adani

APSEZL/EnvCell/2015-16/042 Date: 24.11.2015

To
The Director (S),
Ministry of Environment & Forests,
E-5, Kendriya Paryavaran Bhawan,
Arera Colony, Link Road No. – 3,
Bhopal – 462 016
E-mail: rowz.bpl-mef@nic.in

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय,
Ministry of Environment, Forests & Climate Change,
क्षेत्रीय कार्यालय (पश्चिम क्षेत्र) / Regional Office (Western Zone)
'केन्द्रीय पर्यावरण भवन',
'Kendriya Paryavaran Bhawan'
लिंक रोड नं.-3, ई-5, रविशंकर नगर,
Link Road No.-3, E-5, Ravishankar Nagar,
भोपाल / BHOPAL

Sub : Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"

Ref : Environment clearance under CRZ notification granted to M/s Adani Ports & SEZ Limited vide letter dated 5th February, 2007 bearing no. 11-84/2006- IA.III

Dear Sir,

Please refer to the above cited reference for the said subject matter. In connection to the same, it is to state that copy of the compliance report for the Environmental / CRZ Clearance for the period of Apr'15 to Sep'15 is enclosed here for your records. The stated information is also provided in form of a CD (soft copy).

Thank you,
Yours Faithfully,
For **Adani Ports and Special Economic Zone Limited**

Ennaram

Ennarasu Karunesan
Chief Executive Officer
Mundra Port

Encl: As above
Copy to:

1. The Director (IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003
2. Zonal Officer, Regional Office, CPCB - Western Region, Parivesh Bhawan, Opp. VMC Ward Office No. 10, Subhanpura, Vadodara, Gujarat – 390 023
3. Member Secretary, GPCB - Head Office, Paryavaran Bhavan, Sector 10 A, Gandhi Nagar, Gujarat– 382 010
4. Deputy Secretary, Forests & Environment Department, block - 14, 8th floor, Sachivalaya, Gandhi Nagar, Gujarat - 382 010
5. Regional Officer, Regional Office, GPCB - Katira Complex-1, Mangalam Char Rasta, Sanskar Nagar, Bhuj (Kutch), Gujarat - 370 001

Adani Ports and Special Economic Zone Ltd
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Mundra, Kutch 370 421
Gujarat, India

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info@adani.com
www.adani.com

Environmental Clearance Compliance Report

of

Multipurpose Berth (Terminal -2) at Mundra Port, Dist. Kutch, Gujarat

of

Adani Ports and SEZ Limited

Period:

April-2015 to September-2015

Index

Compliance Report

adani	**Adani Ports and SEZ Limited**	**From : April'15** **To : September'15**
Status of the conditions stipulated in Environment Clearance		

Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
A. Specific Condition		
(i)	All the conditions stipulated by Forests Environment Department, Government of Gujarat vide their letter no. ENV-10-2005-222-P dated 12/10/2006 should be strictly implemented.	Point wise compliance report of CRZ recommendations issued vide letter No. ENV-10-2005-222-P dated 12/10/2006 is enclosed as **Annexure - A.**
(ii)	No Objection Certificate from Gujarat State Pollution Control Board should be obtained before initiating the project.	The project is in operation phase and has been granted for operations vide Consent to operate (CC&A) no. AWH 60840 valid till 17th November 2016 by GPCB.
(iii)	The proposed project should not handle any hazardous goods and cargo	Point noted.
(iv)	Quarantine condition should be provided for keeping the hazardous containers if they are accidentally received.	Point noted.
(v)	Green belt area should be developed along the project and budget earmarked.	Details of the green belt developed are submitted to the Ministry of Environment and forest along with half yearly compliance dated 02.12.2013.
(vi)	A disaster management plan covering emergency evacuation mechanisms etc. to deal with natural disaster event should be prepared and furnished to the ministry.	Details disaster management plan are submitted to the Ministry of Environment and forest along with half yearly compliance dated 02.12.2013.
(vii)	The company must take up and earmark adequate funds for the socio-economic development and for welfare measures in the area including drinking water supply, vocational training, fishery related development programmes (like cold storages)	The CSR Activities are planned out at group level at Mundra by Adani Foundation. Details of the CSR activity and expenditure from April,15 to September,15 is enclosed as **Annexure -1.**
(viii)	The fishing activities by the fishermen living in the settlement along the creek should not be hindered and a mechanism may be evolved for the movement of fishing boats vis-a-vis shipping activities.	Complied.

Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
(ix)	The relocation of the fishermen and local community if any, in the area should be done strictly in accordance with the norms prescribed by the State Government. The relocated communities should be provided with all facilities including health care, education, sanitation and livelihood.	Not applicable.
(x)	The project proponent should not undertake any destruction of mangroves during construction and operation of the project.	Complied. Construction phase is already completed. Details submitted on 02.12.2013.
(xi)	Sewage arising in the port area should be disposed off through septic tank – soak pit system or should be treated along with the industrial effluent to conform to the standards stipulated by Gujarat Pollution Control Board and should be utilized / recycled for gardening, plantation and irrigation	All the liquid effluent and sewage is being treated in the treatment plants. Third party monitoring of treated water is being carried out by NABL and MoEF accredited agency. Summary of monitoring reports for duration from April,15 to September,15 are enclosed as **Annexure – 2.**
(xii)	Project proponent should prepare and regularly update the disaster management plan from time to time.	Complied. Updated Disaster Management Plan was submitted on 02.12.2013.
(xiii)	There should be no withdrawal of ground water in CRZ area, for this project. The proponent should ensure that as a result of the proposed constructions, ingress of saline water into ground water does not take place. Piezometers should be installed for regular monitoring for this purpose at appropriate locations on the project site.	Entire water requirement is sourced from Narmada water and desalination plant of APSEZL. Detailed information on piezometer was submitted on 02.12.2013.
(xiv)	The project should not be commissioned till the requisite water supply and electricity to the project are provided by PWD/Electricity Department	Construction activity is already completed.

Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
(xv)	Specific arrangements for rainwater harvesting should be made in the project design and the rain water so harvested should be optimally utilized. Details in this regard should be furnished to this Ministry's Regional Office at Bhopal within 3 months.	Details of the same is submitted to the Ministry of Environment and forest along with half yearly compliance dated 02.12.2013.
(xvi)	The facilities to be constructed in the CRZ area as part of this project should be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently.	Construction activities are completed in accordance with the prevailing laws.
(xvii)	No product other than those permissible in the coastal Regulation Zone Notification, 1991 should be stored in the Coastal Regulation Zone area.	Point noted and complied.
B. General Condition		
(i)	Construction of the proposed structures should be undertaken meticulously confirming to the existing Central / local rules and regulations including Coastal Regulation Zone Notification 1991 and its amendments. All the construction designs / drawings relating to the proposed construction activities must have approvals of the concerned State Government Department / Agencies.	Construction activities are completed in accordance with the prevailing laws.
(ii)	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation, etc. should be ensured for construction workers during the construction phase of the project so as to avoid felling of trees / mangroves and pollution of water and the surroundings.	Construction activities are completed.

Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
(iii)	The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper waste water treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise levels etc. must conform to the standards laid down by the competent authorities including the Central / State Pollution Control Board and the Union Ministry of Environment and Forest under The Environment Protection Act, 1986, whichever are more stringent.	The quality of treated effluent, emission and noise level is being monitored regularly by a MoEF/NABL accredited agency. Monitoring results are confirming to the applicable norms. Monitoring report from April,15 to September,15 is enclosed as **Annexure - 2**.
(iv)	The proponents should provide for a regular monitoring mechanism so as to ensure that the treated effluents conform to the prescribed standards. The records of analysis reports must be properly maintained and made available for inspection to the concerned state /central officials during their visits.	The quality of treated effluent, emission and noise level is being monitored regularly by a MoEF/NABL accredited agency. Monitoring report from April,15 to September,15 is enclosed as **Annexure - 2**.
(v)	In order to carry out the environmental monitoring during the operational phase of the project, the project authorities should provide an environmental laboratory well equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters.	Third party monitoring is being carried out by NABL and MoEF accredited agency. Summary of monitoring reports for duration from April,15 to September,15 are enclosed as **Annexure – 2.**
(vi)	The sand dunes and mangroves, if any, on the site should not be disturbed in any way.	Point noted.
(vii)	A copy of the clearance letter will be marked to the concerned Panchayat / local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.	Complied.

Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
(viii)	The Gujarat Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industries center and Collector's Office / Tehsildar's Office for 30 days.	This condition does not belong to project proponent.
(ix)	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this Ministry's Regional Office at Bhopal and the State Pollution Control Board.	• Separate budget for the Environment Protection measures is earmarked every year. All environmental and horticulture activities are considered at group level and budget allocation is also done accordingly. • The plan budget for Environment Cell for the year 2015-16 is 484.11 lacs. • The spent budget for Environment Cell for the financial year 2015-16 (till Sept.'15) is 175.88 lacs. • The allocated budget of Horticulture Cell for the year 2015-16 was 486.83 lacs. • The spent budget of Horticulture Cell for the financial year 2015-16 (till Sept.'15) is 363.29 lacs.
(x)	Full support should be extended to the officers of this Ministry's Regional Office at Bhopal and the officers of the Central and State Pollution Control Board by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	M/s APSEZL is always extending full support to the regulatory authorities.
(xi)	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new one for ensuring environmental protection.	Point noted.

Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
(xii)	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Point noted.
(xiii)	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which should be complied with.	Point noted.
(xiv)	The project proponent should advertise in at least in two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board and may also be seen at the website of the Ministry of Environment & Forests at http://www.envfor.nic.in. The advertisement should be made within seven days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.	Already complied with.
(xv)	The projects proponents should inform regional Office at Bhopal 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.	Complied.

Annexure – A

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
Specific Condition		
1	The provision of the CRZ notification of 1991 and subsequent amendments issued from time to time shall be strictly adhered to by the GAPL. No activity in contradiction to the provision of the CRZ Notification shall be carried out by the GAPL.	Complied with.
2	All permissions from different Government Departments / agencies shall be obtained by the GAPL before commencing the expansion activities.	Construction activity is already completed and the project is in operation phase.
3	No Dredging and/or reclamation activity shall be carried out in the CRZ area categorized as CRZ (i) and it shall have to be ensured that the mangrove habitats and other ecologically important and significant areas are not affected due to any of the project activities.	Construction activity is already completed and the project is in operation phase.
4	The dredge material shall be disposed of into pre-designated areas duly identified and got approved through the Gujarat Coastal Zone Management Authority for which the company shall have to make separate application along with proper EIA indicating the exact location of the dredge material disposal area on the CRZ map of the region prepared by the Space Application Center, Ahmedabad, as there exists best mangrove area in and around Bocha and Navinal islands, which requires to be protected.	Dredged material is used for reclamation of back up area. Impact assessment was done for the same and EIA report was submitted to GCZMA and MoEF based on which the final Environmental / CRZ clearance was granted.
5	Massive mangrove plantation activity in at least 1200 ha. Area shall be carried out within a time frame of 5 years commencing from July, 2006 without any delay whatsoever.	Details on the same was submitted on 02.12.2013.

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"

Sr. No.	Conditions	Compliance Status as on 30-09-2015
6	No effluent or sewage shall be discharged into the sea / creek or in the CRZ area and shall be treated to conform the norms prescribed by the Gujarat Pollution Control Board and would be reused/ recycled within the plant premises.	The quality of treated effluent, emission and noise level is being monitored regularly by a MoEF/NABL accredited agency. Monitoring results are confirming to the applicable norms. Monitoring report from April, 15 to September, 15 is enclosed as **Annexure – 2.**
7	All the recommendation and suggestions given by the NIO in its Comprehensive Environment Impact Assessment report for conservation / protection and betterment of environment shall be implemented strictly by the GAPL.	Complied.
8	The construction and operational activities shall be carried out in such a way that there is no negative impact on mangroves and other coastal / marine habitat. The construction activities and dredging shall be carried out only under the constant supervision of the NIO.	Construction activity is already completed.
9	The GAPL shall strictly ensure that no creeks are blocked due to any activity at Mundra Port and the mangrove habitats are neither disturbed nor destroyed due to any activity.	Details submitted on 02.12.2013.
10	The GAPL shall contribute financially for any common study or project proposed that may be proposed by this Department for environmental management / conservation / improvement for the Gulf of Kutch.	Point Noted.
11	The construction debris and/or any other type of waste shall not be disposed of into the sea, creek or in the CRZ areas. The debris shall be removed from the construction site immediately after the construction is over.	Construction activity is already completed. Project is in operation phase.

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
12	The construction camp shall be located outside the CRZ area and the construction labour shall be provided the necessary amenities, including sanitation, water supply & fuel and it shall be ensured that the environmental conditions are not deterioted by the construction labours.	The Construction activity of said project is already completed. Project is in operation phase.
13	The GAPL shall prepare and regularly update their local Oil Spill Contingency and Disaster Management Plan in for their all activities in Mundra Port consonance with the National Oil Spill and Disaster Contingency Plan and shall submit the same to this department after having it vetted through Indian Coast Guard.	Oil spill contingency plan is in place and implemented. The same has been submitted to the Ministry along with Half yearly compliance report dated 29.05.14.
14	The Gujarat Maritime Board shall expedite for the Vessel Traffic Management System for the Gulf of Kutch and would work out the modus operandi for cost sharing by the different players in the Gulf indicating the GAPL. The GAPL shall contribute for the same as may be decided by the Gujarat Marine Board or any other competent authority for this purpose.	Point noted.
15	The GAPL shall bear the cost of the external agency that may be appointed by this Department for supervision / monitoring of proposed activities and the environmental impacts of the proposed activities.	Details submitted on 02.12.2013.
General Condition		
16	The ground water shall not be tapped by the GAPL to meet with the water requirement in any case.	Entire water requirement is sourced from Narmada water and desalination plant of APSEZL.
17	The GAPL shall take up massive greenbelt development activities in consultation with Forest and Environment Department.	Complied. Details submitted on 02.12.2013.

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
18	The GAPL shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forests and Environment Department and the District Collector / District Development officer.	The CSR Activities are planned out at group level by Adani Foundation. Details of the CSR activity and expenditure from April, 15 to September,15 is enclosed as **Annexure -1.**
19	A separate budget shall be earmarked for the purpose of socio-economic upliftment activities and details thereof shall be furnished to this department as well as the MoEF, GOI from time to time. The details with repect to the expenditure from this budget head shall also be furnished on annual basis.	The CSR Activities are planned out at group level by Adani Foundation. Details of the CSR activity and expenditure from April, 15 to September, 15 is enclosed as **Annexure -1.**
20	A separate environment management cell with qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	M/s APSEZL has a well structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan. The Environment Management Cell is headed by Sr. Executive who directly reports to the top management.
21	Environmental Post Project Monitoring report indicating the changes, if any, with respect to the baseline environmental quality in the coastal and marine environment shall be submitted every year by the GAPL to this department as well as to the MoEF, GOI.	The quality of treated effluent, emission and noise level is being monitored regularly by a MoEF/NABL accredited agency. Monitoring results are confirming to the applicable norms. Monitoring report from April, 15 to September, 15 is enclosed as **Annexure – 2.**
22	The GAPL shall have to contribute financially to support the National Green Corps Scheme being implemented in Gujarat by the GEER foundation, Gandhinagar in consultation with Forests and Environment Department.	Point Noted and being Complied with

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"		
Sr. No.	**Conditions**	**Compliance Status as on 30-09-2015**
23	A six monthly report of compliance of the conditions mentioned in this letter shall have to be furnished by the GAPL on a regular basis to this department without fail.	Point Noted and being Complied with.
24	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 GAPL.	Point Noted.

Annexure – 1

Contents

Education

- **M-KEN Project** : The main aim of this pilot project is to provide quality education in the primary schools of Mundra block with help of Education Volunteers. We have total 28 Education Volunteers and 10 Community Mobilizers for 26 Government Schools of Mundra Taluka.
- **Disha Project** : Under this Programme, the students of Class 9th to 12th are guided to give them proper director towards progress. The students pass through a process of 3 hours that emphasizes on psychometric aptitude and career counseling
- **Scinece & Maths on Wheel** :This Programme is aimed at removing the fear of subjects like Math Science and including curiosity in them for the same. The models of Math and Science are displayed in a small vehicle such as a Van. This van remains in the school for 3 hours and provides relevant guidance.
- **Parvarish Project** : It is Five days Residential camp for High Schools Students. Topics like Communication, Mind Power, Team Management, Leadership and other Soft Skills are the mainly focused activities of the Camp
- **Saara Samachar** : The Significance of this programme lies in developing a positive attitude in the society. This news paper contains the smallest of the inspirational events of Mundra and the surrounding areas. The newspaper is published once in every two months. The purpose behind publishing the newspaper rests upon the ideal that if one gets to know about something good.

Education

Sr No	Project Name	No of School	No of Students	Level of Students
1	M-KEN Project	27	7582	1st to 8th
2	Disha Project	21	2797	9th to 12th
3	SOW and Math Fair	35	2524	5th to 8th
4	Parvarish Project	16	300	9th to 12th
5	Material support to Govt School	105	2245	1st and 9th to 12th

Education Initiatives : Overview

Adani Vidhya Mandir Bhadreshwar : Shaping Lives

- Quiz competition of Learning delight & Second semester exam in April 2015.
- Teachers of Navchetan Vidyalaya Visited School. & Interaction in April 2015.
- Remedial classes for Std.- 6,7, & 8 started from 22nd April 2015.
- Std.9th permission granted. (new secondary school.)
- Distribution of Uniform , Notebooks & Textbooks in June 2015.
- Environment Day Celebration on 13th June 2015. and " International Yoga day Celebration" on 19th & 20th June 2015.
- Demonstrated about Solar System through Sun & Moon by PPT.
- Parents Meeting for Std.:- 8 & 9 in August
- Celebration of Anand Mela by all students
- Adani foundation & D.E.O. Office Bhuj (Kutch) , organized "Education quality improvement workshop" on 12th August 2015.
- 69th Independence day Celebration
- Celebration of Sports Day on 25th August 2015.
- Rakhi Making Competition in August 2015.
- Demonstrated about "force & Speed" through the game Carom board to the Students of Std.-09 Sub.
- International Ozone day celebration
- Teachers & Students of Std:-5,6,7,8,9 participated in " Swachhta Abhyan Karyakram" organized
- During science week demonstrated the students of Std:-09 about experiments in the laboratory
- Students gave speech & Exhibition on "Gandhi Jayanti".
- School internal examination From 28th September to 03rd October 2015.

Adani Vidhya Mandir Bhadreshwar : Shaping Lives

Community Health : Mundra

Mobile dispensary and Rural Clinic New initiative Pathological instant test kits

1. Malaria antigen card(for malaria detection in blood)
2. Uristix strip (for urine sugar and protein detection)
3.Urine pregnancy test card.

Initiating Public Partnership

we have received room facility for our mobile van OPD at Pratappar, N. Bhujpur, M. Khakhar, Sadau, Chhasara, Hamiramora and Gundala villages.

Dialysis Support

9 beneficiaries have been receiving support 4 patient weekly 2 dialysis and 2 patient weekly 3 Dialysis, 1 patient weekly 1 Dialysis. (283 times)

Malnourishment Camp

We have organised six medical examination-Mal nourishment camps. Total 56 children benefited and now only 11 remained under malnourishment.

Poor Patient Support

204 Poor Patients have been extended financial support for treatment

Physiotherapy Camps for CP Children

We have started physiotherapy service to disabled children in coordination with BRC-Mundra. total 11 children identified & they receive physiotherapy weekly at our hospital.

- **Mobile Dispensaries & Rural Clinics**

During this month, total 34740 patients were provided with free Health Care Services by Mobile Dispensaries. 33647 patients benefitted by the medical services at Rural Clinics.

- **Health Cards to Senior Citizens**

During the month, total 9546 transactions were done out of 7380 card holders by beneficiaries Sr. Citizens of 65 Villages Mundra Taluka and they received cash less medical services Under this project.

Awareness Generation session

- **Dr. Jagruti Patel in Samaghogha Village "Women Health". Total 30 women participated in it.**
- **Awareness Generation session by Dr. Jagruti Patel in ICDS Unit Mundra "Women Health".**
- **We had organised a seminar on "woman health awareness and world population day"' in collaboration with ICDS and Taluka Health Office.**
- **Awareness Generation session by Dr. Goswami in Adani Hospital for "Child Health Care". Total 25 women, Child, Anganwadi worker participated in it.**
- **Personal Sanitation & Higgin Awareness Session By Dr. Piludiya in Navinal High School for Total 61 Student participated in it.**

Community Health : Mundra Overview

Health : Senior Citizen Project

Sr.Citizen Card Distribution

Old Village:- 36	New Village:-29	Total villages :-65
Green Card:- 4293	Green Card:- 2051	Total Green cards :- 6344
Blue Card:- 581	Blue Card:- 209	Total Blue cards :- 790
Total Card:- 4874	Total Card:- 2260	Total Cards :- 7134






2nd Phase New 29 Villages Added Total 65 Villages Covered

GAIMS : Health is Wealth ....

- **Smooth coordination between Adani foundation staff and Hospital staff by introduction of various department as well as doctors. During Six Months Patients Special Care and Coordination. Hospital Level both are Lab, OPD Department, Ward and Pharmacy Service Regarding.**
- **Death Body Carrier Van Service Start on 6 May 2015, During Six months total dead body to farther Different places put in Kutch District**
- **Total Health Camps organized in different Villages. Total No of Beneficiaries**
- **GAIMS AF Staff has initiated to synchronize with Sarpanch, Grampanchayt members, Leaders and local stakeholders. During this Period Total Village Level Meeting organized with Sarpanch, Leader, Women Groups and other Stakeholders . We had discussion of Hospital Services and Initiatives of Adani Foundation**








Fisherman Amenities

- As Education initiative for children at Balwadi are able to read write and speak A B C , recite Jan –Dec, numeric 1-50 very well. Moreover they are also teaching other fellow students.
- Education Material support given to 52 Students of Juna Bandar, Luni Bandar, Zarpara, Navinal and Bhadreshwar.
- Organize Balwadi Pravetsotsav for new admission of children in presence of their parents and leader of their community to reduce there fear about the class.
- Mother's meet on the topic of "Regularity in class" and also aware them for their children admissions in 1st Standard at 3 Vasahats.
- 48 Student Exposure Visit to Hajipir, Vithon-Nakhatrana Students from Navinal, Zarpara, Juna badar, Luni bandar & Bhadreshwar Village & Machhimar Vasahat.
- Arrangement of Vehicles for School Going Children from Bandar to respective villages. Presently We have made arrangements for Luni Bandar – 31 Students and Bavadi Bandar – 30 & Sekhadiya-7 Total-68 Students are being benefited.
- Independence day Celebration at Chachhvadi ,Juna Badnar and Luni Bandar

Fisherman Amenities : Coordination and Meetings

- Meeting was organized with CEE For Samwad program and 40 fishermen from Luni, Shekhadia, Zarpara, Navinal, Bhadreshwar were involved for betterment and other benefits
- Meeting was organized between Adani Marine Dept and fishermen community from Navinal for solving an issue of vessel approach of West Port.
- Meeting at Navinal for discussion the Progress work of Sanitation & Meeting at Modhava for discussing about Cricket Ground
- Meeting with the fisheries department , Bhuj for Government Scheme of Machhimar Community.

Income Generation Activities

- We have supported 21 Pagadiya Fisherman as a painting Labour.
- Mangroves plantation and maintenance, Total 1472 man days employment provided

Fee Support – SMJ High School Luni

With the objective of - Fees can't be constraint to the study for Girl Child and Reduction in Drop out of Fishermen students as they cannot continue their studies We have supported 34 students for further studies at SMJ High School, Luni

Exposure Visit

Organized visit Port , Power & Willmar with 105 Fishermen From Luni to aware them for Surrounding Industrial Environment and Inspired them for his Children Education

Net Support

Fishing Net Distribution to the 6 Pagadiya Fishermen who lost their fishing net, Rope in Cyclone by the Corporate Affairs.

Inauguration

- Community Centre at Navinal.
- Computer Training Centre at Juna Bandar
- Community Toilets at Navinal
- Shelters and Electricity at Luni Bandar

Fisherfolk Amenities: Meetings and Coordination

Fisherfolk Amenities: Overview

Fisherman Amenities

- **"Pagadiya maachmaar no medavo"** was organized for the foot fishermen on 30th June at Adani House where fishermen from Luni, Shekhadia ,Bhadreshwar, Mundra, Navinal and Zarpara village were invited.
- The main objective of this meet was to spread awareness and message of "De-Addiction" ,"Savings". Govt. Fisheries Officers given information about Govt Scheme related activities for Fishermen by Power Point Presentation.
- The Chief guests present were K.B Thakkar(Assistant director of Rajkot), Vishnu Brahmane (Officer-Fisheries) and Mavji bhai Bariya Director -VRTI ,Mandvi and Mukesh Saxena Sir ,Head -Adani Foundation
- It is great pleasure to share that many students from Fisherman community secured very good percentage in board examination. The parents of the students of class 10th and 12th were felicitated as their children scored high percentage.
- Moreover all the present Pagadiya fishermen were greeted with First-aid Box kit and Rechargeable torch which can be used daily in their fishing activity.

Fisherman Amenities

- Adani Foundation has arranged **"Cricket tournament "Adani Premiere League"** for Ten Days for Fishermen Community in which, Total 36 Teams of Fishermen participated mainly from Village Zarpara, Navinal, Shekhadia, Luni, Bhadreshwar Vandi(Tuna), Tragdi & Modhava.
- Cricket Tournament was started on 05-06-2015 at Shantivan Colony Cricket Ground.
- Nasib Eleven – Modhava and Samrat Eleven- Navinal has given great competition and entered into Finals.
- Final was held on 14-06-15 Sunday at 10.00 am. Between Nasib Eleven – Modhava & Samrat Eleven- Navinal toss won by the Samrat Eleven- Navinal decided to field First, Nasib Eleven – Modhava made 125 Runs in 15 Overs and Samrat Eleven- Navinal reached to the target and in 13 Overs they all out by Nasib Eleven- Modhava and won the tournament by 8 Wickets.
- Adani Foundation has awarded Trophy and Prize to the Winner Team and runners up Team. Adani Foundation has Given Trophy and Prize to the "Man of the Match" and "Man of the series".

Government Pension Scheme - Widows, senior Citizens and Handicapped

- **We are playing the role of facilitator in case of tie up with Government Scheme of Widows, Senior Citizens and Handicapped people**
- **The identity cards issued to two persons for the handicapped in coordination with Bhuj Samaj Suraksha Khata by regular visit and follow up.**
- **Six month 38 widows and 27 Senior Citizens, total 147 members benefitted the approval of pension certificate. One senior citizen widow will get Rs. 400 monthly and other will get Rs.950 per month.**

Category	Total forms	Comp.	Under Process
Widows	38	38	0
Snr Citizens	27	8	19
Handicapped	82	47	35
Total	**147**	**93**	**54**

Beti Vadhavo programme was organized 24 Villages in presence of Village Sarpanch and other leaders. We explain about the Various topics i.e. Importance about girl child , Sex Ratio, Gender Equality and Law regarding Child abortion.
This initiative is well accepted by community and we have observed visible change in mindset of them. We greet daughters with Kit (Small Bed sheet, Mosquito net, Soap and Cream with nutrition food for mother)

Sr.no	No of Village	No of Daughters
1	24	169

Various Trainings

Women Empowerment Training

- **Objective**: Women Group Leadership and group strengthen
- **Point Discussed**: Leadership of Group, Difficulties arrived in group, How to Improvement leader and Strengthen Social Position
- **Venue: Ahinsadham, Pragpar**
- **Partner** : VRTI, Mandvi
- **Participant Details** : 35 women from Siracha, Navinal and Kandagra and 32 women from Shekhadia and Sadau village.

Sr. no	Type of Trainings	No of Women	No of Women
1	Group Strengthens	2	38
2	Savings Trainings	2	32
3	Leadership Trainings	1	28
4	Business Dev. Trainings	1	30
		6	128

Monsoon Relief Work

It is very sad to share that due to heavy rain, may cows and goats died in Beraja, Kukadsar and other villages.

At village Fachariya, Maldhari Community is residing. They lost 82 cows in heavy rain. We had provided Feed bags to them to save other cows.

Farmer's Training

We have initiated Programme for Awareness of Farmers in collaboration of KVK. Outreach is approximate 30 farmers at 3 villages

Objective: Farmer group formation and issue Related agriculture

Topic Discussed:

- **Group Formation: Rules and regulations**
- **Requirement discussion**
- **KVK and Adani Foundation collaboration and discussion of the work done together.**
- **Discussion and coming up with solution of the problems faced by the farmers.**

Livelihood Projects : Overview

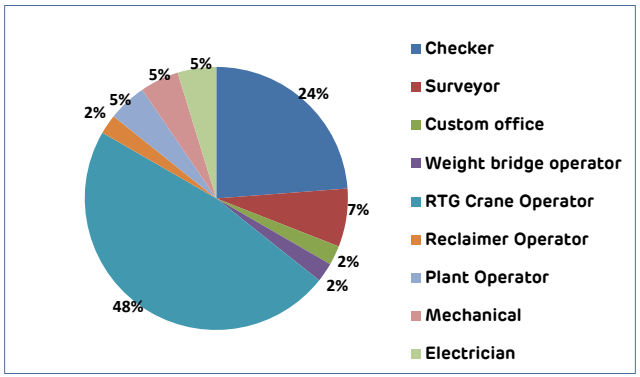
Adani Skill Development Center: Mundra

The objective of Adani Skill Development Centre is to impart different kinds of trainings to the students of 10th, 12th or ITI from surrounding areas. Thus various employment oriented programmes are organized to optimize the skills, art and knowledge through proper guidance and direction.

Course wise Status: Mundra

Sr.No.	Course Name	Location	M	F	Total
1	IT -Basic Computer	ASDC	44	25	69
2	Tally ERP 9	ASDC	11	0	11
3	Beauty parlor	Gundala	0	12	12
4	Basic Embroidery Work	Desalpur	0	25	25
5	Tailoring	Desalpur	0	15	15
6	IT - Basic Computer (Fisher men)	Navinal	12	10	22
7	Beautyparlour	Mundra	0	27	27
8	Checker	APSEZ	8	0	8
9	Checker Cum RTG Crane Operator	APSEZ	23	0	23
10	IT - Basic Computer	Siracha	57	46	103
11	Tailoring	Shekhdiya	0	14	14
12	Febric Work	Mundra	0	5	5
13	Glass Printing	Mundra	0	5	5
14	Mahendi	Mundra	0	10	10
15	IT - Basic Computer	Navinal	10	22	32
16	Mobile Repairing	ASDC	14	0	14
17	Mechanical & Electrical training	CT, APSEZ	11	0	11
18	IT - Basic Computer	Motabhadiya	13	6	19
19	Tailoring	Vadala	0	60	60
	Total		203	282	485

Job Placement after Technical Training



42 people employed after technical training with average salary Rs. 9000/- Monthly.

Adani Skill Development Center : Non Technical Training

Adani Skill Development Center : Technical Training

Rural Infrastructure Development : Building Block of the Society

Work Completed during six months

Extension of Adani DAV School

1. Water conservation and ground water recharge
   - Pond deepening work, Mota Kandagara
2. Drinking water related activity
   - Repairing of RO plant in school at Dhrub
   - New RO plant in school at Tunda Wandh
3. Education Related Projects
   - **Extension of Adani DAV School**
4. Health Related activity
   - Medical center at Tragadi village
   - Toilet for widow woman at Luni village = 1 Nos
   - Toilet for widow woman at Baroi village = 1 Nos
   - Toilet blocks at Dhrub village = 8 Nos
5. Other projects – corporate related activity
   - Atithi bhavan at Tunda Wandh
   - Over head tank at Modhava
   - Crematorium wall at Tragadi
   - Construction of rooms in Madrasa at Luni
   - Sai sutar comm hall at mundra
   - Approach road for Pagadiya, Shekhadia

RID Projects

Financial Budget

Adani Foundation, CSR Budget - Mundra Budget Utilization 2015-16 (April to September 2015)			
Sr. No.	Program	Budget 2015-16 In Lacs	Expenditure April to Sept.2015 In Lacs
A.	**Admin Expense**	**161.21**	**52.49**
B.	**Education**		
(i)	Education Initiative	48.30	37.96
(ii)	Adani Vidya Mandir-Bhadreshwar	124.06	44.56
(iii)	Shanti Vihar	351.16	147.89
	Sub Total	**523.52**	**230.41**
C.	**Community Health**	**332.52**	**161.27**
D.	**Fisher Folk, Sustainable Livelihood Development & Agriculture**	**160.00**	**98.04**
E.	**Rural Infrastructure Development**	**338.49**	**75.25**
	Other Expenditure		**88.90**
	BUDGET 2015-16: GRAND TOTAL	**1515.74**	**706.36**

"Gadhpan me Ji Dikro kam aye te khare tane adani foundation kam aayoo"..... Mariyam Ben, Bhuj

કેસ સ્ટડી

ભુજ શહેરના જુના રેલવે સ્ટેશન વિસ્તારમાં રહેતા મરીયમબેન જુસબની વાત છે. મરીયમબેનને બે પુત્રો અને બે પુત્રીઓ છે અને પોતે વિધવા છે. હાલમા બન્ને પુત્રો અલગ રહે છે અને દિકરીઓના લગ્ન થઈ ગયા છે.

મરીયમબેન પોતે એકલા રહે છે અને સવારે વહેલા ઉઠીને પોતાની દિનચર્યા ચાલુ કરે છે. આજે પણ તે રૂટીન મુજબ વહેલા ઉઠીને પોતાનું કામ કરવા લાગ્યા તેમને ખબર નહોતી કે આજનો દિવસ કાયમી કરતા તેમના માટે જુદો હશે પોતાના કામમાં વ્યસ્ત હતા અને અચાનક તેમનો પગ લપસી ગયો અને તે પડી ગયા પડતાની સાથે જ તેમના ડાબા પગનું હાટકું ભાગી ગયું. તેમની બાજુવાળાને આ બાબતની જાણ થતા તેમને અદાણી જી.કે. જનરલ હોસ્પિટલમાં લઈ આવ્યા ત્યાં તેમના પગનું ઓપરેશન થયું પરંતુ સાથે સાથે કરમની નબળાઈ ગણવી કે શું તેમને હાઈ ડાયાબીટીસ પણ છે. આ બધી જ પીડા તો મરીયમબેન મુંગા મોએ સહન કરે છે. પરંતુ વધારે તો તેમને એ વાતનું દુઃખ છે કે જેમને નવ નવ મહિના પોતાના કોઠામાં રાખીને ખુબજ વ્હાલથી પાલન પોષણ કરી ને મોટા કર્યા છે તેવા કહેવાના દિકરાઓ આજ સુધી પુછવા પણ નથી આવતા કે બા તમને કેમ છે ? કહેવાય છે ને કે 'માં તે માં બીજા વગડાના વા' માં કે જે બીજા કોઈ પણ નું સ્થાન લઈ શકે છે પરંતુ બીજુ કોઈ માનુ સ્થાન લઈ શકતુ નથી આવી માને છેલ્લા ૨૮ દિવસથી હોસ્પિટલમાં દાખલ હોવા છતા પણ દિકરાઓ પુછવા પણ નથી આવ્યા આ માની સારવાર તો ખુબ જ બરાબર થતી હતી પરંતુ જેટલો પગનો દુઃખાવો નહોતો એટલો દુઃખાવો એ વાતનો હતો કે પોતાના દિકરાઓ આવીને કહેશે કે બા તમને કેમ છે ? પરંતુ તે બન્યું નહી પણ એ વાતની ખોટ અદાણી ફાઉન્ડેશનના સ્ટાફે પુરી કરી મરીયમબેન પાસે જઈને કીધુ બા તમને કેમ છે ? બા તમારે કાઈ જરૂર છે ? આવા શબ્દો સાંભળતા વર્ષોથી તડપતી માતાની આંખો સોધાર આસંથી ઉભરાય ગઈ અને બોલ્યા બસ બેટા આજ બધીજ પીડા મારી દુર થઈ ગઈ છે. એમ કહીને આખી કહાની સંભળાવી આવા વડીલોને નથી કોઈ આર્થિક પ્રકારની જરૂરીયાત પરંતુ તે માટે તો માત્ર બે મીઠા શબ્દોની જરૂર છે. જે અદાણી ફાઉન્ડેશને આપ્યા છે.....

Media Corner

સામાજિક દાયિત્વ

રબારી વાંઢ વસાહતને લીલોતરો ઓપ આપવા પ્રતીકાત્મક વૃક્ષારોપણ અગ્રણીઓના હસ્તે કરવામાં આવ્યું હતું

મુન્દ્રાની વાંઢમાં 25 મકાન-સમાજવાડીનું લોકાર્પણ

શિક્ષણના ક્ષેત્રે હવે પાપા પગલી નહીં ચાલે, હરણફાળ જ ભરવી પડશે : રાજ્યમંત્રી

મુન્દ્રા રબારી વાંઢ માટે રબારી સમાજના પુનઃવસન અંતર્ગત ૨૫ આવાસો સહિત સમાજવાડી, બાલવાડીનું લોકાર્પણ

Media Corner

રબારી જ્ઞાતિના વસવાટવાળા રબારી વાંઢનું લોકાર્પણ થયું

રેવેન્યુ રેકર્ડમાં સમાવાશે તો વધુ ફાયદો થશે

શિક્ષણમાં પગલી નહીં, હરણફાળ ભરો

Media Corner

અદાણી ફાઉન્ડેશન દ્વારા માછીમારો માટે કમ્પ્યુટર ટ્રેનીંગ સેન્ટર તથા મેડીકલ રૂમનું લોકાર્પણ

અદાણી ફાઉ. દ્વારા મુન્દ્રાના કાંઠાળ વિસ્તારના માછીમારો માટે કોમ્પ્યુટર ટ્રેનીંગ સેન્ટર તથા મેડીકલ રૂમનું લોકાર્પણ

Media Corner

સામાજિક દાયિત્વ રબારી વાંઢ વસાહતને લીલોતરો ઓપ આપવા પ્રતીકાત્મક વૃક્ષારોપણ અગ્રણીઓના હસ્તે કરવામાં આવ્યું હતું

મુન્દ્રાની વાંઢમાં 25 મકાન-સમાજવાડીનું લોકાર્પણ

ભાસ્કર ન્યૂઝ. મુન્દ્રા

મુન્દ્રાની રબારી વાંઢની સીમમાં છુટા છવાયા કાચા નિવાસોમાં નિવાસ કરતાં ૨૫ જેટલા રબારી પરિવારો માટે અદાણી ફાઉન્ડેશન દ્વારા પુનઃવસન અંતર્ગત ૨૫ પાકા આવાસો સહિત સમાજવાડી બાલવાડીનું લોકાર્પણ કર્યું હતું.

આ લોકાર્પણ પ્રસંગે રાજ્યમંત્રી તારાચંદભાઈ છેડાએ જણાવ્યું હતું કે, રબારી સમાજ માટે જે ચિંતા, ખેવના સેવી છે તેને સૌને માટે પ્રેરણારૂપ ગણાવતાં પશુપાલક ભાઈ-બહેનો અહીં ગોકુળિયું ગામ ખડું કરીને જ રહેશે તેવો તેમનો આત્મવિશ્વાસ વ્યક્ત કર્યો હતો.

મુન્દ્રાની વાંઢમાં સમાજવાડી અને મકાનોનું લોકાર્પણ કરાયું હતું.

વધુમાં રબારી વાંઢ વસાહતને લીલોતરો ઓપ આપવા પ્રતિકાત્મક વૃક્ષારોપણ કરતાં આગામી ચોમાસામાં અદાણી, વન વિભાગના સહયોગે વધુને વધુ વૃક્ષો વાવી તથા માવજતે ઉછેરવા આહવાન કરતાં સિમેન્ટનાં જંગલોને હરિયાળીથી આચ્છાદિત કરવા તમામે તમામ સમાજ સેવકો, સેવાભાવી સંસ્થાઓને આગળ આવવા અપીલ કરી હતી.

આ પ્રસંગે રબારી અગ્રેસર અરજણભાઈ રબારીએ અદાણી ફાઉન્ડેશનના મધુભાઈ માંકડનું વિશેષ સન્માન કર્યું હતું, જ્યારે આ પ્રસંગે મધુભાઈ માંકડે ભૂકંપ વખતે રબારી સમાજ માટે તેમના દ્વારા થયેલ પુનઃવસનની આછેરી ઝલક આપતાં આ પ્રશ્ને ૨૦૦૮માં ગૌતમભાઈ અદાણીએ સંનિષ્ઠપણું દાખવી નૌકાને કાંઠા પર લાવીને જંપ્યા તેને માટે આભારની લાગણી વ્યક્ત કરી હતી.

આ તકે સ્વાગત પ્રવચન અદાણી ફાઉન્ડેશનના વડા મુકેશ સક્સેનાએ કર્યું હતું, આ કાર્યક્રમમાં પંક્તિબેન, વાલજીભાઈ ટાપરીયા, ધર્મેન્દ્રસિંહ જેસર, ગીરીશભાઈ છેડા, માંડણભાઈ રબારી, અદાણી ફાઉન્ડેશનના ભાવેશભાઈ ડોડા, મામલતદાર વિજય દેસાઈ હાજર રહ્યા હતા.

અત્રે ઉલ્લેખનીય છે કે, કચ્છ જિલ્લામાં અદાણી ફાઉન્ડેશન દ્વારા વિવિધ સેવાકીય ઉપરાંત શૈક્ષણિક અને સામાજિક પ્રકલ્પો ચલાવવામાં આવી રહ્યા છે.

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નાના કપાયાની શાળામાં વિદ્યાર્થીઓએ તૈયાર કરેલી કૃતિઓ પ્રદર્શનમાં મૂકાઈ

છાત્રોએ વ્યવહારિક જીવનમાં ઉપયોગી કૃતિઓ તૈયાર કરી

મુન્દ્રા, તા. ૧૦

અદાણી ફાઉન્ડેશન દ્વારા સંચાલિત મુન્દ્રા તાલુકાના નાના કપાયા ગામે આવેલી અદાણી ડી.એ.વી. સ્કૂલમાં અભ્યાસ કરતા વિદ્યાર્થીઓમાં રહેલી આંતરિક શક્તિને ખીલવવા માટે કાર્યક્રમનું આયોજન કરવામાં આવ્યું હતું.

વિદ્યાર્થીઓએ પોતાની કોઠાસૂઝથી તૈયાર કરેલી અને વ્યવહારિક જીવનમાં ઉપયોગી કૃતિઓ પ્રદર્શનમાં મૂકવામાં આવી હતી. વિદ્યાર્થીઓએ વર્ષ દરમિયાન શાળામાં મેળવેલ જ્ઞાનના આધારે વિવિધ કૃતિઓ તૈયાર કરી હતી. શાળા આચાર્ય પ્રવીણ કુમારના માર્ગદર્શન હેઠળ યોજાયેલા પ્રદર્શનના પ્રારંભે અગ્રણીઓના હસ્તે દીપ પ્રાગટ્ય કરવામાં આવ્યું હતું. વિદ્યાર્થીઓને ડિઝાઈન અને ઈનોવેશનના અભ્યાસક્રમ અંગે પ્રિતિબેન દવે સહિત શાળાના તમામ શિક્ષકોએ જરૂરી માર્ગદર્શન પૂરું પાડ્યું હતું. કયુમર એકસપ્લોર ગ્લોબલ સંસ્થાના કાર્યકરોએ સહકાર આપ્યો હતો. બહોળી સંખ્યામાં ઉપસ્થિત વાલીઓએ પ્રદર્શન નિહાળી, શાળામાં અભ્યાસ કરતા બાળકોના સર્વાંગી વિકાસ માટે અભ્યાસની સાથે-સાથે આવી પ્રવૃત્તિ યોજવી તો તેવી ઈચ્છા વ્યક્ત કરી હતી. શાળા પરિવારે વ્યવસ્થા સંભાળી હતી.

કાર્યક્રમમાં ગામના અગ્રણીઓ ઉપસ્થિત રહ્યા હતા.

મુંદરાની અદાણી ડી.એ.વી. પબ્લિક સ્કૂલને બ્રિટિશ કાઉં.નો એવોર્ડ

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માછીમાર પરિવારના બાળકોને ઉચ્ચ શિક્ષણ માટે તત્પર રહેવા ખાતરી

અદાણી ફાઉન્ડેશન દ્વારા નવીનાળના માછીમારો માટે કોમ્યુનિટી હોલનું લોકાર્પણ

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નવીનાળમાં કોમ્યુનિટી હોલનું કરાયું લોકાર્પણ

કંઠીપટના માછીમારોને કમ્પ્યૂટર શિક્ષણમાં શ્રેષ્ઠ બનાવવાની નેમ

અદાણી ફાઉન્ડેશન દ્વારા માછીમાર સમુદાયના વિકાસ માટે સહયોગની ખાતરી

Media Corner

ભદ્રેશ્વરમાં છાત્રો વ્યક્તિત્વ વિકાસ અને જીવન મૂલ્યોના પાઠ ભણ્યા

અદાણી ફાઉન્ડેશન દ્વારા પરવરીશ કેમ્પ યોજાયો

ભદ્રેશ્વર ખાતે પાંચ દિવસીય પરવરીશ કેમ્પનું આયોજન કરાયું હતું, જેમાં મોટી ભુજપુરની એ.જે.એસ. હાઈસ્કૂલ, રતાડિયાની સંજીવની હાઈસ્કૂલ, પ્રતાપરની સાંદીપનિ હાઈસ્કૂલ, ઝરપરા હાઈસ્કૂલ, મોટી ખાખર હાઈસ્કૂલ, નાના ભાડિયાના તુલસી વિદ્યામંદિરના મળી ૭૨ વિદ્યાર્થીઓ જોડાયા હતા.

કેમ્પમાં બાળકોને વ્યક્તિત્વ વિકાસ, જીવનના મૂલ્યો, સમયનું મહત્વ, આયોજન, શિષ્ટાચાર તથા આરોગ્યને લગતી બાબતો અંગે જ્ઞાન આપવામાં આવ્યું હતું. ઉપરાંત બાળકોને રમત સાથે જ્ઞાન આપવાના હેતુસર ઈનડોર અને આઉટડોર રમતોનું આયોજન કરાયું હતું. કેમ્પના ચોથા દિવસે ટેલેન્ટ શો રાખવામાં આવ્યું હતું, જેમાં બાળકોએ જુદા-જુદા નાટકો, ડાન્સ તેમજ ગીતો દ્વારા પોતાનામાં રહેલી સુષુપ્ત શક્તિઓને ઉજાગર કરી હતી. કેમ્પના સમાપન પ્રસંગે અદાણી વિદ્યામંદિર, ભદ્રેશ્વરના આચાર્ય મહેન્દ્ર પરમારે જણાવ્યું હતું કે, આવા કેમ્પ થકી બાળકોને નવું નવું જાણવા અને શીખવાની તક મળે છે. ભાવેશ ડોડાએ પરવરીશ શબ્દનો અર્થ સમજાવતાં જણાવ્યું હતું કે, જેમ માતા-પિતા પોતાના બાળકની પરવરીશ કરે તેમ આ કેમ્પમાં પણ બાળકોની પરવરીશ કરવામાં આવે છે.

મુન્દ્રા તાલુકાના બાળકો જીવન મૂલ્યોના પાઠ ભણતા શીખ્યા

અદાણી દ્વારા પરવરિશ કેમ્પનું આયોજન

ભાસ્કર ન્યૂઝ. ભુજ

અદાણી ફાઉન્ડેશન-મુન્દ્રાના શિક્ષણ વિભાગ દ્વારા અદાણી વિદ્યામંદિર ભદ્રેશ્વર ખાતે તા. 28મી એપ્રિલથી 2જી મે-2015 સુધી 5 દિવસીય પરવરિશ કેમ્પનું આયોજન કરવામાં આવ્યું હતું, જેમાં મોટી ભુજપુરની એ.જે.એસ. હાઈસ્કૂલ, રતાડિયાની સંજીવની હાઈસ્કૂલ, પ્રતાપરની સાંદીપની હાઈસ્કૂલ, ઝરપરા હાઈસ્કૂલ, મોટી ખાખર હાઈસ્કૂલ, નાના ભાડિયાની તુલસી વિદ્યામંદિર વગેરે 6 શાળાના 72 વિદ્યાર્થીએ ઉત્સાહભેર ભાગ લીધો હતો.

આ 5 દિવસીય કેમ્પમાં બાળકોને વ્યક્તિત્વ વિકાસ, જીવનના મૂલ્યો, સમયનું મહત્વ, આયોજન, શિષ્ટાચાર તથા આરોગ્યને લગતી બાબતો વગેરે વિશે વિસ્તૃત જ્ઞાન આપવામાં આવ્યું હતું. સમાપન કાર્યક્રમમાં મહેન્દ્રભાઈ પરમારે જણાવ્યું હતું કે, આ પ્રકારના કેમ્પથી બાળકોને નવું-નવું જાણવા અને શીખવા મળે છે, તેનાથી તેઓનો ઉત્સાહ વધે છે તેમજ વિદ્યાર્થીઓ અને આયોજકોને શુભેચ્છા પાઠવી હતી. ભાવેશભાઈ ડોડાએ પરવરિશ શબ્દનો અર્થ સમજાવ્યો હતો. કાર્યક્રમમાં ડો. વિભાબેન પટેલે હાજર રહી બાળકોને પ્રોત્સાહિત કર્યા હતા.

Media Corner

મુન્દ્રામાં માછીમારોને વ્યસન મુક્તિ અને બચત અંગે માર્ગદર્શન અપાયું

૯ ગામમાંથી ૧૦૬ માછીમાર સભ્યોનો સ્વસહાયજૂથમાં સમાવેશ

મુંદરામાં યોજાયો પગડીયા માછીમાર ભાઈઓનો મેળાવડો

મત્સ્ય ઉદ્યોગની વિવિધ યોજનાઓ વ્યસનમુક્તિ તથા બચત અંગે માર્ગદર્શન અપાયું

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મુન્દ્રામાં માછીમારોને વ્યસન મુક્તિ અને બચત અંગે માર્ગદર્શન અપાયું

માર્કેટિંગ માટે વધુ સક્રિય પ્રયાસો કરવા આવશ્યક

કચ્છની હસ્તકલામાં બોલીવૂડની બજાર સર કરવાની તાકાત છે

Adani Foundation, Mundra

Media Corner

મુંદરામાં માછીમારો માટે અદાણી પ્રીમિયર લીગનું આયોજન કરાયું

મુંદરા માછીમાર સમુદાયના ભાઈઓ માટે ક્રિકેટ ટુર્નામેન્ટ અદાણી પ્રિમિયર લીગ-૨૦૧૫નું યોજાઈ

Adani Foundation, Mundra

Media Corner

વિરાયતન અને અદાણી વચ્ચે કેમ્પસ ઈન્ટરવ્યૂના થયા કરાર

ઇજનેરીના છેલ્લા વર્ષના છાત્રોને અપાશે રોજગાર

વિદ્યાર્થીઓને રોજગારી આપવા અદાણી-વીરાયતનનું જોડાણ

ઇજનેરી છાત્રો માટે ઉદ્યોગ એકમ સાથે એમ.ઓ.યુ. થયા

Media Corner

મુંદરા ઘટકના ૯૫૧ કુપોષિત બાળકની સંભાળ લેખે લાગી : વર્ષમાં સંખ્યા ઘટીને ૨૫

Publication : Sandesh
Tuesday, June 30, 2015

વાયોરમાં સંસ્થા આયોજિત મેડિકલ કેમ્પમાં ૨૧૭ દર્દીઓની સારવાર

અદાણી ફાઉન્ડેશન દ્વારા નિઃશુલ્ક મેડિકલ કેમ્પ યોજાયો

Media Corner

અદાણી ફાઉન્ડેશન દ્વારા નિઃશુલ્ક નિદાન કેમ્પ યોજાયો

મુંદરા તા.માં 'પ્રયાસ'ના બેનર હેઠળ સફાઇ અભિયાનમાં આહુતિ અપાઇ

Media Corner

રાષ્ટ્રની પ્રગતિ માટે વસ્તી નિયંત્રણ જરૂરી

અદાણી હોસ્પિટલ મુન્દ્રામાં સ્ત્રી આરોગ્ય જાગૃતિ અને વિશ્વ વસ્તી દિનની ઉજવણી

Media Corner

ભૂખી નદીમાં ગાબડાં પડતાં વાહનો અટકયાં

મુંદરા તરબતર; વધુ ચાર ઈંચ

Media Corner

અદાણી ફાઉન્ડેશન દ્વારા અબડાસા તાલુકાના જખૌમાં નિઃશુલ્ક જનરલ હેલ્થ કેમ્પ અને બ્લડ ડોનેશન કેમ્પનું આયોજન

અદાણી ફાઉન્ડેશન દ્વારા મુંદ્રા તાલુકામાં બેટી વધાવો બેટી બચાવો કાર્યક્રમમાં ૨૯ ગામોમાં ૨૯૧ બાળાઓને વધાવાઈ

Media Corner

અદાણી ફાઉન્ડેશન દ્વારા માછીમાર સમુદાયના બાળકોને ઉચ્ચ અભ્યાસ માટે શિષ્યવૃતિ વિતરણ કાર્યક્રમ

અદાણી દ્વારા માછીમારોનાં બાળકોને અભ્યાસ માટે શિષ્યવૃત્તિ અપાઈ

Media Corner

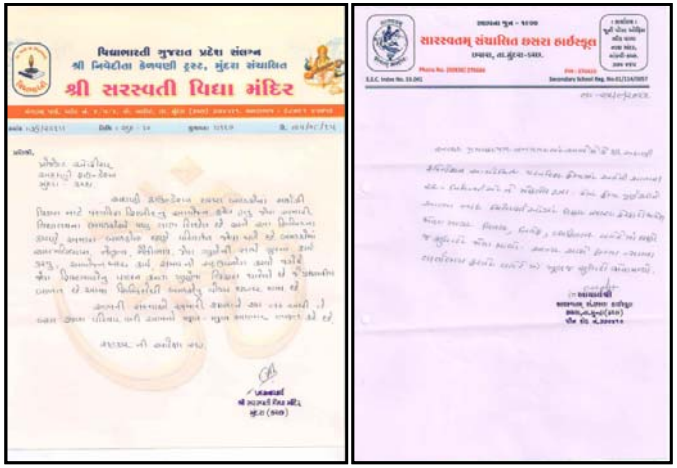
અદાણી ફાઉન્ડેશન દ્વારા મુંદરા તાલુકામાં "બેટી વધાવો બેટી બચાવો" કાર્યક્રમ અંતર્ગત ૨૯ ગામોમાં ૨૯૧ બાળાઓને વધાવવામાં આવી.

અદાણી વિદ્યામંદિર, ભદ્રેશ્વરમાં આનંદ મેળાનું આયોજન

બાળકોની સર્જનાત્મક શક્તિ ખીલવવા ભદ્રેશ્વરની શાળામાં આનંદ મેળો યોજાયો

અદાણી વિદ્યામંદિર ભદ્રેશ્વરમાં આનંદ મેળાનું સફળ આયોજન

Thanks Letter



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Resources Logistics Energy

Annexure – 2

"HALF YEARLY ENVIRONMENTAL MONITORING REPORT"

FOR

ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED
TAL: MUNDRA, KUTCH, MUNDRA – 370 421

MONITORING PERIOD:
APRIL 2015 TO SEPTEMBER 2015

PREPARED BY:

POLLUCON LABORATORIES PVT.LTD.
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T 0820 - 821 **ISO 9001:2008** **ISO 14001:2004** **OHSAS 18001:2007**

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	7.9	8.05	8.01	8.12	8.1	8.15	7.98	8.12	7.58	8.06	8.02	8	IS3025(P11)83Re.02
2	Temperature	°C	30	31	29	30	29	30	28	29	28	29	29	30	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	22	16	16	22	12	18	20	22	14	20	14	20	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.4	4.8	5.8	5	5.4	4.4	5.8	4.4	5.6	4.8	5.6	4.6	IS3025(P38)89Re.99
6	Salinity	ppt	40.3	40.9	41.2	41.7	40.2	40.9	41.6	42.2	40.8	41.8	41.2	42.8	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	0.18	BDL*	0.24	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.72	0.89	0.56	0.72	0.34	0.52	0.42	0.58	0.54	0.62	0.532	0.598	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.064	0.077	0.021	0.034	0.028	0.046	0.026	0.04	0.022	0.044	0.03	0.047	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.86	0.96	0.96	1.1	1.2	1.4	1.0	1.2	0.9	1.1	0.924	1.1	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.056	0.074	0.084	0.096	0.94	1.04	0.88	0.94	0.72	0.84	1.03	1.215	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	4.1	4.7	1.54	1.85	1.31	1.606	1.45	1.84	1.61	1.82	1.486	1.745	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	6	BDL*	4	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	49750	50440	48770	49060	47690	48140	49850	50510	48186	49760	48593	48878	IS3025(P16)84Re.02
15	COD	mg/L	20	28	24	32	22	28	16	24	18	22	19	28	APHA(22nd Edi) 5520-D Open Reflux

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16	Oxidisable Particular Organic Carbon	%	0.68	0.49	0.5	0.4	0.58	0.48	0.56	0.48	0.52	0.44	0.6	0.44	SOP – PLPL - 07
A	**Flora and Fauna**														
17	Primary productivity	mgC/L /day	3.2	2.1	2.7	1.575	2.925	0.45	2.25	0.45	1.575	0.563	1.125	0.338	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	3.79	2.99	2.75	0.99	2.857	1.602	1.682	0.134	1.81	0.134	1.28	0.267	APHA (22^{nd}Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	BDL*	1.54	BDL*	0.98	0.579	1.717	0.128	1.77	0.98	1.39	APHA (22^{nd}Edi) 10200-H
18.3	Cell Count	Unit x $10^3/L$	114	154	248	109	292	110	221	59	158	41	147	52	APHA (22^{nd} Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22^{nd} Edi) 10200-H
			Thalassiosira sp.	*Thalassiosira sp.*	*Thalassionema sp.*	*Thalassionema sp.*	*Biddulphia sp.*	*Nitzschia sp.*	*Chaetoceros sp.*	*Fragillaria sp.*	*Nitzschia sp.*	*Navicula sp.*	*Nitzschia sp.*	*Navicula sp.*	
			Nitzschia sp.	*Navicula sp.*	*Nitzschia sp.*	*Navicula sp.*	*Gyrosigma sp*	*Gomphonema sp.*	*Rhizosolenia sp.*	*Navicula sp.*	*Rhizosolenia sp.*	*Gyrosigma sp.*	*Rhizosolenia sp.*	*Fragillaria sp.*	
			Navicula sp.	*Coscinodiscus sp.*	*Melosira sp.*	*Coscinodiscus sp.*	*Pinnularia sp.*	*Cyclotella sp.*	*Pinnularia sp.*	*Cocconeis sp.*	*Thallasiosira sp*	*Cyclotella sp.*	*Navicula sp.*	*Pinnularia sp.*	
			Melosira sp.	--	*Fragillaria sp.*	*Rhizosolenia sp.*	*Pinnularia sp.*	Green Algae	*Navicula sp.*	Cyanophyceae	*Synedra sp.*	*Fragillaria sp.*	*Asterionella sp.*	*Biddulphia sp.*	
			Fragillaria sp.	--	Green algae	--	Cyanophyceae	*Chlorella sp.*	*Gomphonema sp.*	*Spirulina sp.*	Green Algae	Green Algae	*Cymbella sp.*	Green Algae	
			--	--	*Chlorella sp.*	--	*Microcystis sp.*	*Pandorina sp.*	Cyanophyceae	Green Algae	*Oscillatoria sp.*	*Chlorella sp.*	*Synedra sp.*	*Ulothrix sp.*	
					Ulthrix		*Spirulina sp.*		Anabaena sp.	Hydrodictyon sp.	*Green Algae*		Green Algae	Cyanophyceae	
									Oscillatoria sp.	Spirogyra sp.	*Chlorella sp.*		*Pandorina sp.*	*Oscillatoria sp.*	
									Green Algae		*Pediastrum sp.*		*Pediastrum sp.*	*Spirulina sp.*	
									Volvox sp.				*Ulothrix sp.*	--	
									Chlorella sp.				Cyanophyceae		
									Pediastrum sp.				*Oscillatoria sp.*		

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C	**Zooplanktons**													
19.1	Abundance (Population)	no/m^2	380	270	430	190	250	100	150	40	190	70	280	60	APHA (22nd Edi) 10200-G
19.2	Name of Group Number and name of group species of each group	--	*Polychaetes*	*Polychaetes*	*Polychaete worms*	*Polychaete worms*	Ctenophores	Polychaetes	Polychaetes	Crustaceans	Polychaete Worms	Isopods	Gastropods	Copepods	APHA (22nd Edi) 10200-G
			Bivlaves	*Molluscan*	*Bivalves*	*Molluscans*	Gastropods	Decapods	Krill	Nematodes	Nematodes	Gastropods	Isopods	Polychaete worms	
			Gastropods	*Branchyurans*	*Gastropods*	*Decapods*	Copepods	--	Copepods	Bivalves	Decapods	Decapods	Decapods	Crustaceans	
			Copepods	--	*Copepods*	*Branchyurans*	--	--	Crustaceans	--	Molluscans	--	Krill		
			--	--	--	--	--	--	Isopods	--	Snail	--	Namatodes		
			--	--	--	--	--	--	Ostracods	--	--	--	Molluscans		
			--	--	--	--	--	--	--	--	--	--	Copepods		
19.3	Total Biomass	ml/100 m^3	29	18	72	48	79	23	41	8	28	9	38	23	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	1522	1481	1620	1500	1740	1460	1824	1320	1740	1260	1130	870	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	Test Method
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.57	0.64	0.49	0.52	0.54	0.352	FCO:2007
2	Phosphorus as P	mg/kg	137	160	139	154	146	146	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.8	5	5.2	5	5.4	4.99	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	98	130	176	220	190	189	AAS 3111B
5.3	Manganese as Mn	mg/kg	740	860	910	830	880	789	AAS APHA 3111 B
5.4	Iron as Fe	%	2.05	2.4	2.5	2.08	3.1	2.61	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	59	48	56	60	58	57.96	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	37	54	34	40	36	37.99	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	142	164	156	132	144	143	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	2.6	1.8	1.4	1.02	1.22	1.13	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	Benthic Organisms								
6.1	Macrobenthos	--	Polychaete worms Bivalves Crustaceans	Polychaeteworms Crustaceans Isopods Decapods	Amphipods Mysids Echinoderms	Isopods Mysids Echinoderms Polychaete Worms	Echinoderms Isopods Knill Anthozoans	Crabs Anthozoans Isopods Decapods	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Gastroriches Smaller Crustaceans	Nematodes Smaller Crustaceans	Copepods	Hydrozoan Copepods	Nematodes Foraminiferans	Copepods Foraminiferans	APHA (22nd Edi) 10500-C
2	Population	no/m^2	308	252	377	440	377	288	APHA (22nd Edi) 10500-C

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.05	8.1	8.1	8.17	7.95	8.02	8.25	8.38	8.14	8.2	7.91	8.03	IS3025(P11)83Re.02
2	Temperature	°C	31	31	30	31	27	28	29	30	29	30	29	30	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	24	38	18	20	21	28	24	34	22	30	16	26	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL *	BDL *	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.6	4.4	5.4	4.8	5.6	4.6	5.4	4.6	5.8	4.8	5.4	4.4	IS3025(P38)89Re.99
6	Salinity	ppt	43.6	44.2	41.8	42.2	42.2	42.7	40.4	41.2	39.8	41.4	40.8	42.6	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	0.84	BDL*	0.52	BDL*	0.3	BDL*	0.4	BDL*	0.4	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.64	0.82	0.54	0.66	0.72	0.94	0.54	0.76	0.68	0.82	0.34	0.458	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.072	0.054	0.028	0.054	0.021	0.026	0.03	0.05	0.026	0.052	0.018	0.036	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.32	0.46	0.42	0.51	0.81	0.72	0.8	1.0	0.72	0.9	0.32	0.406	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.086	0.062	0.14	0.094	0.18	0.11	0.2	0.14	0.18	0.1	0.36	0.27	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	2.1	2.6	1.5	1.2	1.55	1.68	1.4	1.81	1.44	1.82	0.678	0.9	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	3.2	BDL*	1.2	BDL*	1.8	BDL*	1.6	BDL*	1.4	BDL*	1.4	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	49750	50400	48210	49170	50710	51240	48930	49900	48580	49990	47990	48380	IS3025(P16)84Re.02
15	COD	mg/L	16	18	12	20	18	20	20	22	16	18	14	19	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.82	0.32	0.62	0.48	0.44	0.48	0.4	0.44	0.56	0.46	0.34	0.38	SOP – PLPL - 07
A	**Flora and Fauna**														

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Lab Manager

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Lab Manager (Q)

17	Primary productivity	mgC/L /day	3.2	1.0	1.57	0.45	2.02	0.225	2.7	0.675	1.68	0.45	1.238	0.225	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	5.79	5.17	1.22	0.854	2.59	0.187	2.163	0.561	1.92	0.561	1.095	0.134	APHA (22^{nd}Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	1.37	1.99	BDL*	2.39	BDL*	0.897	0.227	0.897	1.671	1.493	APHA (22^{nd}Edi) 10200-H
18.3	Cell Count	Unit x $10^3/L$	170	110	198	50	245	74	254	67	169	39	155	45	APHA (22^{nd} Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22^{nd} Edi) 10200-H
			Nitzschia sp	*Nitzschia sp*	*Nitzschia sp.*	*Nitzschia sp.*	*Coscinodiscus sp.*	*Navicula sp.*	*Coscinodiscus sp.*	*Navicula sp.*	*Nitzschia sp.*	*Navicula sp.*	*Navicula sp.*	*Navicula sp.*	
			Melosira sp	*Coscinodiscus sp*	*Biddulphia sp.*	*Coscinodiscus sp.*	*Rhizosolenia sp.*	*Biddulphia sp.*	*Rhizosolenia sp.*	*Biddulphia sp.*	*Synedra sp.*	*Cyclotella sp.*	*Synedra sp.*	*Fragillaria sp.*	
			Asterionella sp	*Pleurosigma sp.*	*Fragillaria sp.*	*Synedra sp.*	*Thallasiosira sp.*	*Nitzschia sp.*	*Gomphonema sp.*	*Pinnularia sp.*	*Rhizosolenia sp.*	*Fragillaria sp.*	*Coscinodiscus sp.*	*Gyrosigma sp.*	
			Coscinodiscus sp	--	*Coscinodiscus sp.*	Cynophyceae	Green Algae	*Pleurosigma sp.*	*Cymbella sp.*	*Gyro sigma sp.*	*Pleurosigma sp.*	Green Algae	*Asterionella sp.*	*Pinnularia sp.*	
			Thalassionema sp	--	*Thalassionema sp.*	*Oscillatoria sp.*	*Ankistrodesmus sp.*	Green Algae	*Synedra sp.*	Green Algae	*Coscinodiscus sp.*	*Spirogyra sp.*	*Gyrosigma sp.*	*cyanophyceae*	
			Desmids	--	Desmids	--	*Pandorina sp.*	*Volvox sp.*	*Tabellaria sp.*	*Scenedesmus sp.*	Green Algae	*Chlorella sp.*	*Cocconeis sp.*	*Lyngbya sp.*	
			Clostericem sp	--	*Closterium sp.*	--	*Chlorella sp.*	--	*Green Algae*	*Spirogyra sp.*	Chlorella sp.	--	*Pinnularia sp.*	*Oscillatoria sp.*	
			--	--	--	--	*Volvox sp.*	--	*Ankistrodesmus sp.*	--	Pediastrum sp.	--	Green Algae	--	
			--	--	--	--		--	*Pediastrum sp.*	--	Desmids	--	*Pandorina sp.*	--	
			--	--	--	--		--	*Ulothrix sp.*	--	Cosmarium sp.	--	*Chlorella sp.*	--	
			--	--	--	--		--	*Desmids*	--	Cyanophyceae	--	Cyanophyceae	--	
			--	--	--	--		--	*Closterium sp.*	--	Oscillatoria sp.	--	*Oscillatoria sp.*	--	
			--	--	--	--		--	--	--	--	--	*Nostoc sp.*	--	
			--	--	--	--		--	--	--	--	--	--	--	
C	**Zooplanktons**														
19.1	Abundance (Population)	no/m^2	400	200	370	120	400	150	170	30	200	40	320	100	APHA (22^{nd} Edi) 10200-G

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19.2	Name of Group Number and name of group species of each group	--	*Echinoderms*	*Polychaeworms*	*Gastropods*	*Foraminiferans*	Polychaetes Worms	Gastrpods	Krill	Polychaete Worms	Copepods	Molluscans	Crustaceans	Gastropods	APHA (22nd Edi) 10200-G
			Gastropods	*Foraminiferans*	*Polychaeworms*	*Ostracods*	Nematodes	Mysids	Copepods	Ctenophores	Isopods	Gastropods	Copepods	Polychaete worms	
			Polychaeworms	--	*Nematods*	--	Echinoderms	Snail	Gastropods	Cyclops	Gastropods	--	Krill	--	
			Nematodes	--	--	--	--	--	Decapods	--	Polychaete Worms	--	Polychaete worms	--	
			--	--	--	--	--	--	Lamellibranches	--	--	--	Decapods	--	
19.3	Total Biomass	ml/100 m^3	29	14	30	4	88	34	55	11	62	7	59	6	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	1745	1904	1850	2020	1880	2100	1930	1580	1850	1620	1670	1420	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK – N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	Test Method
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.71	0.56	0.48	0.54	0.52	0.366	FCO:2007
2	Phosphorus as P	mg/kg	140	164	210	180	200	141	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	6.4	5.6	5.4	5.6	5.2	5.2	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	140	116	128	180	142	135	AAS 3111B
5.3	Manganese as Mn	mg/kg	620	780	810	770	806	609	AAS APHA 3111 B
5.4	Iron as Fe	%	2.8	2.4	2.72	2.16	2.62	2.01	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	48	56	54	58	60	41.99	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	52	39	158	110	158	97.9	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	114	146	163	148	156	157	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	2.1	1.9	1.2	1.16	1.24	1.58	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	0.8	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	Benthic Organisms								
6.1	Macrobenthos	--	Polychaete worms Bivalves Crustaceans	Mysids Polychaeteworms Crustaceans	Polychaete Worms Echinoderms Snail Crab	Isopods Echinoderms Decapods Crab Amphipods	Polychaete Worms Anthozoans Echinoderms	Echinoderms Polychaete worms Isopods Prawn Decapods	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Nematodes	Nematodes Copopods	Foraminiferans Hydrozoa	Foraminiferans Copepods	Ostracodes Hydrozoa	Nematodes Copepods	APHA (22nd Edi) 10500-C
2	Population	no/m^2	240	440	503	503	440	337	APHA (22nd Edi) 10500-C

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

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RESULTS OF MARINE WATER [M3 EAST OF BOCHA ISLAND - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	July 2015		August 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	7.62	8.08	7.55	7.92	IS3025(P11)83Re.02
2	Temperature	°C	29	30	29	30	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	22	25	30	38	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	5.4	4.6	5.6	4.8	IS3025(P38)89Re.99
6	Salinity	ppt	42.8	43.02	41.66	42.92	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	0.2	BDL*	0.3	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.3	0.42	0.28	0.36	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.019	0.028	0.02	0.026	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.8	0.9	0.7	0.8	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.64	0.81	0.58	0.72	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	1.12	1.35	1.08	1.21	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	51288	51492	49920	51430	IS3025(P16)84Re.02
15	COD	mg/L	18	28	20	26	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.31	0.2	0.28	0.21	SOP – PLPL - 07
A							
17	Primary productivity	mgC/L/day	2.25	0.225	1.46	0.113	APHA (22nd Edi) 10200-J
B							
18.1	Chlorophyll	mg/m^3	2.05	0.053	1.01	0.24	APHA (22nd Edi) 10200-H
18.2	Phaeophytin	mg/m^3	0.523	2.52	1.56	2.17	APHA (22nd Edi) 10200-H
18.3	Cell Count	Unit x 10^3/L	254	25	178	18	APHA (22nd Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22nd Edi) 10200-H
			Synedra sp.	*Nitzschia sp.*	*Cymbella sp.*	*Fragillaria sp.*	
			Nitzschia sp.	*Navicula sp.*	*Pinnularia sp.*	*Pinnularia sp.*	
			Rhizosolenia sp.	*Gyro sigma sp.*	*Coscinodiscus sp.*	*Navicula sp.*	
			Thallasiosira sp	Green Algae	*Rhizosolenia sp.*	*Nitzschia sp.*	
			Coscinodiscus sp.	*Chlorella sp.*	Green Algae	*Gyro sigma sp.*	
			Green Algae	Desmids	*Chlorella sp.*	Green Algae	
			Scenedesmus sp.	Closterium sp.	*Oedogonium sp.*	Chlorella sp.	
			Chlorella sp.	--	*Oscillatoria sp.*	--	
			Spirogyra sp.	--	*Anabaena sp.*	--	
			Cyanophyceae	--	--	--	
			Nostoc sp.	--	--	--	
			Oscillatoria sp.	--	--	--	
			--	--	--	--	

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			--	--	--	--	
C							
19.1	Abundance (Population)	no/m^2	150	30	213	25	APHA (22nd Edi) 10200-G
19.2	Name of Group Number and name of group species of each group	--	Polychaete Worms	Gastropods	Copepods	Polychaete Worms	APHA (22nd Edi) 10200-G
			Echinoderms	Isopods	Ostracods	Decapods	
			Molluscans	--	Crustaceans	Nauplies	
			--	--	Krill	--	
			--	--	Ctenophores	--	
19.3	Total Biomass	ml/100 m^3	46	7	54	9	APHA (22nd Edi) 10200-G
D							
20.1	Total Bacterial Count	CFU/ml	1840	1550	1680	1375	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHA ISLAND - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	July 2015	August 2015	Test Method
			SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.52	0.58	FCO:2007
2	Phosphorus as P	mg/kg	150	146	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	PLPL-TPH
5					
5.1	Aluminum as Al	%	5.4	4.8	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	140	180	AAS 3111B
5.3	Manganese as Mn	mg/kg	890	860	AAS APHA 3111 B
5.4	Iron as Fe	%	2.02	1.88	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	52	50	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	36	38	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	138	140	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	1.6	1.46	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	AAS APHA- 3112 B
6					
6.1	Macrobenthos	--	Polychaete Worms Bivalves Anthozoans	Polychaete Worms Echinoderms Bivalves Mysids Decapods	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Copepods	Nematodes Bryozoans	APHA (22nd Edi) 10500-C
2	Population	no/m^2	337	385	APHA (22nd Edi) 10500-C

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RESULTS OF MARINE WATER [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	7.95	8.1	8.1	8.2	8.06	8.15	8.26	8.4	8.17	8.34	8.02	8	IS3025(P11)83Re.02
2	Temperature	°C	31	32	29	31	28	30	28	29	29	30	29	30	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	18	20	26	30	24	28	26	30	28	30	28	32	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.4	4	5.6	5	5.8	4.8	5.4	4.8	5.6	5	5.8	4.8	IS3025(P38)89Re.99
6	Salinity	ppt	43.1	44.2	42.7	43.2	40.2	41.6	40	41.2	41.6	42.8	38.4	39.1	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.44	0.53	0.32	0.18	0.44	0.28	0.48	0.26	0.4	0.24	0.384	0.222	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.052	0.068	0.058	0.08	0.062	0.084	0.058	0.07	0.06	0.082	0.054	0.076	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.72	0.8	0.96	1.24	1.1	1.26	1.2	1.3	0.76	0.94	1.01	1.29	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.044	0.058	0.076	0.086	0.094	0.12	0.44	0.56	0.36	0.44	0.54	0.675	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	3.1	3.6	1.34	1.8	1.6	1.62	1.74	1.6	1.24	1.28	1.448	1.588	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	52100	53200	55760	52240	53940	54000	53070	53520	54120	55846	45313	46173	IS3025(P16)84Re.02
15	COD	mg/L	20	26	16	20	24	32	22	30	18	22	14	24	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.96	0.32	0.6	0.44	0.52	0.44	0.48	0.46	0.82	0.4	0.5	0.46	SOP – PLPL - 07
A	**Flora and Fauna**														
17	Primary productivity	mgC/L /day	3.06	1.9	2.925	0.675	2.475	0.9	1.575	0.225	1.35	0.563	1.575	0.675	APHA (22nd Edi) 10200-J

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B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	4.2	3.2	2.62	0.64	2.723	0.107	1.148	0.107	1.6	0.187	1.89	0.16	APHA (22nd Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	BDL*	1.94	BDL*	2.472	0.459	1.837	0.36	1.757	0.067	1.69	APHA (22nd Edi) 10200-H
18.3	Cell Count	Unit x 10^3/L	218	180	338	88	304	35	196	24	175	29	162	33	APHA (22nd Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22nd Edi) 10200-H
			Biddulphia sp.	*Biddulphia sp.*	*Biddulphia sp.*	*Cymbella sp.*	*Synedra sp.*	*Pleurosigma sp.*	*Asterionella sp.*	*Cocconeis sp.*	*Asterionella sp.*	*Coscinodiscus sp.*	*Asterionella sp.*	*Tabellaria sp.*	
			Nitzschia sp.	*Fragillaria sp.*	*Thalassionema sp.*	*Gyrosigna sp.*	*Biddulphia sp.*	*Navicula sp.*	*Biddulphia sp.*	*Pinnularia sp.*	*Biddulphia sp.*	*Fragillaria sp.*	*Coscinodiscus sp.*	*Navicula sp.*	
			Thalassiosira sp.	*Gyrosigma sp.*	*Fragillaria sp.*	*Nitzschia sp.*	*Nitzschia sp.*	*Skeletonema sp.*	*Coscinodiscus sp.*	*Gyro sigma sp.*	*Chaetoceros sp.*	*Navicula sp.*	*Navicula sp.*	*Gyrosigma sp.*	
			Fragillaria sp.	--	*Pleurosigma sp.*	*Biddulphia sp.*	*Fragillaria sp.*	*Pleurosigma sp.*	*Pinnularia sp.*	*Synedra sp.*	*Coscinodiscus sp.*	*Synedra sp.*	*Nitzschia sp.*	*Coscinodiscus sp.*	
			Pleurosigma sp.	--	Green algae	Green algae	*Cyclotella sp.*	--	*Skeletonema sp.*	Green Algae	*Gyro sigma sp.*	*Pinnularia sp.*	*Fragillaria sp.*	*Asterionella sp.*	
			--	--	*Chlorella sp.*	*Oscillatoria sp.*	Green Algae	--	Green Algae	*Spirogyra sp.*	Green Algae	Green Algae	*Surirella sp.*	Cyanophyceae	
			--	--	--	--	Pandorina sp.	--	Pediastrum sp.	*Volvox sp.*	Pandorina sp.	Chlorella sp.	*Thallasionema sp.*	*Oscillatoria sp.*	
			--	--	--	--	Ulothrix sp.	--	Chlorella sp.	--	Pediastrum sp.	--	Green Algae	*Nostoc sp.*	
			--	--	--	--	Volvox sp.	--	Cyanophyceae	--	Desmids	--	*Ankistrodesmus sp.*	--	
			--	--	--	--	--	--	Microcystis sp.	--	Cosmarium sp.	--	*Chlorella sp.*	--	
			--	--	--	--	--	--	Nostoc sp.	--	--	--	*Pandorina sp.*	--	
			--	--	--	--	--	--	--	--	--	--	Cyanophyceae	--	
			--	--	--	--	--	--	--	--	--	--	*Anabaena sp.*	--	
			--	--	--	--	--	--	--	--	--	--	*Oscillatoria sp.*	--	
C	**Zooplanktons**														
19	Abundance	no/m^2	310	198	440	210	230	160	130	20	183	67	267	133	APHA (22nd Edi)

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.1	(Population)														10200-G
19.2	Name of Group Number and name of group species of each group	--	*Hydrozoans*	*Amphipods*	*Hydrozoans*	*Amphipods*	Chaetognathes	Polychaete Worms	Decapods	Ostracods	Copepods	Decapods	Gastropods	Ctenophores	APHA (22nd Edi) 10200-G
			Anthrozoans	*Polychaetes*	*Anthrozoans*	*Polychaete worms*	Copepods	Decapods	Copepods	Lamellibranches	Krill	Ostracods	Copepods	Gastropods	
			Gastropods	--	*Gastropods*	*Decapods*	Krill	Copepods	Krill	Decapods	Polychaete Worms	Gastropods	Decapods	Krill	
			Foraminiferans	--	*Chaetognaths*	*Echinoderms*	Daphania	--	Ostracods	--	Molluscans	--	Ostracods	Nematodes	
			--	--	--	--	Isopods	--	Gastropods	--	--	--	Krill	--	
			--	--	--	--	--	--	--	--	--	--	Crustaceans	--	
			--	--	--	--	--	--	--	--	--	--	Cyclops	--	
19.3	Total Biomass	ml/100 m^3	32	10	84	29	56	12	43	7	38	10	75	15	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	1613	1554	1710	1625	1820	1740	1810	1285	1880	1310	1850	1680	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	Test Method
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.51	0.44	0.53	0.56	0.48	0.495	FCO:2007
2	Phosphorus as P	mg/kg	156	168	192	210	178	172	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.6	5.3	5.06	5.12	5.22	5.21	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	118	146	174	190	158	127	AAS 3111B
5.3	Manganese as Mn	mg/kg	1020	920	1020	980	890	896	AAS APHA 3111 B
5.4	Iron as Fe	%	2.62	2.5	2.12	2.46	3.02	2.33	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	56	52	46	62	44	49.9	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	42	58	38	44	54	45.9	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	158	174	190	200	186	179	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	2.8	2.4	1.9	1.78	2.06	1.94	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	Benthic Organisms								
6.1	Macrobenthos	--	Polychaete worms Snails Echinoderms	Polychaeteworms Decapods Amphipods Echinoderms	Polychaete Worms Bivalves Crabs Amphipods	Chaetognathes Bivalves Anthozoans	Amphipods Isopods Decapods Echinoderms Crabs	Polychaete worms Echinoderms Isopods Anthozoans	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Copepods Nematodes	Nematodes Copopods	Nematodes Hydrozoa	Nematodes Bryozoans Copepods	Nematodes	Namatodes Foraminiferans Hydrozoa	APHA (22nd Edi) 10500-C
2	Population	no/m^2	336	385	529	337	288	440	APHA (22nd Edi) 10500-C

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	7.95	8.1	8.02	8.15	8.15	8.3	8.22	8.42	8.14	8.28	8.08	8.14	IS3025(P11)83Re.02
2	Temperature	°C	31	32	29	30	30	30	27	28	29	30	28	29	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	12	14	10	16	18	21	26	34	20	32	26	30	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL *	BDL *	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.4	4.6	5.6	4.4	6	5	5.6	4.8	5.4	4.8	5.4	4.6	IS3025(P38)89Re.99
6	Salinity	ppt	40.6	41.4	40.9	41.3	37.8	38.1	37.6	38	38.4	39.2	39.2	40.4	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	0.76	BDL*	0.32	BDL *	0.26	BDL*	0.44	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.72	0.78	0.42	0.46	0.56	0.62	0.5	0.56	0.44	0.5	0.518	0.607	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.056	0.044	0.02	0.014	0.034	0.024	0.022	0.02	0.024	0.038	0.036	0.025	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.28	0.4	0.21	0.34	0.44	0.6	0.54	0.84	0.38	0.46	0.48	0.619	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.09	0.074	0.11	0.062	0.132	0.094	0.32	0.18	0.26	0.16	0.45	0.27	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	1.8	2.4	0.55	0.53	0.13	0.82	1.08	1.4	0.86	0.998	1.034	1.251	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	2.2	BDL*	2.8	BDL*	0.914	1.244	0.502	0.618	0.416	0.72	0.42	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	48600	49690	47960	48340	47270	47780	46890	47560	47820	48360	45966	46874	IS3025(P16)84Re.02
15	COD	mg/L	12	14	18	24	12	16	14	18	16	20	9	24	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.64	0.44	0.56	0.44	0.62	0.48	0.52	0.48	0.54	0.5	0.5	0.42	SOP – PLPL - 07
A	**Flora and Fauna**														
17	Primary productivity	mgC/L /day	2.8	1.1	1.8	0.675	2.7	1.125	1.8	0.675	1.12	0.338	1.688	0.563	APHA (22nd Edi) 10200-J

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Lab Manager (Q)

B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	4.4	4	1.44	0.56	3.124	0.267	1.469	0.134	1.7	0.721	1.362	0.294	APHA (22nd Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	1.13	2.11	BDL *	2.312	0.363	0.951	0.123	0.363	0.806	0.959	APHA (22nd Edi) 10200-H
18.3	Cell Count	Unit x 10^3/L	330	290	212	56	323	77	184	17	205	35	215	40	APHA (22nd Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Green algae	Diatom	Green algae	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22nd Edi) 10200-H
			Pandorina sp.	*Rhilosoleniass sp.*	*Scenedesmus sp.*	*Navicula sp.*	*Biddulphia sp.*	*Thallasionema sp.*	*Gomphonema sp.*	*Navicula sp.*	*Thallasiosira sp*	*Nitzschia sp.*	*Rhizosolenia sp.*	*Nitzschia sp.*	
			Scenedesmus sp.	*Melosira sp.*	Diatom	*Fragillaria sp.*	*Cymbella sp.*	*Pinnularia sp.*	*Rhizosolenia sp.*	*Fragillaria sp.*	*Rhizosolenia sp.*	*Fragillaria sp.*	*Synedra sp.*	*Pinnularia sp.*	
			Diatom	*Navicula sp.*	*Nitzschia sp.*	*Pleurosigma sp.*	*Pleurosigma sp.*	*Rhizosolenia sp.*	*Synedra sp.*	*Pinnularia sp.*	*Pleurosigma sp.*	*Biddulphia sp.*	*Navicula sp.*	*Fragillaria sp.*	
			Nitzschia sp	--	*Navicula sp.*	Green algae	Cyanophyceae	Green Algae	*Nitzschia sp.*	Cyanophyceae	*Nitzschia sp.*	*Synedra sp.*	*Coscinodiscus sp.*	*Biddulphia sp.*	
			Coscinodiscus sp	--	*Coscinodiscus sp.*	*Chlorella sp.*	*Oscillatoria a sp.*	*Chlorella sp.*	*Coscinodiscus sp.*	*Chlorella sp.*	*Synedra sp.*	Green Algae	*Skeletonema sp.*	Cyanophyceae	
			Fragillaria sp.	--	*Fragillaria sp.*	--	*Spirulina sp.*	*Oedogonium sp.*	Green Algae	*Oscillatoria a sp.*	*Coscinodiscus sp.*	*Chlorella sp.*	Green Algae	*Anabaena sp.*	
			--	--	*Acanthes sp.*	--	--	*Pandorina sp.*	Chlorella sp.	*Anabaena sp.*	*Green Algae*	*Pediastrum sp.*	*Spirogyra sp.*	*Nostoc sp.*	
			--	--	--	--	--	--	Pandorina sp.	--	*Pandorina sp.*	--	*Pediastrum sp.*	--	
			--	--	--	--	--	--	Spirogyra sp.	--	*Chlorella sp.*	--	*Hydrodictyon sp.*	--	
			--	--	--	--	--	--	--	--	*Cyanophyceae*	--	Desmids	--	
			--	--	--	--	--	--	--	--	*Nostoc sp.*	--	*Cosmarium sp.*	--	
C	**Zooplanktons**														
19.1	Abundance (Population)	no/m^2	560	280	250	180	290	110	160	40	150	80	260	60	APHA (22nd Edi) 10200-G
19.2	Name of Group Number and name of group species of each group	--	*Gastropods*	*Ostracods*	*Gastropods*	*Ostracods*	Copepods	Gastropods	Copepods	Gastropods	Copepods	Decapods	Copepods	Copepods	APHA (22nd Edi) 10200-G
			Nematodes	*Gastropods*	*Nematods*	*Polychaete worms*	Decapods	Polychaete Worms	Cyclops	Ctenophores	Molluscans	Bivalves	Cyclops	Polychaete worms	

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			Amphipods	--	*Chaetognaths*	*Snails*	Ostracods	--	Ostracods	Decapods	Ostracods	Nematodes	Decapods	Ostracods	
			Chaetognaths	--	--	--	Krill	--	Krill	--	Polychaete Worms	--	Krill	--	
			--	--	--	--	--	--	Polychaete Worms & Gastropods	--	--	--	Polychaete worms	--	
19.3	Total Biomass	ml/100 m^3	31	22	25	11	97	17	35	4	57	11	69	11	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	1495	1318	1586	1227	1886	1430	1580	1140	1650	1390	1830	1630	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	Test Method
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.81	0.71	0.61	0.64	0.66	0.546	FCO:2007
2	Phosphorus as P	mg/kg	110	138	162	200	198	148	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	6.8	6.2	5.7	5.2	5.4	5.39	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	110	98	114	128	118	131	AAS 3111B
5.3	Manganese as Mn	mg/kg	580	690	824	990	788	789	AAS APHA 3111 B
5.4	Iron as Fe	%	2.9	2.7	2.94	2.14	2.56	2.09	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	38	50.2	44.6	52.4	48.44	46.77	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	64	44	32.8	40.2	36.68	36.39	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	140	153	174	210	196	161	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	2.6	2.1	1.62	1.02	1.44	1.8	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	Benthic Organisms								
6.1	Macrobenthos	--	Polychaete worms Snails Crustaceans	Polychaeteworms Crustaceans Echinoderms	Bivalves Isopods Mysids Polychaete Worms Anthozoans Lobsters	Amphipods Decapods Crustaceans Lobsters	Polychaete Worms Decapods Crustaceans Crabs	Crabs Mysids Decapods Bivalves Polychaete worms	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Nematodes	Nematodes Forminiferans	Bryozoan Copepods Ciliates	Nematods Ostracodes Hydrozoa	Nematods Foraminiferans	Gastrotriches Ostracods	APHA (22nd Edi) 10500-C
2	Population	no/m^2	288	377	476	385	433	385	APHA (22nd Edi) 10500-C

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.07	8.17	8.15	8.17	8.05	8.18	8.19	8.23	7.95	8.14	8.1	8.18	IS3025(P11)83Re.02
2	Temperature	°C	31	32	30	31	29	30	28	29	28	29	29	30	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	14	21	20	26	14	18	18	24	16	22	18	22	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL *	BDL *	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	5.6	4.4	5.8	5	5.4	4.8	5.4	4.6	5.6	4.6	5.6	4.8	IS3025(P38)89Re.99
6	Salinity	ppt	37.5	38.4	38.6	39.2	38.1	38.6	37.8	38	37.8	38.3	38.1	39.2	APHA (22ndEdi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	0.44	BDL *	0.16	BDL*	0.12	BDL*	BDL*	BDL*	APHA(22ndEdi)5520D
8	Nitrate as NO_3	mg/L	0.58	0.84	0.68	0.79	0.36	0.48	0.48	0.62	0.52	0.78	0.681	0.784	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.066	0.052	0.023	0.018	0.014	0.026	0.022	0.03	0.046	0.032	0.063	0.05	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.18	0.32	0.11	0.28	0.32	0.58	0.34	0.46	0.26	0.5	0.295	0.554	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.058	0.084	0.081	0.102	0.13	0.15	0.15	0.18	0.14	0.16	0.54	0.585	APHA(22ndEdi) 4500 C
12	Total Nitrogen	mg/L	1.6	2.7	0.81	1.1	0.69	1.08	0.86	1.12	0.826	1.32	1.039	1.189	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	1.8	BDL*	BDL*	BDL*	BDL*	BDL*	2.6	BDL*	2.4	BDL*	1.4	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	43621	44511	44860	45380	43660	44270	43880	44220	43860	44428	43186	43828	IS3025(P16)84Re.02
15	COD	mg/L	18	12	16	20	24	30	24	28	22	28	24	28	APHA(22ndEdi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.88	0.56	0.66	0.52	0.64	0.48	0.58	0.5	0.66	0.54	0.82	0.58	SOP – PLPL - 07
A	**Flora and Fauna**														
17	Primary productivity	mgC/L	4.0	2.6	2.25	1.12	2.25	0.675	2.02	0.9	1.68	0.113	1.35	0.45	APHA (22nd Edi)

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

		/day													10200-J
B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	3.87	3.6	1.55	1.34	2.99	0.347	1.469	0.133	1.28	0.187	1.682	0.107	APHA (22nd Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	1.03	1.24	BDL*	2.232	0.849	2.44	1.03	2.39	0.598	2.02	APHA (22nd Edi) 10200-H
18.3	Cell Count	Unit x 10^3/L	210	190	285	68	312	42	204	31	215	20	227	29	APHA (22nd Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22nd Edi) 10200-H
			Thalassiasira sp.	*Biddulphia sp.*	*Thalassionema sp.*	*Biddulphia sp.*	*Nitzschia sp.*	*Fragillaria sp.*	*Nitzschia sp.*	*Fragillaria sp.*	Nitzschia sp.	Navicula sp.	*Nitzschia sp.*	*Navicula sp.*	
			Nitzschia sp.	*Navicula sp.*	*Nitzschia sp.*	*Fragillaria sp.*	*Fragillaria sp.*	*Coscinodiscus sp.*	*Fragillaria sp.*	*Biddulphia sp.*	Coscinodiscus sp.	Nitzschia sp.	*Synedra sp.*	*Fragillaria sp.*	
			Fragillaria sp.	*Melosira sp.*	*Fragillaria sp.*	*Cyclotella sp.*	*Pinnularia sp.*	*Pleurosigma sp.*	*Asterionella sp.*	*Pinnularia sp.*	Synedra sp.	Biddulphia sp.	*Coscinodiscus sp.*	*Cyclotella sp.*	
			Amphora sp.	--	*Coscinodiscus sp.*	--	*Coscinodiscus sp.*	Cyanophyceae	*Gyrosigma sp.*	*Thallasiosira sp.*	Pleurosigma sp.	Fragillaria sp.	*Pleurosigma sp.*	*Tabellaria sp.*	
			Green algae	--	Green algae	--	*Cymbella sp.*	*Oscillatoria sp.*	Green Algae	Green Algae	Navicula sp.	Skeletonema sp.	*Thallasiosira sp.*	Cyanophyceae	
			Pediastrum sp.	--	*Pediastrum sp.*	--	Green Algae	--	*Pandorina sp.*	*Pandorina sp.*	*Thallasiosira sp*	Pandorina sp.	*Pinnularia sp.*	*Oscillatoria sp.*	
					Cynophyceae		Ankistrodesmus sp.		*Spirogyra sp.*	*Pediastrum sp.*	Green Algae	Desmids	Green Algae	*Nostoc sp.*	
					Oscillatoria sp.		Pediastrum sp.		*Desmids*	*Volvox sp.*	Chlorella sp.		*Chlorella sp.*	Green Algae	
									Cosmarium sp.		Pandorina sp.		*Pandorina sp.*	*Chlorella sp.*	
											Cyanophyceae		*Ulothrix sp.*		
											Oscillatoria sp.		Desmids		
													Closterium sp.		
C	**Zooplanktons**														
19.1	Abundance (Population)	no/m^2	320	220	310	130	240	90	210	70	167	50	280	40	APHA (22nd Edi) 10200-G

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Lab Manager (Q)

19.2	Name of Group Number and name of group species of each group	--	*Copepods* *Gastropods* *Polychaetes* *Fish larvae* -- --	*Bivalves* *Copepods* -- -- -- --	*Copepods* *Gastropods* *Polychaete worms* *Decapods* -- --	*Bivalves* *Copepods* *Molluscans* -- -- --	Gastropods Copepods Mysids Ostracods Krill --	Polychaete Worms Bivalves Molluscans -- -- --	Gastropods Copepods Decapods Polychaete Worms Cyclops & Ctenophores --	Cyclops Krill Ostracods -- -- --	*Gastropods* *Bivalves* *Copepods* *Copepods* *Polychaete Worms* --	*Molluscans* *Platinelminthes* *Ostracods* -- -- --	Copepods Krill Decapods Crustaceans Ostracods Fish egg	Copepods Gastropods -- -- -- --	APHA (22nd Edi) 10200-G
19.3	Total Biomass	ml/100 m^3	22	11	69	19	86	21	66	19	48	12	56	5	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	2331	1895	2077	1981	2100	1850	2130	1620	2210	1870	1760	1580	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi. 2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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RESULTS OF SEDIMENT ANALYSIS [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015 SEDIMENT	May 2015 SEDIMENT	June 2015 SEDIMENT	July 2015 SEDIMENT	August 2015 SEDIMENT	September 2015 SEDIMENT	Test Method
1	Organic Matter	%	0.64	0.44	0.52	0.5	0.48	0.554	FCO:2007
2	Phosphorus as P	mg/kg	90	156	182	110	144	145	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.4	5.8	5.24	5.86	5.36	5.71	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	128	112	129	142	136	137	AAS 3111B
5.3	Manganese as Mn	mg/kg	840	810	936	1020	960	919	AAS APHA 3111 B
5.4	Iron as Fe	%	2.6	2.5	2.8	2.92	2.74	2.25	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	28	41.6	32.4	36.4	38.7	34.35	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	48	40	48.6	50.1	44.24	44.36	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	156	162	193	162	186	181	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	2.7	2.5	1.96	1.22	1.38	1.07	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	Benthic Organisms								
6.1	Macrobenthos	--	Crabs Snails Crustaceans	Bivalves Snails Crustaceans	Chaetognathes Decapods Bivalves Echinoderms	Echinoderms Decapods Bivalves Crabs Turbellaria	Echinoderms Bivalves Crab Isopods	Polychaete worms Echinoderms Isopods Decapods	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	copepods Nematodes	Nematodes Copopods Ostracods	Ostracods Hydrozoa	Ostracods Foraminiferans Hydrozoa	Foraminiferans Copepods	Nematodes Copepods	APHA (22nd Edi) 10500-C
2	Population	no/m^2	251	314	411	357	397	377	APHA (22nd Edi) 10500-C

H. T. Shah
Lab Manager

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Dr. ArunBajpai
Lab Manager (Q)

RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	7.9	8.03	7.95	8.05	7.9	8.01	7.85	7.98	7.82	8.1	8.04	8	IS3025(P11)83Re.02
2	Temperature	°C	30	31	30	30	28	29	29	30	29	30	28	29	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	16	22	18	20	12	14	18	22	14	16	16	20	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.8	4.6	6	4.8	5.2	4.6	5.4	4.8	5.6	4.6	5.4	4.6	IS3025(P38)89Re.99
6	Salinity	ppt	45.9	46.1	43.9	44.2	42.8	43.4	43.6	44.4	42.6	43.2	38.8	39.6	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.42	0.5	0.52	0.6	0.44	0.68	0.48	0.66	0.46	0.58	0.325	0.399	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.48	0.62	0.036	0.054	0.021	0.027	0.018	0.028	0.024	0.036	0.044	0.019	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.64	0.73	0.81	0.96	0.58	0.62	0.42	0.52	0.34	0.42	0.554	0.591	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.038	0.062	BDL*	BDL*	0.12	0.16	0.14	0.18	0.14	0.16	0.495	0.585	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	2.8	5.2	1.36	1.61	1.04	1.32	0.92	1.2	0.84	0.99	0.923	1.009	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	BDL*	BDL*	BDL*	BDL*	2.1	BDL*	1.8	BDL*	0.8	BDL*	1.2	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	54690	54980	52440	52980	53600	54100	51920	52890	53548	53990	42750	43320	IS3025(P16)84Re.02
15	COD	mg/L	16	26	24	32	24	26	20	24	18	22	24	28	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.72	0.52	0.6	0.43	0.72	0.32	0.68	0.44	0.7	0.58	0.54	0.62	SOP – PLPL - 07

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A	**Flora and Fauna**														
17	Primary productivity	mgC/L /day	2.92	1.06	2.475	0.99	2.925	0.45	2.47	1.125	1.463	0.337	1.463	0.113	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	3.8	2.11	2.78	0.83	3.151	0.774	1.92	0.748	1.38	0.427	1.922	0.427	APHA (22^{nd}Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	BDL*	1.75	BDL*	1.805	0.395	1.98	0.742	1.42	0.021	1.479	APHA (22^{nd}Edi) 10200-H
18.3	Cell Count	Unit x $10^3/L$	308	220	306	143	358	95	294	75	189	28	202	33	APHA (22^{nd} Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22^{nd} Edi) 10200-H
			Biddulphia sp.	*Melosira sp.*	*Biddulphia sp.*	*Biddulphia sp.*	*Nitzschia sp.*	*Navicula sp.*	*Nitzschia sp.*	*Fragillaria sp.*	*Coscinodiscus sp.*	*Coscinodiscus sp.*	*Asterionella sp.*	*Fragillaria sp.*	
			Pleurosigma sp.	*Biddulphia sp.*	*Pleurosigma sp.*	*Nitzschia sp.*	*Navicula sp.*	*Biddulphia sp.*	*Synedra sp.*	*Synedra sp.*	*Pinnularia sp.*	*Pinnularia sp.*	*Fragillaria sp.*	*Navicula sp.*	
			Nitzschia sp.	*Nitzschia sp.*	*Thalassionema sp.*	*Pleurosigma sp.*	*Rhizosolenia sp.*	*Thallasiosira sp.*	*Rhizosolenia sp.*	*Cyclotella sp.*	*Gyro sigma sp.*	*Nitzschia sp.*	*Navicula sp.*	*Nitzschia sp.*	
			Thalassiosira sp.	--	*Fragillaria sp.*	*Thalassionema sp.*	*Asterionella sp.*	Green Algae	*Coscinodiscus sp.*	*Cheatoceros sp.*	*Thallasiosira sp*	*Synedra sp.*	*Synedra sp.*	*Gyrosigma sp.*	
			Fragillaria sp.	--	Green algae	--	Synedra sp.	*Chlorella sp.*	*Biddulphia sp.*	Green Algae	*Navicula sp.*	*Skeletonema sp.*	*Coscinodiscus sp.*	Cyanophyceae	
			Melosira sp.	--	*Chlorella sp.*	--	*Cyclotella sp.*	*Scenedesmus sp.*	*Cocconeis sp.*	*Chlorella sp.*	Green Algae	Desmids	*Cymbella sp.*	*Oscillatoria sp.*	
			--	--	--	--	*Gyrosigma sp.*	--	*Skeletonema sp.*	*Hydrodictyon sp.*	Chlorella sp.	Cosmarium sp.	*Pleurosigma sp.*	Desmids	
			--	--	--	--	*Cyanophyceae*	--	*Green Algae*	*Spirogyra sp.*	Pandorina sp.	--	Cyanophyceae	*Closterium sp.*	
			--	--	--	--	*Oscillatoria sp.*	--	*Chlorella sp.*	--	Cyanophyceae	--	*Oscillatoria sp.*	--	
			--	--	--	--	*Spirulina sp.*	--	*Volvox sp.*	--	Oscillatoria sp.	--	*Nostoc sp.*	--	
			--	--	--	--	*Green Algae*	--	*Pandorina sp.*	--	--	--	Green Algae	--	
			--	--	--	--	*Chlorella sp.*	--	*Pediastrum sp.*	--	--	--	*Chlorella sp.*	--	
			--	--	--	--	*Volvox sp.*	--	--	--	--	--	*Pediastrum sp.*	--	
C	**Zooplanktons**														

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19.1	Abundance (Population)	no/m^2	298	198	370	120	210	80	240	60	217	83	240	80	APHA (22nd Edi) 10200-G
19.2	Name of Group Number and name of group species of each group	--	*Echinoderms*	*Polychaete*	*Echinoderms*	*Polychaete worms*	Bivalves	Polychaete Worms	Decapods	Polychaete	Copepods	Molluscans	Nematodes	Polychaete worms	APHA (22nd Edi) 10200-G
			Copepods	*Bivalves*	*Copepods*	*Bivalves*	Nematodes	Copepods	Copepods	Lamellibranches	Decapods	Iospods	Copepods	Isopods	
			Isopods	--	*Isopods*	*Gastropods*	Gastropods	--	Ostracods	Gastropods	Polychaete Worms	Decapods	Krill	--	
			Gastropods	--	*Gastropods*	--	Mysids	--	Krill	Crustaceans	Gastropods	--	Molluscans	--	
			--	--	--	--	--	--	Ctenophores	--	Cyclops	--	--	--	
			--	--	--	--	--	--	Fish egg	--	--	--	--	--	
19.3	Total Biomass	ml/100 m^3	18	12	78	26	44	11	81	14	74	15	61	9	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	1531	1677	1610	1740	1700	1880	1880	1522	1800	1390	1470	1110	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

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RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK – N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015 SEDIMENT	May 2015 SEDIMENT	June 2015 SEDIMENT	July 2015 SEDIMENT	August 2015 SEDIMENT	September 2015 SEDIMENT	Test Method
1	Organic Matter	%	0.59	0.44	0.64	0.4	0.62	0.441	FCO:2007
2	Phosphorus as P	mg/kg	134	160	240	190	210	187	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	--
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.4	5.1	4.9	5.26	5	5.59	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	mg/kg	84	92	104	80	98	99.98	AAS 3111B
5.3	Manganese as Mn	mg/kg	940	784	810	684	720	879	AAS APHA 3111 B
5.4	Iron as Fe	%	2.6	2.3	2.32	2.48	2.52	2.12	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	mg/kg	48	33	56	42	52	35.9	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	mg/kg	56	48	52	50	58	45.9	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	mg/kg	172	156	172	150	166	1.62	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	mg/kg	2.9	2.1	1.7	2	1.96	1.88	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	Benthic Organisms								
6.1	Macrobenthos	--	Snails Amphipods Polychaete worms Crabs	Bivalves Mysids Chaetognathes	Polychaete Worms Crabs Decapods Isopods	Polychaete Worms Bivalves Decapods Echinoderms	Polychaete Worms Bivalves Echinoderms Crabds Isopods	Polychaete worms Isopods Decapods Prawn	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Copepods Nematodes	Nematodes Copopods	Nematodes Foraminiferans Ciliates	Nematodes Foraminiferans Copepods	Nematods Foraminiferans	Namatodes Foraminiferans	APHA (22nd Edi) 10500-C
2	Population	no/m^2	503	481	485	433	337	433	APHA (22nd Edi) 10500-C

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
Lab Manager (Q)

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		July 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.05	8.13	8.11	8.24	8.15	8.22	8.1	8.28	8.05	8.18	8	8.09	IS3025(P11)83Re.02
2	Temperature	°C	31	31	29	30	30	30	29	30	28	29	28	29	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	12	22	16	20	12	16	18	22	20	26	16	20	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL *	BDL *	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.6	4.8	6	5.2	5.4	5	5.6	4.8	5.8	5	5.4	4.8	IS3025(P38)89Re.99
6	Salinity	ppt	42.7	44.1	42.4	42.9	40.6	41.1	43.8	44.6	41.2	42.5	39.6	40.2	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	0.6	BDL *	BDL*	BDL*	0.2	BDL*	0.4	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	mg/L	0.81	0.99	0.66	0.94	0.84	0.88	0.78	0.96	0.58	0.72	0.34	0.414	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.081	0.086	0.041	0.056	0.024	0.042	0.038	0.068	0.03	0.054	0.026	0.011	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.4	0.56	0.56	0.7	0.72	0.86	0.66	0.7	0.5	0.62	0.221	0.351	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.056	0.077	0.096	0.11	0.11	0.13	0.092	0.1	0.088	0.096	0.495	0.63	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	2.1	3.8	1.26	1.69	1.58	1.78	1.478	1.728	1.2	1.394	0.587	0.776	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	BDL*	BDL*	BDL*	BDL*	12.4	BDL*	8.6	BDL*	6.4	BDL*	6.2	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	52105	52640	51610	51740	50680	51120	53200	53880	51240	51630	46326	47880	IS3025(P16)84Re.02
15	COD	mg/L	24	28	18	24	26	30	20	28	16	22	9	19	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.98	0.38	0.72	0.48	0.54	0.32	0.64	0.4	0.48	0.66	0.55	0.43	SOP – PLPL - 07
A	**Flora and Fauna**														
17	Primary productivity	mgC/L /day	2.1	0.8	2.02	0.9	2.925	0.225	2.25	0.45	1.8	0.563	1.125	0.338	APHA (22nd Edi) 10200-J

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Lab Manager (Q)

B	**Phytoplankton**														
18.1	Chlorophyll	mg/m^3	5.2	3.57	2.46	2.67	3.284	0.374	2.1	0.267	1.97	0.107	1.44	0.32	APHA (22nd Edi) 10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	0.12	BDL*	BDL *	2.205	0.246	2.31	0.155	1.762	0.689	1.511	APHA (22nd Edi) 10200-H
18.3	Cell Count	Unit x 10^3/L	270	205	312	169	364	87	278	69	220	55	196	42	APHA (22nd Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22nd Edi) 10200-H
			Gyrosigma sp.	*Fragillaria sp.*	*Gyrosigrea sp.*	*Fragillaria sp.*	*Rhizosolenia sp.*	*Biddulphia sp.*	*Fragillaria sp.*	*Nitzschia sp.*	*Asterionella sp.*	*Fragillaria sp.*	*Rhizosolenia sp.*	*Fragillaria sp.*	
			Navicula sp.	*Nitzschia sp.*	*Thalassionema sp.*	*Gyrosigna sp.*	*Skeletonema sp.*	*Pinnularia sp.*	*Rhizosolenia sp.*	*Melosira sp.*	*Nitzschia sp.*	*Nitzschia sp.*	*Nitzschia sp.*	*Nitzschia sp.*	
			Thalassiosira sp.	*Melosira sp.*	*Synedra sp.*	*Thalassionema sp.*	Synedra sp.	*Pleurosigma sp.*	*Nitzschia sp.*	*Pleurosigma sp.*	*Navicula sp.*	*Navicula sp.*	*Navicula sp.*	*Navicula sp.*	
			Synedra sp.	--	Green algae	--	Navicula sp.	Green Algae	*Synedra sp.*	*Cymbella sp.*	*Coscinodiscus sp.*	*Gyro sigma sp.*	*Coscinodiscus sp.*	*Gyrosigma sp.*	
			Green algae	--	*Spirogyra sp.*	--	*Cyanophyceae Navicula sp. Spirulina sp. Lyngbya sp.*	*Volvox sp.*	*Pleurosigma sp.*	Green Algae	*Pleurosigma sp.*	Cyanophyceae	*Pleurosigma sp.*	Green Algae	
			Spirogyra sp.	--	*Chlorella sp.*	--	Green Algae	--	Green Algae	*Chlorella sp.*	*Fragillaria sp.*	*Oscillatoria sp.*	*Thallasionema sp.*	*Chlorella sp.*	
			--	--	*Ankistrodesmus sp.*	--	Microcystis sp.	--	Chlorella sp.	*Pandorina sp.*	*Pinnularia sp.*	*Spirulina sp.*	Cyanophyceae	*Pandorina sp.*	
			--	--	--	--	Chlorella sp.	--	Pandorina sp.	--	*Green Algae*	--	*Oscillatoria sp.*	--	
			--	--	--	--	Pandorina sp.	--	Ulothrix sp.	--	*Ankistrodesmus sp.*	--	*Nostoc sp.*	--	
			--	--	--	--	--	--	Hydrodictyon sp.	--	*Chlorella sp.*	--	Green Algae	--	
			--	--	--	--	--	--	--	--	*Volvox sp.*	--	*Chlorella sp.*	--	
			--	--	--	--	--	--	--	--	*Hydrodictyon sp.*	--	*Pediastrum sp.*	--	
C	**Zooplanktons**														
19	Abundance	no/m^2	400	300	350	260	270	120	190	50	210	60	325	75	APHA (22nd Edi)

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.1	(Population)														10200-G
19.2	Name of Group Number and name of group species of each group	--	*Copepods*	*Decapod larvae*	*Copepods*	*Decapods*	Nematodes	Foraminiferans	Polychaete Worms	Foraminiferans	Copepods	Copepods	Polychaete worms	Copepods	APHA (22nd Edi) 10200-G
			Polychaetes	*Polychaetes*	*Polychaeworms*	*Polychaeworms*	--	Polychaete Worms	Decapods	Nematodes	Molluscans	Ostracods	Krill	Nematodes	
			Gastropods	*Ostracods*	*Gastropods*	*Ostracods*	--	--	Cyclops	Lamellibranches	Polychaete Worms	Crustaceans	Isopods	--	
			Foraminiferans	--	*Decapods*	--	--	--	Chaetognathes	--	Knill	--	Gastropods	--	
			Ctenophores	--	*Mysids*	--	--	--	Molluscans	--	Gastropods	--	--	--	
19.3	Total Biomass	ml/100 m^3	30	18	89	22	48	20	37	12	82	14	72	11	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
20.1	Total Bacterial Count	CFU/ml	1927	2177	2130	2410	2250	2500	1925	1350	1850	1430	1470	1180	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221-D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2.4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	April 2015		May 2015		June 2015		August 2015		September 2015		Test Method
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	7.99	8.11	8.06	8.17	8.1	8.13	8.14	8.2	7.99	8.05	IS3025(P11)83Re.02
2	Temperature	°C	30	31	29	30	29	30	29	30	29	30	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	16	21	14	18	22	28	18	26	20	26	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	5.4	4.6	5.6	4.4	5.4	4.6	5.6	4.8	5.8	4.6	IS3025(P38)89Re.99
6	Salinity	ppt	41.4	41.8	41.6	42	39.8	40.4	40.2	41.8	39.6	40.1	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL *	BDL *	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520 D
8	Nitrate as NO_3	mg/L	0.56	0.69	0.36	0.51	0.52	0.58	0.48	0.54	0.458	0.888	IS3025(P34)88
9	Nitrite as NO_2	mg/L	0.081	0.102	0.072	0.096	0.048	0.072	0.12	0.18	0.037	0.063	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	mg/L	0.56	0.62	0.69	0.72	0.84	0.63	0.74	0.82	0.887	1.06	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	mg/L	0.094	0.098	0.14	0.16	0.18	0.2	0.16	0.18	0.585	0.675	APHA(22nd Edi) 4500 C
12	Total Nitrogen	mg/L	3.8	4.1	1.12	1.32	1.42	1.3	1.34	1.54	1.382	2.011	IS3025(P34)88
13	Petroleum Hydrocarbon	mg/L	4	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	1.56	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	49608	51210	48710	49810	47480	48120	48020	51308	47310	47738	IS3025(P16)84Re.02
15	COD	mg/L	18	24	24	31	18	20	16	20	24	28	APHA(22nd Edi) 5520-D Open Reflux
16	Oxidisable Particular Organic Carbon	%	0.76	0.42	0.46	0.3	0.49	0.24	0.68	0.4	0.52	0.32	SOP – PLPL - 07
A	**Flora and Fauna**												
17	Primary productivity	mgC/L/day	3.1	1.2	1.35	0.45	2.475	1.013	1.91	0.675	1.575	0.225	APHA (22nd Edi) 10200-J
B	**Phytoplankton**												
18.	Chlorophyll	mg/m^3	3.39	3.81	1.28	0.67	2.67	0.481	1.7	0.427	1.362	0.187	APHA (22nd Edi)

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1													10200-H
18.2	Phaeophytin	mg/m^3	BDL*	BDL*	1.3	1.91	BDL*	2.099	1.65	1.23	0.844	1.77	APHA (22nd Edi) 10200-H
18.3	Cell Count	Unit x 10^3/L	225	182	179	93	321	40	245	47	225	31	APHA (22nd Edi) 10200-H
18.4	Name of Group Number and name of group species of each group	--	Diatom	Diatom	Diatom	Diatom	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	APHA (22nd Edi) 10200-H
			Coscinodiscus sp.	*Coscinodiscus sp.*	*Coscinodiscus sp.*	*Coscinodiscus sp.*	*Nitzschia sp.*	*Cymbella sp.*	*Gyro sigma sp.*	*Amphora sp.*	*Rhizosolenia sp.*	*Thallasionema sp.*	
			Melosira sp.	*Asterionalla sp.*	*Nitzschia sp.*	*Asterionella sp.*	*Gomphonema sp.*	*Nitzschia sp.*	*Pinnularia sp.*	*Coscinodiscus sp.*	*Nitzschia sp.*	*Fragillaria sp.*	
			Nitzschia sp.	*Navicula sp.*	*Synedra sp.*	*Navicula sp.*	*Pleurosigma sp*	*Synedra sp.*	*Synedra sp.*	*Navicula sp.*	*Navicula sp.*	*Synedra sp.*	
			Synedra sp.	Cyanophyceae	*Thalassionema sp.*	*Nitzschia sp.*	*Rhizosolenia sp.*	Green Algae	*Nitzschia sp.*	*Synedra sp.*	*Thallasionema sp.*	*Pleurosigma sp.*	
			Thalassiosira sp.	*Oscillatoria sp.*	*Biddulphia sp.*	--	Cyanophyceae	*Chlorella sp.*	*Thallasiosira sp*	*Fragillaria sp.*	*Coscinodiscus sp.*	*Asterionella sp.*	
			Biddulphia sp.	--	*Cynbella*	--	*Oscillatoria sp.*	--	*Pleurosigma sp.*	Green Algae	*Fragillaria sp.*	Cyanophyceae	
			--	--	--	--	*Desmids*	--	*Cyanophyceae*	Chlorella sp.	Cyanophyceae	*Oscillatoria sp.*	
			--	--	--	--	*Cosmarium sp.*	--	*Oscillatoria sp.*	Pandorina sp.	*Oscillatoria sp.*	Desmids	
			--	--	--	--	*Closterium sp.*	--	*Spirulina sp.*	Pediastrum sp.	*Nostoc sp.*	*Closterium sp.*	
			--	--	--	--		--	--	Green Algae	Green Algae	--	
			--	--	--	--		--	--	Chlorella sp.	*Chlorella sp.*	--	
			--	--	--	--		--	--	Volvox sp.	*Volvox sp.*	--	
C	**Zooplanktons**												
19.1	Abundance (Population)	no/m^2	620	460	480	280	210	130	250	100	280	150	APHA (22nd Edi) 10200-G
19.2	Name of Group Number and name of group species of each group	--	*Polychaetes*	*Bivalves*	*Polychaeteworms*	*Bivalves*	Nematodes	Polychaete Worms	Copepods	Copepods	Copepods	Isopods	APHA (22nd Edi) 10200-G
			Chaetognaths	*Snails*	*Chaetognaths*	*Isopods*	Gastropods	Bryozoans	Krill	Polychaete Worms	Decapods	Hydrozoans	
			Gastropods	*Molluscans*	*Gastropods*	*Hydrozoans*	Muds Skipper	Snail	Gastropods	Crustaceans	Nematodes	Namatodes	
			Bivalves	*Hydrozoans*	*Bivalves*	--	Bivalves	Hydrozoans	Decapods	--	Isopods	--	
			--	*Isopods*	*Decapods*	--	--	--	Polychaete Worms	--	Krill	--	

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									& Ostracods				
19.3	Total Biomass	ml/100 m^3	27	12	36	17	102	28	89	16	75	9	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**												
20.1	Total Bacterial Count	CFU/ml	2009	1927	2800	1825	2560	2240	1710	1280	1590	1320	IS 5402:2002
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	APHA(22ndEdi)9221 -D
20.3	Ecoli	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS:1622:1981Edi.2. 4(2003-05)
20.4	Enterococcus	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 15186 :2002
20.5	Salmonella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-3)
20.6	Shigella	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 1887 (P-7)
20.7	Vibrio	/ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	IS : 5887 (P-5)

H. T. Shah
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POLLUCON LABORATORIES PVT. LTD. SURAT-3

Dr. ArunBajpai
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RESULTS OF ETP WATER OUTLET

SR. NO.	PARAMETERS	UNIT	Liquid Terminal ETP Outlet						TEST METHOD
			April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	
1	Colour	Co-pt	50	40	20	30	30	20	IS3025(P4)83Re.02
2	pH	--	6.7	7.1	6.56	6.92	7.08	7.17	IS3025(P11)83Re.02
3	Temperature	°C	32	31	30	30	30	30	IS3025(P9)84Re.02
4	Total Suspended Solids	mg/L	40	38	20	28	24	26	IS3025(P17)84Re.02
5	Total Dissolved Solids	mg/L	1890	1890	1562	1909	1960	2024	IS3025(P16)84Re.02
6	COD	mg/L	84	92	98	82	92	96	APHA(22nd Edi) 5520-D Open Reflux
7	BOD (3 Days @ 27 °C)	mg/L	30	26	28	18	20	24	IS 3025 (P44)1993Re.03Edition2.1
8	Chloride as Cl	mg/L	589	587	560	390	540	584	IS3025(P32)88Re.99
9	Oil & Grease	mg/L	0.8	0.4	BDL*	0.6	0.2	1	APHA(22nd Edi)5520D
10	Sulphate as SO_4	mg/L	174	160	150	220	190	167	APHA(22nd Edi)4500 SO_4 E
11	Ammonical Nitrogen as NH_3	mg/L	2.1	3.1	4.4	5.6	3	1.75	IS3025(P34)88Cla.2.3
12	% Sodium as Na	%	42	45.56	46.19	48.44	44.8	49.26	AAS APHA(22nd Edi) 3500 NA B/ Flame Photometer
13	Nickel as Ni	mg/L	0.014	BDL*	BDL*	BDL*	BDL*	0.018	AAS APHA(22nd Edi)3111 B
14	Phenolic Compound	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS3025(P43)92Re.03
15	SAR	--	4.6	6.02	5.4	5.8	BDL*	8.88	By Calculation
16	Total Chromium as Cr^{+3}	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS 3111B
17	Hexavalent Chromium as Cr^{+6}	mg/L	BDL*	BDL*	0.018	BDL*	BDL*	BDL*	APHA(22nd Edi)3500Cr B Colorimetric method
18	Copper as Cu	mg/L	0.018	0.011	BDL*	0.012	0.01	0.01	AAS APHA(22nd Edi)3111 B
19	Lead as Pb	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA(22nd Edi)3111 B
20	Sulphide as S	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi) 4500-S
21	Mercury as Hg	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
22	Zinc as Zn	mg/L	0.066	0.031	0.026	0.042	0.03	0.024	AAS APHA(22nd Edi)3111 B
23	Cadmium as Cd	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA(22nd Edi)3111 B
24	Cyanide as CN	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)4500CN E
25	Arsenic as As	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA 3114 B
26	Fluoride as F	mg/L	0.72	0.8	0.62	0.74	0.66	BDL*	APHA(22nd Edi) 4500 F D SPANDS
27	Insecticides/Pesticides	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	GC MS

*Below detection limit

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POLLUCON LABORATORIES PVT. LTD. SURAT-3

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RESULT OF AMBIENT AIR QUALITY MONITORING

Location & Parameter	Unit	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	Test Method
T1 TERMINAL								
Respirable Particulate Matter (PM_{10})	$\mu g/m^3$	75.26	72.81	76.16	79.38	82.88	75.96	IS:5182(P23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	41.80	36.60	41.73	40.87	40.29	38.96	Gravimetric- CPCB - Method (Vol.I,May-2011)
Sulphur Dioxide as SO_2	$\mu g/m^3$	14.27	15.20	15.32	15.45	14.66	11.62	IS:5182(PII):Improved West and Gaeke
Oxides of Nitrogen as NO_2	$\mu g/m^3$	32.09	33.41	34.85	33.22	33.14	30.58	IS:5182(PVI): Jacob & Hochheiser modified (NaOH-NaAsO2) Method
Carbon Monoxide as CO	mg/m^3	0.45	0.51	0.55	0.53	0.51	0.44	NDIR Digital Gas Analyzer
Hydrocarbon as CH_4	mg/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	SOP: HC: GC/GCMS/Gas analyzer
Benzene as C_6H_6	$\mu g/m^3$	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 5182 (Part XI):2006/CPCB Method
NEAR FIRE STATION								
Respirable Particulate Matter (PM_{10})	$\mu g/m^3$	67.94	70.59	75.37	86.26	85.74	80.70	IS:5182(P23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	39.10	35.73	40.87	46.72	44.57	41.56	Gravimetric- CPCB - Method (Vol.I,May-2011)
Sulphur Dioxide as SO_2	$\mu g/m^3$	17.40	18.77	18.84	19.35	17.37	15.52	IS:5182(PII):Improved West and Gaeke
Oxides of Nitrogen as NO_2	$\mu g/m^3$	31.13	34.23	34.21	34.67	34.31	32.53	IS:5182(PVI): Jacob & Hochheiser modified (NaOH-NaAsO2) Method
Carbon Monoxide as CO	mg/m^3	0.27	0.30	0.32	0.35	0.32	0.33	NDIR Digital Gas Analyzer
Hydrocarbon as CH_4	mg/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	SOP: HC: GC/GCMS/Gas analyzer
Benzene as C_6H_6	$\mu g/m^3$	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 5182 (Part XI):2006/CPCB Method
PUB /ADANI HOUSE								
Respirable Particulate Matter (PM_{10})	$\mu g/m^3$	67.29	68.65	62.39	70.67	68.94	67.06	IS:5182(P23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	39.34	36.37	29.82	33.80	31.35	30.89	Gravimetric- CPCB - Method (Vol.I,May-2011)
Sulphur Dioxide as SO_2	$\mu g/m^3$	14.54	15.30	17.00	16.95	16.68	12.08	IS:5182(PII):Improved West and Gaeke
Oxides of Nitrogen as NO_2	$\mu g/m^3$	29.05	31.77	31.45	29.89	29.83	28.03	IS:5182(PVI): Jacob & Hochheiser modified (NaOH-NaAsO2) Method
Carbon Monoxide as CO	mg/m^3	0.37	0.44	0.42	0.40	0.40	0.42	NDIR Digital Gas Analyzer
Hydrocarbon as CH_4	mg/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	SOP: HC: GC/GCMS/Gas analyzer
Benzene as C_6H_6	$\mu g/m^3$	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 5182 (Part XI):2006/CPCB Method

H. T. Shah
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POLLUCON LABORATORIES PVT. LTD. SURAT-3

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RESULT OF AMBIENT AIR QUALITY MONITORING

Location & Parameter	Unit	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	Test Method
AIR STRIP								
Respirable Particulate Matter (PM_{10})	$\mu g/m^3$	71.09	71.08	65.95	69.93	70.38	69.70	IS:5182(P23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	33.14	35.41	30.67	31.55	30.69	29.85	Gravimetric- CPCB - Method (Vol.I,May-2011)
Sulphur Dioxide as SO_2	$\mu g/m^3$	13.19	14.08	12.28	12.21	13.98	11.70	IS:5182(PII):Improved West and Gaeke
Oxides of Nitrogen as NO_2	$\mu g/m^3$	29.83	31.34	28.26	28.06	29.70	27.84	IS:5182(PVI): Jacob & Hochheiser modified (NaOH-NaAsO2) Method
Carbon Monoxide as CO	mg/m^3	0.29	0.24	0.24	0.26	0.27	0.26	NDIR Digital Gas Analyzer
Hydrocarbon as CH_4	mg/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	SOP: HC: GC/GCMS/Gas analyzer
Benzene as C_6H_6	$\mu g/m^3$	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	IS 5182 (Part XI):2006/CPCB Method
NEAR SHANTIVAN COLONY'S STP								
Respirable Particulate Matter (PM_{10})	$\mu g/m^3$	62.36	63.99	58.03	64.40	62.50	67.60	IS:5182(P23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	33.13	32.74	28.50	32.12	31.60	32.27	Gravimetric- CPCB - Method (Vol.I,May-2011)
Sulphur Dioxide as SO_2	$\mu g/m^3$	12.61	13.56	13.09	16.63	14.03	14.31	IS:5182(PII):Improved West and Gaeke
Oxides of Nitrogen as NO_2	$\mu g/m^3$	28.60	26.92	29.13	29.87	28.02	29.29	IS:5182(PVI): Jacob & Hochheiser modified (NaOH-NaAsO2) Method

Note: Monthly average is calculated from result of 24 hourly &twice in a week monitoring.

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RESULTS OF NATIONAL AMBIENT AIR QUALITY MONITORING

WEST PORT		T1 TERMINAL	NEAR FIRE STATION	PUB /ADANI HOUSE	AIR STRIP	NEAR SHANTIVAN COLONY'S STP	METHOD OF MEASUREMENT
TEST PARAMETER	**UNIT**	**08/04/2015**	**08/04/2015**	**08/04/2015**	**09/04/2015**	**07/04/2015**	
Respirable Particulate Matter (PM10)	µg/m^3	92.92	78.82	55.50	73.11	57.50	IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter (PM 2.5)	µg/m^3	51.45	45.03	44.14	35.54	36.23	Gravimetric- CPCB - Method (Vol.I,May-2011)
Lead as Pb	µg/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Benzo (a) Pyrene (BaP)-particulate phase only	ng/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Arsenic as As	ng/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Nickel as Ni	ng/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Carbon Monoxide as CO	mg/m^3	0.34	0.16	0.44	0.34	0.48	NDIR Digital Gas Analyzer
Benzene as C_6H_6	µg/m^3	BDL*	2.16	BDL*	BDL*	BDL*	IS 5182 (Part XI):2006/CPCB Method
Ammonia (NH3)	µg/m^3	46.54	28.44	34.53	44.73	25.52	CPCB Method (Vol.I,May-2011)
Sulphur Dioxide (SO_2)	µg/m^3	15.34	19.70	16.70	10.68	12.52	IS:5182(Part 2): Improved West and Gaeke
Oxides of Nitrogen (NO_2)	µg/m^3	41.36	30.20	36.41	24.54	26.48	IS:5182(Part 6):Modified Jacob & Hochheiser (Na-Arsenite)
Ozone as O_3	µg/m^3	21.47	25.38	22.35	19.52	18.08	IS 5182 (PART IX) 1974 / CPCB Method (Vol.I,May-2011)
Hydrocarbon as CH4	ppm	BDL*	BDL*	BDL*	BDL*	BDL*	SOP: HC: GC/GCMS/Gas analyzer

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WEST PORT		T1 TERMINAL	NEAR FIRE STATION	PUB /ADANI HOUSE	AIR STRIP	NEAR SHANTIVAN COLONY'S STP	METHOD OF MEASUREMENT
TEST PARAMETER	**UNIT**	**17/07/2015**	**17/07/2015**	**17/07/2015**	**18/07/2015**	**16/07/2015**	
Respirable Particulate Matter (PM10)	$\mu g/m^3$	86.63	79.63	54.89	67.47	62.63	IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)
Particulate Matter (PM 2.5)	$\mu g/m^3$	48.54	32.52	24.57	27.60	39.14	Gravimetric- CPCB - Method (Vol.I,May-2011)
Lead as Pb	$\mu g/m^3$	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Benzo (a) Pyrene (BaP)-particulate phase only	ng/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Arsenic as As	ng/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Nickel as Ni	ng/m^3	BDL*	BDL*	BDL*	BDL*	BDL*	CPCB Method (Vol.I,May-2011)
Carbon Monoxide as CO	mg/m^3	0.70	0.46	0.58	0.41	0.60	NDIR Digital Gas Analyzer
Benzene as C_6H_6	$\mu g/m^3$	BDL*	BDL*	BDL*	BDL*	BDL*	IS 5182 (Part XI):2006/CPCB Method
Ammonia (NH3)	$\mu g/m^3$	58.51	36.39	46.74	40.63	21.69	CPCB Method (Vol.I,May-2011)
Sulphur Dioxide (SO_2)	$\mu g/m^3$	18.80	11.23	22.78	13.73	13.58	IS:5182(Part 2): Improved West and Gaeke
Oxides of Nitrogen (NO_2)	$\mu g/m^3$	41.66	36.46	39.52	30.42	35.36	IS:5182(Part 6):Modified Jacob & Hochheiser (Na-Arsenite)
Ozone as O_3	$\mu g/m^3$	24.50	28.39	26.58	21.72	21.48	IS 5182 (PART IX) 1974 / CPCB Method (Vol.I,May-2011)
Hydrocarbon as CH4	ppm	BDL*	BDL*	BDL*	BDL*	BDL*	SOP: HC: GC/GCMS/Gas analyzer

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RESULT OF STACK MONITORING

SR. NO.	TEST PARAMETERS	Unit	#Thermic Fluid Heater (Bitumen)	#Hot Water System-1 (Liquid Terminal)	#Hot Water System-2 (Liquid Terminal)	Test Method
April 2015						
1	Particulate Matter	mg/Nm^3	28.58	42.53	36.58	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	4.68	7.42	8.34	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	28.52	32.76	26.54	IS:11255 (Part-VII):2005
May 2015						
1	Particulate Matter	mg/Nm^3	41.62	35.58	28.45	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	6.64	8.65	5.36	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	31.33	34.74	29.05	IS:11255 (Part-VII):2005
June 2015						
1	Particulate Matter	mg/Nm^3	32.75	44.56	36.74	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	7.67	6.67	8.61	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	35.60	32.56	37.80	IS:11255 (Part-VII):2005
August 2015						
1	Particulate Matter	mg/Nm^3	--	26.80	30.61	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	--	8.74	6.28	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	--	38.56	35.70	IS:11255 (Part-VII):2005
September 2015						
1	Particulate Matter	mg/Nm^3	--	18.93	24.51	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	--	6.83	5.55	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	--	36.24	32.85	IS:11255 (Part-VII):2005

*Below detection limit

Results on 11 % O_2 Correction when Oxygen is greater than 11 %

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RESULT OF DG STACK MONITORING

April 2015								
SR. NO.	**TEST PARAMETERS**	**Unit**	**D.G. Set-1* (500 KVA)**	**D.G. Set-2* (500 KVA)**	**D.G. Set-3* (500 KVA)**	**D.G. Set-4* (500 KVA)**	**D.G. Set-5* (500 KVA)**	**Test Method**
1	Particulate Matter	mg/Nm^3	24.58	32.59	29.84	21.53	36.57	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	5.86	7.85	4.34	6.74	7.5	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	24.4	26.38	34.04	30.54	32.23	IS:11255 (Part-VII):2005
July 2015								
SR. NO.	**TEST PARAMETERS**	**Unit**	**D.G. Set-1* (500 KVA)**	**D.G. Set-2* (500 KVA)**	**D.G. Set-3* (500 KVA)**	**D.G. Set-4* (500 KVA)**	**D.G. Set-5* (500 KVA)**	**Test Method**
1	Particulate Matter	mg/Nm^3	16.44	38.51	33.75	30.18	26.66	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	4.75	5.83	7.8	9.56	5.23	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	28.85	26.63	30.51	35.2	29.62	IS:11255 (Part-VII):2005

*DG sets are used as standby, so stack monitoring is done on quarterly basis.

Results on 11 % O_2 Correction when Oxygen is greater than 11 %

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MINIMUM DETECTION LIMIT [MDL]

Water parameter(mg/L)

Sr. No.	Test parameter	MDL
1	Total Suspended Solids	1
2	Oil & Grease	1
3	BOD	10
4	COD	5
6	Total Dissolved Solids	3
7	Sulphate	0.3
8	Ammonical Nitrogen	0.05
9	Nickel	0.01
10	Phenolic Compound	0.001
11	Fluoride	0.01
12	Copper	0.013
13	Sulphide	0.01
15	Cyanide	0.0001
16	Residual Chlorine	0.1
17	Boron	0.02
17	Insecticides/Pesticides	0.01
19	Nitrate Nitrogen	0.15
20	Phosphorous	0.15
21	Petroleum Hydrocarbon	0.01
22	Lead	0.005
23	Mercury	0.0005
24	Zinc	0.022
25	Cadmium	0.001
26	Arsenic	0.00015
Sediment parameter(mg/kg)		
1	Petroleum Hydrocarbon	0.2

Stack parameter		
Sr. No.	**Test parameter**	**MDL**
1	Particulate Matter (mg/Nm^3)	10
2	Sulphur Dioxide(ppm)	1.52
3	Oxides of Nitrogen (ppm)	2.65

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MINIMUM DETECTION LIMIT [MDL]

Ambient Air Parameter		
Sr. No.	**Test parameter**	**MDL**
1	Particulate Matter (PM10)	10
2	Particulate Matter (PM 2.5)	10
3	Lead as Pb ($\mu g/m^3$)	0.5
4	Benzo (a) Pyrene (BaP)- particulate phase only(ng/m^3)	0.5
5	Arsenic as As (ng/m^3)	2
6	Nickel as Ni (ng/m^3)	10
7	Carbon Monoxide as CO (mg/m^3)	1
8	Benzene as C_6H_6 ($\mu g/m^3$)	2
9	Ammonia (NH_3) ($\mu g/m^3$)	10
10	Sulphur Dioxide (SO_2) ($\mu g/m^3$)	5
11	Nitrogen Dioxide (NO_2) ($\mu g/m^3$)	5
12	Ozone as O_3 ($\mu g/m^3$)	5
13	Hydrocarbon ($\mu g/m^3$)	150

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