	26.59	12.45	22.58	0.37	23.39	18.57	BDL*	BDL*	BDL*	BDL*	BDL*
30/07/2015	45.54	15.55	10.48	16.65	0.31	24.32	17.53	BDL*	BDL*	BDL*	BDL*	BDL*
03/08/2015	92.62	42.45	21.61	25.64	0.66	20.17	29.51	BDL*	BDL*	BDL*	BDL*	BDL*
06/08/2015	77.63	38.41	15.47	37.55	0.78	15.87	26.65	BDL*	BDL*	BDL*	BDL*	BDL*
10/08/2015	85.53	41.61	13.52	32.63	0.33	24.75	24.45	BDL*	BDL*	BDL*	BDL*	BDL*
13/08/2015	93.64	50.86	11.72	28.45	0.74	19.74	27.69	BDL*	BDL*	BDL*	BDL*	BDL*
17/08/2015 20/08/2015	55.18 86.52	24.38 45.40	14.71 12.70	24.30 32.52	0.60 0.36	26.01 29.14	22.29 28.33	BDL* BDL*	BDL* BDL*	BDL* BDL*	BDL*	BDL*
											BDL*	
24/08/2015 27/08/2015	90.50 84.50	48.54 43.29	19.44 23.35	25.45 22.46	0.64 0.49	12.24 18.49	23.48 20.58	BDL* BDL*	BDL* BDL*	BDL* BDL*	BDL* BDL*	BDL*
31/08/2015	94.52	52.54	20.53	39.39	0.49	33.84	25.47	BDL*	BDL*	BDL*	BDL*	BDL*
03/09/2015	94.52	39.09	15.69	23.40	0.41	31.19	24.75	BDL*	BDL*	BDL*	BDL*	BDL*
03/09/2015	80.52	43.48	13.53	35.39	0.57	28.59	24.75	BDL*	BDL*	BDL*	BDL*	BDL*
10/09/2015	90.48	49.60	16.58	42.51	0.55	43.09	27.40	BDL*	BDL*	BDL*	BDL*	BDL*
14/09/2015	84.52	45.40	19.65	38.53	0.33	28.01	17.92	BDL*	BDL*	BDL*	BDL*	BDL*
15/09/2015	57.38	30.68	11.75	21.60	0.45	46.48	22.44	BDL*	BDL*	BDL*	BDL*	BDL*
22/09/2015	88.72	47.50	12.65	32.63	0.46	24.63	23.48	BDL*	BDL*	BDL*	BDL*	BDL*
24/09/2015	95.53	52.76	17.43	41.48	0.82	48.09	19.08	BDL*	BDL*	BDL*	BDL*	BDL*
28/09/2015	86.70	40.77	20.31	36.54	0.21	49.56	29.55	BDL*	BDL*	BDL*	BDL*	BDL*
20/03/2013 BDI *: Below Det												

BDL\*: Below Detection Limit, Minimum Detection Limit, Lead as Pb ( $\mu$ g/m³):0.5, Benzo (a) Pyrene (BaP) - particulate phase only (ng/m³): 0.5, Nickel as Ni (ng/m³):10, Arsenic as As (ng/m³):2, Benzene as  $C_6H_6$  ( $\mu$ g/m³): 2

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#### **RESULTS OF NOISE LEVEL MONITORING**

Sampling Date : As Per Table

Test Method : IS 11702

Sampling Location : As Per Table

Sampling By : Pollucon Laboratories Pvt. Ltd.

Protocol (purpose) : Environmental Monitoring

## Table No. 5 Results of Day Time Noise level monitoring [April 2015 to September 2015]

				Noise Leve	el Day Time	dB (A)Leq	k		
Sr.	Name of Location	Zero Point	t Near KPT		ırity Cabin ack up Area		t Corner Of p Area		t Corner Of Jp Area
No.	Month	Min	Max	Min	Max	Min	Max	Min	Max
1.	April	50.7	66.9	56.9	69.8	45.2	64.4	50.5	62.9
2.	May	53.1	67.8	58.3	68.0	51.3	68.9	50.1	65.0
3.	June	56.2	64.0	54.9	68.3	58.3	67.3	54.0	65.0
4.	July	48.3	70.8	55.3	67.9	52.3	70.1	54.3	67.9
5.	August	53.5	67.0	53.2	73.5	52.3	70.1	51.4	71.9
6.	September	49.0	68.0	51.2	66.2	54.6	67.0	51.2	66.5

## Table No. 6 Results of Night Time Noise level monitoring [April 2015 to September 2015]

				Noise Leve	el Night Tin	ne dB (A)Le	q*			
Sr.	Name of Location	Zero Point	t Near KPT		rity Cabin ick up Area		t Corner Of Ip Area		rth East Corner Of Back Up Area	
No.	Month	Min	Max	Min	Max	Min	Max	Min	Max	
1.	April	45.7	59.7	44.9	60.7	41.1	49.5	44.9	53.0	
2.	May	47.2	58.7	51.1	59.4	52.3	59.4	50.3	57.3	
3.	June	52.3	60.9	53.4	61.6	54.0	61.1	48.0	59.0	
4.	July	43.2	58.6	54.4	63.5	55.4	67.9	54.4	56.3	
5.	August	59.1	69.5	56.6	69.1	55.4	67.9	53.7	66.0	
6.	September	49.3	63.5	53.5	64.5	51.1	63.3	51.2	60.2	

#### **Ambient Air Quality Standards for Noise Specified by CPCB**

Area Code	Category of Area/Zone	Limits in dB (A) Leq#								
		Day time	Night time							
Α	Industrial area	75	70							
Notes:										
1. Day tin	ne shall mean from 6.00 a.m. to 10.00 p.m.									
2. Night time shall mean from 10.00 p.m. to 06.00 a.m.										
#dB(A) Leg denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing										

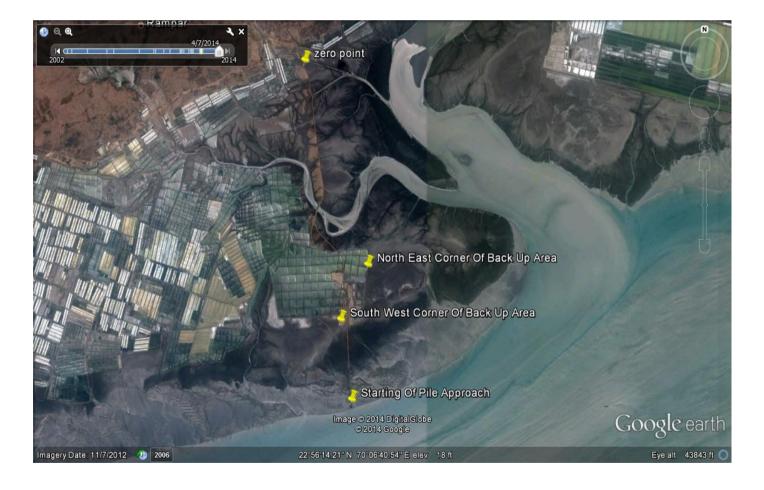
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#### Ambient Air Quality Monitoring & Noise quality Monitoring Locations

Sr. No	Name of Location	GPS Coordinate
1.	Zero Point	N 22°58.184' E 70°05.651'
2.	Starting Of Pile Approach	N 22°54.418' E 70°06.255'
3.	South West Corner Of Back Up Area	N 22°55.307' E 70°06.114'
4.	North East Corner Of Back Up Area	N 22°55.915' E 70°06.465'

Figure No. 1 Google earth image of Ambient Air Quality Monitoring & Noise quality monitoring location



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#### **RESULTS OF SEA WATER MONITORING**

Table No. 7 Results of Sea water [April 2015 to September 2015]

Description of Sample : Sea Water Samples Quantity/No. of Samples : 10 Lit/Two

Sampling By : Pollucon Laboratories Pvt. Ltd. Sampling Procedure : Grab

Packing/Seal : Sealed Protocol (purpose) : Env. Monitoring
Test Method : IS 3025 & APHA (22<sup>nd</sup> Edi.) 2008 Test Parameters : As per Table

			Near Jet	tty (M2)	Near Mouth o	of Creek (M1)			
SR.	TEST	UNIT	Apr		May	<b>/-15</b>		-15	
NO.	PARAMETERS	OMI	03/04		12/05	/2015		/2015	
			SURFACE	воттом	SURFACE	воттом	SURFACE	воттом	
1	рH		8.1	8.15	8.15	8.25	8.22	8.28	
2	Temperature	°C	30	29	29	30	28	29	
3	Total Suspended Solids	mg/L	38	30	48	36	49	32	
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	
5	Dissolved Oxygen	mg/L	5.4	4.6	5.6	4.8	5.4	4.4	
6	Salinity	ppt	40.29	40.79	39.6	40.4	39.8	40.9	
7	Oil & Grease	mg/L	0.8	BDL*	1.2	BDL*	0.8	BDL*	
8	Nitrate as NO₃	mg/L	0.64	0.81	0.58	0.72	0.54	0.66	
9	Nitrite as NO <sub>2</sub>	mg/L	0.083	0.063	0.044	0.052	0.048	0.054	
10	Ammonical Nitrogen as NH₃	mg/L	0.29	0.41	0.2	0.36	0.28	0.46	
11	Phosphates as PO <sub>4</sub>	mg/L	0.089	0.14	0.038	0.089	0.058	0.094	
12	Total Nitrogen	mg/L	1.013	1.283	0.824	1.132	0.868	1.18	
13	Petroleum Hydrocarbon	μg/L	8	BDL*	22	BDL*	8	BDL*	
14	Total Dissolved Solids	mg/L	48650	49200	46980	47400	46210	47440	
15	COD	mg/L	24	32	20	30	26	16	
16	Oxidisable Particular Organic Carbon	%	0.64	0.4	0.68	0.44	0.62	0.22	
Α	Flora and Fauna								
17.1	Primary Productivity	mgC/L /day	2.02	1.2	1.12	0.675	2.25	0.45	
В	Phytoplankton								
18.1	Chlorophyll	mg/m	2.29	1.7	1.68	0.961	3.02	0.19	
18.2	Phaeophytin	mg/m	BDL*	0.552	0.738	1.33	BDL*	2.39	
18.3	Cell Count	Unit x 10 <sup>3</sup> /L	170	99	142	58	254	68	
18.4	Name of Group Number and name of group species of each group		Bacillariophyce ae Navicula sp. Nitzschia sp. Fragillaria sp. Gyrosigma Cyanophyceae Nostoc sp. Green algae Pandorina sp. Pediastrum sp. Desmids Closterium sp.	Bacillariophyce ae Nitzschia sp. Fragillaria sp. Green algae Pandorina sp.	Diatoms Nitzschia sp. Thalassiosima sp. Nitzschia sp. Synedra Sp. Coscinodiscus sp. Cyanophyceae Nostoc sp. Desmids Closterium sp.	Diatoms Nitzschia sp. Navicula sp. Synedra sp. 	Bacillariophycea e Navicula sp. Gyro sigma sp. Nitzschia sp. Synedra Sp. Rhizosolenia sp. Green Algae Thallasionema sp. Spirogyra sp. Pediastrum sp. Desmids Cosmarium sp.	Bacillariophycea e Rhizosolenia sp. Coscinodiscus sp. Thallasionema sp. Green Algae Pandorina sp	

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			Near Jetty (M2)		Near Mouth	of Creek (M1)	Near Mouth of Creek (M1)	
SR.	TEST PARAMETERS	UNIT	Apr	-15	May	/- <b>1</b> 5	Jur	n-15
NO.		ONTI	03/04/2015		12/05/2015		27/06/2015	
			SURFACE	воттом	SURFACE	воттом	SURFACE	воттом
С	Zooplanktons							
19.1	Abundance (Population)	no/m²	240	144	180	100	300	150
19.2	Name of Group Number and name of group species of each group		Molluscans Bivalvia Crustaceans Copepods Foraminiferans Snail Mussels	Polychaete worms Foraminiferan s Bivalvia	Molluscans Bivalvia Copepods	Polychaete worms  	Copepods Decapods Crustaceans Cyclops Bivalves	Ostracods Polychaete Bivalves  
19.3	Total Biomass	ml/10 0 m <sup>3</sup>	11	9	12	5	55	11
D	Microbiological Parameters							
20.1	Total Bacterial Count	CFU/ ml	1380	1220	1230	890	1305	1055
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.3	E.coli	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.4	Enterococcus species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.5	Salmonella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.6	Shigella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.7	Vibrio species	/ml	Absent	Absent	Absent	Absent	Absent	Absent

Note: BDL\*: Below Detection Limit, Minimum Detection Limit, BOD: 10 mg/L, Oil & Grease: 1.0 mg/L, Phaeophytin: 0.1 mg/m³, Petroleum Hydrocarbon: 10 μg/L

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## Table No. 8 Results of Sea water [April 2015 to September 2015]

	TEST PARAMETERS	UNIT	Near Jetty (M2)		Near Mouth of Creek (M1)		Near Jetty (M2)	
SR.				l-15	Aug-15		Sep-15	
NO.			30/07/2015		21/08/2015		24/09/2015	
			SURFACE	воттом	SURFACE	BOTTOM	SURFACE	воттом
1	pH Tanan ayatı iya	°C	8.12	8.18	8.15	8.25	6.71	7.82 30
2	Temperature Total Suspended		28	29	29	30	29	
3	Solids	mg/L	34	26	36	28	30	38
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
5	Dissolved Oxygen	mg/L	5.6	4.8	5.6	4.8	5.2	4.4
6	Salinity	ppt	39.62	40.08	39.86	40.32	41.52	41.07
7	Oil & Grease	mg/L	0.6	BDL*	0.4	BDL*	0.4	0.76
8	Nitrate as NO <sub>3</sub>	mg/L	0.48	0.615	0.54	0.74	0.6	0.76
9	Nitrite as NO <sub>2</sub>	mg/L	0.066	0.049	0.076	0.058	0.096	0.069
10	Ammonical Nitrogen as NH₃	mg/L	0.313	0.377	0.4	0.5	0.31	0.42
11	Phosphates as PO <sub>4</sub>	mg/L	0.224	0.359	0.088	0.1	0.13	0.22
12	Total Nitrogen	mg/L	0.859	1.041	1.016	1.298	1.006	1.249
13	Petroleum Hydrocarbon	μg/L	10	BDL*	6	BDL*	12	BDL*
14	Total Dissolved Solids	mg/L	47840	48340	46310	47840	50270	49660
15	COD	mg/L	20	28	22	26	22	26
16	Oxidisable Particular Organic Carbon	%	0.42	0.36	0.56	0.42	0.56	0.48
Α	Flora and Fauna							
171	Primary	mgC/L/d	2.02	0.0	1 575	0.45	1.25	0.220
17.1	Productivity	ay	2.02	0.9	1.575	0.45	1.35	0.338
В	Phytoplankton							
18.1	Chlorophyll	mg/m <sup>3</sup>	2.48	0.37	1.3	0.214	1.709	0.614
18.2	Phaeophytin	mg/m³	BDL*	1.94	0.65	2.22	0.42	1.22
18.3	Cell Count	Unit x 10 <sup>3</sup> /L	224	30	235	41	265	55
18.4	Name of Group Number and name of group species of each group		Bacillariophyce ae Achnanthes sp. Cymbella sp. Fragillaria sp. Coscinodiscus sp. Rhizosolenia sp. Cyanophyceae Oscillatoria sp Lyngbya sp. Green Algae Chlorella sp.	Bacillariophycea e Navicula sp. Nitzschia sp. Fragillaria sp. Cyanophyceae Oscillatoria sp Desmids Closterium sp	Bacillariophyce ae Navicula sp. Nitzschia sp. Synedra sp. Coscinodiscus sp. Rhizosolenia sp. Asterionella sp. Thallasionema sp. Symbella sp. Cyclotella sp. Cyanophyceae Anabaena sp. Oscillatoria sp Green Algae Chlorella sp.	Bacillariophyce ae Navicula sp. Nitzschia sp. Fragillaria sp. Coscinodiscus sp. Thallasionema sp. Green Algae Chlorella sp. Pediastrum sp	Bacillariophyceae Coscinodiscus sp. Rhizosolenia sp. Pinnularia sp. Asterionella sp. Green Algae Chlorella sp. Ankistrodesmus sp. Pandorina sp. Cyanophyceae Nostoc sp. Oscillatoria sp.	Bacillariophyceae Navicula sp. Gyrosigma sp. Fragillaria sp. Nitzchia sp. Green Algae Chlorella sp. Cyanophyceae Oscillatoria sp

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	TEST PARAMETERS		Near Jetty (M2)		Near Mouth of Creek (M1)		Near Jetty (M2)	
SR.			Jul	-15	Aug	j-15	Sep-15	
NO.		UNIT	30/07/2015		21/08/2015		24/09/2015	
			SURFACE	воттом	SURFACE	воттом	SURFACE	воттом
С	Zooplanktons							
19.1	Abundance (Population)	no/m²	250	50	275	125	233	67
19.2	Name of Group Number and name of group species of each group	1	Copepods Polychaete worms Gastropods Crustaceans	Krill Polychaete worms Daphnia 	Copepods Cyclops Crabs Gastropods Echinoderms Molluscans Nematodes Isopods	Cyclops Gastropods Molluscans  	Decapods Krill Polychaete worms Nematodes Isopods Crabs	Polychaete worms Molluscans Echinoderms  
19.3	Total Biomass	ml/100 m <sup>3</sup>	34	5	56	12	79	15
D	Microbiological Parameters							
20.1	Total Bacterial Count	CFU/ml	1822	1340	1740	1520	1530	1170
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.3	E.coli	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.4	Enterococcus species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.5	Salmonella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.6	Shigella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.7	Vibrio species	/ml	Absent	Absent	Absent	Absent	Absent	Absent

Note: BDL\*: Below Detection Limit, Minimum Detection Limit, BOD: 10 mg/L, Oil & Grease: 1.0 mg/L, Phaeophytin: 0.1 mg/m³, Petroleum Hydrocarbon: 10 μg/L

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#### **RESULTS OF SEA SEDIMENT MONITORING**

#### Table No. 9 Results of Sea Sediment [April 2015 to September 2015]

Description of Sample

Sea Sediment Sample

Quantity/No. of Samples :

10 Kg/Two

Sampling By

Pollucon Laboratories Pvt. Ltd.

**IS/ASTM/CPCB Guidelines** 

Sampling Procedure

Grab

Packing/Seal

. . .

Protocol (purpose)

QC

Test Method

Sealed

Test Parameters

As per Table

1 Organic Matter	SR. NO.	TEST PARAMETERS	UNIT	Near Jetty (M2)	Near Mouth of Creek (M1)	Near Mouth of Creek (M1)	Near Jetty (M2)	Near Mouth of Creek (M1)	Near Jetty (M2)
1					May-15	Jun-15		Aug-15	Sep-15
2				03/04/2015		27/06/2015			24/09/2015
Texture		Organic Matter	%					<b>-</b>	0.48
Petroleum Hydrocarbon   Mg/kg   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*		Phosphorus as P	mg/kg	417	394	330	382		404
Hydrocarbon	3	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
S.1   Aluminum as Al   %   7.2   6.9   5.82   6.4   6.22   5.24	4		mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
5.2         Total Chromium as Cr <sup>+3</sup> mg/kg         144         156         120         128         138         112           5.3         Manganese as Mn         mg/kg         980         1040         890         742         840         813           5.4         Iron as Fe         %         3.09         2.96         2.82         2.88         2.62         2.54           5.5         Nickel as Ni         mg/kg         44         52         58         38         46         39.98           5.6         Copper as Cu         mg/kg         114         98         76         102         88         88           5.7         Zinc as Zn         mg/kg         169         152         144         156         139         150           5.8         Lead as Pb         mg/kg         2.78         2.6         1.96         2.04         1.76         2.38           5.9         Mercury as Hg         mg/kg         BDL*         BDL*         BDL*         BDL*         BDL*           6         Benthic Organisms         Copanisms         No and name of species of each group present,         No and name of species         No and name of species         Copends         Gastropods Polychaete Worms	5	<b>Heavy Metals</b>							
S-2   Cr <sup>+3</sup>   Manganese as Mn   mg/kg   980   1040   890   742   840   813	5.1	Aluminum as Al	%	7.2	6.9	5.82	6.4	6.22	5.24
1.5.4   Iron as Fe	5.2		mg/kg	144	156	120	128	138	112
S.5   Nickel as Ni   mg/kg	5.3	Manganese as Mn	mg/kg	980	1040	890	742	840	813
5.6 Copper as Cu mg/kg 114 98 76 102 88 88 58 5.7 Zinc as Zn mg/kg 169 152 144 156 139 150 5.8 Lead as Pb mg/kg 2.78 2.6 1.96 2.04 1.76 2.38 5.9 Mercury as Hg mg/kg BDL* BDL* BDL* BDL* BDL* BDL* BDL* BDL*	5.4	Iron as Fe	%	3.09	2.96	2.82	2.88	2.62	2.54
Signature   Sign	5.5	Nickel as Ni	mg/kg	44	52	58	38	46	39.98
S.8   Lead as Pb   mg/kg   2.78   2.6   1.96   2.04   1.76   2.38     5.9   Mercury as Hg   mg/kg   BDL*   BDL*   BDL*   BDL*   BDL*     6   Benthic Organisms	5.6	Copper as Cu	mg/kg	114	98	76	102	88	88
S.9   Mercury as Hg   mg/kg   BDL*   BDL*   BDL*   BDL*   BDL*   BDL*	5.7	Zinc as Zn	mg/kg	169	152	144	156	139	150
6.1 Macrobenthos (No and name of groups present, No and name of species of each group present)  6.2 Mematodes Gastropods  Nematodes Gastropods  Nematodes Polychaete Worms Polychaete Worms Bivalves Isopods Decapods  Crabs Decapods  Ostracods Foraminiferans  S  Copepods Ostracods Foraminiferans S  Nematodes Polychaete Worms Gastropods Decapods  Copepods Polychaete Worms Sisopods Decapods Crabs Molluscans  Copepods Foraminiferan S  Nematodes Polychaete Worms Gastropods Crabs Decapods  Copepods Foraminiferan S  Nematodes Foraminiferan S	5.8	Lead as Pb	mg/kg	2.78	2.6	1.96	2.04	1.76	2.38
6.1 Mematodes (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (No and name of species of each group present)  MeioBenthos (Copepods Ostracods Foraminiferan s Polychaete Worms Bivalves Decapods Decapods Ostracods Foraminiferan s Polychaete Worms Gastropods Polychaete Worms Sivoleto Species Ostracods Foraminiferan s Polychaete Worms Sivoleto Species Ostracods Foraminiferan s Polychaete Worms Sivoleto Species Ostracods Service Species Ostracods Service Servic	5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
Macrobenthos (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of groups present, No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of species of each group present)  Mematodes Foraminiferans S  Mematodes Polychaete Worms Bivalves Isopods Decapods Crabs Molluscans  Copepods Ostracods Foraminiferan S  Nematodes Foraminiferan S  Nematodes Bryozoans	6	Benthic							
(No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of species of each group present)  MeioBenthos (No and name of groups present, No and name of groups present, No and name of species of each group present)  Capepods  Capepods  Copepods  Ostracods  Foraminiferans  S  Copepods  Ostracods  Foraminiferan  S  Nematodes  Decapods  Mysids  Crabs  Molluscans  Nematodes  Foraminiferan  S  Nematodes  Bryozoans	0								
(No and name of groups present, No and name of species of each group present)  (No and name of groups present, No and name of species of each group present)  Polychaetewor ms  Copepods Ostracods Foraminiferans S  Copepods Foraminiferan S  Copepods Foraminiferan S	6.1	(No and name of groups present, No and name of species of each group			Polychaete	Worms Bivalves	Worms Crabs	Worms Isopods	Decapods Mysids
6.3 Population no/m2 188 144 440 314 337 385	6.2	(No and name of groups present, No and name of species of each group		,	Copepods	Ostracods	Foraminiferan		Nematodes Bryozoans
	6.3	Population	no/m2	188	144	440	314	337	385

Note: BDL\*: Below Detection Limit, Minimum Detection Limit, Mercury as Hg: 0.00025 mg/L, Petroleum Hydrocarbon: 5 mg/kg

H. T. Shah Lab Manager

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#### **Sea Water & Sea Sediment Locations**

Sr. No	Name of Location	GPS Coordinate
1.	NEAR MOUTH OF CREEK(M1)	N 22°54'10.58" E 70° 8'34.86"
2.	NEAR JETTY(M2)	N 22°'53.60" E 70° 6.47"

Figure No. 2 Google earth image of sea water and sediment location



H. T. Shah Lab Manager

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Cleaner Production / Waste Minimization Facilitator

## **RESULTS OF DRINKING WATER ANALYSIS**

## Standard Methods & Permissible limit for Drinking water

SR. NO.	PARAMETERS	UNIT	DESIRABLE LIMIT AS PER IS:10500:2012	TEST METHOD
	Chemical Parameters			
1	Odour		Agreeable	IS3025(P-5)83Re.02
2	Colour	Hazen	Max 5	IS3025(P-4)83Re.02
3	Taste		Agreeable	IS3025(P-8)84Re.02
4	pH Value		6.5 to 8.5	IS3025(P-11)83Re.02
5	Turbidity	NTU	Max 1	APHA 2130-B
6	Total Dissolved Solids	mg/L	Max 500	IS3025(P16)84Re.02
7	Total Hardness as CaCO <sub>3</sub>	mg/L	Max 200	IS3025(P-21) 84EDTARe.02
8	Alkalinity	mg/L	Max 200	IS 3025(P-23)
9	Residual Free Chlorine	mg/L	Min 0.2	APHA(22 <sup>nd</sup> Edi)4500 Cl
10	Chloride as Cl	mg/L	Max 250	IS3025(P-32) 88Re.99Argentometric method
11	Calcium as Ca	mg/L	Max 75	IS3025(P40)91Re.03EDTA
12	Magnesium as Mg	mg/L	Max 30	IS3025(P46)94Re.99EDTA
13	Oil & Grease	mg/L	Max 0.5	IS3025(P-39)
14	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	Max 0.001	IS3025(P43)92Re.03
15	Hexavalent Chromium as Cr <sup>+6</sup>	mg/L	Max 0.05	APHA (22 <sup>nd</sup> Edi) 3500 Cr B
16	Cadmium as Cd	mg/L	Max 0.003	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
17	Copper as Cu	mg/L	Max 0.05	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
18	Zinc as Zn	mg/L	Max 5	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
19	Iron as Fe	mg/L	Max 0.3	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
20	Lead as Pb	mg/L	Max 0.01	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
21	Mercury as Hg	mg/L	Max 0.001	AAS-APHA 3112 B
22	Selenium as Se	mg/L	Max 0.01	AAS-APHA 3114 B
23	Aluminum as Al	mg/L	Max 0.03	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
24	Manganese as Mn	mg/L	Max 0.1	AAS-APHA(22 <sup>nd</sup> Edi) 3111 B
25	Arsenic as As	mg/L	Max 0.01	AAS-APHA(22 <sup>nd</sup> Edi) 3114 B
26	Sulphate as SO <sub>4</sub>	mg/L	Max 200	IS 3025(P-24)
27	Cyanide as CN	mg/L	Max 0.05	APHA(22 <sup>nd</sup> Edi)4500CN E
28	Boron as B	mg/L	Max 0.5	APHA(22 <sup>nd</sup> Edi)4500 B
29	Fluoride as F	mg/L	Max 1.0	APHA(22 <sup>nd</sup> Edi) 4500 F D SPANDS
30	Nitrate Nitrogen as NO <sub>3</sub>	mg/L	Max 45	IS3025(P34)88
31	Anionic Detergents as MBAS	mg/L	Max 0.2	14542/Methylene Blue extraction method
32	Pesticides	mg/L	Absent	GCMS
33	Coliform	/100 ml	Absent	APHA (22 <sup>nd</sup> Edi. Method) 9221-D
34	E-Coli	/100 ml	Absent	IS: 1622:1981 Edi. 2.4 (2003-05)

H. T. Shah Lab Manager

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## Table No.10 Results of Drinking Water [April 2015 to September 2015]

## Results of Drinking Water [ Full Parameter in April-August 2015]

				r-15	Aug-15		
SR.	TEST PARAMETERS	UNIT	03/04	1/2015	21/08/2015		
NO.			Adani Tuna RO Outlet	Adani Tuna Raw Water (Narmada Water)	Narmada Water Pump House	PMC RO Water	
	Chemical Paramet	ers					
1	Odour		Agreeable	Agreeable	Agreeable	Agreeable	
2	Colour	Hazen	< 1.0	< 1.0	< 1.0	< 1.0	
3	Taste		Agreeable	Agreeable	Agreeable	Agreeable	
4	pH Value		7.08	8.25	8.4	7.5	
5	Turbidity	NTU	0.23	0.31	0.95	0.32	
6	Total Dissolved Solids	mg/L	77	131	189	71	
7	Total Hardness as CaCO3	mg/L	6	96	109	6	
8	Alkalinity	mg/L	30	115	98	22	
9	Residual Free						
7	Chlorine	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	
10	Chloride as Cl	mg/L	22.99	9.49	27.99	17.99	
11	Calcium as Ca	mg/L	ND*	22.8	24.8	ND*	
12	Magnesium as Mg	mg/L	1.44	9.36	11.28	1.44	
13	Oil & Grease	mg/L	ND*	ND*	ND*	ND*	
14	Phenolic compounds as C6H5OH	mg/L	ND*	ND*	ND*	ND*	
15	Hexavalent	120					
15	Chromium as Cr+6	mg/L	ND*	ND*	ND*	ND*	
16	Cadmium as Cd	mg/L	ND*	ND*	ND*	ND*	
17	Copper as Cu	mg/L	ND*	ND*	ND*	ND*	
18	Zinc as Zn	mg/L	0.108	0.047	0.3	0.12	
19	Iron as Fe	mg/L	ND*	ND*	ND*	ND*	
20	Lead as Pb	mg/L	ND*	ND*	ND*	ND*	
21	Mercury as Hg	mg/L	ND*	ND*	ND*	ND*	
22	Selenium as Se	mg/L	ND*	ND*	ND*	ND*	
23	Aluminum as Al	mg/L	ND*	ND*	ND*	ND*	
24	Manganese as Mn	mg/L	ND*	ND*	ND*	ND*	
25	Arsenic as As	mg/L	ND*	ND*	ND*	ND*	
26	Sulphate as SO4	mg/L	1.95	6.26	6.02	1.74	
27	Cyanide as CN	mg/L	ND*	ND*	ND*	ND*	
28	Boron as B	mg/L	0.08	ND*	0.06	0.004	
29	Fluoride as F	mg/L	ND*	ND*	ND*	ND*	
30	Nitrate Nitrogen as NO3	mg/L	2.75	1.77	3.44	1.92	
31	Anionic Detergents as MBAS	mg/L	ND*	ND*	ND*	ND*	
32	Pesticides	mg/L	ND*	ND*	ND*	ND*	
	Microbiological Para	meters					
33	Coliform	/100 ml	Absent	Absent	Absent	Absent	
34	E-Coli	/100 ml	Absent	Absent	Absent	Absent	

H. T. Shah Lab Manager

Cleaner Production / Waste Minimization Facilitator

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### Results of Drinking Water [ Essential parameter in May 2015 - September 2015]

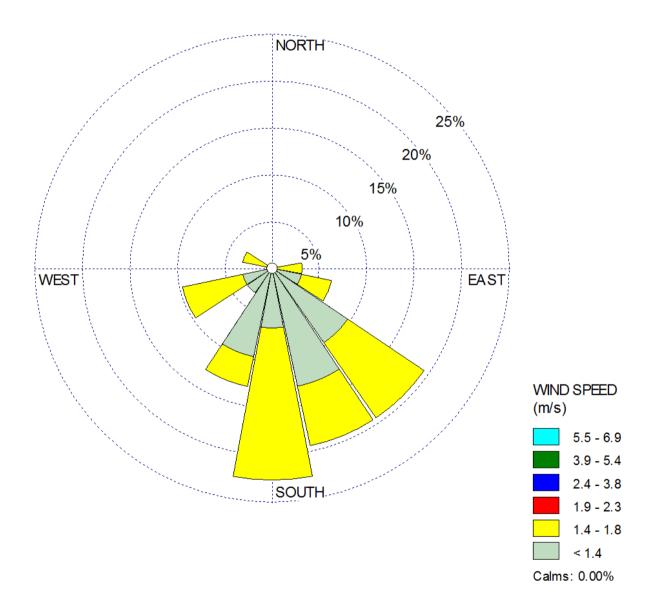
			May-15	June	-15	July	<b>7-15</b>	Sep	-15
SR.	TEST	UNIT	01/05/2015 27/06/2015		2015	30/07	/2015	24/09/2015	
NO.	PARAMETERS		Narmada Water Pump House	Narmada Water Pump House	PMC RO Water	Narmada Water Pump House	PMC RO Water	Narmada Water Pump House	PMC RO Water
1	Odour		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
2	Colour	Hazen	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
3	Taste		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	pН		7.95	8.46	8.28	8.48	7.71	8.48	8.33
5	Turbidity	NTU	3.37	0.82	0.35	0.47	0.08	0.83	0.44
6	Total Dissolved Solids	mg/L	134	138	100	166	105	150	26
7	Total Hardness as CaCO <sub>3</sub>	mg/L	100	98	8	112	14	105	15
8	Residual Free Chlorine	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
9	Chloride as Cl	mg/L	10.99	8.99	31.99	17.9	42.9	8.49	1.99
10	Fluoride as F	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
11	Iron as Fe	mg/L	BDL*	0.014	BDL*	BDL*	BDL*	BDL*	BDL*
12	Coliform	/100 ml	Present	Absent	Absent	Absent	Absent	Absent	Absent
13	E-Coli	/100 ml	Present	Absent	Absent	Absent	Absent	Absent	Absent

H. T. Shah Lab Manager Dr. Arun Bajpai Lab Manager (Q)



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### Figure No.3 Wind Rose Diagram



H. T. Shah Lab Manager Dr. Arun Bajpai Lab Manager (Q)

# Annexure - 3



Ref No. AKBTPL/ENVSTATEMENT/2014-15/01

September 18, 2015

To, Member Secretary Gujarat Pollution Control Board Paryavaran Bhavan, Sector-10-A, Gandhinagar-382010

Dear Sir,

### Kind Attn. Sh. Hardik Shah

Sub: Environmental Statement for the financial year ending 31st March, 2015 for

M/s Adani Kandla Bulk Terminal Pvt Ltd (AKBTPL)

Ref: PCB ID:- 46110, Consent Order No. AWH - 68051

With reference to the above mentioned subject and reference, please find enclosed Environmental Statement in Form V prescribed under Rule 14 of the Environment (Protection) Rules 1986, for M/s Adani Kandla Bulk Terminal Pvt Ltd, Ta. Anjar for the financial year ending 31<sup>st</sup> March 2015.

Thank you,

Yours faithfully,
For Adani Kandla Bulk Terminal Pvt Ltd

Col. Parag Shrivastava (Head - AKBTPL)

Encl: As above.

Copy to:

The Regional Officer, Gujarat Pollution Control Board, Bhuj.

Adani Kandla Bulk Terminal Pvt Ltd Adani House Nr Mithakhali Circle, Navrangpura Ahmedabad 380 009 Gujarat, India Tel +91 79 2656 5801 Fax +91 79 2555 6490 info@adani.com www.adani.com Gujarat Pollution Control Board

Sector No. 10 A,
Gandhinagar - 382 010.

A & | 9 | 1 )



Ref No. AKBTPL/ENVSTATEMENT/2014-15/01

September 18, 2015

To, Member Secretary Gujarat Pollution Control Board Paryavaran Bhavan, Sector-10-A, Gandhinagar-382010

Dear Sir,

Kind Attn. Sh. Hardik Shah

Sub: Environmental Statement for the financial year ending 31st March, 2015 for

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Thank you,

Yours faithfully, For Adani Kandla Bulk Terminal Pvt Ltd

Col. Parag Shrivastava (Head - AKBTPL)

Encl: As above.

Copy to:

The Regional Officer, Gujarat Pollution Control Board, Bhuj.

Gujarat Policien Control Board

Nr. Patwadi Gate Bhuj-Kutch.

Adani Kandia Buik Terminai Pvt Ltd Adani House Nr Mithakhali Circla, Navrangpura Ahmedabad 380 009 Gujarat, India

www.adani.com

### FORM V (See Rule 14)

### Environmental Statement for the Financial Year ending 31st March 2015

### PART - A

(i) Name and address of the Owner/ : Col. Parag Srivastava Occupier of the Industry Operation or Process

Head - AKBTPL

Adani Kandla Bulk Terminal Pvt Ltd.

Tuna Tekra, Taluka - Anjar Dist. Kutch (Gujarat)

(ii) Industry Category Primary (STC Code) Secondary (STC Code) : Red – Large

NA NA

(iii) Production Capacity

: Dry Bulk Cargo Handling – 12 MMTPA

(iv) Year of Establishment

: 2011 – 12

(v) Date of last Environment Statement submitted

: This is first submission

### PART - B

### Water and Raw Material Consumption

### (i) Water Consumption

Water Consumption Cu. Mtr./Day	
Process	Nil
Cooling	303 m3/day*
Domestic	24 m3/day*

<sup>\*</sup> Production started from the month of February 2015.

Name of Products	Process Water Consumption per unit of Product Output			
	During the previous financial year (2013 - 14)	During the current financial year (2014 - 15)		
Handling and Storage of dry bulk cargo*	NA	Approx. 0.195 m <sup>3</sup> /MT		

<sup>\*</sup> Unit does not go under any manufacturing process. The water consumed was mainly in firefighting, dust suppression, sprinkling and washing activities.

### (ii) Raw Material Consumption

Name of Raw Material	Name of Products	Consumption of Raw Material per Unit of output			
		During the previous financial year (2013 – 14)	During the current financial year (2014 - 15)		
NIL*	Not Applicable	Nil	Nil		

<sup>\*</sup> Unit does not go under any manufacturing process. The water consumed was mainly in firefighting, dust suppression, sprinkling and washing activities.

### PART - C

# <u>Pollutants discharged to Environment/Unit of Output</u> (Parameters as specified in consent issued)

Pollutants	Quantity of pollutants of pollutants in discharged (Mass/day)  Concentrations Percentage of variable from prescribe standards with real formula (mass/volume)				
(a) Water	Nil*				
(b) Air	<ul><li>during powe</li><li>The Height</li></ul>	during power failure.			
Particulate Matter (mg/Nm3)	Nil .				
Sulphur Dioxide (PPM)	Nil				
Nitrogen Oxide (PPM)	Nil				

<sup>\*</sup> Unit does not go under any manufacturing process, as it is service industry (Port) engaged in Handling & Storage of dry bulk cargo. During the FY 2014-15 there is no any treated effluent /water discharged to the environment.

### PART - D

# <u>Hazardous Wastes</u> (As specified under Hazardous Wastes Management and Handling Rules 1989)

Hazardous Wastes	Total Quantity (Kg)			
	During the previous financial year (2013-14)	During the current financial year (2014-15)		
(a) From Process	Nil	Nil		
(b)From Pollution Control facilities	Nil	Nil		

### PART - E

### Solid Waste

Solid Waste	Total Quantity Generated (MT/Annum)			
	During the previous financial year (2013-14)	During the current financial year (2014-15)		
(a) From Process (Ash)	Nil	Nil .		
(b) From Pollution Control facilities	· Nil	Nil		
(C-1)Quantity recycled or reutilized within the unit	Nil	Nil		
(C-2) Sold	Nil	* Nil		
(C-3) Disposed	Nil	Nil		

### 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:

No hazardous waste generated during the FY 2014-15.

#### PART - G

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

Unit has installed Sewage Treatment Plant and for treatment of the Sewage water being generated at site. AKBTPL has planted mangroves in 250 ha area near Satsaida Bet(Kandla), Kutch sea cost. Unit has formed dedicated Horticulture department & developing green belt within port premises.

During the project, the total cost incurred on environmental protection measures is enclosed as Annexure 1.

#### PART - H

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

- Unit is doing Regular Environmental Monitoring of Port & surrounding area through reputed NABL certified Laboratory. All the required environmental parameters are well within specified limit & the details of monitored data is regularly submitting to GPCB, CPCB, MOEF & other concerned authorities.
- Unit has installed STP for the treatment of the Sewage water being generated at site. Unit has also provided dump pond and conveyance channel for collection of runoff generated from Coal Yard.
- Unit has provided Sprinklers at coal yard & conveyer system and carrying out regular water spreading to control the dust exposure.
- Unit has formed dedicated Horticulture department & developing green belt within port premises.

### PART - I

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

- Environmental awareness programs have been conducted for workmen.
- Integrated housekeeping management being maintained regularly.

Date: 18. 09.2015

(Signature of a person carrying out an industry,

operation or process)

Name : Col. Parag Srivastava Designation : Head - AKBTPL

Address : Adani Kandla Bulk Terminal Pvt Ltd, Tuna Tekra, Taluka Anjar. District Kutch (Gujarat)

### Annexure - 1 Expenditure for Environmental Protection Activities during project phase.

Sr. no.	Activity	Cost incurred (INR in Lakh)
1	Environmental Monitoring	16.00
2	Greenbelt development	15.00
3	Mangrove plantation	125.00
4	Construction of bridges on creeks	
	Road Bridge	897.93
	Rail Bridge	952.00
5	Construction of box culverts (Raod & Rail)	160.09
6	Construction of STP	23.34
7	Disposal of wastes	10.86
8	Fire fighting and safety equipments	455.82
9	Water sprinkler system for dust suppression	243.12
10	Conveyor system for bulk cargo handling to mitigate air pollution	16976
11	Temporary pipes on the Main Approach road	130.00
	Total	20,000.15

# Annexure - 4



### Adani Kandla Bulk Terminal Pvt. Ltd.

From: Oct,14 To: March,15

# Annexure – 4: Details of socio-economic upliftment activities

Sr.no	Project	April To October - 2015 Tuna		Vandi		Rampar		Remarks
	Name	Number of Patient	Amount	Number of Patient	Amount	Number of Patient	Amount	
1	Sr.Citizen	86	2.75.435	9	9.923/-	29	38.513/-	
2	Medical Support	2	1.080/-	24	2.06978/-	00	00	
3	Rural clinic	2244	44.880/-	3321	66.420/-	2781	55.620/-	
	Total	2332 Pt.	3.21.395/-	3354 Pt.	2.83.321/-	2810	94.133/-	
CSR a	ctivities planne	d/in progre	ss: Nov2015	to March -	2016			
Sr. no.	Name of village		CSR activity planned E					expected
1	Tuna	Run of Rural clinic/Sr.Citizen/Medical Support					2.29567/-	
2	Vandi	Run of Rural clinic/Sr.Citizen/Medical Support					2.02372/-	
3	Rampar	Run of Ru	Run of Rural clinic/Sr.Citizen/Medical Support					.237/-

### **Photographs**



