GOA STATE POLLUTION CONTROL BOARD
गोंय राज्य प्रदुशण नियंत्रण मंडळ

(An ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Board)

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CHAIRMAN'S MESSAGE:

Since its foundation in 1988, the GOA STATE POLLUTION CONTROL BOARD has strived to achieve a harmony between development and environmental concerns under The Air (Prevention And Control Of Pollution) Act, 1981, Water (Prevention & Control Of Pollution) Act, 1974 and The Environment (Protection) Act, 1986 as amended and their related Rules

The year under review was marked by considerable improvement in the fact that major decisions were taken to encourage the use of greener technology and eco –friendly processes coupled with environmental audit scheme that is being pursued for industries . This will help improve preservation, protection of the environment and promote sustainable development in the state of Goa. The mining & Port activities were streamlined with better dust control measures. The Port was made accountable for non compliant operations.

In its pursuit of paperless functioning, the Board has taken a decision to adopt OCMMS (On-Line Consent Management and Monitoring system) to create a more user friendly and dynamic platform for both Board and CPCB.

In continuation to the capacity building initiative of the Board, the year was also marked by the successful acceptance of 8 more Board staff to the M.Tech. Environmental Engineering Degree, through an ongoing MoU between the Board and Birla Institute of Technology (BITS)-Goa. This along with the Board's Certification to the ISO standards of ISO 9001:2015 (Quality Management Systems) , ISO 14001:2015 (Environment Management Systems) , and OHSAS 18001:2007 (Occupational Health and Safety Assessment Standard)has provided a more constructive path forward.

I also take this opportunity to extend my sincere appreciation to the Board staff and the people of Goa for sharing in our endeavour of maintaining the clean and fresh air of Goa in our march towards the future. Rest assured the Board will continuously seek and strive to improve and maintain the quality of the environment and society at large

On behalf of the Goa State Pollution Control Board, it is my pleasure in sharing the performance of the Board through this GSPCB Annual Report for the year 2017-18

Ganesh Shetgaonkar
Chairman-GSPCB

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CHAPTER 1

INTRODUCTION

1.1 GENERAL INTRODUCTION

The Goa State Pollution Control Board is an autonomous statutory organization constituted on 1st July, 1988 under the Water (Prevention & Control of Pollution) Act, 1974. Prior to that, when Goa formed part of the erstwhile Union Territory of Goa, Daman and Diu, the Central Board for the Prevention and Control of Water Pollution was performing the functions of the State Board in Goa. The Central Pollution Control Board at Ponda-Goa had established a Section Office for the purpose. The same arrangement continued till the constitution of the State Board. In the meanwhile, the Section Office was re-constituted as West Zonal Office and shifted to Baroda on 4th April, 1988. All the relevant records pertaining to Goa were transferred to the Goa State Pollution Control Board on 12th September, 1988.

The Goa State Pollution Control Board, after its constitution, established its office in the Goa Medical College Complex at Bambolim. In June 1991, the Government of Goa allotted independent premises for the Board at Patto- Panaji, where the Board shifted its' office in September 1991.

On 15th August, 2002 the Board acquired new premises on the 1st floor in Dempo Tower at Patto Plaza, Panaji and shifted its full set-up to this new premise. The office as well as the laboratory were operating from here. Subsequently, on 15th August, 2005, additional premises measuring 311.86 Sq. mt. was acquired on the 4th floor of the same building which was dedicated to the Board Laboratory.

Further the Board has plans to construct a new State of the Art building for establishing a full fledged Laboratory at Saligao by the next year.

1.2 THE BOARD OFFICE

The Goa State Pollution Control Board is presently operating from its own premises on the first floor and the fourth floor of Dempo Towers, EDC Patto Plaza, Panaji-Goa. The Offices of the Chairman, Member Secretary, Technical section, Legal section, Account section, Administrative Section, IT Section and Scientific section are located on the first floor on a built up area of 600 sq.mts and the laboratory is located on the fourth floor. The Board laboratory and entire Board office is assessed under ISO: 9001, ISO: 14001 and OHSAS: 18001. Additionally, the Board laboratory has obtained accreditations under MoEF (Ministry of Environment & forests) and NABL (national Accreditation Board for Testing & Calibration Laboratories).

Presently, there are one hundred and forty three staff employed in the Board under the various sections. The details of the staff are provided in the table below and the Organization Chart is attached as Annexure I.

Table 1.1: Staff employed in the Board with Name and Designation

SR.NO	NAME OF THE EMPLOYEE	DESIGNATION
Scientific Section		
1	Mrs. Jenica Sequeira	Scientist 'C'
2	Ms. Connie Fernandes	Scientist 'C'
3	Dr. Mohan Girap	Scientist 'C'

4	Mrs. Francisca Pereira	Scientist 'B'
5	Mr. Sanjay Kankonkar	Scientist 'B'
6	Mr. Nilesh Parsekar	Scientific Assistant
7	Mrs. Anny Dias	Scientific Assistant
8	Mrs. Livia D'silva	Scientific Assistant
9	Mr. Ganpat Naik	Scientific Assistant
10	Mrs. Edma Sheth	Scientific Assistant
11	Mrs. Joshna Mahale	Scientific Assistant
12	Mrs. Avina Pereira	Scientific Assistant
13	Mr. Chaitanya Salgoankar	Scientific Assistant
14	Mrs. Chetna Naik	Scientific Assistant
15	Mr. Ravi Naik	Scientific Assistant
16	Ms. Reshma Vaz	Scientific Assistant
17	Mr. Krishnanath Pednekar	Scientific Assistant
18	Mrs. Denza Cardozo	Scientific Assistant
19	Mr. Sajid Inamdar	Senior Laboratory Assistant
20	Mr. Waman Chari	Senior Laboratory Assistant
21	Mr. Santosh Haldankar	Senior Laboratory Assistant
22	Mr. Sanmesh Borkar	Senior Laboratory Assistant
23	Mr. Nilesh Surlekar	Senior Laboratory Assistant
24	Mr. Samir Borkar	Senior Laboratory Assistant
25	Mrs. Jocelyn Coelho	Junior Laboratory Assistant
26	Mr. Kamlesh Kavlekar	Junior Laboratory Assistant
27	Mr. Sunny Pirankar	Junior Laboratory Assistant
28	Mr. Deepak Naik	Junior Laboratory Assistant
29	Ms. Reema Kaulekar	Junior Laboratory Assistant
30	Mr. Freddy Barbosa	Junior Laboratory Assistant
31	Ms. Felsy Pereira	Junior Laboratory Assistant
32	Ms. Sophia Dias	Junior Laboratory Assistant
33	Mr. Johnny Moniz	Junior Laboratory Assistant
34	Ms. Nishtha Lolayekar	Junior Laboratory Assistant
35	Mrs. Quiteria Fernandes e Pereira	Junior Laboratory Assistant
36	Mrs. Swara Gaonkar	Junior Laboratory Assistant
37	Ms. Wilma D'costa	Junior Laboratory Assistant
38	Mr. Anthony Miranda	Junior Laboratory Assistant
39	Mr. Anil Parab	Field Assistant
40	Mr. Chandrashekar Parab	Field Assistant
41	Mr. Xawollino Rodrigues	Field Assistant
42	Mrs. Luiza D'silva	Field Assistant
43	Mrs. Milagrina Colaco	Field Assistant
44	Mr. Sidney Gracias	Field Assistant
45	Mr. Saby Fernandes	Field Assistant

46	Mrs. Sangita Korgaonkar	Laboratory Attendant
47	Mr.Ishu Vishnu Dhulapkar	Laboratory Attendant
48	Mr. Mario Fernandes	Laboratory Attendant
49	Mr. Bhuvan Borkar	Laboratory Attendant
LEGAL SECTION		
1	Mrs. Natalia Dias	Senior Law Officer
2	Mr. Constance Fernandes	Assistant Law Officer
ACCOUNTS SECTION		
1.	Mr. Devendra Arlekar	Accounts cum Administrative Officer
2.	Mr. Gautam Kamat	Assistant Accounts Officer
3.	Mr. Sulesh Naik	Accountant
4.	Mrs. Mitzi D'silva	Accounts Clerk
5.	Mrs. Nevies Miranda	Accounts Clerk
6.	Mrs. Berlyn Fernandes	Accounts Clerk
7.	Mrs. Stefanie Carvalho	Accounts Clerk
ADMINISTRATION SECTION		
1	Mrs. Tulita da Costa e Fernandes	Office Superintendent
2	Mrs. Swapna Naik	Senior Stenographer
3	Mrs. Daya Usgaonkar e Godinho	Upper Division Clerk
4	Mr. Cedric De Souza	Upper Division Clerk
5	Ms. Margaret Cardozo	Junior Stenographer
6	Mrs. Debra Pereira	Junior Stenographer
7	Mrs. Valanie Abranches	Data Entry Operator
8	Mrs. Abygale Vaz	Data Entry Operator
9	Mrs. Dorothy Fernandes	Data Entry Operator
10	Mr. Alleluia D'Mello	Data Entry Operator
11	Mrs. Francisca Auria Lobo	Lower Division Clerk
12	Mrs. Plancy Miranda	Lower Division Clerk
13	Ms. Shane Gracias	Lower Division Clerk
14	Mrs. Ana Maria Lourenco	Lower Division Clerk
15	Mr. Maison Fernandes	Lower Division Clerk
16	Mrs. Supriya Nageshkar	Lower Division Clerk
17	Ms. Joice Coutinho	Lower Division Clerk
18	Mrs. Ria Naik	Lower Division Clerk
19	Mrs. Preeti Barreto	Lower Division Clerk
20	Mrs. Suzee Fernandes	Lower Division Clerk
21	Mrs. Alisha Colaco	Lower Division Clerk
22	Mr. Umesh Kankonkar	Record Keeper
23	Mrs~~. Guadalupe D~~ias	Record Keeper
24	Mr. Lourenco Fernandes	Driver
25	Mr. Gopal Girodkar	Driver
26	Mr. Pravin Kavlekar	Driver

27	Mr. Mahesh Veluskar	Driver
28	Mr. Hemant Satarkar	Driver
29	Mr. Narayan Shirodkar	Driver
30	Mr. Savio Tino Pereira	Driver
31	Mr. Daniel Colaco	Driver
32	Mr. Sebastiao Dias	Driver
33	Mr. Conceicao Colaco	Driver
34	Mr. Derrick Dias	Multi-tasking Staff
35	Mr. Salvador Rodrigues	Multi-tasking Staff
36	Mrs. Catarina Pereira	Multi-tasking Staff
37	Mr. Roque Fernandes	Multi-tasking Staff
38	Mr. Ankush Kankonkar	Multi-tasking Staff
39	Mrs. Piedade Crasto	Multi-tasking Staff
40	Mr. Issac Lobo	Multi-tasking Staff
TECHNICAL SECTION		
1	Mr. Shivanand Salelkar	Superintending Engineer
2	Mr. Sanjeev Joglekar	Environmental Engineer
3	Mrs. Nandan Prabhudessai	Junior Env. Engineer (Civil)
4	Mr. Keshav Fadke	Junior Env. Engineer (Civil)
5	Mr. Abner Rodrigues	Junior Env. Engineer (Civil)
6	Mr. Rohan Nagvekar	Junior Env. Engineer (Civil)
7	Mr. Manoj Kudalkar	Junior Env. Engineer (Mech./Prod)
8	Mr. Amit Shanbhag	Junior Env. Engineer (Mech./Prod)
9	Mr. Pravin Faldessai	Junior Env. Engineer (Mech./Prod)
10	Mr. Sebastiao Barreto	Engg. Assistant (Civil)
11	Mr. Ashley Pereira	Engg. Assistant (Civil)
12	Mr. Vinson Quadros	Engg. Assistant (Civil)
13	Mr. Sebastiao Colaco	Engg. Assistant (Civil)
14	Mr.Liston Fernandes	Engg. Assistant (Mechanical)
IT SECTION		
1	Mrs. Indira Faldessai	Network Engg. (Software)
2	Mr.Pratik Chari	Engg. Assistant (Computers)
3	Mr. Chetan Upadhye	Network Assistant (Hardware)
4	Mr. Rajendra Naik	Network Assistant (Hardware)
STAFF TAKEN ON CONTRACT BASIS		
1	Mrs. Pranali R. Raut	Junior Law Officer
3	Mr. Shashank K. Dessai	Junior Env. Engineer (Mech.)
4	Mr. Vijay Kansekar	Junior Env. Engineer (Mech.)
5	Mr. Nikhil Caeiro	Junior Env. Engineer (Civil)
6	Miss. Lee Ann Antao	Junior Env. Engineer (Civil)
7	Mr. Bento Thomas	Junior Env. Engineer (Civil)
8	Mr. Digvijay Dessai	Junior Env. Engin eer (Civil)

9	Mr. Devesh M. Gholkar	Junior Env. Engineer (Civil)
10	Mrs. Pratiksha Prabhu	Network Engineer (Software)
11	Mr. Vinayak Talankar	Driver
12	Mr. Sailesh R. Mahale	Driver
13	Mr. Immam Shaikh	Driver
14	Mr. Ravi Kadam	Driver
15	Mr. Hariesh Vernekar	Driver
16	Mr. Vijay Halarnkar	Driver
17	Mr.Narayan Haldankar	Driver

1.3 FUNCTIONS OF THE VARIOUS SECTIONS

1.3.1 SCIENTIFIC SECTION

The Board has a full fledged laboratory, operating on the 4th floor of Dempo Towers having a built up area of about 311.86 sq.mts. The laboratory is well equipped with instruments and equipments needed for carrying out analysis of water, air and soil samples of industrial effluents, rivers, wells, etc for chemical, physical and bacteriological parameters including trace and toxic metals, pesticides and organic components. The Board laboratory is MoEF and NABL accredited and follows the procedures and guidelines in accordance with the said accreditations. The laboratory conducts periodical Internal Audits and External Audits of the Board Laboratory processes through NABL approved Auditors. Assessment of the Board laboratory is also conducted every two years under ISO: 17025 and every five years under MoEF requirement.

The Board has set up 18 ambient air quality monitoring stations and 52 water quality monitoring stations under the Central Pollution Control Board sponsored projects National Air Monitoring Programme (NAMP) and National Water Monitoring Programme (NWMP). Of the 18 air stations, 14 are outsourced to MoEF approved laboratories and 4 are operated by the GSPCB. The 49 NWMP stations are all managed by GSPCB. These stations are monitored at defined intervals and the samples collected are analysed at the Board laboratory for physical, chemical, metals, pesticides and microbiological parameters. The Board has two mobile laboratories which are being used during NAMP and NWMP monitoring programmes throughout the year.

During the year under report the Board laboratory collected 1,360 water samples from various sources such as ETP, STP, mine discharge (settling pond, mining pit, etc.), river water, well water, canal water, etc. and analyzed the same for various parameters. Also, a number of complaints regarding dust pollution have been attended to by the laboratory and have conducted ambient air quality monitoring programmes. A number of Stack emission Monitoring programmes have also been conducted during the year.

1.3.2 TECHNICAL SECTION

The Technical Section handles the consent management. The industries, hazardous waste handling facilities, health care facilities, municipal solid waste facilities, etc. are inspected and monitored on regular basis. The inspection reports and analysis reports are put up online through XGN software which are scrutinized by the Technical Committee and subsequently approved by the Chairman upon which consents under the relevant acts and rules are issued. During the year under report, 221 consents have been granted for operation and establishment of the above facilities under the Water and Air Acts, Hazardous Waste Rules.

Besides, periodic inspections to monitor red category industries are also conducted to check the compliance by the units. Samples of waste water, ambient air and stack emissions are monitored and analyzed in the Board laboratory.

Additionally, inspections in response to public complaints are also conducted as and when required after initially scrutinizing the complaints through the 'Complaint Committee'. The complaints are monitored by inspection, samples are collected and analysed where required and action deemed fit is initiated if required.

1.3.3 LEGAL SECTION

The Legal section handles all the legal / Court matters related to the functions of the Board. The matters are filed before the Hon'ble Supreme Court, the Hon'ble High Court, the National Green Tribunal, the Administrative Tribunal the Appellate Authority under the Air Act and the Water Act and other lower courts.

The Personal hearings for industries, Public Hearing and matters related to Right to Information Act are also looked after by this Section.

Complaints are scrutinized and examined by the legal section before initiating action in the matter. Notices/directions/clarifications are issued to the defaulting units under the Environment (Protection) Act, 1986 i.e Municipal Solid Waste Rules, Hazardous Wastes Rules, Bio-Medical Rules, E- Waste management Rules, Noise Pollution Rules etc. whenever required to seek compliance for the defaultings.

1.3.4 ADMINISTRATIVE CUM ACCOUNTS SECTION

The Administrative Section deals with all the administrative matters of the Board such as service matters of the staff which includes creation of posts, appointments, promotions, leave, tours, stores, calculation of retirement benefits of the employees, etc. Preparation of agenda and minutes for the Board meetings and subsequent follow up for the implementation of the decisions taken herein for smooth functioning of the Board.

The Accounts section of the Board deals with all the accounting and financial matters of the Board such as monitoring of Revenue and Expenditures, preparation of Annual Budget, processing of all files where in financial implications are involved. Advices the Board on financial matters in accordance with the Government Rules and Procedures for smooth functioning. Conduct periodical Audit of the Board Accounts through a Registered Chatered Accountant nominated by the Comptroller and Auditor General of India (CAAG).

1.3.5 OTHER FACILITIES

1.3.5.1 LIBRARY FACILITIES

The Board has a spacious library of its own on the 4th Floor. It has varied publications from different departments/institutions, such as MOEF, CPCB, other State Boards' Annual Reports, etc. Legal, accounts and technical books, ISI Specifications, etc. are also available in the Board library.

1.3.5.2 CONFERENCE ROOM

The Board has a spacious Conference Room on the 1st floor with a seating capacity for 60 people. It is fully air conditioned and has facilities like whiteboard, and over head projector. All Board Meetings and other important meetings are held in the Conference Room.

CHAPTER 2

CONSTITUTION OF THE BOARD

2.1 CONSTITUTION OF THE BOARD INCLUDING CHANGES THEREIN

The present Board was constituted under the Chairmanship of Shri. Ganesh Budhu Shetgaonkar. This Board was constituted vide Order No. 5/20/87-STE/P-IV/741 dated 15th December, 2017 and the composition is as given below:-

Chairman

1. Shri. Dharmendra Sharma, Chief Secretary, Government of Goa, Secretariat, Porvorim, Bardez - Goa (w.e.f. 01/04/2017 to 07/12/2017)

2. Shri. Daulat A. Hawaldar, Secretary (Environment) Secretariat, Porvorim – Goa (w.e.f. 08/12/2017 to 25/12/2017)

3. Shri. Ganesh Shetgaonkar, Deputy General Manager, Excel Crop Care Limited, Mumbai (w.e.f. 26/12/2017)

Members

4. Director, Directorate of Industries, Trade and Commerce
5. Chief Engineer, Water Resource Department
6. Director, Directorate of Mines & Geology, Panaji
7. Director, Department of Tourism
8. Director, Directorate of Health Services
9. Shri Shawn Brian Martins, Panch Member, Village Panchayat Calangute
10. Shri. Shubham Chodankar, Corporator, Corporation City of Panaji
11. Smt. Unnati Sahastrabhudhe, Panch Member, Village Panchayat of Velguem
12. Shri. Rajsingh Rane, Councilor, Mapusa Municipal Council
13. Shri. Sanjay Naik, Panch Member, Village Panchayat Savordem
14. Chairman, Confederation of Indian Industries (Goa Chapter)
15. Chairman, Goa Bagaytdar Sahakari Kharedi Vikri Saunstha
16. President, Travel & Tourism Association of Goa
17. Managing Director, Goa State Infrastructure Development Corporation
18. Managing Director, Goa Tourism Development Corporation

Member Secretary

19. Shri. Levinson Martins, Goa Civil Services.

CHAPTER 3

MEETINGS OF THE BOARD

3.1 During the year under report, the Goa State Pollution Control Board held five Board Meetings under the reconstituted Board. The details of the meetings held during the year are presented in the Table below:-

Sr. No.	Sr. No. of Meeting	Date of meeting	Venue	No. of members who attended the meeting
1.	124th (Special Meeting)	28/04/2017	Conference Hall of the Chief Secretary	09
2.	124th (Adjourned)	05/05/2017	Conference Hall of the Chief Secretary	8
3.	124th (Special Meeting)	15/05/2017	Conference Hall of the Chief Secretary	6
4.	124th (Special Meeting)	23/05/2017	Conference Hall of the Chief Secretary	9
5.	125th	23/06/2017	Conference Hall of the Chief Secretary	10
6.	125th	26/06/2017	Conference Hall of the Chief Secretary	7
7.	125th	14/07/2017	Conference Hall of the Chief Secretary	8
8.	125th	28/07/2017	Conference Hall of the Chief Secretary	9
9.	125th	09/08/2017	Conference Hall of the Chief Secretary	8
10.	126th	31/08/2017	Conference Hall of the Chief Secretary	9
11.	126th	04/09/2017	Conference Hall of the Chief Secretary	10
12.	127th	27/09/2017	Conference Hall of the Chief Secretary	10
13.	128th	07/12/2017	Conference Hall of the Chief Secretary	06
14.	129th	20/12/2017	Conference Hall of the Chief Secretary	07
15.	130th	01/01/2018	Board's Conference Hall	14
16.	131st	08/01/2018	Board's Conference Hall	12
17.	132nd	27/03/2018	Board's Conference Hall	15

3.2 EXTRACTS OF MINUTES OF BOARD MEETINGS HELD DURING THE YEAR UNDER REPORT

124th Meeting of The Board (Special Meeting)
In the 124th Meeting the Board took the following decisions:

The 124th (Special) meeting of the Goa State Pollution Control Board was held on 28th April, 2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

Agenda item no. 01

Application for Consent to Operate / Renewal under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 of the 38 mining units.

1.	M/s. Vedanta Ltd. (Botvadecho Dongor Iron ore Mine) T.C. No. 28/51
2	M/s. Sesa Goa Ltd. (Mareta Sodo Iron ore Mine) T. C. No. 6/55
3	M/s. R. S. Shetye (Deulem Pissurlem iron ore Mine) T.C. No. 70/51
4	M/s. Chowgule & Company Pvt. Ltd. (Onda Iron ore Mine) T.C No. 98/52
5	M/s. Cosme Costa & Sons (Gaval Sonshi Iron Ore Mine) T.C. No.110/53
6	M/s. Geetabala PManohar Naik Parulekar , (Gulliem e Gaval (Pissurlem) Mine) T.C. No. 55/1951
7	M/s. Sesa Resources Limited (Surla-Sonshi Iron ore Mine) T.C. No. 5/54,20/54,21/54
8	M/s. Kunda Gharse (Cazreachem Culna Iron ore Mine) T.C. No. 51/52
9	M/s. Sociedade Timblo Irmaos Limitada (Dignem Iron ore Mine) T. C. No. 92/52
10	M/s. Kashinath Talaulikar (Carmolachem Mol iron ore mine) T. C. No. 48/58
11	M/s. Sociedade De Fomento Industries Pvt. Ltd. (Quelchim Tour Iron ore Mine) T.C. No. 14/53
12	M/s. Sociedade De Fomento Industries Pvt. Ltd.(Cormolem e Bog) T.C. No. 45/52
13	M/s. Haider Kassim Khan (Vangi Bindi Advona Iron ore Mine) T.C. No.10/51
14	M/s. Sesa Resources Ltd (Curpem Iron Ore Mine) T.C. No 3/51,40/54
15	M/s. Sesa Resources Ltd (Colomba Iron Ore mine) T.C.No.35/52
16	M/s. Panduronga Timblo Industrias (Oiteiro Borga do Bairo Queri) T. C. No. 34/50
17	M/s. Panduronga Timblo Industrias (Borga Dongrachem Fall Iron ore Mine, Rivona) T. C. No. 29/52
18	M/s. Orasso Dongor Iron ore Mine, T.C. No. 76/52
19	M/s. Vedanta Ltd. (Sanquelim Iron Or Mine) T.C. No. 9/49,10/49,3/54
20	M/s. Sesa Mining Corporation Ltd (Bicholim Iron Ore Mine) T.C. No. 11/4, 12/41, 13/41, 14/41, 15/41
21	M/s. Bandekar Brothers Private Limited- Jaquela Oujacadevicho Mollo Iron Ore Mines, TC No.84/1952
22	M/s. V.M. Salgaokar & Bros. Ltd (Velguem-Surla Iron Ore Mine) T.C. No. 83/52, 29/54, 19/58, 62(B)/52
23	M/s. Chowgule & Company Pvt. Ltd. (Costi Iron Ore Mine), T.C. No. 22/50 38/51 12/57
24	M/s. V. D. Chowgule, (Costi Iron ore Mine), T.C. 40/50, 16/51
25	M/s. N. S. Narvekar Minerals (Kalay Iron Ore Mine), T.C. No. 12/52, 40/51
26	M/s. Panduronga Timblo Industrias, Bondra Advona Iron Ore mine, T. C. No. 61/53
27	M/s. Sociedade De Fomento Industries Pvt. Ltd., Copila Gaichem Paul,T.C. No. 88/52
28	M/s. Eyestar Finance And Leasing Pvt. Ltd., Huldool Dongor Bimbol Iron ore Mine, T. C. No. 8/41

29	M/s. Panduronga Timblo Industrias [Shigao (Advona Toleamati E Galiguro) Iron Ore Mine] T.C. No. 87/53
30	M/s. Sigao Iron Ore Mine Sanguem Goa, M/s. V. M. Salgaocar & Bros Ltd, T.C. No. 47/54, 50/53, 13/55
31	M/s. Baddrudin H. Mavani,(Nomoxitembo de Caurem iron Ore Mine) T. C. No 14/52
32	M/s. G. N. Agarwal (Borchi Mordi Iron Ore Mine) T.C. No.621. /61
33	M/s. M. S. Talaulikar & Sons (Saniem Iron Ore Mine) T.C. No.2/51
34	M/s. Panduronga Timblo Industrias (Sailetembi-Iron Ore Mine,Suctole) T. C. No. 143/1953
35	M/s Litho Ferro (Calsanicho Mato de Oilomol Iron ore mine) T.C. No. 89/52
36	M/s. Chowgule & Company Ltd (Sirigao Iron Ore Mine) T.C. No. 5/49,13/49
37	M/s. Chowgule & Company Pvt. Ltd. (Pale Iron Ore Mine)T.C. No.31/53,41/56
38	Pravin Kumar Gosalia, T.C No: 4/NSD/BAUX

1. Chairman informed the members that the Board is in receipt of applications for renewal of 37 mining units for Consent to Operate and 01 mining unit for fresh Consent to Operate. He further informed the members that there are total 09 clusters in South Goa and 08 clusters in North Goa. The clustering is on two organizing principles i.e. shared boundaries and, evacuation routes. Each mine has monitoring station in the core and in the buffer zone. The Goa State Pollution Control Board (GSPCB) monitoring stations are at designated points on routes of evacuation. Thus, while as the Board was informed, that within the core zone the individual mining agency discharge limits were in control in 6 cluster/area monitoring stations PM^{10} parameter was exceeding limits since October 2016. As all those clustered together are deemed responsible and as there is no way that individual responsibility can be apportioned, all Consent to Operate Renewals/Fresh must first address this issue. Viewed thus, it is not a case of a specific mine or all mines in that cluster being defined as explicit defaulters. If that was to be so taken, then, Renewal/Fresh Consent to Operate had to be necessarily denied as default had occurred. This view accommodates the counter concern expressed by the mine representatives that many of the clusters monitoring stations are being attended by other sector related activities and not ore transportation simplicitor.

1A. The Board was informed that Show Cause Notices were issued under section 31(A) read with Section 21 of the Air Act to 13 mining units of Sonshi cluster. All remaining clusters have been given a direction through Directorate of Mines and Geology to reduce the transportation by 25%. However, given the fact of threshold limits have crossed in 10/14 clusters monitoring stations, it was decided that all similarly situated must be treated alike.

2. The Board was open to a further expansion of cluster monitoring capabilities so as to allow the industry and the Scientific section to evolve approaches which can segregate responsibility in a more specific manner both, sectorally and, with respect to individual units.

3. The representatives of the Sonshi cluster pointed out that in response to the Honda station readings and the physical circumstances at Sonshi Village, an alternative route has being adopted through mutual consent and approval of the Department. However it was not taken to be a sufficient basis for immediate renewal of Consent to Operate as GSPCB has no monitoring capability at the new route. The industry is free to chalk out a plan of action to validate this hypothesis with the Scientific section and revert back to the Board for reconsideration as soon as possible.

4. It was proposed to the Board that for some routes, assets of the companies could be made accessible to GSPCB. The Board noted the suggestion and directed the Scientific section to :

a.	Survey the location and confirm that those sites conform to Central Pollution Control Board norms for fair and robust cluster/area monitoring.

b.	Draft a Memorandum of Understanding by which those mining company assets stand 'requisitioned' to GSPCB so as to ensure an arms length control and management.
c.	Then the company should install alternative stations for their Legal requirements.

5. The advantage of this above proposed arrangement would be to consider renewals and the Plan of Action (PoA), of those whose renewals which are presently being denied/delayed due to immediate non availability of monitoring stations of GSPCB and where alternative routes are a possibility.

6. In the net, only 3 monitoring stations at Sanguem, Tilamol and Curchorem were showing results as within limits for all five months and thus Consent to Operate renewals for those clusters could go through.

7. One fresh Consent to Operate was deferred as its evacuation route monitoring station i.e. Usgaon was already showing crossing of limits and Board could not add further load on the area.

8. The Board informed the industry that its ability to monitor cluster/area wise is a must-especially where readings have shown negative results. Thus no Consent to Operate can be renewed on the various proposal of new routes etc. till monitoring capability, arms length to the individual mine capabilities, are in operation. All respective units have to take the responsibility of cluster standards being breached (albeit on one parameter only) for past 5 months. They must cease operations forthwith.

9. On a pure hypothetical basis, a through put cut of 25% has already been imposed on all operational mines in the cluster/area which are exceeding the permissible limits and Board will get to know its impact next month.

10. The mining representatives sought permission to revert back to the Board for further voluntary through put cuts, as an interim measure, to move ahead their Consent to Operate renewals to deal with the oncoming monsoon. This was agreed and Scientific section was asked to examine feasibility only as a fall back option. The reason being that if the industry fails to control pollution at presently permitted extraction and evacuation levels and, reduction in throughputs is what achieves the required standard, then an altered basis comes into being - challenging the validity of the presently assessed carrying capacity which today underwrites the Hon'ble Supreme Court authorized partial and controlled lifting of the ban. Hence, first priority is to comprehensively validate that the approved through puts could be achieved by ever improving/ strengthening of control measures by the industry.

11. All mining representatives stated that they were not made aware of the negative readings at cluster stations. Board directed Scientific section henceforth to automatically release the readings in public domain. Board directed mining representatives to also ensure that readings of their monitoring stations are to be made available on real time basis on e-platforms. Board was open to the mining industry and Scientific section working out modality that as soon as a level is breached – even for a day- a SMS is sent and immediate cluster meeting is held to remedy the situation.

12. Accordingly, in view of the above broad understanding, case by case decision were taken:

13. The Board thus discussed the application, cluster wise, as follows:

1. Mines located in Sonshi area -

a.	Scientific Section informed that the pollution levels as monitored by the Board are exceeding the limits at Honda for the last five months.	
b.	The Scientific section of the Board confirmed that at Sonshi stretch itself there are no monitoring stations because of non co-operation of the public with regards to location and electricity connections. However Scientific Section has now identified located 9 locations.	
c.	The industry informed that they have already routed the mining traffic to an alternative route which passes through two mining leases that is Mareta Sodo Iron Ore Mine of Vedanta and Sonshi mine of M/s V. G.Quenim. Since in their area the respective mining companies have monitoring stations its readings could be relied upon to segregate the Renewals of Consent to Operate with the problem at Sonshi.	
d.	However the Board assessed that since the Sonshi problem is manifest and related to activities of cluster mines, an interim moving away of traffic would not form a fair basis to consider an immediate renewal. The impact of such movement to new area would need to be determined by having relevant monitoring stations to be validated. If the problem at Sonshi is relatable to the ineffectiveness of measures of control, then merely shifting the same inefficiency to another route would be impermissible.	
e.	Therefore it was directed that:	
	1.	the mining unit to submit action plan in next three days to enhance control measures for extent Sonshi route, as well as new route
	2.	The mining operators are free to offer a monitoring location in the Sonshi route to PCB for monitoring capabilities to come up.
f.	In the mean while, no operations to continue.	
g.	Chairman further stated that no further extension in the validity is granted to the mines listed at serial no. 01 to 12 listed above till a clarity on above concern is achieved.	

2. Mines located in Costi area –

a.	The relevant monitoring stations are at Curchorem.
b.	The monitoring reports indicates that for all five months there were no limits violations were recorded hence the renewal of consent to operate of the mines listed at serial no. 23 to 25 can be approved.
c.	The Renewal of Consent to Operate is considered for grant for a period of four months with immediate effect with measures stated below at sr.no. 16 so as to avoid Sonshi situation to be repeated in any other route.

3. Mines located in Codli area –

a.	The relevant monitoring station of Codli monitored by the past five months indicates that the PM10 parameters were exceeding limits.	
b.	In view of the same it was proposed to defer the renewal of Consent to Operate application of mining unit placed at sr. no. 26. Therefore the unit is directed to:	
	1.	the mining unit to submit action plan in next three days to enhance control measures for extent Codli route as well as any new route.
	2.	The mining operators are free to offer a monitoring location in the Codli route to GS PCB for monitoring till GSPCB capabilities come up.
c.	In the mean while, no operations to continue	

d.	The Consent of M/s Vedanta Ltd., Codli – T.C no. 69/51, 70/52, 126/53, M/s. Marzook and Cadar Pvt ltd at Dharbandora village in Sanguem Taluka, T.C. No 4/55, M/s. Odamola Iron Ore Mine of SOVA, T.C. No. 45/54 is presently valid. However as the parameter for PM^{10} is exceeding limit in that area it is proposed to issue a Show Cause Notice under Section 31(A) read with Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 for not carrying out effective pollution control measures during transportation of ore from the units. Direction to issue to the unit to cut off their transportation by 50% with intimation to Directorate of Mines and Geology and Transport Department. The unit is free to revert back with the plan of action for a reconsideration of the decision.

4. Mines located in Sigao area -

a.	The relevant monitoring station of Codli monitored by the past five months indicate that the PM^{10} parameters were exceeding limits	
b.	In view of the same, it was proposed to defer the renewal of Consent to Operate application of mining unit placed at serial no. 27, 28, 29 . Therefore the unit is directed to	
	1.	The mining unit to submit action plan in next three days to enhance control measures for extent Codli route, as well as any proposed new route.
	2.	The mining operators are free to offer a monitoring location in the Codli route to PCB for monitoring capabilities till GSPCB facilities come up
c.	In the mean while, no operations to continue	
d.	The application of mining unit placed at sr. no 30 is for fresh consent to operate. However, as the route of the transportation of this mining unit will be through Usgaon where the PM^{10} parameter is found to be exceeding limits for five consecutive months the application was deferred as the additional mining unit will increase the burden on the route. The unit is free to revert back with the plan of action/ suggestion to escalate their application forward while addressing this concern.	

5. Mines located in Sulcorna, Kevona and Maina - Caurrem and Borga area

a.	The relevant monitoring stations are at Curchorem and Tilamol . The monitoring reports indicates that for all five months there were no limits violations were recorded
b.	The monitoring reports indicates that for all five months there were no limits violations were recorded hence the renewal of consent to operate of the mines listed at serial no. 13, 14, 15, 16,17, 31, 32 have been approved for grant of renewal of Consent.
c.	The Consent to Operate is considered for grant for a period of four months with immediate effect with measures stated below at sr. no. 16 so as to avoid Sonshi situation to be repeated in any other route.

6. Standalone case of M/s. Pravin Kumar Gosalia at Sr .No. 38

a.	Bauxite mine is not in the purview of Hon'ble Supreme Court order.
b.	There are no monitoring station of the Board along the route
c.	Hence the application of mining unit listed at serial no. 38 is renewed
d.	However the Board directs Scientific section to obtain the data of the monitoring carried out by the unit along the transportation route and verify if the same is in compliance to CPCB norms. As an interim measure the Scientific section could consider monitoring the same stations till such time the Board installs its station at the said location in terms of para 5(a), 5(b) and 5(c) stated above.

7. Mines in Dharbandora and Suctolim area:

a.	The relevant monitoring station of Codli monitored by the past five months indicates that the PM10 parameters were exceeding limits.	
b.	In view of the same it was proposed to defer the renewal of Consent to Operate application of mining unit placed at serial no. 33 and 34 have been deferred. Therefore the unit is directed to	
	1.	The mining unit to submit action plan in next three days to enhance control measures for extent Codli route, as well as any proposed new route.
	2.	The mining operators are free to offer a monitoring location in the Codli route to GSPCB for monitoring till GSPCB capabilities come up.
c.	In the mean while, no operations to continue.	

1. Mines located in Advalpal area-

a.	There are no monitoring of the Board along the route.
b.	The Scientific Section explained to the Board that it is so because all the mining units transport the ore through the buffer zone of the mine itself. It was confirmed that nothing adverse is in notice by the GSPCB.
c.	There are existing stations of the units in the buffer zone which is monitored by the units individually.
d.	Hence, the application of mining unit listed at serial no. 8, 19, 20,21, 22, 35, 36, 37 is renewed in view of the special facts on the ground, even though this is avoidable gap in GSPCB monitoring responsibility. This case thus is distinguished from cases where negative results were available on relevant cluster monitoring stations..
e.	However the Board directed the Scientific section to reconfirm the data of the monitoring carried out by the unit along the transportation route and re-verify if the same is in compliance to CPCB norms.
f.	As an immediate measure the Scientific section should consider monitoring the same stations till such time the Board installs its station at the said location in terms of para 5(a), 5(b) and 5(c) as stated above.

14. Chairman informed the mining units to submit their Action Plan to the office of the Board on 01/05/2017, for which the Board office shall remain open for accepting the same.

15. After deliberations, the Board decided to incorporate the following new conditions, whenever/to whomever of the above units the Consent is being renewed or granted:

1.	The condition of installation of wheel washing station was stipulated in the previous consent issued for all the mines. However, it is seen that the same has not been complied with. Hence, it is proposed that all the mines be directed, to install wheel washing system alongwith the compressed air wheel drying facility, followed by a tarred road upto the main approach road so that the dust is not carried on the transportation roads.
2.	All the trucks carrying ore shall be properly covered with tarpaulin and no overloading should be permitted. It is proposed to write to Director, Mines and Geology regarding the same.
3.	Speed of ore carrying trucks should be controlled at the speed breakers to avoid spillage. It is proposed to write to Director, Mines and Geology regarding the same.
4.	Additional road sweeping machines, 2 in each transportation route, should be installed for operation on the mining roads to-and-fro simultaneously.

5.	The shoulders of the mining transport roads should be fully tarred. It is proposed to write to Public Works Department regarding the same and it can be implemented through funding by mining companies
6.	The mining units to be directed to submit Bank Guarantee of Rs. 1 Crore ……..100 hac and above mining lease area Rs. 50 lakhs ……...50 hac to 100 hac mining lease area Rs. 25 lakhs…….. less than 50 hac mining lease area to enforce non compliance that is observed.
7.	Monitoring charges to be levied on the mining companies

16. The Board directed Member Secretary and Scientific Section to take note :

a.	Additional monitoring stations should be installed at the public locations which are influenced by mining traffic, which should be monitored by the mining industry and also by GSPCB. The following stations are proposed with regards to the Sonshi area: Fanaswadi, Khodginim, Navelim, Surla/Sonshi, Maina, Velguem, Pissurlem, Valvoi, Pale and Gaundalim and for other mining units it is proposed to identify the stations and include the monitoring of the stations.
b.	Renewal of Consents for all the mining companies applied shall be granted for a period of four months.

Agenda item no. 2

Application for Consent to Establish under the Air Act and the Water Act of M/s. Sukraft Recycling Pvt. Ltd., located at Dharbandora Industrial Estate.

Members were informed that the Board is in receipt of application for Consent to Establish under the Air Act and the Water Act of M/s. Sukraft Recycling Pvt. Ltd., located at Dharbandora Industrial Estate, for the manufacture of kraft paper, white kraft liner, water repellent and virgin top liner- 3000MT/ month. The members were informed that no complaints with regard to the unit have been received by the Board. Further, Department of Industries and Commerce have not allocated the plot nos. to the unit at Dharbandora, pending approval from the Board. Further, the members were informed that the application has been approved in the 13th meeting of Goa Investment Promotion & Facilitation Board held on 02/11/2016 and the Technical Advisory Committee of the Board has also approved the proposal of the unit. Members approved for grant of Consent to Establish to the unit.

Agenda item no. 3

Application of M/s Merck Limited, Usgaon Goa, for amendment in the Consent to Operate under the Water Act and the Air Act.

Chairman informed the members the application of M/s Merck Ltd., Usgao Goa for amendment in the Consent to Operate under the Water Act and the Air Act was discussed at the 122nd meeting of the Board held on 28th November, 2016, vide Agenda item no. 13. However due to typographical error the decision of the Board was not recorded in the said minutes. After deliberations, the members agreed to add the following to the said agenda item:

Members approved the application of M/s Merck Limited, Usgao. for Consent to operate issued to the unit under the Air Act and Water Act, for the replacement of part of permitted quantity of Vitamin E acetate with 2-ethylhexylcyanoacetate (EHCA).

II. Chairman informed the members that the meeting shall be continued on 02nd May, 2017 at 3.30 pm to discuss the lay out plan as submitted by the mining companies.

The Board agreed that these minutes could be shared with the mining companies whose cases

were assessed today. This would enable them to be aware of facts and decisions. It would enable them to take any additional measures which facilitates the early renewal of these leases even if not this contemplated in this meeting

III. The meeting has been adjourned upto 02/05/2017.

124th Meeting of The Board
In the 124th Meeting the Board took the following decisions:

The adjourned 124th (Special) meeting of the Goa State Pollution Control Board was held on 05th May,2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

Chairman informed the members that the 124th meeting (Special meeting) which was held on 02nd May, 2017 was adjourned inorder to:

a. To decide on the efficiency and the practicality of the short term and middle term measures submitted by the mining companies for controlling of dust pollution along the transportation route as presented by them in the meeting held on 02/05/2017 referred at para 6.

b. To consider and decide upon further course of action in the matter of show cause notices issued to 13 mining units located in Sonshi cluster as per para 1A referred in minutes of 28/04/2017.

c. To examine the preliminary monitoring reports of the additional stations at Sonshi cluster installed by Goa State Pollution Control Board (GSPCB) at locations as annexed herewith i.e. four nos. by GSPCB (and 9 requisitioned monitoring station. (Annexure 'A'). The AAQM data monitored on 2nd May, 2017 is annexed as Annexure 'B'. The Scientific section informed that the Board could increase the stations to be monitored by the Board at Sonshi cluster to six by adding two more stations. It was decided to do parallel monitoring at these two additional locations at Sesa camp and Sonshi junction.

d. To ratify the requisitioning of the Ambient Air Quality Monitoring (AAQM) Stations from mining units by the Board in terms of decision taken in para 16 of the minutes of 28/04/2017 and para 10 of the minutes of 02/05/2017, and further by way of signing of Memorandum of Understanding with such mining companies.

2. The Scientific Section explained the progress in monitoring/ acquisition of the monitoring stations of the mining companies to be manned and managed by Boards Scientific Section in ongoing monitoring with initial readings taken on 02/05/2017 (google map of the AAQM locations enclosed herewith).

The Scientific section explained that the readings at the residence of Shri Praksah Gauns house at Sonshi, Shri Rohidas Kandekar at Fanswadi, Navelim and the Navelim Sub-station at Navelim were found exceeding the permissible limits as noted at Annexure – B. The ambient air quality station located at the residence of Shri Shivram Naik at Maina could not be made operational as there was no availability of power supply. To this, the mining company representative submitted that they had results of the findings of the AAQM data monitored by them and suggested that the Board conducts a prolonged monitoring period as per Central Pollution Control Board (CPCB) guidelines, which would give more representation of the ambient air quality of the said locations. The Board agreed to this proposition and the Scientific section was directed to conduct AAQM for an additional week to provide and interim assessment.

Chairman directed that in the Memorandum of Understanding to be signed with the mining companies towards acquisition for the monitoring station the definition of acquisition should clearly spell

out the details of the monitoring station such as location, make, model, certificate of Calibration, last serviced report and Operational Status and Manual. The representatives of the mining companies who were present agreed to execute the Memorandum of Understanding and further to bear the cost of monitoring. The Board also directed that now that the companies monitoring stations are requisitioned by the Board the respective companies must immediately start monitoring additionally on their own in their buffer zone besides core zone as per the Consent condition.

3. As regards identifying locations and monitoring AAQM at Codli and Curpem clusters scientific section informed that identification process on the site is in process and will be finalized soon and the clusters at Dharbandora/ Suctolim/Codli/Sigao etc will be finalized soon. She also informed that since the Board has taken the onus of monitoring these clusters there would be a shortage of manpower and logistical support and therefore the Board agreed that these locations in the above clusters could be monitored by outsourced MoEF accredited laboratories which are currently monitoring Board stations under NAMP and that they could be paid under the same terms and conditions. The Board on receipt of the data will decide on the applications for consent on these clusters.

4. The Scientific section Air monitoring In-charge Scientist 'C', Ms. Connie Fernandes, further explained that concerning Sonshi Village being surrounded by 13 mines, the entire area acts as a buffer zone. She further explained the location of Board stations at Gawas House, Fanaswadi and Navelim junction where Board is presently carrying monitoring and informed that to validate the data she requires time to take more readings and sought time upto 13/05/2017.

5. The Board agreed to this proposition as some time is required to get a fair assessment with validated data based on which further projections could be extrapolated which would help the Board to decide on show cause notices and the pending applications for Consent.

6. The Board directed that the technical section to conduct further inspection and verify the activities/ parameters vis-a-vis timelines to be achieved by the mining companies concerning the short term measures besides giving the status of work done in this respect as on the date of inspection and that the scientific section of the Board shall present the monitoring data of Sonshi as well as other Clusters that are monitored. Board agreed to further defer the meeting and meet on 15/05/2017 at 3.30 pm.

7. The Board further decided to also monitor by outsourcing the clusters in which there were no monitoring stations of the Board as per para 16 of the minutes of 28/04/2017.

8. Additional 9 monitoring stations (referred at para no 3) which are presently managed by the mining companies are identified by the scientific section of the Board and proposed to be requisitioned. (details enclosed). The mining Company representatives present at the meeting agreed to sign Memorandum of Understanding with the Board in this respect.

9. Post Consent monitoring could also be done in Sulcorna, Kevona and Maina -Caurem and Borga area and adequate number of monitoring stations are to be located which can be outsourced to MoEF accredited laboratories as per NAAMP programme with cost of monitoring to the respective Mining Companies jointly. Scientific Section to expedite, as Scientific section has to put up reply / comments to the Central Empowered Committee of Supreme Court of India in Writ Petition (Civil) 435/2012.

10. Chairman sought to knows from the representative of the Mining Department as to whether the carrying capacity of the transportation routes was considered prior to hiking the extraction / production / transportation, to which Dy. Director Mines informed that the Mines department looks after the revenue aspect of mining and further informed that the trucks operating for the respective mines are fitted with GPS and can be monitored for their load and speed on their

software, including past data and that this was primarily done for prevention of theft of ore and prevention of accidents.

11. In respect of the decision of the Board to grant Consent to 19 mining companies as recorded in the minutes of the 124th Board meeting held on 28/04/2017 at sub para no. 2, 5, 6 and 8, of para 13, besides, the mine of M/s Kashinath Talaulikar as recorded in the minutes of the 124th meeting held on 02/05/17 at para 7 (b), the Board agreed to grant Consent to Operate valid for four months after obtaining Bank Guarantee as decided in the Board meeting held on 02/05/17 at para 12. This decision can be further reviewed after considering ambient air quality monitoring data.

The meeting has been adjourned to 15/05/2017 at 3.30 p.m.

124th Meeting of The Board (Special Meeting)
In the 124th Meeting the Board took the following decisions:

The adjourned 124th (Special) meeting of the Goa State Pollution Control Board was held on 15th May, 2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim

Chairman informed the members that the 124th meeting (Special meeting) which was held on 05nd May, 2017 was adjourned inorder to:

(i) To get the data of Ambient Air Quality Monitoring carried out by the Goa State Pollution Control Board at Sonshi and also the data of Ambient Air Quality Monitoring parallely carried out by the Mining Companies.

(ii) For effective requisitioning of the AAQM machines by Goa State Pollution Control Board on the mining concerns specifically at Sonshi Junction (Fomento), Sesa Camp, Vedanta and Honda Village at CCPL Mine office.

(iii) Identification of locations for carrying at Ambient Air Quality Monitoring in other areas at Codli, Suctolim Dharbandora and entering into MoU with the mining companies for carrying out Ambient Air Quality Monitoring at these locations.

Agenda Item No. 1

The Scientific Section explained that the readings at the residence of Prakash Gauns at Sonshi, Shri Rohidas Kansekar at Fanaswadi, Navelim and the Navelim Substation at Navelim and Shivram Naik (on 2 occasions) and at Maina were found to be exceeding permissible limits on all the 5 occasions monitored in the month of May. To this, the mining companies representative submitted that they had parallely carried out the monitoring on the same day in close proximity of the location, where GSPCB had carried out the monitoring and their reports indicate that the parameters are within the permissible limits. The Board agreed to the proposition of the scientific section for carrying out Ambient Air Quality Monitoring for an additional period and the reports of the monitoring could be discussed on 19/05/2017 and accordingly the incharge of Air Monitoring, GSPCB shall select one third of the total number of station at Sonshi area (i.e. 5 in numbers) and operate them in a controlled environment jointly with the mining units equipment and MoEF&CC (Approved Laboratories) to validate the operation through data comparison and the deviations noted during onsite readings.

Five such RDS's (Respirable Dust Sampler) and FPS (Fine Particulate Samplers) will be randomly drawn from the existing monitoring stations at Sonshi.

The mining companies who were heard during the meeting further requested that they may be allowed to carry out activities within the mines such as ore washing etc., during monsoons without any transportation outside the mine to which the Board decided that the respective mining companies on case to case basis shall submit their action plan on or before the next meeting.

The Board decided to defer the applications for renewal for mining companies at Sonshi until the next Board meeting.

Agenda Item No. 2 & 3

The scientific section explained that the reports of the Ambient Air Quality Monitoring carried out at Mines located at Codli area, Sigao area, Dharbandora and Suctolim area were not available. Stations along these transportation routes could not be made operational as the locations for monitoring were not identified.

Further, as the data of NAMP location at the locations at Codli, Usgao, Sanguem, Tilamol-Quepem and Curchorem for the month of March is within the permissible limits except Codli which showed occasional exceedances but not on two consecutive monitoring days and there are 4 exceedances noted in Usgao for the month of March, 2017 of which 2 are on consecutive monitoring days i.e. on 08/03/2017 & 10/03/2017. The data of Ambient Air Monitoring in the month of April at this location is not available.

In these circumstances, the Board decided that 20 Mining Companies as per the list enclosed at Annexure I, which were decided in the Board meeting dated 28/04/2017 to be granted renewal of consent to operate for 4 months, subject to submission of Bank Guarantee since the transportation route monitoring data is yet to be made available. The Board had decided to seek Bank Guarantees for granting of renewal of Consent to operate as the confirmation of compliance to the conditions. The mining units submitted that the Air Quality parameters can only be ascertained over a period of 4 working months i.e. May, October, November and December, 2017. The decision to grant renewal of Consent to the mining leases this may also be considered in view of the representations made by the mining companies to grant renewal of Consent to operate upto 31/12/2017 as the Ambient Air Quality Monitoring readings will not reflect the actual Air Quality in the monsoon season from June to September when mining transportation activities are not carried out. The representative also stated that the Ambient Air Quality Reports of October and November 2017 would be represented as the transport activity will commence at the end of the monsoon. This was accepted.

It was pointed out to all present that though consent to operate is to be for a period of 2 years and financial guarantee are not normally taken, the situation confronting the industry and the Board was unique. Detailed monitoring capability being a sin qua non for consent to operate being absent and currently being implemented, this via media to balance the industry request with environmental concern has been worked out and with consent of all stake holders.

The Bank Guarantee has been sought to ensure that the mining companies comply with all necessary Pollution Control Measures are adhered to and in the event of any violation of the conditions in the consent including if the Ambient Air Quality Parameters exceed the permissible limits, then the mining companies jointly and severally responsible for such violations and the Board shall be free to forfeit the Bank Guarantee.

The representative of M/s Kashinath Talaulikar bearing T.C. no. 48/58 has undertaken that their mine shall start its operation only in October, 2017 and the company requires the consent for maintenance of the mine as well as to undertake pre-monsoon measures hence the Board has decided that this mine is considered to grant the Consent from October, 2017 till December, 2017. Provided the Bank Guarantee submitted by 19/05/2017 by the Company.

The Board further decided that such renewal of Consent to operate for other mines shall be for four operational months leaving monsoons i.e. upto December, 2017 and inclusive of the balance days of May provided Bank Guarantee is submitted by 19/05/2017. List is enclosed as '**Annexure I**'.

The mining companies who were heard during the meeting further requested that they may be allowed to carry out activities within the mines such as ore washing etc., during monsoons without any transportation outside the mine to which the Board decided that the respective mining companies on case to case basis shall submit their action plan on or before the next meeting.

It was also decided that those companies as per Annexure I, who do not submit their Bank Guarantees by 19/05/2017 shall be rejected by the Board. However, the mining companies are free to approach the Board for consent to operate the mine from October, 2017.

Agenda Item No. 4

The Member Secretary informed the Board members that inspection was conducted by the Board officials along with the Complainant of the five mining units along the route on 10/05/2017 and the inspection report was circulated during the meeting. The report indicates that:

(i) Transportation of only one mine i.e. Borchi Mordi Maina Mine, T.C.No. 06/1961 was observed from Caurem –Quepem-Tilamol- Curchorem-Sarvordem route.

(ii) No transportation was observed from Sulcorna – Kevona – Rivona – Tilamol- Curchorem-Sanvordem route.

(iii) It was observed that AAQM at Tilamol Junction and near Curchorem Circle are within permissible limits from October, 2016 to March, 2017.

(iv) However, long term measures like wheel washing system and tarring of approach roads is required to be completed.

(v) The Board has decided to monitor Air Ambient along these transportation routes.

In respect of the grievances of the petitioner, the depletion of water table due to pumping out the water from the mine which according to the petitioner has led to drying up of some wells and some stretches of Karca and Kushavati River, the Board decided to refer this matter with the Water Resource Department to ascertain the facts. Further, the Board shall refer the matter to the Mining Department for monitoring the plying of trucks on the route and regularize their movement, speed and covering of trucks properly with tarpaulin etc. accordingly within the permissible transport operation time period.

The Board has also decided to refer the matter with Department of Agriculture with respect to complain that there is reduction in Agricultural yield. The Board also decided to refer the matter to the Indian Bureau of Mines in respect of the grievances raised by the Complainant.

The Member Secretary brought to the attention of the Board members that MoEF&CC has issued an Office Memorandum dated 29th October, 2014 wherein a clause prescribing bypass road for the transportation of minerals, widening and strengthening of existing public road network at the cost of the Project Proponent is included.

The Board observed that widening and strengthening of existing public road network has already been carried out and the roads are having width of 7 to 8 mtrs at present. The Board members agreed that this width is sufficient to cater to and fro heavy mining traffic, provided the mining companies adapt all pollution control measures in respect of loading, cleaning of trucks and wheel washing before entering the main roads, clearing of road pot holes, tarring of road shoulders and strictly complying with the speed and traffic management of trucks as adopted by the Mines Department, which suffices the requirements of above referred Office Memorandum of MoEF&CC.

Agenda Item No. 5

The Board noted the representation made by the truck contractors for permitting mining activities as it is their source of livelihood.

Agenda Item No. 6

The Board decided to grant renewal of consent to operate to the mining unit upon submission of the Bank Guarantee and in the event the Ambient Air Quality exceeds the permissible limits during the operational periods then the Bank Guarantee shall be forfeited.

Agenda Item No. 7

The Board decided to defer this agenda and consider the same in the next meeting after perusing the minutes and the decision taken in earlier meeting while processing the application of M/s. Minescape Private Limited. Since this is a standalone case and the decision was taken on the hypothesis that the Ambient Air Quality Monitoring at that location was within limits and adding this particular mine should not exceed the Ambient Air Quality Monitoring permissible limits.

Agenda Item No. 8

The Board decided to delegate the powers for granting consent to establish / operate / Renewal of Consent to operate for Red (Small) and Orange (Large) Category Industry besides Consent for Mobile Base Station Tower to Shri Shivanand Salelkar, Senior Environmental Engineer.

Further, the Board resolved that Shri Shivanand Salelkar would look after urgent / Time Bound Administrative matters and amend the Delegation of Powers accordingly and he shall be incharge of the Technical Section who shall examine such matters.

Agenda Item No. 9

The Board decided to examine the matter legally on this aspect and as to whether the Board could train and requisition the services of Police Officials / Revenue Officials, PWD Engineers, whose noise monitoring reports would be acceptable to the Courts of Law.

The meeting has been further adjourned to 22/05/2017 at 3:30 p.m.

124th Meeting of The Board
In the 124th Meeting the Board took the following decisions:

The adjourned 124th (Special) meeting of the Goa State Pollution Control Board was held on 23rd May, 2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

Agenda Item No. 1 & 2

Action in respect of Mines located at Sonshi area:

A. Following Show Cause Notices issued to Mining Companies were enclosed as per **Annexure I,** the Board has conducted monitoring along the route of transportation for this cluster by installing additional monitoring stations. The details / findings of data of monitoring for the period 02/05/2017 to 18/05/2017 were enclosed at Enclosure **'A' colly** AAQM North Goa Mines Transportation Routes

B. The Board had selected one third of the total number of station at Sonshi area (i.e. 5 in numbers) and operated them in a controlled environment jointly with the mining units equipment and MoEF&CC (Approved Laboratories) i.e. at SAG Ground Bambolim to validate the operation through data comparison and the deviations noted during onsite readings are compiled were enclosed as **Enclosure 'B'**.

C) The mining companies requested that they may be allowed to carry out activities within the mines such as ore washing etc., during monsoons without any transportation outside the mine in the Board meeting held on 15/05/2017. The Board instructed the mining companies to submit their action Plan on case to case basis in this meeting. **So far, no such specific request has come from any mine.**

Discussion in the Board:

1.1 The AAQM Data of North Goa Mines Transportation Routes which was enclosed as Enclosure 'A' colly and Enclosure 'B' i.e. Data Comparison Exercise was placed before the Board. It was observed that:

(a) In Sonshi area, the particulate matter levels were still exceeding the permissible limits for the GSPCB captive monitoring locations as against the data obtained in the RDS / FPS requisitioned from the mining unit by the Board.

(b) Hence, in view of the variations in Sonshi cluster of AAQM levels between the Board equipments and the mining unit equipments it was decided to conduct a study in a controlled environment exercise conducted jointly with 4 samplers derived from those requisitioned by the Board from mining units equipment and MoEF&CC Approved Laboratories. This joint exercise was conducted at SAG Athletics Stadium Bambolim, which again showed variations between the data obtained from the monitoring machines between the 04 mining companies and that from the Board and MoEF & CC Approved Laboratory. It was explained by Scientist 'C' (Air), that the exercise went smoothly except for the following:

1.2 The blower of the Respirable Dust Sampler (RDS) of the MoEF&CC approved laboratory M/s Bhagvathi got burnt during the course of setting up the electrical connection to the said RDS and their representative informed that they do not have a standby RDS as all were currently engaged.

1.3 In order to maintain the equal representation mining AAQM to non mining, the Board officials decided to lend the Board RDS, which also subsequently got burnt, as was informed in the early morning of the day of the start of said exercise. i.e. 18/05/17. However, when the Board officials visited the said exercise site at the end of the first shift, it was noted that the said RDS provided to M/s Bhagvathi was not cleaned prior to said exercise, thereby violating the requirements of the said exercise and was so informed by the Board officials, to the mining units, that the same will not be considered.

1.4 The RDS requested from M/s Fomento from Sonshi Junction was also informed to be under breakdown and replaced. The mining company representatives disputed that the variation was due to non cleaning of monitoring machines by Board staff.

1.5 The Scientific section stated that the calibration of the calibrator used for the calibration of the sampler as stated in the calibration certificates of the samplers used in Sonshi and which were drawn randomly for the said study in Bambolim, as submitted by some of the mining units was found to be done in 2015, whereas, the calibration certificate of the sampling equipment is found done in 2017. These were represented by only one laboratory i.e. Mineral Engineering Services for M/s. Salgaocar, M/s. Fomento and M/s. Chowgule. The mining companies representatives also agreed that the monitoring instrument measuring PM10 sampler in controlled environment of M/s. Bhagavati Ana Labs Pvt. Ltd. was not functional after it was put to use. The mining companies representatives jointly wrote a letter on 19/05/2017 i.e. on the same day to bring this fact to the notice of the Board. The scientific section of the Board informed that the machine stopped functioning in between as explained in sr. no. 1.3 and that efforts were also made to replace this machine by Board's machine. However, the data has not been incorporated in the Enclosure 'B' for this particular sampler.

1.6 The mining representative also stated that as all the mining agencies showed similar values and that the same should be considered correct. However the Scientific section representative, Scientist 'C' (Air), was of the opinion that as all mining units getting similar values could not be a criteria for correctness, rather the correctness of the values can be established based on the existing data base available under NAMP, for similar locations. It was further informed that in the current monitoring the machines are not manned 24x7 hours and that the machine is visited every 8 hours to change filter paper. Besides it was informed that the mining machines Flow Rate Meter is manually adjustable.

1.7 In order to narrow the focus, the options considered were:

(a) The mining units may hand over its machines to GSPCB, who after duly getting these samplers calibrated from the NIST traceable calibrating agencies will again hand back the same to the mining units for the purpose of monitoring under the supervision of Board selected MoEF Accredited Laboratory, with CCTV coverage at cost to the concerned mining units.

(b) The Board could also outsource these machines directly to its MoEF Accredited Laboratory and the entire cost i.e. the machines, calibrations and monitoring cost to be borne by mining units jointly or severally to operate on this particular route.

(c) To purchase 20 or more new Samplers as per requirements of CPCB out of which 10 are to be purchased immediately for use in the transportation routes presently under monitoring survey to observe the AAQM at arms length. Additionally a Continuous Ambient Air Quality Monitoring Station (CAAQMS) may be installed at a Board identified location based on the highest particulate matter obtained in the near future.

(d) The representatives of the mining companies who were present for the discussion suggested that they would immediately come up with a proposal for the purpose of monitoring of transportation routes of Sonshi cluster whereby they propose to engage CPCB or Indian School of Mines, Dhanbad to monitor the AAQM levels at Sonshi transportation routes. The Board officials had telephonically contacted CPCB officials regarding the upgraded Air Samplers and the CPCB has recommended M/s. Envirotech Pvt. Ltd., as it is the currently used sampler in CPCB. M/s. Envirotech was contacted and they have provided Specifications and Quotations of their upgraded Respirable Dust Sampler APM 460DXNL along with Thermo Electrically Cooled Gaseous Sampling Attachment APM 411TE, as per BIS method 5182-Part 23:2006 which is quoted at Rs. 1.7030 lacs per unit + applicable taxes and with a 10% discount offered for the same to the Board. The unit has an automated flow controller for minimizing flow variations and will be provided adequately with CCTV cameras during the operation of monitoring machines.

(e) The Board decided that these upgraded versions of samplers are required at the monitoring stations as undisputed data is a sin qua non for an effective monitoring matrix-a mandate of the Apex Court for lifting the ban on mining in Goa. It will also provide a concrete basis for GSPCB to respond to the pending request for comments on raising the extraction limit from 20 MT to 30 MT.

(f) The Board envisages that by upgrading the samplers it will be in a better position to monitor the pollution level efficiently and uniformly for the oncoming mining fair season which is likely to start from October, 2017.

1.8 Director of Mines suggested that the pollution aspect is primarily concern with evacuation routes of trucks and suggested that the Board could grant partial / curtailed consent to operate the respective mines i.e. 13 in nos. with a specific condition that no transportation of Ore from the respective mines shall be allowed and that the mines could however carry out their normal activities within the confines of the mine leases during monsoon and the validity of such Consent to operate is to be granted upto October 31st which could be reviewed thereafter.

1.9 However, it was clarified that the Board has already permitted the 13 mines to undertake all control measures before monsoon and during monsoons vide Board decision conveyed under letter dated 10/05/2017. As the monitoring accuracy has itself come in doubt, the perception that no violation of norms is occurring during extraction of ore cannot ipso facto be relied upon to make such a distinction as being suggested by Directorate of Mines. Thus, it is clarified to these mining units that no development of mines such as excavation of Pits, crushing and screening / beneficiation of ore etc. shall be permitted during this period.

2. The Board after deliberating this issue at length decided as under w.r.t Sonshi Cluster:-

a) M/s. V.G. Quenim which has Consent to operate valid upto 17/07/2017 and has been kept in abeyance and has been issued show cause notice, will be processed upon separately.

b) M/s. Kashinath Talaulikar has made a submission stating that the unit will not be operated upto 15th October, 2017 and the same has been considered by the Board.

c) Having considered the NAMP data that there was a default by the mining companies in maintaining Ambient Air Quality Monitoring within permissible limits and as the exceedence in AAQM was manifest in the monitoring station within the Buffer Zones of the mines though incidentally they also fall within the evacuation routes. It is also noted that the data from the captive monitoring locations conducted by the mining units is not possessed of an arms length quality. Hence, for monitoring as mandated in the Supreme Court order, this data ought not to be used to contradict the data of NAMP stations. The NAMP stations regularly showed increase in permissible limits from October, 2016 to March, 2017. The default which occurred in April, 2017 at Sonshi was manifest by site visits, photos, etc. Thus, in terms of facts and data available, the GSPCB has no basis to favorably consider the immediate renewal applications of the 11 units.

d) The Board was also constrained to take note of the allegations by M/s. Lithoferro, M/s. Eyestar Finance & Leasing Pvt. Ltd., M/s. G. N. Agarwal, Borchi Mordi Iron Ore Mine, M/s. N. S. Narvekar Minerals (Kalay Iron Ore Mine) before Hon'le High Court that the affected units were not heard. This is despite the fact that for all Board Meetings, representatives from concerned units were informed and allowed full participation and copy of minutes were issued to all. Therefore, while up till now the Board was treating this matter as a matter of shared concern and a voluntary effort by industry to remedy the situation – the court challenge disturbs this rythym. Thus, Member Secretary is authorized to process the Sonshi Cluster cases strictly as per the legal procedure needed and pass individual orders. Once the prescribed control means are fully operational i.e. by September, 2017, the units are free to approach the GSPCB afresh. Self regulation by the mining companies to maintain AAQM has failed as can be verified through the Ambient Air Quality Monitoring reports / monitoring data. Pending completion of the action plan as submitted by the mining companies in this clusters to mitigate environmental damages, the Board has no basis to grant an immediate renewal to these 11 applications.

e) That monitoring stations along the transportation routes in this cluster to be set up as stated above in Para 1.6 with cost to the mining companies, which will include cost of new machines, its calibrations and operating cost etc.

f) The Scientific section to further monitor in Sonshi cluster.

Agenda Item No. 3

The Board had decided to grant renewal of Consent to those mining companies approved in earlier Board meetings subject to payment of Bank Guarantees before 19/05/2017.

So far, 2 mining companies i.e. M/s. V. M. Salgaocar & Bros. Ltd (Velguem-Surla Iron Ore Mine), T.C. No. 83/52, 29/54, 19/58, 62(B)/52 and M/s. Baddrudin H. Mavani, Nomoxitembo de Caurem iron Ore Mine, T.C. No. 14/52 has submitted Bank Guarantees and has issued consent.

Decision of the Board:

3.1 The Board noted the same. However, representative of M/s. V.M. Salgaocar & Bros Ltd., informed that one of the condition of the consent states that 2 sweeping units shall be employed, which implies that each mining company will have to employ 2 such machines which practically is not

required. To this, the Member Secretary clarified that minimum 2 machines shall be employed either jointly / severely in each transportation route to operate on the mining transportation road to and fro simultaneously to ensure that the road is clear from dust.

The mining company representative suggested that Wheel washing system involves construction and other detail activities; hence they may be permitted to install the same by October, 2017 for which the Board agreed. As regards the drying of wheels by compressed air, Board agreed to consider and verify any other measures which the industry claim could suffice in mitigating the carrying of dust on wheels of the trucks on the main road. The industry should submit the alternatives by 15/06/2017.

3.2 The mining companies representatives suggested that instead of Bank Guarantees being sought as a "condition precedent" for issuing of consent to operate, the Board could consider incorporating the condition in the consent for submission of subsequent submission of Bank Guarantee. They further informed that they have reservation on the issue of Bank Guarantee since the respective mining company at the time of their approval of mining plan by Indian Bureau of Mines summits to the tune of 3 Crore Bank Guarantee and as such the Board insisting on further Bank Guarantee amounts to duplication. They further stated that the Bank Guarantee issued to Indian Bureau of Mines is also related to ensuring environmental protection measures.

3.3 The Board also examined the Judgment in Appeal No. 68 of 2012 before the National Green Tribunal, Principal Bench, New Delhi dated 09/01/2014 in State Pollution Control Board, Odisha Vs M/s. Patnaik Steel and Alloys Limited and M/s. Swastic Pvt Ltd. Wherein the Hon'ble NGT has held that the pollution Board can require the industry to submit Bank Guarantee and has further held that the Board is vested with the power of issuing directions of closing an industry and therefore requiring the industry to furnish a Bank Guarantee as a condition for grant and continuation of consent and it being less rigorous and that the decision of the Board is not penal, but is regulatory and compensatory in nature.

3.4 After deliberating on this issue it was explained that:

(a) In respect of Sonshi Cluster which had 13 mining companies operating through same evacuation route, caused excessive air pollution as can be seen after perusing the AAQM reports and therefore there was a clear default on part of the mining companies to maintain Ambient Air Quality within prescribed limits. Besides the agitation by local people, The Hon'ble High Court of Bombay at Goa also took Sou Moto cognizance and south report from GSPCB, which has since being submitted after site inspection. Similarly report has been also submitted by GSPCB before the Hon'ble Human Rights Commission. The default in maintaining Ambient Air Quality within permissible limits was despite the fact that this was the condition in the consent.

(b) That the Board did not have additional monitoring capacity in the evacuation routes of the 20 mining companies of which 3 nos are in Costi Cluster, 8 nos. in Sulcorna, Kevona and Maina –Caurem and Borga Cluster, 1 no. Bauxite Mine at Betul, and 8 nos. in Advalpal cluster, except NAMP stations which showed that Ambient Air Quality Monitoring was within permissible limits and hence the Board decided to grant these 20 mining companies based on the assurance that they shall implement the short term and medium term action plan to mitigate pollution. The Board has further taken steps to establish monitoring stations along the evacuation routes of the above clusters.

(c) Having considered this position in the Board's meeting dated 28/04/2017 and subsequent deferred meetings with due regard that mining fair season would end by 31/05/2017 and to give the respective mining companies a fair opportunity and having considered that the mining companies would effectively implement these measures and that they would want

to continue mining activities till 31st May, 2017, the Board decided to have standby and standalone Bank Guarantees from the respective mines, so that they reiterate that the Plan of Action suggested by them, is a serious and well thought through effort and not a sham proposal hurriedly put in place to get a consent to operate.

(d) Further, in order to ensure that these Short and Medium term measures are being effectively implemented by the mining companies as per the assurance given by them, which could be further monitored by the Board, the Board decided to accept BGs from the respective mine companies. This comprehensive monitoring study is also necessary so that the Board can submit its comments on carrying capacity to MoEF, for which the Board has sought time till 30th June, 2017.

(e) The Board noted the proposition of mining companies that they have already submitted Bank Guarantees to Indian Bureau of Mines to the tune of 3 Crores with a forfeiture clause in the event of any violation of conditions of the mining plan, wherein environmental protection measures is also a condition. In this respect, it is clarified that the Bank Guarantee sought by the Board is strictly in respect of implementing the Pollution Control Measures as presented by the mining companies in their action plan in the Board's meeting dated 02/05/2017**.**

Agenda Item No. 4
The following mining companies have sought time to submit Bank Guarantees as under:-

Name of the mine with address	T.C. No.	Lease Area in Hectare	Amount of Bank guarantee	Remarks
M/s. Chowgule & Company Pvt. Ltd. (Costi Iron Ore Mine)	2 2 / 5 0 3 8 / 5 1 12/57	127.9257	50 Lac	The unit has asked for 4 weeks to submit Bank Guarantee
M/s. V. D. Chowgule, (Costi Iron Ore Mine)	4 0 / 5 0 , 16/51	167.78	50 Lac	The unit has asked for 4 weeks to submit Bank Guarantee
M/s. Haider Kassim Khan (Vangi Bindi Advona Iron ore Mine)	10/51	83.066	25 Lac	The unit has asked for time period upto 1st week of June, 2017 to submit Bank Guarantee
M/s. Sesa Resources Ltd (Curpem Iron Ore Mine)	3/51,40/54	148.67	50 Lac	The unit has asked for 3 days to submit Bank Guarantee
M/s. Sesa Resources Ltd (Colomba Iron Ore mine)	35/52	98.46	25 Lac	The unit has asked for 3 days to submit Bank Guarantee
M/s. Panduronga Timblo Industrias (Oiteiro Borga do Bairo Queri)	34/50	89.50	25 Lac	The unit has asked for a period of one week to submit Bank Guarantee
M/s. Panduronga Timblo Industrias (Borga Dongrachem Fall Iron ore Mine,Rivona)	29/52	71.98	25 Lac	The unit has asked for a period of one week to submit Bank Guarantee

M/s. G. N. Agarwal, Borchi Mordi Iron Ore Mine	6/61	92.243	25 Lac	The unit has asked for 10 days to submit Bank Guarantee. **However, the applicant has also filed Petition before Hon'ble High Court seeking relief from submission of Bank Guarantee in terms of the Order of Hon'ble High Court in the matter relating M/s. Litho Ferro dated 22/05/2017. The Board has received a copy of Petition at 1:00 p.m. on 23/05/2017.**
M/s. Vedanta Ltd. (Sanquelim Iron Ore Mine)	T.C. No. 9/49,10/49, 3/54	203.509	50 Lac	The unit has asked for 3 days to submit Bank Guarantee
M/s. Sesa Mining Corporation Ltd (Bicholim Iron Ore Mine)	T.C. No. 11/41, 12/41, 13/41, 14/41, 15/41	479.30	50 Lac	The unit has asked for 3 days to submit Bank Guarantee
M/s. Bandekar Brothers Private Limited- Jaquela Oujacadevicho Mollo Iron Ore Mines,	T C No.84/1952	99.45	25 Lac	The unit has sought time to Bank Guarantee (Time not specified)
M/s. Orasso Dongor Iron ore Mine,	T.C. No. 76/52	99.40	25 Lac	The unit has asked for 3 days to submit Bank Guarantee
M/s. N. S. Narvekar Minerals (Kalay Iron Ore Mine)	12/52, 40/51	178.1826	50 Lac	The unit has asked for 10 days to submit Bank Guarantee. **However, the applicant has also filed Petition before Hon'ble High Court seeking relief from submission of Bank Guarantee in terms of the Order of Hon'ble High Court in the matter relating M/s. Litho Ferro dated 22/05/2017. The Board has received a copy of Petition at 1:00 p.m. on 23/05/2017.**

Further, the following mining companies have not replied to the letter regarding submission of the Bank Guarantee.

Name of the mine with address	T.C. No.	Lease Area in Hectare	Amount of Bank guarantee
Pravin Kumar Gosalia,	T.C No: 4/NSD/ BAUX	826.158	50 Lac
M/s Litho Ferro (Calsanicho Mato de Oilo-mol Iron ore mine)	T.C. No. 89/52	47.03	12.5 Lac
M/s. Chowgule & Company Ltd (Sirigao Iron Ore Mine)	T.C. No. 5/49,13/49	172.10	50 Lac

M/s. Chowgule & Company Pvt. Ltd. (Pale Iron Ore Mine)	T.C. No.31/53,41/56	152.63	50 Lac
M/s. Kashinath Talaulikar (Carmolachem Mol iron ore mine)	T. C. No. 48/58	97.54	25 Lac

Decision of the Board: The Board decided to grant the time as sought by the mining companies. As regards to the Applicants who has neither requested for time nor submitted Bank Guarantee the same are rejected. However, they are free to apply later.

However, those applicants who have filed petitions before the Hon'ble High Court i.e. M/s Litho Ferro & M/s. Eyestar Finance & Leasing Pvt. Ltd., the Board will file its replies and take the decision based on the outcome / Orders of the Hon'ble High Court / Apex Court.

Agenda Item No. 5 & 6

M/s. Litho Ferro has filed Writ Petition before the Hon'ble High Court of Bombay at Goa challenging the Board's decision to submit Bank Guarantee of amounting Rs. 12.5 lacs with validity period of one year for considering the application for renewal. The Board has received this notice at office at 10.50 a.m. stating that the matter will be taken up for hearing at 11:00a.m. The petitioner has prayed to withdraw that letter and also quashed and set aside the Board's communication and also to decide renewal application in accordance with law and without insisting on Bank Guarantee. The Hon'ble High Court of Bombay at Goa, vide order dated 22/05/2017, which states as follows:-

"Heard Shri Parag Rao, learned Advocate for the Petitioners, considered the grounds urged in the petition and the relevant provisions of the Air (Prevention and Control of Pollution) Act, 198. Besides, I also perused the impugned communication dated 8th / 9th -05-2017 bearing no. 1/25/PCB-17/Tech/2227 calling upon the petitioners to furnish the Bank Guarantee in the amount of Rs, 12.05 lakhs and the second dated 17-05-2017 bearing no. 1/25/16-PCB/Tech/064 whereby the application for renewal of consent is made subject to the furnishing of the Bank Guarantee. It is apparent that no notice has been issued to the petitioners prior to the issuance of the impugned communication dated 17-05-2017.

2. In the circumstances, therefore, stay is granted in terms of the prayer clause 'D' till the next date. Stands over on 5-6-2017, Parties to act on the authenticated copy of this order".

The Board will file a Counter.

M/s. Eyestar Finance and Leasing Pvt. Ltd., Huldool Dongor Bimbol Iron Ore Mine has also filed Writ Petition before the Hon'ble High Court of Bombay at Goa, challenging the letter dated 11/05/2017, wherein it was directed to stop the mining activity. The Board has received this notice at office at 10.50 a.m. stating that the matter will be taken up for hearing at 11:00 a.m. The petitioner has prayed to withdraw the letter / order dated 11/05/2017 and also quashed and set aside the Board's communication and also to decide renewal application in accordance with law and without insisting on Bank Guarantee. The Hon'ble High Court of Bombay at Goa, vide order dated 22/05/2017, which states as follows:-

"*"Heard Shri Parag Rao, learned Advocate for the Petitioners.*

2. It is shown by him from the records that even a Show cause notice has not been issued to the petitioners before issuing the impugned order thereby resulting in violation of the principles of natural justice. In view therefore and in the circumstances the operation of the impugned order dated 11/05/2017 is stayed till the next date.

3. Stands over on 5/06/2017. Parties to act on the authenticated copy of this order".

The Board will file a Counter.

Decision of the Board:

The Board noted the same and decided that appropriate reply has to be filed before the Hon'ble High Court giving chronology of issues besides considering the order of Hon'ble Supreme Court case number 435 of 2012 and connected matter, recent order of High Court in Suo Moto Writ Petition no. 2/2017 concerning Sonshi cluster and the minutes of the 124th meeting / deferred meetings of the Board

Agenda Item No. 7

In respect of monitoring of transportation routes in South Goa details were provided as **Enclosure 'C'**.

Scientific section Air Monitoring incharge to present the monitoring data including that of NAPM locations.

Further, Scientific section to also present the monitoring data at Tilamol NAMP location following grant of Consent to M/s. Minescape, to undertake the effort of operation by M/s. Minescape Minerals Private Limited.

Decision of the Board: The monitoring data was presented before the Board by the scientific section of the Board. At Tilamol NAMP station, the AAQM data is within prescribed limits hence the grant of Consent to M/s. Minescape Minerals Private Limited can continue.

Agenda Item No. 8

There are 7 applications for Renewal of Consent / Fresh Consent in the following clusters. Based on the monitoring data as presented by scientific section the Board may take appropriate decision in respect of their applications.

Name of Applicant	Cluster	Whether Renewal or Fresh
M/s. Eyestar Finance and Leasing Pvt. Ltd., Huldool Dongor Bimbol Iron Ore Mine, T.C. No. 8/41	Sigao	Renewal
M/s. Panduronga Timblo Industries, Sigao (Advona Toleamati e Galiguro) Iron Ore Mine, T.C. No. 87/53,	Sigao	Renewal
M/s. M. S. Talaulikar & Sons, (Sainem Iron Ore Mine), T.C. No. 2/51,	Dharbandora	Renewal
M/s. Panduronga Timblo Industries, (Sailetembi-Iron Ore Mine, Suctole),T.C. No. 143/1953,	Suctolim	Renewal
M/s. Sociedade De Fomento Industries Pvt. Ltd., Copila Gaichem Paul, T.C. No. 88/52,	Sigao	Renewal
M/s. Panduronga Timblo Industries, Bondra Advona Iron Ore Mine, T.C. No. 61/53,	Codli	Renewal
Ms/. V. M. Salgaoncar & Bros Ltd., Sigao Iron Ore Mine, T.C. No. 47/54, 50/53, 13/55	Sigao	Fresh

Decision of the Board: The AAQM monitoring data was presented before the Board by scientific section. As per the monitoring report, the mine at sr. no. 2, 4 and 6 shall be granted consent to operate since they are passing through Codli route which is having the AAQM levels within prescribed limits for the month of May, 2017, provided the Bank Guarantee as prescribed by the Board is submitted.

As regard to unit at sr. no. 1, 5 and 7, these units have been advised to find an alternative route and not pass through Usgao route since the AAQM levels at Usgao are beyond the permissible limits for the month of May, 2017. Though at Sigao station AAQM does not exceeded. These mine transportation passes through Sigao as well as through Usgao route. The evacuation route to be followed by these

units has to be vetted by the Mining Department. Upon vetting by the mines Department the Board will examine the routes and consider the applications accordingly, taking into consideration the monitoring capability.

With regard to sr. no. 3 the representative of mining unit informed that mine is not in operation at present and the mining operation will start only in the month of October, 2017. In view of this submission, the Board has decided to consider this application and grant consent with a condition that the mining company shall not carry out the transportation of Ore upto October, 2017.

Agenda Item No. 9

Shri Kush Kushta Velip r/o. Caurem Quepem Goa, complaint vide letter dated dated 04/05/2017 regarding violation of norms and guidelines by Mining companies bearing T.C. Nos. 10/51, 59/51 and 06/61.

Action Taken Report:

As per earlier Boards decision, Water Resources Department, Department of Agriculture, and Indian Bureau of Mines have been already issued letters in respect to the grievances raised by the Petitioner, Shri Kush Kushta Velip r/o. Caurem Quepem Goa.

Decision of the Board: The Board noted the action taken by Member Secretary.

Agenda Item No. 10

In respect to Application of M/s. Minescape Minerals Private Limited, whereby he has sought to reduce the Bank Guarantee in view of decision taken by the Board in 124th Special Meeting.

In terms of Board meeting dated 15/05/2017, Consent was granted to M/s. Minescape Minerals Private Limited as a standalone case at that relevant time taking into consideration, the data of monitoring of NAMP location at Tilamol station, which was within limits and after operation of M/s. Minescape Minerals Private Limited any increase in pollution load could be attributed to M/s. Minescape Minerals Private Limited.

Decision of the Board: After deliberating on this issue, it is seen that M/s. Minescape Minerals Private Limited was granted consent as a standalone case following the Hon'ble High Court order on the premise that Air Ambient at NAMP station at Tilamol was within limits. The Board had taken the Bank Guarantee from the said mining company to ensure that the Pollution Control Measures are strictly adhered to, on the hypothesis that any exceedance beyond the permissible limits could be attributed to this unit alone. Hence the Board rejected the request to reduce the Bank Guarantee.

Agenda Item No. 11

The Board has received 2 letters from M/s. V. M. Salgaoncar & Brothers to grant consent to operate to Sigao Mine bearing T.C. No. 13/55, 50/53 and 47/54. In the first letter dated 15/05/2017 the unit has requested to grant consent to operate to its new mine situated at Sigao since it is stated that the PM 10 recorded by the company at their monitoring station at Palaskata, Mollem Village is well within the prescribed limits.

In the second letter dated 19/05/2017, the unit has stated that they will be carrying out the developmental activity like handling of waste rock, back filling of workout pit, pumping of pit water, protective measures, maintenance of equipment and other mining allied activity within in the lease hold area during the monsoon. The unit has also requested to kindly consider their case on similar basis as of M/s. Kashinath Talaulikar bearing T.C. No. 48/58.

However, during 124th Board meeting (Special Meeting) held on 28/04/2017, was decided by the Board that the application of this mining unit which has applied for fresh consent to be deferred. Since PM 10 parameter is found to be exceeding permissible limits for 5 consecutive months as per NAMP data of Usgao location, as the additional mining unit will increase the burden on the route.

Vide Sr. No. 4(d), in this connection the Board may deliberate and decide.

Decision of the Board:

The Board after deliberating decided that Consent to operate will be granted to M/s. V. M. Salgaocar & Brothers only to operate the mine and not to carry out transportation activity. The consent to operate will be granted upon submission of Bank Guarantee by the unit as decided by the Board in earlier meetings.

Agenda Item No. 12

In respect of modification of Delegation of Powers, Modified order is already issued.

Decision of the Board: The Board noted the action taken by Member Secretary.

Agenda Item No. 13

In respect of MoU that has to be executed between PWD, Goa and Mining Companies for repairs & widening of roads, which are being used by the mining trucks at the cost of mining companies.

The broad requirements for MoU:
(i) Removal of Pot holes
(ii) Widening and strengthening of the mining trucks transportation routes
(iii) Providing signages, Protective measures etc.
(iv) Any other requirement as per case to case basis.

Decision of the Board: The representatives of PWD were present for the Board meeting. The Board deliberated with representatives of mining companies and PWD representatives and decided that MoU to be signed between PWD and Mining companies for removal of Pot holes and minor repairs to be undertaken by mining companies at their own cost which shall be supervised by PWD local offices after identifying the evacuation routes and as per the CPWD specifications.

Regarding widening and strengthening of roads used for evacuation of mining trucks, it was decided by the Board to take this matter with State Government for necessary action.

Agenda Item No. 14

Proposed panel of Advocates to appear on behalf of the GSPCB before various Courts of law and Judicial Forums and Tribunals

As per Rule 17(18) of the Goa Water Rules notified by the State Government, subject to the approval of the Board the Member Secretary shall have powers to engage legal advisors, Advocates, Attorneys for the purpose of protecting or assisting the business of the Board on terms and conditions to be approved by the Board.

As per the decision taken by the Board during its 121st meeting held on 26/06/2016, it was decided by the Board that appointment/allotments of matters to advocates should be done based on the recommendations of senior Advocate A.N.S. Nadkarni. In supersession of all earlier decisions of the Board, it was decided that fees to be paid to Advocates of the Board (as recommended by Advocate Nadkarni) are to be paid in terms of order dated 18/1/2016 issued by the Law Department, Government of Goa.

Presently Senior Counsel A.N.S. Nadkarni has been appointed as the Additional Solicitor General of India and is now based in New Delhi. In case of exigencies and urgent petitions filed before the courts, which requires immediate representation before Courts i.e. the Hon'ble High Court, Hon'ble NGT, Pune Bench, Administrative Tribunal and other lower Courts, the Member Secretary may appoint an advocate from the panel of Government Advocates / Additional Advocates / or any other Advocates who is currently appearing for the Board. The stop gap arrangement is necessary so that the Board does not go unrepresented during the initial hearing especially when ex-parte ad interim relief are sought by the Petitioners.

The Board members may deliberate and decide on the issue of appointing Advocate from the panel of Advocates notified by the State Government or any other Advocate so as to defend the interest of the Board.

Decision of the Board: The Board after deliberating on this issue approved that the Member Secretary of the Board shall move a file for the confirmed appointment of Ld. Senior Advocate A.N.S Nadkarni, after his appointment as Ld. Additional Solicitor General of India, to seek his consent and non-conflict. However, in case of exigencies and urgent Petitions filed before the Courts, Member Secretary is authorized to appoint Government Advocates / Additional Government Advocate from the panel of advocates approved by the Law Department or any other advocate who presently appears for the Board in other matters. As decided above, Ld. Sr. Adv. A.N.S Nadkarni to be consulted in respect of his appearance on behalf of the Board after his assuming the office of Additional Solicitor General of India. Thereafter, a standing panel of Senior Advocates could be constituted in consultation with Ld. Senior Advocate A.N.S Nadkarni.

The meeting ended with thanks to the Chair.

125th Meeting of The Board (Special Meeting)
In the 125th Meeting the Board took the following decisions:

I. The 125th meeting of the Goa State Pollution Control Board was held on 23rd June, 2017 at 4.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

Agenda Item No. 1.
Rectification in the minutes of the 124th Board meeting

Chairman informed the members the Board in its 124th Meeting held on 28/04/2017 had discussed the applications for Consent to Operate / Renewal of 38 mining units, the same has to be reads as 39 units including the mine of M/s V.G. Quenim. The Member noted and approved the same.

Agenda Item No. 2
(a) Applications for Consent of the mining units located at Sonshi and Codli

Members of the Board perused the air quality monitoring report prepared based on the data of the air quality monitoring conducted by the Board in the month of May, 2017 alongwith the data made available by Directorate of Mines and Geology with respect to transportation of iron ore in the area and approved the same to be placed before the hon. High Court in the Suo Motou Writ Petition no. 02/2017. on an Affidavit.

The representative of the mining units present at the meeting informed that the Professor / Scientist from Indian School of Mines, Dhanbad is expected to arrive in Goa in the week end and presentation of the air pollution control measures and the monitoring mechanism suggested by Indian School of Mines, Dhandbad could be scheduled on Monday i.e 26/06/2017. The members decided to consider the applications for renewal of Consent in Codli after the presentation of the Indian School of Mines, Dhanbad

(b) Representation by Village Panchayat Surla: - The Panchayat has requested for stopping of sprinkling of water on road through tanker. The Board has issued Consent to the mining units condition at 4(v) “The roads in mining areas shall be sprinkled with water to suppress dust pollution”. The Board insists the same and decided to take a decision after the presentation made by the Professor / Scientist from Indian School of Mines, Dhanbad in respect of conditions as regards to sprinkling of water on roads.

(c) Letter received from Goa Mineral Ore Exporters Association: The Board reiterated the decision taken at the 124th Board meeting held on 23/05/2017

Agenda Item No. 3

Proposal for additional locations for carrying out Ambient Air Quality Monitoring (AAQM) under National Ambient Monitoring Programme (NAMP) of Central Pollution Control Board. (CPCB)

The Board in its earlier meeting had noted that there are certain gaps in conducting ambient air quality monitoring in the transportation corridors of iron ore in North Goa and South and asked the Scientific section to identify locations for carrying out AAQM on such routes. Members noted that the Scientific section of the Board has carried out the exercise and identified the following seven location in North Goa.

North Goa - 1. Sonshi Village, 2. Navelim Sub-station , 3. Maina Village 4. Sirsaim Village, 5. Pale – Velguem – Vagus Village 6. Calvim 7. Bicholim (Sub-urban)

The following locations were approved for South Goa.

South Goa – 1. Capxem – Sanvordem.

The members approved to recommend these monitoring locations to be included under NAMP of CPCB and until such approval is obtained, the monitoring should be commenced at these locations post monsoons at the cost to the mining companies.

The Board also considered the recommendations made by the Scientific section for purchase of mobile Continuous Ambient Air Quality Monitoring equipments with a GPS locator as this would provide on-line and real time data for effective monitoring of air quality in the mining areas on the transportation routes / buffer zones at (a) Sonshi Village and (b) Navelim in North Goa and (c) Sanvordem – Capxem route in South Goa., at cost to mining units for minimum of five parameters, namely, PM_{10}, $PM_{2.5}$, SO_2, NO_2 and CO. And approved the same.

Agenda Item No. 4

Status of Writ Petitions filed before the Hon. High Court, Panaji Bench, by the mining units.

I. PUBLIC INTEREST LITIGATION (SUO MOTO) 2 OF 2017 VERSUS STATE OF GOA AND OTHERS, (GSPCB RESPONDENT NO. 4)

The matter is now before the Hon. High Court for hearing on 28/06/2017, wherein the Board is required to place the AAQM report.

Members of the Board perused the air quality monitoring report prepared by the Scientific section based on the data of the air quality monitoring conducted by the Board in the month of May, 2017 and approved the same to be placed before the Hon. High Court in the Suo Motu Writ Petition no. 02/2017 along with the report prepared by the Scientific section of the Board with regard to data comparison study at Athletic stadium Bambolim, on an Affidavit along with the data available from the Directorate of Mines and Geology with respect to transportation of iron ore in the area.

2. In respect of Writ Petitions filed by:

i.	M/s. Eyestar Finance & Leasing Pvt. Ltd, Huldool Dongor Bimbol Iron Ore Mine, T.C. no. 8/41 V/s GSPCB Writ Petition no. 490/2017.
ii.	M/s V.G. Quenim V/s GSPCB Writ Petition no. 498/2017
ii.	M/s N. S. Narvekar Minerals V/s GSPCB Writ Petition no. 488/2017
iv.	M/s Agrawal Minerals (Goa) Pvt. Ltd V/s GSPCB Writ Petition no. 489/2017
v.	M/s Littho Ferro V/s GSPCB Writ Petition no. 491/2017

(a) Member Secretary explained that the Writ Petitions at serial no. (i) and (ii) are in respect of Boards directions dated 11/05/2017 directing the mining units for cease of operations, thought the mining units had valid Consents, whereas, the Writ Petitions at serial no. – (iii) (iv) and (v) are in respect of Boards directions for submission of Bank Guarantee.

(b) It was noted that in all five Writ Petitions, filed by different mining units the common assertion by all the units was as follows: **" That as a mining lessee, the Petitioner has applied for Consent to Operate only for the purpose of extraction of iron ore from the said mine. The Petitioner states that the Petitioner does not itself transport any iron ore from the said mine and the iron ore is sold at the mine head".**

Further, that " **the Petitioner sells iron ore from the said mine on ex-mine basis i.e at the pit head and is not involved in transportation of iron ore from the mine to the jetty".**

(c) This business model being disclosed by the Petitioners for the first time, and therefore now stands in a undefended legal position of never having the capacity to comply with conditions of the Consent 6 (xviii), the GSPCB immediately consulted Boards Legal Counsel and both could be affidavits to all five petitions and independently a show cause notice accordingly was drafted and readied, as annexed to these minutes. The core point being Consent condition no. 6 (xviii) which specifically mandates the compliance of the following: " mining lease with common transport route should carry out AAQM along the transport routes in consultation with the Board before commencement of the mining operations."

Further that the original Consent to Operate order issued to the respective mining units was obtained by the above referred mining units by suppression of a material fact, namely that they were not carrying out transportation of ore and merely selling the iron ore at the mine head, while in fact the mining companies were submitting the transportation data to the CPCB without disclosing that they do not propose to be accountable for the same.

(d) Thereafter during consultations with the Boards Senior Legal Counsel it was informed that the above referred mining units have conveyed to withdraw the Writ Petitions and accordingly has served the withdrawal petitions on the Boards Counsel, besides, petitioner at serial no. (ii) above, has filed application for amendment to respective paras in respect of contents of para (b) above, on the ground that " the Applicant / Petitioner states that in view of the limited relief sought in the Petition and inorder to bring in accord the contents of the petition, with the real intent in filing the petition, it has become necessary to amend the petition by deleting a portion from the contents of the relevant paragraph."

(e) Attention of the Board was drawn to the above relevant para of the petition by the mining unit at (d) (ii) above in respect of modification of petition which perhaps may go contrary to the extent GSPCB understanding that the impact of extraction as well as impact of transportation on AAQMS is the core responsibility of the mining unit which obtains the Consent to Operate. Further, the Board felt that exceedence of parameters on the transportation route is a cumulative default of a cluster, while exceedence of parameters in the core and buffer zones arguably can be pin pointed to a specific mining lease / company

(f) After due deliberations it was decided :

i.	GSPCB may in principle has no objection for unconditional withdrawal of respective petitions and as by this action, the Court interim restraints will dissolve and the respective mining units will voluntarily come within the on-going plan of action. However, it was decided to request the Boards Counsel that before the Hon. High Court, the Boards core position as reflected in the draft show cause notice remains steadfast i.e, that the unit which obtains the Consent to Operate cannot absolve itself of responsibilities to be bound by default of permissible limits of emission on the transportation routes.
ii.	The Board assessed that exceedence of AAQM at transportation and exceedence of AAQM at evacuation can be seen as distinct but only for the purpose of source of pollution study for better mitigation measures and not as a basis to evade responsibility of consequence of default and as transportation as well as evacuation are integral part of mining operations and estimation of carrying capacity.

3. It was brought to the notice of the Board that the Boards Senior Counsel has advised that the grant of Consent needs to for a period of two years for the mining units and not for short term like one year or six months. This has been advised in terms of Judgment dated 09/01/2014 passed by National Green Tribunal (Principal Bench) in appeal no. 68/2012 : State Pollution Control Board, Orissa V/s M/s Patnaik Steel and Alloys Ltd., and Ors. interalia that *"Consent cannot be used as a device to hamper industrial development and cause loss to industry. The purpose of Consent could be for prevention and control of pollution. Further, if an industry to whom Consent has been granted fails to comply with conditions of the Consent, the Board can withdraw the Consent. Further, the National Green Tribunal has directed all Pollution Control Boards to grant Consent to Operate to only those units which have satisfied the Consent conditions. It is also stated that wherever the Board requires a unit to furnish Bank Guarantee for compliance of consent conditions; the Board should ensure that its order provides for a time targeted action plan."*

Having considered the above, in the present context and further in view of the order of the Hon. High Court in Public Interest Litigation Suo Moto 02/2007, concerning the pollution in Sonshi area, the Board faced with the following situation:

a.	A number of mining units who had initially been granted Consent to Operate by the Board had submitted application for renewal of the same.
b.	Most of the Consent to Operate orders granted by the Board to the above mining units now stand expired.
c.	During the course of processing the above applications for renewal of Consent to Operate, the Board has observed non compliance of the Consent conditions. And further the AAQM conducted by the Board at the cluster transportation routes besides the NAMP locations showed exceedence of parameters.
d.	In light of the contents of the judgment of the National Green Tribunal as referred to above, the Board now faces a situation in which the mining units have failed to satisfactorily comply to the Consent conditions and therefore, strict interpretation of this National Green Tribunal order leaves no space to GSPCB but to deny renewal of Consent to Operate.
e.	However, the mining companies subsequently submitted short term and medium term measures for controlling pollution being caused due to their operation.
f.	Accordingly, the Board inorder to avoid the harsh decision to reject the Consent to Operate, instead insisted on a Bank Guarantee for ensuring effective compliance by issuing a Consent to Operate for a restrained period of six months so as to validate the short term and, medium term measures for controlling pollution being proposed by the industry as a interim response.

Though ordinarily in terms of the National Green Tribunal judgment Consent would have to be granted for two years, however, the Board was left with a unique situation that the Board was inclined to give the industry a fair chance to study and rectify the situation and provide window to the industry to

validate the proposed short term and medium term measures and accordingly it was decided to grant Consent upto December, 2017 after obtaining Bank Guarantee to ensure time bound compliance of pollution control measures.

The Board advised that given the above context a further opinion of the Boards Senior Counsel should be obtained prior to its implementation as a verbatim understanding of the said National Green Tribunal order as applicable to the present cases moves the mater towards rejection of the renewals in Sonshi cluster.

Agenda Item No. 5

Adoption of the Audit Report of the Board for the financial year 2014 – 2015

The members perused the Audit report as prepared by the Statutory Auditors appointed by the Government, M/s Rege, Kunkolienkar & Angle, Chartered Accountants who have audited the Balance sheet, Income & Expenditure and Receipts & Payments of the Board for the financial year 2014-2015 and have submitted the audited statement of accounts for the year 2014-2015 and the Audit report along with observations for compliance. The members perused and approved the same.

Agenda Item No. 6

Approval of the Revised Budget Estimates of the Goa State Pollution Control Board for the financial year 2016-2017 and Budget Estimate of the Board for the financial year 2017-2018.

The members perused and approved the Budget for the financial year 2015-2016 and the Budget Estimate's for the financial year 2016-2017. The budget Estimate for the year 2017-2018 prepared in Form VI and VII was also perused by the members and approved the same so as the forward to the Department of Environment.

Agenda Item No. 7

Revision of fees for conducting Environmental Public Hearing

The members deliberated and decided to study the charges levied for conducting Environmental Public Hearing from Gujarat Pollution Control Board, Maharashtra Pollution Control Board and Karnataka State Pollution Control Board. The members also asked to furnish break up of actual expenditure incurred towards advertisement on the local / national newspapers, conduct of public hearing, videography, hall, photocopies, translator, translation of the documents etc so as to decide on the increase of fees thereafter. The Board agreed that the Chairman may take a decision on the file accordingly.

Agenda Item No. 8

Implementation of Business Reform Action Plan (BRAP) under 'Ease of Doing Business in the State of Goa'.

Member Secretary informed the members that a meeting was conveyed by the Director of Industries, Trade and Commerce for implementing Business Reform Action Plan (BRAP) under 'Ease of Doing Business (EODB) in the State of Goa, initiated by the Government of India. The members perused the report as placed by the Board .

After deliberations, the members decided to constitute a Sub-Committee of the Board members comprising of the following to examine the recommendations for the Business Reform Action Plan (BRAP) under 'Ease of Doing Business in the State of Goa' and submit its recommendations within 15 days.

1. Member Secretary, GSPCB – Member
2. Director, Department of Tourism - Member

3. Director, Department of Mines and Geology _ Member
4. Director, Industries, Trade and Commerce – Member
5. Environmental Engineer, GSPCB – Member Convenor

Agenda Item No. 9

Applicability of the recommendations of the 7th Pay Commission to the Staff of the Goa State Pollution Control Board

The Board after deliberating on the subject decided that the records of the implementation of the VIth Pay Commission by the Board are required to be examined, so as to understand the decision taken by the board in the implementation of the Vth Pay commission as to from what date of the VIth pay commission it was implemented by the Board and further as regards to the arrears to be paid thereon. The Accounts section is required to submit detail statement of arrears.

Chairman directed to place relevant records at the next Board meeting and accordingly the subject was deferred.

Agenda Item No. 10

Re-designation of Public Information Officer, Assistant Public Information Officer and First Appellate Authority under the RTI Act.

Chairman informed the members that the following officials of the Board are being appointed as First First Appellate Authority, Public Information Officer and Assistant Public information Officer:

First Appellate Authority	Chairman, GSPCB
Public Information Officer	Senior Law Officer
Assistant Public Information Officer	Assistant Law Officer

During discussions Member Secretary informed the members that since the Board receives RTI mostly pertaining to Technical, Legal and Scientific Sections, the present officials be continued. Chairman further directed that the Legal Section be provided an additional dealing hand to cope up with the additional work.

III. The meeting was adjourned to 26th June, 2017 at 10.00 am, wherein the Goa Mineral Ore Exporters Associations informed that the proposal of Indian School of mines, Dhanbad will be presented before the Board.

125th Meeting of The Board
In the 125th Meeting the Board took the following decisions:

The adjourned 125th meeting of the Goa State Pollution Control Board was held on 26th June, 2017 at 10.00 am in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

In continuation with the proceedings of the last Board meeting (i.e. 125th meeting held on 23rd June, 2017 at 04.30 p.m.), Dr. Vishwajit Paul – representative of the Indian Institute of Technology (IIT) / Indian School of Mines (ISM), Dhanbad made a brief MS Power-point presentation *(.ppt)*.

The primary objective and purpose of set out in the presentation included adoption of best practices in the mines along transportation routes/ within lease area to reduce the levels of PM_{10} and $PM_{2.5}$ as well as identify the quality of ambient air and potential source of pollution through statutory complied comprehensive monitoring scheme and assist in developing control measures by devising sound customized management plan. The salient features of the said presentation are summarized as:

1. Entire mining belt in Goa is classified under six clusters namely –

a.	Advalpal – Bicholim
b.	Sonshi – Pissurlem – Velguem
c.	Codli – Costi
d.	Collem
e.	Tollem
f.	Maina – Sulcorna

Out of all the activities of the mining operations, transportation of ores through public / village road is the most challenging task in the absence of dedicated corridor, restricted timing and habitations on the road. The suggestions made in the presentation with reference to monitoring of Ambient Air Quality –

i.	Development of framework for comprehensive AAQM in accordance to the norms laid down by the CPCB for each cluster.	
ii.	Provision for continuous real-time monitoring of selected hot-spots including geo-tagging of monitoring locations	
iii.	Development of Standard Operation Protocol (SOP) for regular calibration, monitoring and analysis of the pollutants as far as monitoring is concerned.	
iv.	Selection of monitoring locations in line with the CPCB guidelines.	
v.	The suggestions made for effective Environment Management Plan (EMP) are as follows:	
	a.	Implementation of wheel-washing system
	b.	Identification of alternate route to bypass
	c.	Use of dust-extractors / road-sweeping machines at frequent interval
	d.	Moistening the transportation route by mobile water-mist guns / chemical suppressants
	e.	Mechanically covered tipper-trucks after phasing out older polluting trucks.
	f.	Random PUC checks through Government agencies
	g.	Inter-mine pollution control audit
	h.	Refresher training, research and awareness for all stakeholders involved in the mining-related activities.
vi.	Implementation of a road-map for selection of AAQM stations / procurement of monitoring instruments /	

2. The Board discussed and deliberated that the institute should provide a short term and middle term measure with at time frame, budgetary requirement. The technical details were discussed by the Board officials along with Official from ISM, Dhanbad and the mining units.

3. It was noted during this discussion that the plan of action requires decision between inter departments and the State Government hence Board individually cannot take a decision.

4. The Board also decided that the Directorate of Mines & Geology (DMG) should give capping for a period of one year and not distribute the capping of non-operating mines as these causes burden on the evacuation routes.

5. The Directorate of Mines and Geology (DMG) also should consider the capacity of the evacuation routes while deciding the capping of the individual mines.

6. The Representative of the mining companies informed that certain mines which were allotted

extraction limits so as to achieve the capping limit of 20 million tons for the financial year 2016-2017 did not operate the mines and extracted the ore. For achieving the target of 20 million tons for the financial year. The Directorate of Mines and Geology in the month of January – February carried out a re-allotment exercise and enhanced the capacity of operational mines which included mines in Sonshi cluster. As the mining companies had limited time to achieve the capping limits within a period of one month the quantum transportation spiked / shot up in the month of February – March. They requested that the allocation of capping limits should be firmed up in the month of September – October itself as the transportation could be proportionately distributed for the full season among the operational mines thereby reducing the stress on road network and air quality.

7. In response to the same, Chairman, desired to have a detailed plan of action with clear-cut time lines and responsibility of individual mining company with proportionate financial liability to address the said issue in a sustainable and practically-implementable manner. He also desired the proposed measures need also to incorporate two aspects of (i) upgradation of existing infrastructure availability and (ii) post-implementation monitoring mechanism so as to ascertain the changes thereafter. Accordingly, he instructed that the said remedial measures be discussed jointly by the industry representatives and Board officials to arrive at a mutually acceptable scenario to address the issue.

8. Subsequently and based on the interaction held, it was decided to consider these measures as detailed at (i) and (vi).

II. The Plan of action as discussed in the meeting with the industry.

1.	That the mining industry suggested for an immediate relief from pollution by alternate measures that they should move the transportation of ore in time from the main Sonshi road to internal road of the / adjoining mining leases. That this will ensure that there should be immediate relief in respect of pollution with regard to transportation of ore.
2.	The Board Scientist sought to know the mechanism of monitoring of transportation within the leases to which the industry clarified that as of now they are bound to monitor the core zone i.e in their lease area and that the core zone standards should apply. The Board clarified that it will continue to monitor the NAMP stations meant to the Sonshi cluster i.e at Honda, besides new proposed NAMP locations and that in the event of exceedence at these NAMP/ Monitoring stations in buffer zone should be dealt as a cluster defunct. The Rapid EIA of ISM, Dhanbad submitted to MoEF in 2014, suggested that dust suppression is generally limited to 100 metres from the source of generation.
3.	The Board decided to seek clarification on this respect from CPCB as well as ISM, Dhandbad in respect of proposal of transportation of ore within core zone and with respect to applicable Central Pollution Control Board standards. After obtaining this clarification Board could thereafter proceed to decide on Consent applications accordingly.
4.	The financial costings were also discussed in respect of funding of the short term measures and medium term measures in respect of monitoring by GSPCB i.e the operating expenditure and funding of monitoring equipments such as CAQMS (stationery and mobile), manual monitoring stations and other incidentals like CCTV, power requirement i.e for capital expenditure etc. Permanent station should be considered for enforcement mechanism while the mobile station to be utilized for response mechanism. Decision has to be arrived at as to whether the funding shall be borne by the mining companies jointly or severally or from the District Mineral Fund.
5.	ISM/IIT, Dhanbad in its proposal should consider appropriate modification in the software of the Directorate of Mines and Geology for controlling the transportation of ore and factor in the response time.
6.	The industry proposed for relaxation of additional two more hours for transportation from the existing restriction i.e from 8.00 am to 6.00 pm. The Board sought to know if there are any orders from the Hon. Courts, District Magistrate etc.

III. It was decided to hold the next Board meeting after receipt of a complete proposal for air pollution control mechanism and monitoring mechanism on the transportation routes from ISM / IIT, Dhanbad, besides on receipt of clarifications from CPCB/ ISM/IIT, Dhanbad and Directorate of Mines and Geology, so as to decide on show cause notices issued to Sonshi cluster and to finally decide on the applications for Renewal of Consent.

125th Meeting of The Board
In the 125th Meeting the Board took the following decisions:

The adjourned 125th meeting of the Goa State Pollution Control Board was held on 14th July, 2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

In continuation with the proceedings of the last Board meeting (i.e. 125th meeting held on 26th June, 2017 at 04.30 p.m.), based on the preventive measures suggested by the Board and on recommendations of IIT/ISM Dhanbad, Goa Mineral Ore Exporters Associations had suggested short, medium and long term measures to reduce air pollution in the mining areas.

Agenda Item no. 01

(a) Follow up action on the decision taken at the 121st meeting (Special meeting of the Board held on 29/06/2017

Member Secretary informed the Board that Sr. Advocate A.N.S. Nadkarni has confirmed that he will have no conflict of interest in representing the Board in light of his current engagement as Additional Solicitor General of India, Government of India. He shall continue to represent the Board.

Members deliberated on this issue and decided as follows:

Sr. Advocate A.N.S. Nadkarni, presently the Additional Solicitor General of India, Government of India, is based at New Delhi. Ld. Advocate Dattaprassad Lawande as Advocate General for the State of Goa also invariably has a large work load. At present both these Ld. Advocates are Counsels of the Goa State Pollution Control Board.

In the event of any urgent matter i.e. cases where the Board is required to appear before a Court of Law within a short duration, it may become difficult to brief the Ld. Advocates effectively if they happen to be out of station and also difficult for the Ld. Advocate to put in an appearance before the Court of Law in a short duration.

The Board members also noted that there could arise a situation wherein the stand of the Goa State Pollution Control Board in a matter would be at variance with the State Government or the Union Government resulting in both the aforestated Advocate being unable to represent the Board in such a matter.

Hence it is decided that the Board in addition approves nominating Panel of Advocates who had/ have been Advocate Generals of the State of Goa, to appear in any matter as stated in para (3) above.

In the event of a difficulty in obtaining the service of Sr. Advocate A.N.S. Nadkarni or Advocate Dattaprassad Lawande by the Board; the Member Secretary of the Board is authorised to retain any Advocate from the above stated panel to represent the Board.

(b) Follow up action on the decision taken at the 125th Board meeting held on 23/06/2017

Agenda item no. 6 – The members noted that the Revised Budget Estimate of the Board for the financial year 2016-2017 and Budget Estimate for the financial year 2017-2018 has been forwarded to the Department of Environment.

Agenda item no. 8 - The members perused the report as submitted by the Sub-Committee in respect to Ease of doing business and decided that the same be forwarded to the Directorate of Industries, Trade and Commerce for information.

Agenda item no. 9 - A detailed statement of arrears of VIIth Pay commission to the staff of the Board, was placed during the meeting. However, the Board desired to have the statement of income and expenditure of the last three financial years.

Agenda item no. 10 - Members noted that a letter has been forwarded to the Department of Environment conveying the decision of the Board in respect to designating Public Information Officer, Assistant Public Information Officer and Appellate Authority, as mandated under RTI Act.

(c) Follow up action on the decision taken at the adjourned 125th Board meeting held on 26/06/2017.

Member Secretary informed the members that letter has been forwarded to Indian Institute of Technology (Indian School of Mines) Dhanbad seeking clarification with respect to applicability of CPCB/MoEF standards prescribed under ambient air quality monitoring, monitored in core zone while transporting intra lease finished product (i.e ore)

Letter is also forwarded to Director, Dte. of Mines and Geology for comments on the suggestive short, medium and long term measures as submitted by Goa Mineral Ore Exporters Association.

He further informed that the reply of ISM/IIT Dhanbad is still awaited. However, the Directorate of Mines and Geology (DMG) has forwarded comments with regard to the transportation routes. The reply of ISM/IIT Dhanbad is required to be discussed along with the comments as submitted by DMG. The item has been differed to the next meeting, pending reply from ISM/IIT, Dhanbad.

Agenda Item no. 02

Application for Consent to Establish under the Air Act and the Water Act of M/s Syngenta Biosciences Pvt. Ltd. located at Survey No 28, Santa Monica Works, Corlim, Ilhas-Goa. (additional building and utility premises)

Members approved the proposal of M/s Syngenta Biosciences Pvt. Ltd. located at Survey No 28, Santa Monica Works, Corlim, Ilhas-Goa for Consent to Establish under the Air Act and the Water Act for Consent of additional building and utility premises for Research and Technology Laboratory. Further, the approval was subject to the condition that the waste water will be treated in ETP of Deccan Fine Chemicals (I) Pvt. Ltd. and the ETP treated effluent is discharged in Kumbharjua Canal, with a condition that the discharged effluent should meet the prescribed CPCB standards for S.W II category of water

Agenda Item no. 03

Application for Consent to Establish under the Air Act and the Water Act of M/s Deccan Fine Chemicals (I) Pvt. Ltd. located at Survey No 28, Santa Monica Works, Corlim, Ilhas-Goa.

Member Secretary informed the members that M/s Deccan Fine Chemicals (I) Pvt. Ltd. located at Survey No 28, Santa Monica Works, Corlim, Ilhas- Goa has submitted an application for Consent to Establish under the Air Act and the Water Act for change in product mix i.e for rationalization of Pretilachlor capacity from 1400TPA to 2900 TPA and the unit proposes to utilise the quantity of Monocrotophous of 1500 TPA of which production had stopped since 2010. He further informed that BITS Pilani, Goa has undertaken a study in this respect. Chairman desired to know whether BITS has conducted any consultation studies in the past on behalf of M/s Deccan fine Chemicals and as such wanted to know the conflict of interest from the expert engaged in undertaking the present study and accordingly he desired to obtain an undertaking to this effect while submitting a report to the Board, if

any. Further, Chairman desired that the approval be obtained on hard file after clarifying the fact that the said proposal has not received any complaints or dissents from any stakeholders.

Agenda Item no. 04

Application for Consent to Establish under the Air Act and the Water Act of M/s Deccan Fine Chemicals (I) Pvt. Ltd. located at Survey No 28, Santa Monica Works, Corlim, Ilhas-Goa. (extension in validity)

Member Secretary informed d the members that M/s Deccan Fine Chemicals (I) Pvt. Ltd located at Survey No 28, Santa Monica Works, Corlim, Ilhas-Goa has applied to the Board for grant of Consent to Establish under the Air Act and the Water Act for increase in production of Thiomethoxam from 3500 TPA to 4300 TPA. Consent to Establish for the said unit was granted on 27/12/2013. However, the unit has requested for extension in validity of the Consent to Establish.

Members noted that as the Consent Establish was granted on 27/12/2013, the Board is required to verify the validity of the Environmental Clearance granted to the said unit by the Competent Authority (i.e MoEF) concerned, prior to considering the application.

Agenda Item no. 05

Notification issued by Town and Country Planning (TCP) Department, Govt. of Goa.

Member Secretary informed the members that the Board in its 110th meeting held on 23/10/2013 had resolved that all residential complexes having 24 flats and above should install a Sewage Treatment Plant inorder to prevent water contamination due to overflowing of septic tanks/ soak pits. The decision of the Board was thereafter implemented and is in-force till date. At this juncture, Chairman desired to know whether TCP was appraised about the said decision.

However, Town and Country Planning department vide their Notification No.21/1/TCP/2015/ Steering Comm/16/5145 dated 21/12/2016 has notified that Sewage Treatment Plant is mandatory for residential complexes having 50 flats/ residential units and above. Sewage Treatment Plant will not be required if the area is already served by existing sewer lines.

Members took strong objection to the Notification issued by the Town and Country Planning Dept., when GSPCB has already taken a decision in this regard and the same was over-ruled. Since GSPCB is entrusted with the protection of the environment, the members felt that the Board decision should not be compromised and have decided to seek details from the Town and Country Planning Department for the logic arrived at increasing the number of flats / residential flats / units to 50, not based on the quantity of effluent generated as has been done by the Board during its meeting held on 23/10/2013.

Agenda Item no. 06

Applications of mining units for Consents

A. Cluster: Codli -

1. M/s. Vedanta Ltd. Codli Iron Ore Mine, T.C. No. 69/51, 70/52,126/53 The Board decided to consider the applications of M/s. Vedanta Ltd. Codli Iron Ore Mine, T.C. No. 69/51, 70/52,126/53 under Codli cluster by imposing a mandatory condition to carry out the ore transportation only through Route no. 1 i.e Codli - Guddemol - Sanvordem - Capxem / Andrem Jetty – subject to maximum operation of 1500 trucks /day irrespective of other routes if used otherwise. This was agreed upon since Codli NAMP location monitored by the Board is found to be within permissible limits during May, 2017.

2. M/s. Timblo Pvt. Ltd, Gaotone, Dusrifal, Codli, T.C. No 14/58 – The Board approved for transportation of ore through Codli – Dharbandora - Usgaon Tisk - Usgaon Bombay

Junction – Vagus – Surla –Navelim / Sonshi junction - Amona Jetty and decided to consider the application for Consent renewal as the AAQM station at Vagus monitored by the Board is found to be within CPCB permissible limits..

B. Cluster – Curpem
   1. Late Amalia R. G. Figueiredo- Polo Dongor Iron and Manganese Iron ore Mine T. C. No 65/51

C. Cluster – Pale
   1. M/s. Madachem Bat Mines Pvt. Ltd- T.C. No 8/61

Applications at B(1) and C(1) are considered for approval since the Board has not recorded any exceedance in the ambient air quality parameters with specific reference to PM_{10} at NAMP stations located at Tilamol and Vagus respectively and are within prescribed CPCB standards. While considering the above proposals and issuing a renewal of Consent, the Board re-collected the decision taken at the adjourned 124th Board meeting held on 02/05/2017 to impose a Bank guarantee depending on the lease area and include the same as specific condition in addition to other applicable conditions.

Agenda Item No. 07

Representations received from the following Mining units

1. M/s Minescape Minerals Private Limited – T.C. no. 59/51- The Board decided that the mine unit should clarify how much iron ore was extracted within the period of granting Consent upto 31/3/2017 and pollution control measures adopted while transporting the same. Further it was clarified that the decision to impose Bank Guarantee of Rs. 1 Crore will be re-considered subject to a reply from the mine unit.

2. M/ Pravin Kumar Gosalia – The Board decided to verify the submission of data for ambient air quality report by the mine unit monitored within core and buffer zone and ascertain its compliance as per the Consent issued by the Board prior to considering his application.

3. M/s Sociedade Timblo Irmaos Limitada (represented by Panduronga Timblo Industrias) – T.C no. 143/53, The Board agreed to grant time upto September, 2017 to the mine unit for submission of the Bank guarantee as per their request dated 21/06/2017.

4. M/s Sociedade Timblo Irmaos Limitada (represented by Panduronga Timblo Industrias) – T.C no. 87/53, The Board agreed to grant time upto September, 2017 to the mine unit for submission of the Bank guarantee as per their request dated 21/06/2017.

5. M/s Kashinath D.S. Talaulikar (represented by the legal heir Devendra T. Sawant Talaulikar and Bhagyashri D. Sawant Talaulikar) - T.C. no. 48/58 The Board agreed to grant time upto September, 2017 to the mine unit for submission of the Bank guarantee as per their request dated 22/06/2017.

Agenda Item No. 08

Staff requistioned for Booth Level Officers Duty

Member Secretary informed the members that the staff of the Board are requisitioned for performing election/ election related duties which at times continues for more than a month, thereby hampering the routine office work, due to lack of staff. It was also placed before the members that the Board is not funded by the State Government and Board operates outside the consolidated funds of the State Government. Further, GSPCB is a Statutory Authority constituted under the Air and Water Acts.

Chairman noted that since Goa State Pollution Control Board is required to work as an emergency department, it will not be able to spare its manpower as well as its resources for election /election related duties. Further, the Board officials need to attend urgent Court matters in the Hon.

Supreme Court / Hon. High Court and National Green Tribunals with reference to time bound matters. It was further decided that the decision of the Board be conveyed to the State Election Commission / Collectors, DEO's North and South Goa.

Agenda Item No. 09

Filling up of two posts of Junior Environmental Engineer (Civil) and one post of Junior Law Officer

Members were informed that that Board had entrusted the process of recruitment to the two posts of Junior Environmental Engineer (Civil) (and two additional posts of Junior Environmental Engineer on contract basis) and one post of Junior Law Officer to the Goa Public Service Commission as per the R.R's of the Board. The Goa Public Service Commission was entrusted with advertisement to the posts, scrutiny of the applications, conducting Computer Based Recruitment Test and short listing the candidates. The oral interviews are to be conducted by the Departmental Selection Committee of the Board.

GPSC forwarded list of 01 short listed candidate for the post of JEE (Civil) and 05 candidates for the post of Junior Law Officer, for which the candidate shortlisted for the post of Junior Environmental Engineer (Civil) possesses working knowledge of Konkani, wherein the R.Rs state knowledge of Konkani is essential, whereas for the post of Junior Law Officer, two candidates posses working knowledge of Marathi, one candidate has no knowledge of Marathi and two candidates are fluent in Marathi.

The Board noted the above. However, it was stated that a Circular has been issued by the Department of Personnel relaxing the essential qualification of Konkani / Desirable knowledge of Marathi and also relaxation in the domicile certificate for professional post. The Board directed that the same be verified and placed before the Board.

Agenda Item No. 10

Extension of the contract appointment of the Legal Retainer presently serving the Board.

Member Secretary informed the members that the Board had engaged the services of Adv. S.B. Faria, Special Pubic Prosecutor, Govt. of India and also Special Public Prosecutor for National Investigation Agency, Govt. of India as a Legal Retainer of the Board in respect of the criminal matters concerning the Board for a period of two years from 25/07/2015, the contract of which expires on 24/07/2017.

Since penalties can be imposed by the Courts only after filing of criminal complaints by the Board before the competent Courts, the Board felt it necessary to retain the services of . Adv. S.B. Faria for a further period of two years on a retainership fee of Rs. 21,000/- per month and a fee of Rs. 3000/- per effective hearing for appearance per case with effect from 25/07/2017 n the same terms and conditions.

Agenda Item No. 11

Bank Guarantee to be obtained from defaulting units

The Board decided to take a legal opinion in respect of imposing Bank Guarantee for the period of non compliance of the Consent conditions during the period for which initial Consent is issued, subject to its compliance, as such the Board opined that such a practice of allowing a certain period for operating without compliance is detrimental to the environment, as such needs to be verified through legal opinion.

Agenda Item No. 12

Streamlining modalities of Consent Mechanism – Directives of Central Pollution Control Board..

Member Secretary informed the members that Central Pollution Control Board has vide letter no. B-39022/ESS/CPA/16-17/2570 dated 02/02/2017 have informed that the Central Pollution Control

Board vide its 175th meeting held on 21/12/2016 deliberated and decided the modified mechanism for granting of Consent to various categories of industries / projects, which are required to be followed henceforth, for which all State Boards were required to initiate action in the matter accordingly.

After deliberations, the Board decided to prepare a check list of the existing industrial units based on its categorisation including white category in terms of the Office Memorandums as well as Circulars issued by the Ministry of Environment and forests with specific reference to building and construction projects as well as area development projects which are referred in EIA Notification of 2006. Accordingly, the Board will have to treat all such category of industries at par with Central Pollution Control Board guidelines while issuing Consents.

Agenda Item No. 13

Proposal for installation of Common Sewage Treatment Plant at Bandora, Quelem and Curti, Ponda, Goa by Sewerage and Infrastructural Development Corporation Ltd.

The Board decided to consider applications for setting up (1) :STP capacity at Bandora- 15 MLD located at Survey No 119, Bandora Village (2) STP capacity at Quelem -15 MLD located at Survey No. 99(Part), Quela Village. (3) STP capacity at Curti – 08 MLD located at Survey No 95/1,95/4, Curti Village.

Based on the submissions of the technical inputs and site inspection conducted by the Board officials, the proposal at (3) above is considered for issuance of Consent. Further, in respect of applications referred at (1) and (2), the Board opined that considering the site and locations of these proposed STPs, the Board decided to consider the applications subject to verification of complaints and further resolved that the concerned Village Panchayats and the project proponent need to amicably resolve the issue with specific reference to the operation of STPs at theses locations. The Board also commented on siting guidelines for setting of STP with specific reference to its proximity to natural water bodies.

Agenda Item No. 14

Applications received from units engaged in the fabrication / glass cutting / painting and allied activities in residential areas.

Member Secretary informed the members that the Board receives various complaints with regard to operation of cement godowns, fabrication units, automobile workshops etc. as the same is causing noise pollution, dust pollution and water pollution in the residential units. As per the categorization of industrial units, as notified by the Department of Science, Technology & Environment, Govt. of Goa, all these units require to obtain Consent to Operate of the Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.

Further, cement godowns causes dust pollution/fugitive emissions during loading and unloading activities, which is not feasible to be controlled by dust suppression measures like water sprinkling. The only measure that can be adopted is by fully covering such activities which in most cases being godowns located in shops of residential buildings.

The Board in its 106th Board meeting held on 11/02/2013 resolved that the Board should write a letter to Goa Industrial Development Corporation requesting for an appropriate location to re-locate such industries who were carrying out activities in residential areas.

The Board in its 112th Board meeting held on 25/03/2014 discussed on the same issue and it was proposed that the units are required to obtain Consent to Operate under Water Act and Air Act and Board may also direct the units to shift to premises away from residences or in industrial estates. The Board decided that the decision to be conveyed to Department of Environment, for issue of a suitable Notification.

The matter was further decided at the 119th Board meeting to review the decision taken in the 112th Board meeting. The Board had granted Consents to the units for a period of one year. However it was noted that the Goa Industrial Development Corporation had not yet allocated separate areas for such units and till such time these arrangements are made the Technical Advisory Committee (TAC) of the Board had proposed to issue Consents to the such units with following guidelines:

1. All activities to be carried out in an enclosed shed when the unit is located near the residence of the proprietor.
2. No activities to be carried outside the shop or unit when it is in a residential complex.
3. The working hours to be restricted between 8.00 am to 1.00 pm and 3.00 pm to 6.00 pm.
4. The unit shall remain closed on Sundays and Festival Holidays.
5. All noise generating equipments and machines should not be operated at the same time.
6. The number of workers should not be more than four.
7. No waste scrap should be accumulated near the premises and should be disposed off on a weekly basis.
8. Aesthetics and cleanliness of the place to be maintained.
9. Glass cutting, painting and printing units should not be allowed in residential complexes.

The Board decided that while considering the applications from units engaged in the fabrication / glass cutting / painting and allied activities in residential areas, it is pertinent to seek a Bank Guarantee of a value proportionate to the pollution control measures (air / noise) depending on the activities specific output. Accordingly, the Board should consider the applications and incorporate the said clause while granting Consent with the above guidelines as proposed by the TAC of the Board.

The meeting has been adjourned for submission of reply by ISM I/IIT, Dhanbad, based on which the next meeting will be convened.

125th Meeting of The Board
In the 125th Meeting the Board took the following decisions:

I. The adjourned 125th meeting of the Goa State Pollution Control Board was held on 28th July, 2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

In continuation with the proceedings of the last Board meeting (i.e. 125th meeting held on 14th July, 2017 at 04.30 p.m.), the following items were discussed:

Agenda item no. 01
Confirmation of the minutes of the adjourned 125th Board meeting held on 14/07/2017.

The members perused and confirmed the minutes of the adjourned 125th Board meeting held on 14/07/2017, so as to enter the same in the minutes book.

Agenda item no. 02
(a) Follow up action on the decision taken at the 125th Board meeting held on 14/07/2017.

Clarification received from Dr. Biswajit Paul, Associate Professor, Indian Institute of Technology (Indian School of Mines), Dhanbad was discussed and deliberated during the meeting. It was informed that there are separate prescribed standards for separate purposes as mention in Rule (3) (1) and Rule 3(3B) of the Environment (Protection) Rules, 1986 which are applicable for mining related activities

within the lease (core zone) and outside (buffer zone) areas which was agreed by the members and accordingly, it was decided that the Board should compile draft Consent conditions to be incorporated while issuing the Consent with specific reference to all the 13 mines as per the application received for renewal of Consent.

The mining representatives were also requested to discuss the same in consultation with the Scientific and Technical staff of the Board to finalise such Consent conditions for approval of the Board in the forth coming meeting scheduled on 4th August, 2017.

Latter, based on the request of the Goa Mineral Ore Exporters Associations to consider the drilling operations for exploration within lease area during monsoon season by the Board for issuance of Consent it was informed that the said activity does not come under the purview of the Environmental Clearance granted by the Ministry of Environment and Forests. However, the representative of M/s Vedanta requested for considering the following three activities in the mining lease: 1. Drilling for excavation 2. Extraction of ore from the exposed surface and 3. wet beneficiation of the extracted ore as these activities will not result in air pollution and in turn will enable the lease holder to space out the annual extraction capacity throughout the year to achieve the annual capping prescribed by the Supreme Court.

Further, the Board desired to seek technical comments and clarifications from Dr. Paul of IIT (ISM) Dhanbad prior to proceeding in the matter, response is still awaited..

Further, mining representatives were also directed to provide the list of ambient air monitoring locations within the respective buffer zones as well as along the transportation routes to enable the lease holder concerned to undertake monitoring on regular basis and to rule out the possibility of any exceedance in PM_{10} concentration during the transportation of ore to the ore loading jetty. Accordingly, the Chairman desired that the location so specified be submitted in the form of undertaking to the Board who will in turn undertake and confirm the same in due course of time.

Further as regards to procurement of continuous ambient air quality monitoring instruments, Chairman desired to know the financial liabilities as well as the mode of payment to be made through District Mineral Fund constituted as per the directives of the Hon. Supreme Court. Further, it was informed that the State Government has not yet constituted a Committee towards effective utilization of the fund, as such the Chairman informed that an amicable solution be resolved by the mining companies concerned with specific reference to Sonshi cluster in addition he also suggested that the Board may increase the Consent fees towards generation of appropriate funds for procurement and its monitoring through either by appointment of contract staff or by engaging the services of the Ministry of Environment and Forests empanelled laboratories. Further, he requested the assistance of Board members, wherein Chief Engineer Water Resource Department on the request of the Chairman agreed to spare the services of his staff to co-ordinate with the staff of the GSPCB in undertaking the exercise of finalization of location to conduct the ambient air quality monitoring in buffer as well as transportation routes in all the mining clusters of Goa.

(b) Follow up action on the decision taken at the 125th Board meeting held on 23/06/2017.

Agenda item no. 9 - Details of the income and expenditure of the Board were placed before the members. The members informed that the capital expenditure are required to be shown independently. Similarly, the members desired to know the expenditure that will be incurred towards payment of arrears of VIIth Pay Commission.

Chairman desired to know the modalities that will be followed for increasing the revenue of the Board. It was informed that the Board has moved a proposal to the State Government for enhancement of the fees from the industries for obtaining Consents, as the present fee structure was notified in the year 2011. It was further informed that the State Government had constituted a Committee comprising

of the former Member Secretary of the Board, a Legal Expert and the Assistant Law Officer of the Board to draft the revised fee structure. However, Chairman desired that the file in this regard be moved to him.

After deliberations it was decided that the matter be discussed after the Code of Conduct.

Agenda item no. 3
Comments of GSPCB on Macro – EIA study

The Scientific section of the Board made a brief presentation on the comments of the Macro EIA prepared as well as the proposed recommendation of the Supreme Court Expert Committee (SCEC) to enhance the annual iron ore extraction capacity from the existing 20 million tons to 30 million tons for the State of Goa. Based on the observations referred to in the said report, and the methodology adopted to calculate sustainability index on various parameters used by the SCEC to qualitatively evaluate and recommend the enhancement to 30 metric tons was apprised to the Board members. Further, comments on the said recommendations and based on the data compiled on air and water quality parameters at locations which are situated within the mining related clusters for the pre-periods namely:

1. Pre-banned period – 2010-2011 to 2011-12
2. Banned period 2012-2013 to 2014-2015
3. Post banned period 2015-2016 to 2016-2017

was referred to understand the annual pattern of variation in four water quality parameters (turbidity, total suspended solids, iron concentration and total colliform) and PM_{10} concentration of air quality parameters based on the above was recommended by the Goa State Pollution Control Board.

1. The existing total capping of 20 MTPA for the State of Goa to continue till the Board completes the water-quality / air-quality study to ascertain the seasonal variation and establish a baseline status subsequent to the satisfactory and effective implementation of the pollution-control measures suggested by the Board as well as submissions made by the GMOEA (*in consultation with the IIT (ISM), Dhanbad*) as regard to submission of short / medium and long-term air-pollution control measures and its compliance by mining lease holders in all indentified clusters.

2. The Ministry of Environment, Forests and Climate Change (MoEF & CC) will be appraised about the status of above-referred exercise as well as comments thereof with reference to enhancement to 30 MTPA as proposed by the Supreme Court Expert Committee.

3. The annual extraction capacity of 20 MTPA to be distributed among the operational lease holders (*which were operational during the said period*) on pro-rata basis as has been done during 2016/17.

4. The allotted extraction capping vis-a-vis ore-transportation per lease holder within the respective clusters be spaced proportionately among the operational period of mining (i.e. October to April) and in no circumstances, this extraction capping so allotted be enhanced after December including the daily permissible quota of ore-transportation.

5. The balanced un-extracted quantity out of annual extraction capping during the particular financial year, if any, be allowed to carry forward to the following operational year over and above the then stipulated capping / proposed enhancement for the fresh mining season but in tune with (4) above.

While discussing on the above referred comments, the Chairman desired to know the weightage given by the SCEC to recommend the proposed enhancement in ore extraction capacity. It was informed that the Committee had considered Folchi model (2003) as a quantitative method to understand environmental scenarios at various levels or production rate @ 30, 40, 50 metric tons of

iron ore separately. The said model takes into consideration environmental pollution as well as human need and interest as a parameter to arrive at a co-relation matrix and also impose two factors namely tourism and corporate social responsibility while establishing sustainability index later. Chairman sought comments from the Directorate of Mines and Geology, it was informed that the same will be communicated once approval is granted by the Director of Mines and Geology.

Agenda item no. 04

Proposal for purchase of new software - Online Consent Management & Monitoring System (OCMMS).

Member Secretary informed the members that the Board sicne June, 2010 is using XGN system for processing of online application. Many issues are being faced with this software in processing applications as the XGN system was hosted at NIC Gujarat, for which dedicated manpower in the form of Programmer was appointed by NIC for maintenance and up-gradation of the software, which was still not working as per the requirement of the Board. The total cost spent on the software hosted at NIC Gujarat is Rs. 7,32,046/-.

Further, in December, 2014 the office migrated source code of XGN from NIC Gujarat to NIC Goa but problems still continued. The implementation of delegation of powers for processing applications online in is still not implemented in XGN after follow up for the last one year. A total amount of approximately Rs. 19 lakhs has been spent on this software for 7 years for upgradation, maintenance and modification, but the Board is not getting satisfactory service from this software.

The members were informed that a new software has been implemented i.e Online Consent Management & Monitoring System (OCMMS) which provides online processing of application processing, monitoring of various industrial activities related to pollution. This web based application package offers Consent Management, Waste Management System (BMW, HWM, and MSW), Laboratory Management System, Integration of Payment Gateway in OCMMS, CESS Administration System, Monitoring and Evaluation System, Delivery System, Information, Alert and Notification through email, SMS etc., Report/Queries, Frequently Asked Questions (FAQ). The system has inbuilt user authentication and authorization mechanism, which defines role and provides access control accordingly.

The OCMMS system is already implemented in various State Pollution Control Boards/Pollution Control Committees viz. Andhra Pradesh, Bihar, Chhattisgarh, Chandigarh UT, Jammu and Kashmir, Jharkhand, Kerala, Haryana, Orissa, Punjab, Tamil Nadu, Telangana, Meghalaya, Sikkim, Tripura and Puducherry. However, customization is in progress in Andaman and Nicobar.

The total estimated project time will be around six months and delivery will be on module wise basis and the total estimated cost of the project is Rs.7,45,748/-. However, NIC will provide hand-holding support of one Assistant Programmer for one year duration at GSPCB office @ Rs. 30,795 /- per month (as per the present NICSI rate). The cost of hand holding charges will have to be borne by the Board and will be deployed at NIC HQ. NIC/NICSI will start the customization work of OCMMS after receiving 100% payment from Board.

Chairman desired to know the expenditure incurred by the Board on the previous software purchased by the Board, whether the same can written-off. It was clarified that most of the State Boards earlier operating the XGN system have now switched over to OCMM system, which has added benefits.

Members approved for migrating to the OCMM system and also for hand-holding support through NIC which will be operated from Delhi.

Agenda item no. 05

Grant of approval in principle for insitu scrapping of grounded vessel M.V. Qing at MPT

Member Secretary informed the Board that M.V Qing a passenger vessel which arrived in January, 2014, for repairs at Western India Shipyard Ltd.(WISL), leased premises in Mormugao Port Trust, foundered and sank due to ingress of sea water. Even after repeated correspondence with WISL and vessel owners, there was no response from them for mitigating this issue which forced MPT to raise the issue before NGT, Pune branch for removal of oil and refloating of the vessel in July, 2016. MPT has also filed a Notice of Motion in Hon'ble High Court of Mumbai for removal of oil, refloating of vessel and taking it away from the Port. The matter is being heard on an urgent basis in the Hon'ble High Court and at present, salvors are to bid shortly in the High court during the next date of hearing.

Considering the seriousness of the case, the following is requested from the Goa State Pollution Control Board.

1. In-principle approval for scrapping the vessel insitu.
2. Conditions to be complied with by the ship breakers/salvors
3. Goa State Pollution Control Board may monitor the entire operation with regard to oil pollution.
4. Charges leviable by the Goa State Pollution Control Board with regard to the above activity.

After deliberations, Chairman desired to communicate to MPT with a request to seek clarification on the technical feasibility of re-floating the said vessel and tow it away from the MPT berth prior to undertaking in-situ scrapping of the grounded vessel, M.V Qing, so as to ascertain the likelihood of environmental pollution. However, the technical know-how and infrastructure availability available with MPT to proceed with in-situ scrapping in case refloating is not possible.

Agenda item no. 06

Application for Consent to Establish from M/s Goan Marine Impex Pvt. Ltd. to set up a fish meal plant at Barcem in Quepem Taluka.

Member Secretary informed the members that following TAC's recommendation, the said proposal was discussed during 119th Board meeting held on 28th January 2016, wherein the Board has approved the proposal. Further, it was also decided that the firm was requested to conduct odour-control specific study by engaging the services of Indian Institute of Science (IISc.), Bangalore, so as to recommend improved technology to reduce odour. It was also informed that the proposal has received in-principle approval of the Goa Investment Promotion Board (Goa-IPB) during its 7th meeting held on 6th October 2015.

The Scientific section of the Board informed the members that based on the request of the project proponent (M/s Goan Marine Impex Pvt. Ltd.), Board officials were deputed to ascertain the practical feasibility of the pollution control measures adopted by M/s Herald Marine Services Ltd. at Palakkad, Kerela, the same was not possible as the said unit was not in operation due to unavailability of raw fish during monsoon season. It was also informed that similar such units are already in operation in Cuncolim Industrial Estate and Corlim Industrial Estate.

Chairman desired to seek detailed information in respect of site vulnerability as well as commercial vulnerability in setting up of such a fish meal unit in the State of Goa prior to grating of Consent. The item has been accordingly deferred.

Agenda item no. 07

Re-classification of the categorization of Industries by Central Pollution Control Board.

Member Secretary informed the members that the Board at its 120th meeting held on 28/04/2016 vide Agenda item no. 16 adopted the categorization as directed by the Central Pollution Control Board and also decided to forward the same to the Department of Environment with a request to suitably amend the Goa Water and Air Rules after obtaining approval of the State Government.

He furthers informed that Central Pollution Control Board have vide letter no. F.N. B-29012/IPC-VI/2017-18/3009 dated 19/07/2017 have clarified in the matter of Revised categorization of the industrial sector namely 'Poultry, Hatchery and Piggery and dealing new category of industry for classification and review of existing category, which is placed at serial no. 33 in Green category of industrial sectors, which is as follows:

13.	Poultry farms less than one lakh birds need to obtain Consent to Operate as per CPCB guidelines circulated vide letter no. B-4032/PCI-SSI/poultry/2015 dated 20/10/2015
14.	The poultry farms which are handling one lakh or more birds at a given time in single location need to approach State Pollution Control Board to obtain necessary Consent to Operate under the Water Act, 1974.
15.	Environmental Guidelines for poultry farm including minimization of odour pollution, management of solid waste, management of waste water discharge, good house-keeping practices is applicable to all poultry farm irrespective of number of birds.

Members agreed for the said classification, as forwarded by the Central Pollution Control Board and decided to forward the same to the Director of Environment for issue of a suitable Notification.

Agenda item no. 08

Application for Consent to Operate (New) of M/s D.B. Bandodkar & Sons Pvt. Ltd. (Malta-e-Dando iron ore mine) T.C. No. 62A/1952

Members approved for granting of Consent to the mine of M/s D.B. Bandodkar & Sons Pvt. Ltd. (Malta-e-Dando iron ore mine) T.C. No. 62A/1952 in Pale Cluster for production of 5 lakhs tons, with the transportation route 1 - Route 1 : Velguem – Pale – Vagus – Kothambi

Table Item no. 01

Member Secretary informed the members that a representation has been received from M/s Minescape Mineral Private Limited T.C. no. 59/51 for reducing the amount of Bank Guarantee. The members perused the clarifications as submitted by the mining unit and decided to forward the same to the Directorate of Mines and Geology for comments on the submission made by the mine unit.

III. The meeting was adjourned and will now be held on 9th August, 2017 at 3.30 pm.

IV. The meeting ended with thanks to the Chair.

125th Meeting of The Board

In the 125th Meeting the Board took the following decisions:

I. The adjourned 125th meeting of the Goa State Pollution Control Board was held on 9th August, 2017 at 3.30 pm in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

II. In continuation with the proceedings of the last Board meeting held on 28/07/2017, the following items were discussed:

Agenda item no. 01

Confirmation of the minutes of the adjourned 125th Board meeting held on 28/07/2017

The members confirmed the minutes of the adjourned 125th Board meeting held on 28/07/2017, so as to enter the same in the Minutes Book.

Agenda item no. 02

(a) Clarification in respect to the decision taken at the adjourned 125th Board meeting held on 26/06/2017.

The members approved for the following clarification / correction / addition in the minutes of the adjourned 125th meeting held on 26/06/17 made in respect to para 8 (II)(2) and addition to para 8(II)(7). The words 'The Board Scientist sought to know the mechanism..... should apply'. The same may be corrected as 'the Chairman sought to know the mechanism..... should apply'.

The following to be inserted as 8(II)(7)

7.	The said notification GSR 809 (E) dated 04/10/2017 has indicated that the application of the limits of fugitive emissions is to be monitored in the down wind direction at a distance of 25 $\pm$ 2 mtrs. and as such indirectly implies that fugitive emission limits applied upto the stated distance i.e 27 metres. Further to the same, it may be accepted that the achievement of National Ambient Air Quality Standards (NAAQS) beyond 27 metres from core source activity is not possible, but at the core perimeter it should be attainable, subject to absence of any core activity near to the core perimeter, so as to have a minimum impact on buffer zone NAAQS. Thus, it is advisable that the lease holder / mining firm should comply with NAAQS along the core zone periphery at three linear points to be fixed by the Scientific section which shall be a part of the Consent condition to be complied with the help of regular monitoring conducted by a lease holder / mining firm.

(b) Follow up action on the decision taken at the adjourned 125th Board meeting held on 14/07/2017.

Agenda item no. 02 – The members noted that M/s Syngenta Bio-Sciences Pvt. Ltd. has been issued a letter seeking clarifications in respect of material safety data sheet and details of raw materials.

Agenda item no. 3 – The members noted that M/s Deccan Fine Chemicals India Pvt. Ltd. has been issued letter seeking an undertaking with the Consultancy providers i.e. BITS Pilani, Goa.

Agenda item no. 4 – The members noted that the validity of the Environmental clearance granted MoEF&CC to M/s Deccan Fine Chemicals India Pvt. Ltd. – stands expired on 29/10/2013. Accordingly, the Board rejected the application.

Agenda item no. 5 – The members noted that letter is issued to Town and Country Planning Dept. informing the decision of the Board for re-consideration of their notification.

Agenda item no. 6 – (A.1), (B.1), (C.1)

The members noted that letter has been issued to the following units for submission of Bank Guarantee:

1. Application of M/s Vedanta Limited – Codli iron ore mine
2. Application of Late Amanlia R.G. Figueiredo
3. Application of Madachem Bat Mines Pvt. Ltd.

(A.2)	Application from **M/s. Timblo Pvt. Ltd.,** Gautona Dusrifall Iron Ore Mine: The Board had approved for grant of consent to the unit in its Board meeting held on 14/07/2017 as Vagus monitoring station was inadvertently considered. However it was clarified in the Board meeting held on 28/07/2017 that the monitoring station for the said mining unit is Usgao, hence the Board may decide accordingly	The members agreed for the following correction in the decision taken at the adjourned 125th meeting held on 14/7/2017 and may be corrected that the same is kept in abeyance till the unit submits an alternate ore transportation route duly approved by the Directorate of Mines and Geology (DMG) due to the fact that National Air Monitoring Programme (NAMP) location at Usgaon has recorded exceedance in PM_{10} parameter.

Agenda item no. 7 –

(1) **M/s Minescape Minerals Pvt. Ltd.** – Members perused the letter received from Directorate of Mines and Geology stating that the unit has extracted 2.9 lakh tons of iron ore and transported 21,113.37 tons of iron ore and no production of iron ore was done in the months of April and May. The unit was given Consent with a condition that transportation shall not exceed 27, 0000 tons upto 31/03/2017. The letter further states that the total transport is 21,113.37 which is less than the approved quantity.

It was further informed that the unit had submitted a Bank Guarantee, and has now requested to consider his Bank guarantee in line with Bank Guarantees as approved in the 124th Board meeting i.e. for his category of mine being Rs. 25 lakhs. It was further submitted that there was no exceedance in Particulate matter at Tilamol NAMP station in April/May, post grant of Consent. The members approved for reduction of Bank guarantee to Rs. 25 lakhs.

(2) **M/s Pravin Kumar Gosalia** : Based on the ambient air quality monitoring reports, Chairman instructed to inform the proponent about the non compliance to the consent conditions observed and seek clarifications with specific reference to (1) names of the villages specified to be located within the core zone (2) location and Latitude / Longitude (*Lat./Long.*) AAQM stations established at buffer zones. In addition, it was also decided to seek clarifications of not complying to $PM_{2.5}$ parameter as per schedule of NAAQS. Further, it was decided that the Board should propose installation of AAQM station along the transportation routes to verify the submissions made by the mining firm / lease holder. In addition, it was decided and scientific section to verify the said location to be included as mandatory compliance to condition of the Consent to be issued.

Agenda item mo. 08 – The members noted that letter has been forwarded to the State Election Commission and to the Collectors / District Election Officer, North and South Goa, with respect to requisitioning of staff for election duty..

Agenda item no. 10 – The members noted that an Office order is issued to Adv. S.B. Faria appointing him Legal Retainer of the Board.

Agenda item no. 13 – Proposal for installation of Common Sewerage Treatment Plant at Bandora, Quelem and Curti - Ponda - The Board at its meeting had decided to consider the applications (1) and (2) i.e STPs at Bandora and Quelem, after taking into consideration the site and locations of these proposed STPs and having further considered the technical specifications as explained by official of Sewerage Infrastructure Development Corporation Limited (SIDCL), the Board decided to grant Consent with site specific conditions. However, in view of the objections / complaints from the concerned Village Panchayats, the Board resolved that the SIDCL shall deal and resolve the objections / complaints with the respective Panchayats.

While deliberating on the proposal submitted for installation at Common Sewerage Treatment Plant (CSTP) at Bandora, Quelem and Curti – Ponda, Scientific section pointed out that the treated waste water is discharged into the seasonal nullah which needs to comply with the CPCB-prescribed water

discharge standards of the receiving water body. As such, it was proposed that the treated waste water from such CSTP be discharged at a mid-stream of a perennial water source (*which is about 10 metres from the respective plant boundaries*) through the pipeline so as to comply with the prescribed water-quality standards of the said river. In response to the same Chairman instructed to report the existing status of the discharge of the treated water and incorporate the above-referred condition as one of the specific conditions while issuing the Consent to the firm concerned.

Agenda item no. 14 - The members noted that the Board is in the process of formulating sector-specific guidelines to units engaged in fabrication / glass cutting / carpentry, etc. and located in residential areas and the same will be placed before the Board on approval by the Technical Advisory Committee (TAC) of the Board.

(c) **Follow up action on the decision taken at the adjourned 125th Board meeting held on 28/07/2017.**

Agenda item no. 02 -

a.	The members perused the status of the mining applications .
b.	Comments received from Department of Mines and Geology in response to the action plan submitted by the mining firms in consultation with ISM/IIT, Dhanbad - In response to the request submitted by the Goa Mineral Ore Exporters Association to allow within the lease activities during monsoon season, Director of Mines and Geology suggested that the Technical inputs be obtained from Indian Bureau of Mines and Directorate of Mines Safety, Margao.
d.	Letter submitted by the mining units with respect to locations of monitoring in core and buffer zone. In response to the letter of the mining units, Chairman desired that AAQM locations which were identified during the Sonshi exercise be retained as a regular station as they were identified by the Scientific section based on CPCB-prescribed citing guidelines and more such air-quality monitoring locations be identified along the transportation route(s) in other clusters in consultation with the lease holders concerned. Further, the Chairman also instructed that the Board should attempt to complete this exercise within next 15-20 days after incorporating other site-specific requirements such as (*availability of electricity, consent from the owner, CCTV installation and its safety aspects, vehicle arrangement and deployment of staff, etc.*). Further, he also stressed on engaging in hiring of vehicles for undertaking such monitoring by Scientific staff to complete the assignment in time. He also said that identification of such locations may be done by the Board staff jointly with the mining firm / lease holder concerned. In addition, assistance may be sought from surveyors or other staff of the Directorate of Mines and Geology (DMG).
E	The Legal section of the Board explained that the Public Interest Litigation (PLI) – *Suo Moto Writ Petition 02 of 2017* has been disposed-off with instruction to the Board for suitable compliance. However, in the absence of availability of official 'Order' and the contents therein, Chairman desired that the same be placed before the Board during its next meeting for perusal, discussion / deliberation and record.
f.	Draft Consent for mining units incorporating Consent conditions The members perused the draft Consent conditions and agreed for the same to be incorporated while issuing Consent to mining firms / lease holders concerned.
g.	Letter has been forwarded to the Chief Engineer, Water Resource Department with a request to provide staff in assisting the Board officials to identify locations for air-quality monitoring along transportation routes in all clusters of the State. Further, as decided during the previous Board meeting, details of monitoring station have been submitted by the respective mining companies.

Agenda item no. 03 - Comments on Macro–EIA study - In response to the reply received from the Directorate of Mines and Geology (DMG) on the comments on the Micro-EIA study forwarded by the Board, Chairman desired that the Board and DMG may like to submit their respective comments independently to the Ministry of Environment, Forest and Climate Change (MoEF & CC) for further needful.

Further, in response to a reply received from the DMG w.r.t. Goa Mineral Ore Exporters Association (*GMOEA*) proposal for considering following within-lease activities namely – (i) Drilling for the purpose of exploration / excavation, (ii) Removal of overburden and extraction of ore from the exposed face of the lease, (iii) Wet/dry beneficiation/processing of extracted-ore during monsoon season, the Board decided to seek technical clarification from the Directorate of Mines Safety and Indian Bureau of Mines (IBM), Margao prior to initiate further action in the matter.

Agenda item no. 04 – Proposal for purchase of new software – Online Consent Management and Monitoring System (OCMMS) - Members perused the follow up undertaken by the Board requesting Dy. Director General, NIC. Delhi, to give a demonstration on the proposed OCMMS software to the staff of the Board. Further the members approved to bear the cost towards TA/DA of the NIC team.

Agenda item no. 05 – Grant of approval in principle for in situ scrapping of grounded vessel – M.V. Qing at MPT - Members noted that letter is forwarded to MPT to ascertain the feasibility of refloating the vessel after removal of oil and oily water and towing the ship to the designated area for dismantling.

The issue of grounded M. V. Lucky Seven at Miramar beach came up for discussion. After deliberation, the Board decided to consider the request received from the Office of the Captain of Ports (CoP) to allow in salvaging the stranded vessel by adapting to amphibian excavator so that it can be refloated / towed-away. Having considered the urgency involved and the time bound action required, provided the concerns of the Board are addressed and further necessary measures in respect of the following are taken i.e:

a) Likelihood of ecological damage

b) Temporary location where the extraction / loosened sand will be stored / stacked

c) Short term impacts on these profiles due to temporary mechanism as a result of tidal pattern / wave dynamic and sediment movement.

Further, the Captain of Ports Department to conduct a study through National Institute of Oceanography or any such similar Institute to address and mitigate the ecological damage at Miramar beach and thereafter recover the compensation for ecological damage from the vessel owner.

Having considered that the risks of grounding of vessel was well known to the owners and as immediate measures are required to refloat the vessel which cannot wait till such study is completed, the Board further directs the vessel owner to submit a Bank Guarantee of Rs. 1 Crore to further ensure that pollution control measures are adopted while carrying out salvage operations and no environmental damage is caused during the process.

Agenda item no. 06 – Consent to Establish in respect of M/s Goan Marine Impex Pvt. Ltd. – The members noted that the proposed site could not be re-inspected by the Board officials owing to on-going Assembly session. Further, the members were informed that the said proposal was discussed and considered in the TAC meeting of the Board and has approved for issuance of Consent. However, due to the necessity of understanding the latest technological intervention in respect of the installation of bio-filters (*used as an effective odour-control mechanism*) the Board, as per the request of the project proponent, had deputed its staff at Palakkad to oversee the functioning of similar unit – M/s Herald Marine Services Pvt. Ltd., However, the same could not be ascertained on-site due to non-operation of the said unit as a result of inadequate supply of raw-fish. As such, the Board desired to re-inspect the

site at Quepem as proposed by the firm. It was resolved that the Board officials undertake the inspection at the earliest.

Agenda item no. 07 – Re-classification of categorization of industries by the Central Pollution Control Board (CPCB) - The members noted that letter is forwarded to the Department of Environment for issue of notification.

Agenda item no. 08 – Application for Consent to Operate (New) of M/s D.B. Bandodkar & Sons Pvt. Ltd. – T.C no. 62A/1952 – The members noted that letter is issued to the mining unit for submission of Bank Guarantee**.**

Agenda item no. 03

Establishment of Continuous Ambient Air Quality Monitoring Station (CAAQMS) in Million –Plus Cities and State Capitals- regarding**.**

The Board was in receipt of a letter no. Air Laboratory /CAAQMS/2010-11/4519 dated 03/11/2014 from the Central Pollution Control Board regarding Establishment of Continuous Ambient Air Quality Monitoring Station (CAAQMS) in Million –Plus Cities and State Capitals. An amount of Rs. 55.00 lacs/station would be released to the Board during the financial year 2014-15 for the procurement of the CAAQM station. The proposal was approved by the board in its 114th Board meeting held on 19/08/2014 and the decision was conveyed to CPCB for the installation of CAAQMS in Panaji city under the Million Plus cities project. In subsequent letters CPCB informed that no CAAQMS will be established in any city on 50:50 fund sharing basis with respective SPCBs. Thereafter CPCB informed to avoid initial investment of large amount, these stations will operate on data purchase mode for initial 7 years (100% by CPCB) followed by transfer of stations to concerned SPCBs/PCCs. On receipt of the original proposal from CPCB regarding the 50:50 million plus city CAAQM, Board has written to the Government for funding 50%. i.e. Rs. 55 lakhs.

Subsequently, the Board was in receipt of letter no. Tech/75/CAAQMS/ZOB/2016-17/1598 dated 10/03/2017 from CPCB informing that the proposal for setting up of CAAQMS in five cities in the southern zone is under active consideration of MoEF & CC. on 50:50 sharing basis with and approx. operational & maintenance of 12-18% (i.e. 13.2 to 19.8 lakhs) per annum.

In addition, the Board has also sought funds from the MoEF for installation of Continuous Air Quality Monitoring Station for monitoring of air pollution such as PM_{10}, $PM_{2.5}$, SO_2 & NOx and had decided to install the same at the KTCL, bus terminal.

The permission granted for original locations was rejected and thereafter the location at Dr. Ambedkar was selected and with permissions from Corporation of the City of Panaji (CCP) and office of the Chief Conservator of Forest work for construction of platform for installation of CAAQMS was in progress, which has been stopped due to agitation.

Matter came up in the State Assembly as Calling Attention/ Zero Question and for which Hon'ble Chief Minister & Minister for Environment replied that the station will be shifted to another location.

The Board after deliberation and discussion on merits of the above matter decided –

1. To shift the CAAQMS (*MoEF & CC funds*) station at Panaji to another location complying with CPCB-prescribed citing guidelines. Alternate locations have been inspected by Board officials and accordingly report is under compilation. The expenditure incurred towards construction of a platform for installation of CAAQMS at Dr.Ambedkar Park, Patto, Panaji is Rs. 5.81 lakh (wherein *Rs. 4.30 lakhs to be borne by the Board and remaining Rs. 1.52 lakhs to be borne by the CAAQMS supplier – M/s Envirotech Online Instruments Pvt. Ltd., Hyderabad*). As such, it was decided that the Board need to seek one-time grant from the State Government as an reimbursement towards financial loss already incurred while setting-up a platform at Dr. Ambedkar Park, Patto, Panaji.

2. In response to a communication received from the CPCB informing about the inability to change the city from Panaji to Vasco-da-Gama under million-plus cities funding pattern (*i.e. 50:50 financial assistance*), the Board decided to recall the decision of accepting to participate under the said scheme and proceed with finalization of a station in Panaji under funds (*i.e. 100% assistance*) provided through the MoEF & CC.

III. Chairman placed before the Board the following issues and accordingly it was decided to put up an exhaustive list of requirements for monitoring / pollution control mechanism like –

a) Instruments / equipments for monitoring of air and water-quality parameters.

b) Human Resource Component for effective monitoring of air / water-quality parameters as per the Consent conditions issued by the Board.

c) Consumables as well as institutional mechanism for monitoring of air / water-quality parameters for a period of seven years.

It was decided that one-time requirement of funds be sought from the State Government to factor above-referred exercise through District Mineral Funds (DMF) constituted as per the 'Directions' of the Hon'ble Supreme Court.

IV. The meeting ended with thanks to the Chair.

126th Meeting of The Board
In the 126th Meeting the Board took the following decisions:

1. The 126th meeting of the Goa State Pollution Control Board (GSPCB) was held 0n 31st August 2017 at 03.30 p.m. in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

2. Member Secretary, GSPCB welcomed the members and thereafter agenda for the meeting was taken up for discussion, deliberations and suitable decisions in respective matters.

Agenda item no. 01
Conformation of the minutes of the adjourned 125th Board meeting held on 09/08/2017.

The Members confirmed the minutes of the adjourned 125th Board meeting held on 09/08/2017, so as to enter the same in the Minutes Book.

Agenda item no. 02
(a) Follow-up action on the decision taken at the adjourned 125th Board meeting held on 09/08/2017

Agenda item no. 02(b) –Agenda item no. 7(1) – M/s Minescape Minerals Pvt. Ltd., - Members noted that letter has been issued to M/s Minescape Minerals Pvt. Ltd., for release of Bank Guarantee and submission of fresh Bank Guarantee amounting to Rs. 25 lakhs.

Agenda item no. 02(b) – Agenda item no. 7(2) – M/s Pravin Kumar Gosalia – Members noted that a letter has been issued to M/s Pravin Kumar Gosalia seeking clarification and the Board is awaiting a reply.

Agenda item no. 02(b) – Agenda item no, 02 – M/s Syngenta Bio-Sciences Pvt. Ltd., - Members noted that the unit has submitted a clarification in respect of Material Safety Data Sheet (MSDS) and details of raw material and accordingly the proposal is approved for issuance of Consent.

Agenda item no. 02(b) – Agenda item no. 03 – M/s Deccan Fine Chemicals India Pvt. Ltd., - Members noted that the unit has submitted a clarification authenticated by Birla Institute of Technology & Science (BITS) Pilani, Goa Campus, stating that neither the Institute nor its Professor Dr. Sampatrao D. Manjare was involved in the unit concerned at any point of time previously for employment / consultancy, etc. Accordingly, members approved the proposal for issuance of Consent.

Agenda item no. 02(c) –Agenda item no. 03- Comments on Macro-EIA study to ceiling of Annual excavation of Iron-ore from the State of Goa : recommendations of the Supreme Court Expert Committee (SCEC) – Members deliberated on the contents in the draft letter and incorporated additional information with reference to (i) financial implications towards creating modern infrastructure for environmental monitoring (*i.e. air-quality monitoring*) to be made available through District Mineral Fund (DMF), constituted as per the Hon'ble Supreme Court directives, on approval from the State Government, (ii) implementation of short / medium / long-term measures suggested by the mining companies in consultation with ISM-IIT, Dhanbad so as to address the issue of livelihood vis-à-vis sustainability of the mining activity the prior to communicate the same to the Ministry of Environment, Forests and Climate Change (MoEF& CC).

Agenda item no. 02 (c) – Agenda item no. 06 – Consent to Establish (CTE) in respect of M/s Goan Marine Impex Pvt. Ltd., for proposed setting up of a fish-meal plant in Quepem Taluka. – Members noted that the project proposal has received in-principal approval from the Goa Investment Promotion Board (Goa-IPB) and further opined that the validation of the proposed odour-control measures be directly taken up by the Project Proponent (PP) concerned with the Indian Institute of Science (IISc.), Bangalore and any other Institute of excellence and submit the report to the Board for further consideration of the proposal. With respect to whether NOC from the local authority ia a prior requirement and should the Board follow routine run for Goa Investment Promotion Board (Goa-IPB) cases or should it adopt the Telecom-tower model, Member Secretary was asked to submit a follow-up proposal for a generic decision as to be applied to all similar stand-alone cases of Goa-IPB clearances.

Agenda item no. 03 – Establishment of Continuous Ambient Air Quality Monitoring Station (CAAQMS) in Million-Plus Cities and State Capitals –Members noted that the letter has been forwarded to the Central Pollution Control Board (CPCB) and the reply is still awaited.

(b) Follow-up action on the decision taken at the adjourned 125th Board meeting held on 28/07/2017.

The Board is in receipt of a letter from Board Member – Dr. Vasudev R. Deshprabhu with reference to enabling enhancement of extraction capacity of iron-ore mining. The same was taken on board and after deliberations, it was decided to forward the same to the Department of Mines and Geology (DMG) for consideration.

(c) Follow-up action on the decision taken at the 124th Board meeting (Special meeting) held on 28th April 2017.

Agenda item no. 01 – Application for Consent to Operate /Renewal under the Water (*Prevention and Control of Pollution*) Act, 1974 and Air (*Prevention and Control of Pollution*) Act, 1981 of the 38 mining units – The Board is in receipt of professional legal opinion from Sr. Adv. Atmaram Nadkarni with regard to the opinion sought in the matter of applicability of the Order passed by the Hon Supreme Court of India in the matter of Common Causes V/s Union of India and Ors. (pages 10 to 18)

The present status of the application of the mining units referred above is placed at pages 19 to 31. In response to the opinion furnished by Sr. Adv. Atmaram Nadkarni in response to applicability of Hon'ble Supreme Court Order as above, the Chairman desired that the said 'Order' be thoroughly perused by all Board Members and provide valuable inputs / comments thereof with specific reference to applicability of prior Environmental Clearance (EC) validity as mandated in the Environment Impact

Assessment (EIA) Notification 1994 and EIA Notification, 2006 (*as amended till date*). Further, he opined that the Board needs to categorically list-out existing operational mining leases into :–

i.	Leases which were granted prior EC as per provisions of EIA Notification, 1994.
ii.	Leases which were granted prior EC as per provisions of EIA Notification, 2006 (*as amended till date*).
iii.	Leases which were granted prior EC as per provisions of EIA Notification, 1994 but, subsequently their renewal / expansion, as applicable, were issued as per provisions of EIA Notification, 2006 (*as amended*).
iv.	Leases which were in process of consideration under provision(s) of EIA Notification, 1994 but continued de facto under the same Notification post-2006 (*i.e. even after enactment of EIA Notification, 2006*).
v.	Any other case(s) which cannot be categorized under (i) to (v) above.

(d) Follow-up action on the decision taken at the 125th Board meeting held on 23/06/2017.

Agenda item no. 09 – Applicability of the recommendations of the VIIth pay Commission to the staff of the Goa State Pollution Control Board. – Members perused the statement with regard to the financial status of the Board and the break-up of the proposed income to be generated by the Board. However, Chairman desired that the fees receipts in respect of the fee structure needs to be enhanced. It was further decided that the savings as well as capital assets of the Board be left unutilized for the purpose of implementation of VIIth pay. Thus, he instructed to compile a comprehensive break-up with reference to salary component / office expenses /recurring expenditure and put up relevant details during the next adjourned meeting scheduled on 4th September 2017.

(e) Follow-up action on the decision taken at the 118th Board meeting held on 10/07/2015.

Agenda item no. 20 – Directions issued by the Central Pollution Control Board (CPCB), Delhi regarding treatment and utilization of sewage – Members were informed that as per the directions of the CPCB under section 18(1) (b) of the Water (*Prevention and Control of Pollution*) Act, 1974 regarding treatment and utilization of sewage, State Pollution Control Boards have to make it mandatory for the local / urban bodies to set up sewerage system for sewage collection, underground conveyance, treatment and its disposal to cover the entire local / urban area to bridge the widening treatment gap along with enforcement of Consent management in line with the new discharge standards for sewage treatment and the standards to be met within two years from the date of issuance of the directions. It was further informed that this issue was discussed at the 118th Board meeting held on 10th July 2015.

The Central Pollution Control Board (CPCB) has clarified that the said direction is applicable to all the sewage treatment plants (STPs'), the new discharge standards are under finalization for Notification through Official Gazette. The achievements of prescribed discharge standards for existing STPs' within five (05) years from the date of Notification.

After deliberations, it was proposed that the prescribed discharge standards be made applicable for sewage treatment plants installed in residential complexes / institutions / commercial complexes / industries in a phased manner, so as to complete the process within five years from the date of issue of Notification. It was decided that a condition be incorporated while issuing fresh Consents that the unit shall meet the prescribed discharge standards for STPs' within stipulated time and notices be issued accordingly.

Agenda item no. 03

Extension of contract of Dr. Joe D'Souza as Consultant Scientist for the Goa State Pollution Control Board (GSPCB).

Member Secretary informed the Board that Dr. Joe D'Souza, Retired Professor from the Department of Microbiology, Goa University was serving the Board as a Consultant Scientist from June, 2014 on a consolidated salary of Rs. 20,000/- per month.

To a query by the Board member, it was informed that he was engaged in the JAICA project, Bio-remediation of hazardous waste dump site located at Cuncolim industrial estate, study on tar-balls and providing subject expertise in the matter of grounded vessel M.V. Qing at MPT berth area.

After deliberations, it was decided to avail the services of Dr. Joe D'Souza, for a period of two months – i.e. upto November 2017 and in the meantime, the Board to conduct an exercise of short listing a panel of Microbiologists who could assist the Board in its activities, which could be allotted project-wise on a consolidated amount to be decided based on assignment / project activity.

Agenda item no. 04

Application for Consent to Operate (CTO) – Expansion for installation of Coal Pulveriser at Vedanta Limited, Pig Iron Division, Plot no. 30 (part), 41, 43/1, 27(part), Amona village, Bicholim taluka.

Members perused the proposal of M/s Vedanta Limited, Pig Iron Division, for installation of coal Pulveriser. The unit deals in production of Pig –iron. No prior Environmental Clearance (EC) is required for the said project. Technical Advisory Committee (TAC) of the Board has approved /recommended for grant of Consent. Consent to Establish to the unit was issued on 20/09/2016.

After deliberations, the Board approved to issue Consent to Operate (Expansion) to M/s Vedanta Limited, Pig Iron Division, incorporating the following conditions, and the Scientific section to monitor / verify compliance once in six months.

1.	Tarring /integrity of roads in line with order issued to mines regarding use of public roads as ore-transportation routes.
2.	To carry out ambient air-quality monitoring during operation of the Pulveriser and the unit to submit reports through a MoEF& CC approved / empanelled scientific laboratories.

Agenda item no. 05

Application for Consent to Establish (CTE) under the Air and Water Acts for expansion in production capacity by M/s Goa Glass Fibre located at Colvale Industrial Estate, Colvale.

Members perused the said proposal with reference to enhancement in the production capacity of chopped strand mat, roving, woven roving from existing 1,220 MT per month to 2,120 MT per month (*i.e. increase by 900MT per month*). No prior environmental clearance (EC) is required for the said activity being outside the purview of the EIA Notification, 2006.

After deliberations, the Members approved the proposal for grant of Consent to Establish (Expansion) to M/s Goa Glass Fibre located at Colvale Industrial Estate, Colvale.

Agenda item no. 06

Application for Consent to Establish (CTE) for Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF) at Pissurlem Industrial Estate located in Satari taluka in North Goa district submitted by M/s SMS Envirocare Limited.

Members perused the said proposal of M/s SMS Envirocare Limited for establishment of CHWTSDF at Pissurlem Industrial Estate, Pissurlem.

Members were further informed that land admeasuring 77,574 sq.mts. is allotted to GIEMA by Goa-IDC for development of project and environmental clearance (EC) is granted to M/s SMS Envirocare Limited by the MoEF& CC on 01/08/2017 for establishment of such a facility.

After deliberations, the Members approved the proposal for grant of Consent to Establish (CTE) for setting up of CHWTSDF at Pissurlem Industrial Estate by M/s SMS Envirocare Limited.

Agenda item no. 07

Order of the Hon'ble National Green Tribunal (NGT) dated 16/05/2017 in the matter of People for Education Research Scholarship & Outward Nutrition V/s Union of India, relating to Petcoke.

Members perused the directions issued by the Central Pollution Control Board (CPCB) with regard to whether Pet coke is 'an approved fuel or not' in terms of section 19(3) of the Air (*Prevention and Control of Pollution*) Act, 1981 and notify their decision within a period of two months. To a query raised by the Chairman as well as one of the Members – Dr. Vasudev Deshprabhu, it was clarified that M/s Vedanta is neither using a pet coke as a raw material nor as a fuel and that the firm use metallurgical coke as raw-material and fuel.

After deliberations, it was decided to forward the 'Order' of the Hon'ble Tribunal to the Department of Environment for onward submission to the MoEF& CC, New Delhi.

Table item no. 01

(a) Representation received from the Village Panchayat, Pissurlem dated 31st August 2017.
(b) Representation submitted by Mr. Rupesh Parab and others on behalf of Truck Owners Association dated 31st August 2017.

Members perused both the representations dated 31st August 2017 referred above and decided to consider the said request of the parties within a period of one month as per the judgment pronounced by Hon'ble High Court in 'Sonshi matter' along with the representation of Goa Foundation. Further, the Board was informed that in terms of judgment of Goa Bench of Bombay High Court passed in PIL S.M. 02/2017 dated 9th August 2017, regarding Sonshi matter, the Hon'ble High Court has stated that in case of any grievances and received in terms of this order the GSPCB shall expeditiously dispose-off the said grievances preferably within one month from the date of its receival. The Board has received representation dated 9th August 2017 from M/s Goa Foundation, Mapusa and now, representation as above dated 31st August 2017. One-month thereon expires on 9th September 2017 in case of representation received from M/s Goa Foundation.

As this matter requires further deliberation as stated above, the Board approved requesting its Advocate to prefer an application seeking extension of time of one month to decide/dispose-off the same, in light of the fact that the implication of the order passed by the Hon Supreme Court of India in the Common Causes matter is under detailed consideration of the Board after considering all legal and technical aspects of the matter.

III. The meeting is adjourned on 4th September 2017 at 03.30 p.m.

126th Meeting of The Board
In the 126th Meeting the Board took the following decisions:
(4 th September) Refer Annexure XII

127th Meeting of The Board
In the 127th Meeting the Board took the following decisions:

The 127th meeting of the Goa State Pollution Control Board (GSPCB) was held 27th September, 2017 at 05.00 p.m. in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

Agenda item no. 01

Confirmation of the minutes of the adjourned 126th Board meeting held on 4th September 2017.

Members were informed that the minutes of the adjourned 126th meeting held on 4th September 2017 were forwarded to the Members and on discussion thereon, the same were confirmed to be entered in the 'Minutes Register' for records.

Agenda item no. 2 (a) - Follow-up action on the decision taken at the 124th, 125th and 126th meetings of the Board.

During the 124th / 125th Board meetings forty-five mining applications were considered for renewal / fresh consent to operate under Water and Air Acts. Out of which thirteen applications were from the Sonshi cluster and remaining thirty-two applications were from non-Sonshi cluster. One application from Sonshi cluster and twenty-nine applications from non-Sonshi cluster (*totalling to thirty nos.*) were approved for grant of consent subject to submission of bank guarantee. Out of these thirty applications, six mining firms have submitted the bank guarantee and accordingly, consents were issued to these six mining firms.

Subsequently, during the 126th Board meeting a complaint / representation received from Goa Foundation, Mapusa enclosing therein an 'Order' pronounced by the Hon'ble Supreme Court dated 2nd August 2017 in a matter of WP / 114/2014 (*i.e. Common Causes v/s Union of India*) was considered. Based on the same, above-referred forty-five mining applications were sub-categorized into (i) twenty-two mining units which have been granted environmental clearance (EC) as per provisions of the EIA Notification, 1994 and (ii) twenty-three mining units which have been granted environmental clearance (EC) as per provisions of the EIA Notification, 2006.

Further, it is informed that five mining units, *to which EC has been issued under the provisions of the EIA Notification, 1994*, had submitted the bank guarantee and consents were issued to them accordingly. Further, prior to 124th Board meeting, one mining unit, *to which EC has been issued under the provisions of the EIA Notification, 1994*, was granted consent which is valid upto 27/02/1018. However, the Board in response to the 'Order' pronounced by the Hon'ble Supreme Court referred in para above approved to issue SCN to these six mining units informing that their application will be kept in abeyance till until suitable orders are received arising out of legal interventions at various levels.

In addition to above, the Board was informed that seven mining units, *to which EC has been issued under the provisions of the EIA Notification, 2006*, were granted consents and a validity upto 2018 / 2019. Out of these seven mining units, only one unit has submitted a bank guarantee while, remaining mining units have to submit the bank guarantee as well as compliance / Plan of Action (PoA) to short / medium and long-term air-quality measures as prescribed in consultation with the ISM-IIT, Dhanbad.

Subsequently, the Board deliberated on the status of twenty-three mining units, *to which environmental clearance (EC) was granted as per provisions of the EIA Notification, 2006*. The details are elaborated as under -

1. The Board was informed that there are 13 mining units (*Annexure – 1*) which are located in the clusters (*except Sonshi cluster*) which have been granted environmental clearance (EC) as per provisions of the EIA Notification, 2006. It was also informed by the scientific section that these clusters have not shown any exceedance in the ambient air-quality parameters w.r.t. particulate matter (PM_{10}). Accordingly, the Board approved to consider grant of renewal of Consent to the mining units referred at Annexure – 1 subject to submission of Bank Guarantee (B.G.) as well as compliance to Plan of Action (PoA) submitted to the Board in consultation with the ISM-IIT, Dhanbad which are to be incorporated as "Specific Conditions" in the Consent to be issued. In addition, establishing vis-a-vis monitoring of ambient air-quality monitoring mechanism along the ore-transportation route at location(s) where settlement(s) are located and if such location(s) are not represented under the National Air-quality Monitoring Programme (NAMP) of the Board.

Further, the Board agreed that till such time, the Board sets up such monitoring stations, the mining firms concerned have to set-up the same at the locations determined by scientific section of the Board.

2. In additiona, M/s Kashinath Talualikar (*Carmolochem Mol iron-ore mine – T.C. no. 48/58*) *located in Sonshi cluster* was approved for grant of Consent as the said lease was not operational during the period of reported exceedance during 2016-17. However, the lease holder is required to submit a B.G. (*based on the lease area*) as well as compliance to Plan of Action (PoA) submitted in consultation with the ISM-IIT, Dhanbad which are to be incorporated as "Specific Conditions" in the Consent to be issued.

3. The Board was informed that in case of the mining unit of Late M/s Amalia R. G. Figueiredo–Polo Dongor iron and manganese ore mine (*T.C. no. 65/51*) to which although the environmental clearance (EC) was granted under the provisions of the EIA Notification, 2006, the Ministry of Environment, Forest and Climate (MoEF & CC) has not yet lifted the EC abeyance since 2012. Accordingly, the Board decided to defer the application pending relevant / suitable communication for the MoEF & CC, Govt. of India, New Delhi.

4. The Board was informed that there are 06 mining units in the Sonshi cluster (*Annexure – 2*) which have been granted environmental clearances as per provisions under the EIA Notification, 2006. It was also informed that this cluster has reported exceedance in ambient air-quality parameter with specific reference to particulate matter (PM_{10}) prior to June 2017.

5. The Board after discussion / deliberations, approved to consider grant of renewal of Consent to the mining units referred at Annexure – 2 subject to submission of Bank Guarantee (B.G.) as well as compliance to Plan of Action (PoA) submitted to the Board in consultation with the ISM-IIT, Dhanbad which are to be incorporated as "Specific Conditions" in the Consent to be issued. In addition, establishing vis-a-vis monitoring of ambient air-quality monitoring mechanism along the ore-transportation route at location(s) where settlement(s) are located. Further, the Board agreed that till such time, the Board sets up such monitoring stations, the mining firms concerned have to set-up the same at the locations determined by the Board.

6. In addition, the Board considered the imposition of punitive action for causing exceedance in the ambient air-quality parameters along the ore-transportation route during their operation in 2016-17. Accordingly, legal section of the Board was instructed to propose possible interventions namely (i) closure directions, (ii) punitive action which may be imposed on the defaulting units as per the applicable clause(s) / provision of Air / Water Acts. It was also deliberated regarding the possibility of imposing a proportionate reduction in the annual ore-extraction capacity (*lease-wise*) of these mining units located in Sonshi cluster and accordingly, Department of Mines and Geology (DMG) was instructed to come out with / suggest probable plan of action to be deliberated during the next Board meeting, to be scheduled accordingly.

7. As regards to applications received from (i) M/s Sociedade De Fomento Industries Pvt. Ltd., - Copila Gaichem Paul (*T.C. no. 88/52*) and (ii) M/s Timblo Pvt. Ltd., Gaotone, Dusrifal at Codli (*T.C. no. 14/58*) to which environmental clearance (EC) was granted under the provisions of the EIA Notification, 2006, the Board was informed that these units be instructed to submit alternate ore-transportation route owing to reported exceedance in ambient air-quality parameter w.r.t particulate matter (PM_{10}) along the existing ore-transportation route during their operations in 2016-17. It was also clarified that the alternate ore-transportation route so proposed by the mining firms concerned be vetted / approved by the Department of Mines and Geology (DMG). And on approval of the said route, the units concerned need to establish location(s) at plac(es) where settlement(s) is (are) present in consultation with the Scientific section of the Board and monitor ambient air-quality as per protocol prescribed under NAAQMS, 2009. Accordingly, the matter was deferred till the mining units concerned submit relevant information as detailed above.

8. The Board was informed that six mining units (*Annexure – 3*) were granted the Consent as per the earlier decision taken during 124th / 125th and 126th Board meetings. However, in response to the 'Order' pronounced by the Hon'ble Supreme Court dated 2nd August 2017 in a matter of WP / 114/2014 (*i.e. Common Causes v/s Union of India*), it is given to understand that these units have been granted environmental clearance (EC) by the erstwhile Ministry of Environment & Forests (MoEF) as per provisions of the EIA Notification, 1994.

9. In view of the above back-drop, the Board decided to issue Show Cause Notices (SCNs') to these six mining firms as to why the applications submitted seeking Consent are not to be revoked.

Further, as regard to representations made by the mining units namely -

a) **M/s Vedanta Ltd**., w.r.t. Codli iron-ore mine (*to which the environmental clearance – EC was granted as per provisions of the EIA Notification, 2006*) requested to consider the ore-transportation from Codli mine to its Pig-iron plant located at Amona, Sanquelim vis Usgaon.

The Board after detailed deliberations decided to consider the request and approved the same in view of the outcome conveyed (i.e. minutes) in respect of National Priority Projects by the Ministry of Steel, Govt. of India under self-sustainable / self-reliable mandate. Further, it was also decided that the mining firm need to establish and monitor the ambient air-quality along the ore-transportation route at location(s) where settlement(s) is/are present as per the protocol laid down in the NAAQS, 2009.

b) **M/s Vedanta Ltd**., w.r.t. request to consider the applications for renewal of Consent in respect of (a) Botwadecho Dongor mine, (b) Cosme Costa : Gaval-Sonshi mine and (c) Mareto Sodo mine located within the 'Sonshi cluster' as these leases were granted environmental clearances (ECs') as per provisions of the EIA Notification, 2006.

The Board has decided to consider these applications as enumerated against agenda item 2(a) (3) above.

c) **M/s Vedanta Ltd**., w.r.t. consideration of application of Surla-Sonshi beneficiation plant which is located in the core-zone of Surla-Sonshi lease area (*located within the Sonshi cluster*) for which two separate consents were issued by the Board earlier – one for Beneficiation plant and another for Sonshi-Surla mine. It was impressed upon that the said plant will receive ores from three mines namely (i) Mareto Sodo mine, (ii) Gaval-Sonshi mine and (iii) Botwadecho Dongor mine which are located within the 'Sonshi cluster'.

The Board decided to reject the application in view of the fact that (1) the said beneficiation plant is located within the Sonshi-Surla lease area (i.e. core zone) for which environmental clearance (EC) was granted by the erstwhile Ministry of Environment and Forests (MoEF) as per provisions of the EIA Notification, 1994 and (2) reported exceedance of the ambient air-quality parameter with reference to particulate matter (PM_{10}) within the Sonshi cluster during 2016-17 period.

d) **M/s Minescape & Kadar Ores Pvt. Ltd**., w.r.t. consideration of consent renewal application for Vangi Bindi Advona mine to which environmental clearance (EC) was granted as per provisions of the EIA Notification, 1994 in view of the fact that no exceedance in the ambient air-quality parameters (especially particulate matter) has been reported and the unit has already submitted a bank guarantee of Rs. 25 lakhs earlier as per Board's decision in previous meetings.

The Board, as decided in all the mining applications to which EC was granted under the provisions of the EIA Notification, 1994, decided to reject the proposal (*refer 2(a) (5) above*) and return the Bank Guarantee (B.G.) of Rs. 25 lakhs to the mining firm on priority.

Agenda item no. 2 (b) - Follow-up action on the decision taken at the 125th Board meeting held on 14/07/2017.

Agenda item no. 14 – In respect of the guidelines to be made applicable to industrial units located outside the notified industrial estates / zones / areas framed by the Technical Advisory Board (TAC) of the Board, it was decided various 'terms' referred in the proposed guidelines be defined as per well-established nomenclature for normative interpretation and thereafter these guidelines be made available to seek comments from general public / relevant stakeholders prior to notifying the same for implementation. As such, the Chairman desired that the said guidelines be discussed among all sections of the Board and thereafter a noting / file be put up with relevant details therein for further consideration.

Agenda item no. 3 – Status of Board Laboratory cum Office Building. The Board has been appraised that it had sought financial assistance from the Ministry of Environment, Forests and Climate Change (MoEF & CC), Govt. of India under the scheme – '*Assistance for abatement of Pollution*' for the Board Laboratory. In response to this, the MoEF & CC has requested to seek financial assistance under 'Integrated Coastal Zone Management (ICZM) project': Phase-II of the same Ministry wherein proposal from all coastal States will be considered for appropriate funding. Letter to this effect has been forwarded to the Department of Environment and the reply is awaited.

Agenda item no. 4 – Member Secretary, Goa-PCB appraised the Board about the current status update in respect of 'Order' of the Hon'ble Supreme Court pronounced on 22nd February 2017 in the matter of Paryavaran Suraksha Samiti and Ors., V/s Union of India & Ors., W.P. (C) 375 / 2012. It was informed that out of 583 Sewage Treatment Plants (STPs') installed by the industrial units / hotels, residential complexes in the State and to which Consent to Operate (CTO) has been issued by the Board with a condition to submit monthly report. Upon verifying the reports submitted by these units, the Board has noted that 331 STPs' are operating satisfactorily while 252 STPs' will be verified within a further period of two weeks.

Agenda item no. 3

Revised Notification of Goa Water (Prevention and Control of Pollution) Rules, 1988 and Air (Prevention and Control of Pollution) Rules, 1982.

The Board members after due deliberation on the proposed revised Notification (*incorporating corrections / modifications / amendments*) has decided to forward the same to the Department of Environment to obtain Government approval prior to Notifying the same in the Official Gazette. It was also reiterated that once these Rules are Notified, the Board may execute the implementation of provisions of VIIth Pay Commission vis-a-vis disbursement of arrears, as applicable.

Agenda item no. 4

Draft Notification on Environment Audit Scheme (EAS)

The Board was appraised that a Gazette Notification on Environment Audit has been issued by the erstwhile Ministry of Environment & Forests (MoEF) on 13th March 1992 (*amended vide Notification no. GSR 386 (E) dated 22nd April 1993*). Thereafter, Environment Engineer of the Board made a brief presentation on the proposed scheme which has been adopted from Gujarat Pollution Control Board. It was also informed that the Center for Science & Environment (CSE) was required to submit draft notification for Environment Audit Scheme and accordingly the same has been compiled as per the mandate of the Goa-PCB. The Chairman desired to understand the mandate of the said scheme vis-a-

vis operational mechanism for its effective implementation. The Board after deliberation and discussion on the proposed draft Notification on Environment Audit Scheme (EAS), it was decided that the said draft be circulated / discussed with the all the section of the Board to incorporate relevant comments and nominate a representative from the Scientific section to be a member of a Committee to be constituted under the said Scheme.

Agenda item no. 5

Adoption of rates as notified by the Ministry of Environment, Forests and Climate Change (MoEF & CC) on behalf of the Central Pollution Control Board for sampling and analysis charges for Environmental Samples.

On perusal of the said Notification, the Board decided to adopt to the same with immediate effect as it is considered as one of the initiatives towards self-sustainability w.r.t. financial independency.

In addition and on approval of the Chairman, following 'Table items' were taken up for discussion / deliberations and suitable decision in the matter as detailed below –

a) **Table item no. 01**: *PIL W.P. filed by the Goa Foundation* before the Hon'ble High Court of Bombay at Goa as scheduled to be listed before the Hon'ble High Court for hearing on 04/10/2017 at 10.30 a.m.

   In response to the above matter, the Board was informed that a file has already been processed to appoint a Advocate to defend the interest of the Board. Accordingly, an Affidavit in response to the content in the petition is in the process of compilation for further needful.

b) **Table item no. 2**: *Standard Operating Procedure (SOP)* towards reports / payment submitted under the national Air-quality Monitoring Programme (NAMP) in the State of Goa.

   The Board, after deliberations on the proposed SOP has decided to discuss the same with the scientific section of the Board to incorporate relevant inputs and accordingly put up the same on file for further needful.

c) **Table item no. 3** : *Pollution potential regarding M. V. Lucky-Seven* stranded at Miramar coast

   The Board was appraised about the current status of the matter and the same is elaborated as under –

The pollution potential of the M.V Lucky-Seven is from hazardous material and sewage if any in the vessel. The vessel was to submit inventory of the hazardous material if any of the Board. M/s Worldwide Resorts & Entertainment Pvt . Ltd., submitted the inventory of fuel & lube oils held on Board the vessel vide letter No.WREPL/GSPCB/17-18/01 dated 18/07/2017, The inventory of other hazardous materials is yet to be submitted.

Board vide letter No.1/20/17-PCB dated 24/08/2017 sought to confirm the status of removal of oil & sewage with present status from vessel & the action plan for removal/refloating of the vessel. It is also required that CoP ensures submission of Bank Guarantee of 1 crore by the vessel owner latest by 10th October 2017.

CoP in response to the above letter vide letter No.B-11039/GSPCB/2017-18/4300 dated 05/09/2017 has informed the Board to refer the subject matter to the company itself for compliance.

Board could not visit the vessel as it was unsafe to Board for inspection as informed during the inspection by CoP representatives.

Subsequently and after deliberations on the matter referred above, the Board approved that

i) **M/s Golden Globe Hotels Private Limited** may be directed to submit the Self declaration clearly indicating the inventory of all hazardous & other waste material and status of the same on Board (e.g. mode of storage, etc). Any other possible (air & water) pollution sources on Board vessel M.V. Lucky-seven.

ii) In addition, the firm be directed to (a) ensure that no contamination of the sea water takes place due to pumping out of water, (b) submit a bank guarantee to ensure pollution control measures in place for identified sources of pollution present on board the vessel M.V. Lucky-seven.

Since the Board does not have expertise of the marine vessels it is recommended to;
a) Appoint an marine vessel expert
b) Appoint Safety expert for entry into vessel

iii) Further, with respect to possibility of likelihood damage to ecology due to the stranding of the said vessel & the attempts to refloat, the Captain of Ports (CoP) be instructed to conduct study through the National Institute of Oceanography (NIO), Goa or any other institute of repute to address and mitigate the ecological damage at Miramar beach.

In addition, the Board also decided as follows -

1. The Board will conduct and immediate inspection to verify the operation of the D.G. set located on the Miramar beach for the salvaging operations and will ascertain as to whether this activity comes under the purview of the Boards consent and authorization mechanism under the Air Act and the Water Act as well as the Hazardous Waste Rules.

2. With regard to the damage caused to the beach due to the stranding of the vessel and its subsequent efforts at salvage; the members decided that the Board may like to consult with the NIO in order to establish the damage to the environment. On completion of this assessment the Board could then initiate necessary action against the parties found responsible for the environmental damage.

3. As regards to filing of an intervention application before the High Court in the proceedings pending before it on the issue of salvage of the vessel; the members decided that such intervention would be possible only after the Board conclusively establishes the potential pollution that can be caused due to the stranding of the vessel at the beach and the measures required to be initiated to prevent the said pollution. The Board could also place before the Court the impact the salvage operations have on the environment at the beach with specific reference to air / water pollution and the measures required to remediate / mitigate the same.

The members decided that the above would be required to be put up by the scientific section of the Board which could then be submitted to the Boards legal section and its Advocates for further necessary action.

1. The members also approved the proposal as placed in the present table item and decided that the scientific section of the Board should ensure that the same is complied with.

2. With regard to the seeking of Bank Guarantee the Board members decided that as a demand for the same has already been raised by the Board and the same has not been received by the Board till date.

The meeting ended with thanks to the Chair.

128th Meeting of The Board
In the 128th Meeting the Board took the following decisions: (Refer Annexure XIII)

129th Meeting of The Board
In the 129th Meeting the Board took the following decisions: (Refer Annexure XIV)

130th Meeting of The Board
In the 130th Meeting the Board took the following decisions:

The 130th meeting of the Goa State Pollution Control Board was held on 1st January, 2018 at 11.30 a.m. in the Conference hall of the Goa State Pollution Control Board

Chairman informed the members that the Board should strive to keep the environment clean and green considering the uniqueness of the State not only from the touristic point of view but also we owe to give clean air and water to the residents of Goa. He further sought co-operation of all the members to take decisions in consensus.

Chairman further informed that this Special meeting was necessitated as the Consent granted to six mining concerns stands expired with effect from 31/12/2017. He informed the members that only two agenda items were placed for discussions for the meeting. Thereafter, the agenda was taken for discussion.

Agenda item no. 1
Confirmation of the minutes of the 128th meeting held on 07/12/2017 and 129th (Special) meeting held on 20/12/2017 of the Goa State Pollution Control Board.

Member Secretary informed the members that the minutes of the 128th meeting held on 07/12/2017 and minutes of the 129th (Special) meeting held on 20/12/2017 of the Board could not be circulated to the members as the final approved minutes were not received. As such, the same shall be placed for perusal during the next Board meeting. However, as decided during the last meeting, minutes of the 128th meeting were also confirmed.

Agenda item no. 2
Application for extension of validity of Consent to Operate issued to Mining leases.

The members of the Board perused the compliance and the status of the following 6 mining units which had a valid consent upto 31/12/2017:-

Sr. No.	Mines
1.	M/s. Baddrudin H. Mavani, (Nomoxitembo de Caurem iron Ore Mine) T. C. No 14/52,
2.	M/s. Panduronga Timblo Industrias, Bondra Advona Iron Ore mine, T. C. No. 61/53
3.	M/s. V. M. Salgaoncar & Bros. Ltd., Sigao Iron Ore Mine, T.C. No. 47/54,50/53,13/55,
4.	M/s. Sesa Mining Corporation Ltd (Bicholim Iron Ore Mine) T.C. No. 11/4, 12/41, 13/41, 14/41, 15/41
5.	M/s. V. M. Salgaokar & Bros. Ltd (Velguem-Surla Iron Ore Mine) T.C. No. 83/52, 29/54, 19/58, 62(B)/52
6.	M/s. Vedanta Ltd. Codli Iron Ore Mine, T.C. No. 69/51, 70/52,126/53

The Board after perusal of the status reports decided to extend the validity of Consent to Operate to all the 6 mines listed above for ***further 18 months***. The Board also decided to direct M/s. Panduronga Timblo Industrias, Bondra Advona Iron Ore mine, T. C. No. 61/53 and M/s. V. M. Salgaoncar & Bros. Ltd., Sigao Iron Ore Mine, T.C. No. 47/54, 50/53,13/55, for compliance to construct concrete or black top

the approach road to the exit of the mine and installation of wheel washing system within three months after taking into consideration of facts that ***BOTH*** have not carried out transportation of ore. Further, no transportation of ore shall be carried out by these two mines until an express order from the Board is communicated after compliance of conditions of approach road. The Board also decided to reduce the transportation of ore by 25% on Velguem-Surla and Sanvordem - Ambeudok - Tisk route, where the ambient air quality monitoring (AAQM) parameters of Particulate matter (PM_{10} and $PM_{2.5}$) were found to be exceeding the permissible limits and accordingly, the Director of Mines will control the number of truck-trips per day leaving individual lease and the Transport Department also to be informed accordingly for ensuring compliance of the provisions of the Motor Vehicle Acts/ Rules. The Scientific section of the Board shall monitor the AAQM and report to the Board for review of the decision within two months. The show cause notices issued to the mining leases which have obtained Environmental clearance (EC) under provisions of the Environmental Impact Assessment Notification, 1994 stands revoked in view of legal scrutiny conducted by Board ***and subject to any directions passed by the Courts in this regard***.

II. With the permission of the Chair, the Director of Mines & Geology raised the issue of application for Renewal of Consent to the 6 mining units located within the 'Sonshi cluster' which have been granted EC under 2006 Notification, where the Board in its 128th Meeting had decided to grant Consent subject to the Department of Mines & Geology suggesting punitive action against these mines as the air quality was found to be exceeding from October, 2016 to May, 2017 along the ore transportation route. The air quality was found to be exceeding as appropriation of extraction of iron ore to these mining concerns in Sonshi with additional extraction permission were granted to meet the quota permitted for extraction in the State of Goa. In the 129th meeting of the Board, the Board decided to drop the show cause notices issued to these mines. Further, the Director of mines and Geology informed that mining units have re-routed some of the transport through adjoining neighbouring mining leases to avoid transportation through habitation and have adopted measures as proposed by the board and as per plan of Action submitted by the mining units in consultation with Indian Institute of Technology, Dhanbad.

The Director of Mines & Geology suggested that 25% reduction of the transportation through Sonshi village as a punitive measure i.e not exceeding 1000 no. of trucks per day.

The Board noted the submissions made by the Director of Mines & Geology and after due deliberations and discussion decided that the renewal of Consent to Operate be issued to the 6 mining concerns in the Sonshi village as decided and approved by the Board in the 128th Board meeting, with 25 % reduction in transportation as suggested by the Director of Mines Geology with the Director of Mines and Geology to control the number of truck-trips per day not exceeding 600 nos. of trips per day leaving all leases, which will be reviewed after one month and the Transport Department be informed accordingly for compliance of the Motor Vehicle Act/ Rules. The Scientific section of the Board shall monitor the AAQM and report to the Board for review of the decision within one month.

The following members of the Board suggested that the Board meeting should be convened shortly to decide the pending applications of mining units with the Board.

1. Mr. Shawn Brian Martins, Panch Member, Village Panchayat Calangute
2. Mr. Shubham Chodankar, Corporator, Corporation of the City of Panaji
3. Ms. Unnati Sahastrabhudhe, Panch Member, Village Panchayat Velgum
4. Mr. Rajsingh Rane, Councillor, Mapusa Municipal Council.
5. Mr. Sanjay Naik, Panch Member, Village Panchayat Sanvordem.
6. Mr. Atrey Sawant who represented Chairman, Confederation of Indian Industries (Goa Chapter)
7. Mr. Savio Messias, President, Travel and Tourism Association of Goa.

II. The members decided to schedule the next Board meeting on 8th January 2019 at 11:30 am in the Conference hall of the Board as a 'Special Board Meeting', at this time this issue will be discussed. The Technical and Scientific section of the Board will ensure all pending applications / files of mining units along with compliance reports, ambient air and water data and all relevant correspondence / reports/ documents, status etc., duly authenticated are placed before the Board for perusal and decision.

The meeting ended with thanks to the Chair.

131st Meeting of the Board
In the 131st Meeting the Board took the following decisions:

I. The 131st meeting (Special meeting) of the Goa State Pollution Control Board was held on 8h January, 2018 at 11.30 a.m. in the Conference hall of the Goa State Pollution Control Board.

Chairman, Confederation of Indian Industries (Goa Chapter) Mr. Atrey Sawant informed his inability to attend the meeting, He was granted leave of absence.

II. At the outset, Chairman welcomed the Board members for the meeting. Thereafter, agenda was taken up for deliberations, discussions and suitable decision in the matter.

Agenda item no. 01

Confirmation of the minutes of the 128th meeting of the Board held on 7th December, 2017, 129th meeting (Special meeting) held on 20/12/2017 and discussion on the minutes of the 130th meeting (Special meeting) of the Goa State Pollution Control Board held on 01/01/2018

The members perused the minutes of the minutes of the 128th meeting held on 07/12/2017 and minutes of the 129th meeting (Special meeting) held on 20/12/2017, and confirmed the same so as to enter in the minutes book.

Copy of the Draft minutes of the 130th meeting (Special meeting) of the Board held on 01/01/2017 were forwarded to the members vide this office letter no. 4/130/18-Admn/18777 dated 03/01/2018 and via e-mail, for comments and suggestions if any. Accordingly the minutes were deliberated during the meeting and necessary suggestions were incorporated to the extend of 25% reduction on production of Environmental clearance limits in the cluster and 25% reduction in transportation on inhabited portion of Soncshi village. The same were confirmed so as to enter in the minutes Book.

Agenda item no. 02

Renewal of applications of the mining units:

Member Secretary informed the members that there are 21 mining applications pending before the Board. It is seen that the Ambient air quality (AAQ) parameters exceed for the months of November and December, 2017, whereas the same are within the permissible limits at some places, through which the transportation routes for which monitoring is being conducted. It was noted that the transportation for all 21 mines has not commenced as yet. However, these exceedances are due to the fact that other transport is taking place through these routes and junctions. It was decided that inorder to control the transport, the Board shall communicate with Government of Goa and especially with the Department of Transport.

The AAQ parameters exceed for the month of November and December, 2017 for PM10 were for the following mines which are to be considered for grant of Consent.

2 (a)	M/s. Haider Kassim Khan (Vangi Bindi Advona Iron ore Mine) T.C. No.10/51
2(f)	M/s. Panduronga Timblo Industrias (Oiteiro Borga do Bairo Queri) T. C. No. 34/50

2(h)	M/s. Panduronga Timblo Industrias [Shigao (Advona Toleamati eGaliguro) Iron Ore Mine] T.C. No. 87/53
2(g)	M/s. Panduronga Timblo Industrias (Borga Dongrachem Fall Iron ore Mine, Rivona) T. C. No. 29/52
2(i)	M/s. Eyestar Finance And Leasing Pvt. Ltd., Huldool Dongor Bimbol Iron ore Mine, T. C. No. 8/41
2(j)	M/s. Panduronga Timblo Industrias (Sailetembi-Iron Ore Mine, Suctole) T. C. No. 143/1953
2(l)	M/s. Timblo Pvt. Ltd, Gaotone, Dusrifal, Codli, T.C. No 14/58
2(p)	M/s R.S. Shetye (Deulem Pissurlem iron ore Mine) T.C. no. 70/51
2(s)	M/s. Kunda Gharse (Cazreachem Culna Iron ore Mine) T.C. No. 51/52
2(t)	M/s. Sociedade Timblo Irmaos Limitada (Dignem Iron ore Mine) T. C. No. 92/52
2(u)	M/s. V. G. Quenim- Sonshi Iron ore mine, T.C. 16/55

After deliberations the Board members decided to grant conditional Consent with monitoring of AAQ parameters till March, 2018. AAQ to be monitored thrice a week instead of twice, which is being presently conducted by the Board. The excess amount incurred towards the third monitoring to be borne by the mining units for that cluster for which monitoring is being conducted. The Board decided that with adequate measures s to contain pollution on transportation routes to be adopted like water sprinkling on the routes, road cleaning, wheel washing mechanism, road shoulders to be tarred, whereby pollution will infarct reduce. Further it was decided that once Consent is granted, the Directorate of Mines and Geology will regulate the mining transport and act on the Boards inputs of exceedances if any. Further, Board resolved taht the Transport Department to also verify and check the pollution certificates of vehicles and violation under the Motor Vehicle Act.

The water analysis conducted by the Board show exceedances in the parameters such as e-coli present in the open wells which is attributed to local inhabitations, hence it was decided to forward this report to the Department of Health Services for necessary action.

2(b)	M/s. Sesa Resources Ltd (Curpem Iron Ore Mine) T.C. No 3/51,40/54
2(c)	M/s. Rajesh P. Timblo Godbaem Ou Cuttiem Curpem Iron ore Mine, Village Curpem, Sanguem, T.C. No. 63/51
2(d)	M/s. Polo Dongor Iron Ore Mine, T.C. No. 65/51
2(e)	M/s. Sesa Resources Ltd (Colomba Iron Ore mine) T.C.No.35/52
2(k)	M/s. M. S. Talaulikar & Sons (Saniem Iron Ore Mine) T.C. No.2/51
2(m)	M/s. Orasso Dongor Iron ore Mine, T.C. No. 76/52
2(n)	M/s. Chowgule & Company Ltd (Sirigao Iron Ore Mine) T.C. No. 5/49, 13/49
2(o)	M/s. Vedanta Ltd. (Sanquelim Iron Ore Mine) T.C. No. 9/49,10/49,3/54
2(q) M/s. Chowgule & Company Pvt. Ltd. (Onda Iron ore Mine) T.C No. 98/52	
2(r) M/s. Sesa Resources Ltd. (Surla-Sonshi Iron ore Mine) T.C. No. 5/54, 20/54, 21/54	

The members noted that the AAQ parameters although within the limits from January to December, 2017, however it was noted that these mining units have not complied with compliance to plan of action regarding short term measures and medium term measures as directed by the Board. Hence, it was decided to grant conditional Consent to this mining units with a time limit of three months to comply with the plan of action and submit a Bank guarantee as per the decision taken in the 124th (Special meeting) meeting held on 02/05/2017 in respect of the mining lease area, within 15 days from the date of issue of this conditional Consent, failing which the said Bank guarantee shall stand forfeited. Further, that no transportation to be carried out till the plan of action is complied.

Mr. Shawn B. Martins was concerned with the fact that the records of AAQ parameters for the month of November and December, 2017 exceeding the permissible limits even though mining is not in operation. However, the Director of Mines and Geology clarified that the mining units also take necessary precautionary measures such as cleaning of roads, sprinkling of water etc., through which mining transportation takes place which as of now is not adhered as there is no mining transportation and that the PM10 level thereafter will fall once measures are adopted.

Member Secretary stated that the Board should give a fair chance to the mining units to carry out transportation with limited trucks and observe the AAQ parameters so that the transportation carrying capacity can be reviewed from time to time.

After deliberations Chairman agreed to these suggestions and observed that the Board will monitor and review from time to time the exceedance in these parameters and also suggested that the Board will take up this issue with the Transport department to check the fuel emissions, control of transport so that these parameters do not exceed beyond the permissible limits. Further that the Board will monitor thrice a week with additional cost to be borne by the mining companies jointly for that cluster

Agenda No 2.1:

Member Secretary informed the Board that the following mining units have submitted letters to the Board stating that their mines are not in operation and Consent compliance will be done before resumption of the mining activity.

a.	M/s. Madachem Bat Mines Pvt. Ltd, Madachem Iron ore Mine, T.C. No. 8/61
b.	M/s. Bandekar Brothers Private Limited - Jaquela Oujacadevicho Mollo Iron Ore Mines, TC No.84/1952.
c.	M/s. Kashinath Talaulikar (Carmolachem Mol iron ore mine) T. C. No. 48/58

The members deliberated and taking note that since these mines were under 1994 Notification and were in doubt regarding the issue of Consent and also regarding apprehensions regarding market conditions, the members decided to grant time limit of three months to comply with the plan of action issued by the Board and submit a Bank guarantee amounting to Rs. 25 laksh each within 15 days of the issue of Consent. The Bank guarantee shall stand forfeited in the event of failure to comply with the conditions within the stipulated time limit.

Agenda No 2.2:

The members deliberated on the issue of amendment sought by the following mining units seeking enhancement in capping as approved by Directorate of Mines and Geology upto 31/03/2018.

a.	M/s. Vedanta Ltd.: enhancement in capping from **3.155 MMT to 5.55 MMT.**
b.	M/s. Chowgule & Company Pvt. Ltd. (Costi Iron Ore Mine), T.C. No. 22/50 38/51 12/57: Enhancement in capping from **0189 MMT to 0.314 MMT**

Member Secretary explained to the members that last year the same issue was faced by the Board due to the fact that capping of mines was enhanced in Sonshi area due to which the Board had to suspend the Consents and issue show cause notices due to enormous increase in the AAQ parameters due to enhanced capping suggested by the Mining department, the locality was submitted to enormous rise in AAQ levels and subsequent pollution levels and the local people suffered. Subsequently, the Court of Law also took cognisance of these facts and transportation had to be reduced subsequently resulting in closure of these mines.

Inorder to avoid such a situation the Board decided to grant these amendments subject to the condition that AAQ along the transportation route is to be monitored by the Board and the same shall be conveyed to the Department of Mines and Geology from time to time if there is exceedance based on which the Mines Dept. which regulates the transport will act.

Member Secretary stressed the need to have real time monitoring data, the expenses of which have to be borne by the mining units in the particular cluster. Director of Mines and Geology stated that within such a short period it is not possible to set up the real time monitoring system for which a substantial amount is required to be shelled out by the mining units. Hence it was suggested and agreed by the members that AAQ monitoring data be collected thrice a week instead of two times a week which is presently being done by the Board.

It was also suggested by the Member Secretary that in case the AAQ parameters exceed on the transportation routes only extraction of ore will be permitted. Further the ore will have to be stored properly within the lease area to which Director of Mines and Geology agreed.

Agenda No 2.3:

Member Secretary informed the members that 23 mining units granted Environmental Clearance under EIA Notification of 1994 were issued Show cause Notices for rejection of application/revocation of Consent, however, Legal opinion has been sought by the Board from its Legal Advisors, who have advised that the said Notification does not pertain to these mining units, hence this issue was deliberated and unanimously agreed by the members to drop these show cause notices.

Agenda item no. 03

Hearing on the Show Cause Notice issued to M/s South West Port Ltd.

The Board had issued a Show Cause notice dated 30/11/2017 to M/s South West Port Ltd (SWP) to show cause as to why the renewed Consent to Operate Order dated 21/07/2017, granted by the Board to the unit, for handling of coaking coal/coal, limestone and steel slabs, should not be revoked for handling excess amount of coaking coal in violation of the conditions as contained in the said Consent to operate order and further, for submitting false data in form V.

The unit was further directed to show cause as to why a Bank guarantee of Rs. 5 lakhs for shifting a CAAQMS station should not be forfeited by the Board on account of delaying and disobeying of the Boards directions to shift the station, by the unit.

Vide the said show cause notice, the unit was directed to show cause as above by 06/12/2017. The unit was further put to notice that failure to show cause satisfactorily as above would result in forfeiture of the Bank guarantee and issue of directions of suspension/closure of all operations including cargo handling at Berth no. 5A & 6A.

M/s South West Port Ltd approached the High Court of Bombay at Goa vide WP/1092/2017 seeking a direction to the GSPCB to extend the time granted by it for replying to the Show Cause Notice.

The High Court vide order dated 13/12/2017 has recorded the statement of the GSPCB that it had decided to grant two weeks time more to the Petitioner to file its reply. It also noted that the GSPCB would give a personal hearing to SWPL.

This issue was earlier discussed before the Board at its 128th Meeting held on 07/12/2017. In terms of the decision taken by the Board at its 128th meeting and in terms of the order of the Hon'ble High Court dated 13/12/2017, the Board vide letter dated 15/12/2017 informed SWPL that they were granted a further period of two weeks time to file a reply to show cause notice dated 30/11/2017. In terms of the decision taken by the Board at the 128th meeting, SWPL was further directed to submit a bank guarantee of Rs. One Crore to the Board.

SWPL filed WP/1143/217 opposing the imposition of Rs. One Crore Bank guarantee on it by the GSPCB vide its letter dated 15/12/2017. The High Court vide order dated 27/12/2017 passed in the matter accepted the statement of GSPCB that until it disposes off the show cause notice issued to the Petitioner, GSPCB will not insist upon the Petitioners providing the Bank Guarantee of Rs. One crore.

In reference to SWPL's request that if GSPCB's final order is adverse the same may not be given effect for a period of at least two weeks from the date of communication; the GSPCB statement that it is open to the Petitioners to make such a request during the course of the personal hearing and the GSPCB will make suitable orders thereon has been recorded.

The Board is now in receipt of a reply dated 28/12/2017 from SWPL, to the SCN dated 30/11/2017. In brief SWPL has submitted as follows:

a.	SWPL has adequate pollution control measures to prevent/avoid any pollution and the readings establish that their operations are well within the prescribed permissible limits of pollution.	
b.	It is fundamental to establish that their operations are causing pollution beyond the permissible prescribed limits of pollution and not merely on the basis that the output is beyond the permitted capacity. Any operations carried out beyond the purported permissible limits of handling Coking Coal / Coke does not ipso facto determine that the same is causing pollution beyond the prescribed permissible pollution limits	
c.	Section 33(A) of the Water Act and 31(A) of the Air Act and the entire scheme of both the Air Act and Water Act mandates that the Board is under the obligation to take all such necessary steps and issue directions from time to time in case of erring industry causing pollution. Unless the operations/industry causes pollution, the directions of closure/ revocation of the consent to operate would be shockingly disproportionate and excessively severe. Without a finding that there has been emission of air pollutant would not clothe the jurisdiction of the Board to issue any direction under the aforesaid section 31 A.	
d.	It is necessary for the Board to reach to the conclusion based on material / evidence that their operations have been emitting any air pollutant into the atmosphere. If no such finding is arrived at (with proof), the exercise of powers under Sec.3lA of the Air Act is without jurisdiction and authority.	
e.	For exercising powers under section 33A of the Water Act, it is necessary for the Board to arrive at a conclusion that their operations are polluting the environment by discharging contaminated water.	
f.	Operations at berth Nos. 5A and 6A;	
	i.	do not cause any air pollution;
	ii.	do not cause any water pollution
	iii.	does not endanger public life.
	iv.	are earned out well within the prescribed pollution limits.
g.	Substantial cargo of SWPL is handled directly without discharging or offloading at the berths / stockyard. Thus, the said cargo is transported / conveyed from the mother vessels by way of closed conveyor belts to the railway wagons as against the handling at berths / stockyard. A 'Short Film' (CD) is enclosed with the reply detailing their operations at the facility in form of and the activity of handling of coal	
h.	With reference to Form V and the submissions made by MPT to the Board, SWPL states that substantial part of SWPL's cargo is handled directly without discharging or offloading at the berths / stockyard. Thus, the said cargo is transported / conveyed from the mother vessels by way of closed conveyor belts to the railway wagons as against the handling at berths / stockyard. They sincerely believe that there is no misrepresentation and that their operations have not caused any pollution and therefore they are not in violation of the scheme or object of the Air and Water Act.	
i.	SCN is based on a wrong premise in as much as the same is issued in relation to financial year where as their consent to operate is for the period commencing from 7/12/2016. They further submit that without prejudice to the above, with respect to the quantum taken into account by the Board, they put the Board to strict proof thereof.	
j.	They are entitled for the benefit of deemed Consent as stipulated under the said Acts.	

k.	The carrying capacity of the Mormugao Port Trust ('MPT') as can be seen from the letter dated 30/10/2013 of the Ministry of Environment & Forests (MOEF) granting Environment Clearance is 50 MMTPA, and in the least can be said to be 25 MMTPA.
l.	With reference to shifting of the CAAQMS station they had by their letters dated 28th July 2017, 4th and 8th August 2017 and 11th September 2017 clarified that the suggested location for installing the CAAQMS will capture source emissions from various other sites and sources viz. pollution from adjacent berths, emissions due to road traffic etc and this would lead to wrong readings. Nevertheless, in order to comply with the directions under the said SCN, SWPL have shifted the CAAQMS at the new location suggested by GSPCB. This has been conveyed to GSPCB by letter dated 7th December 2017. It is however stated that installation of the CAAQMS at the said new location is contrary to the standard norms and practices, and does not confirm with the relevant Indian Standards.
m.	As per the directions of the Goa High Court in its orders dated 6th and 13th December 2017, prior to passing any order it is requested that they be granted a personal hearing as it is imperative for them to elucidate their submissions personally.
n.	If any adverse order of revocation / suspension of the consent to operate would not only cause grave and irreparable loss, harm and injury to SWPL but would also have adverse repercussions on the steel industry causing a deficit of the steel in the market.
o.	Referring to the order dated 27th December 2017 passed by the High Court of Bombay at Goa in the Writ Petition No.1143 of 2017, SWPL requested the Board not to pass any adverse orders against them. In the event of any adverse order, they humbly request the Board to defer the effect, operation and implementation of such an order for a period of four (4) weeks
p.	SWPL Reserves their rights to file any additional reply, to add or elaborate any contents herein and produce further documents/ material to deal with the said SCN and respond to the Board at all times. They crave leave to examine expert witness in support of their defence and contentions raised by them as and when necessary.

Records with the office regarding this issue along with the relevant files etc shall be placed before the Board at the meeting.

Vide letter dated 3/1/2018 the Board has directed the authorized representatives of SWPL to remain present before it on 08/1/2017 at 12:00 pm to submit their say on the Show cause notice dated 30/11/2017.

On hearing the authorized representatives of SWPL and considering their submissions as detailed in the enclosed proceedings of the personal hearing, the members of the Board after detailed deliberations have resolved to pass the following order;-

ORDER

The Goa State Pollution Control Board has, vide Order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017, granted M/s South West Port Ltd. (Berth no. 5A and 6A) located at Mormugao harbour, Mormugao, Goa, Renewal of Consent to Operate in respect of handling of 4.125 MMT/annum of Coaking Coal /Coke, 1 MMT/annum of Limestone and 1 MMT/annum of Steel Slab at Berth no. 5A and 6A . This Renewed Consent to Operate order has been issued under section 25 of the Water Act and under section 21 of the Air Act.

The Board is in receipt of an email message from Mormugao Port Trust (MPT) dated 25/7/2017 wherein they have submitted the details regarding the 'Berth/Position wise traffic handled from April 2016 to March 2017' in respect of all the operational berths at MPT, including Berth no. 5A and 6A operated by the M/s South West Port ltd.

Perusal of the aforesaid data submitted by the MPT indicates that M/s South West Port has handled a total quantity 10.112 MMT/annum of Coaking Cola /Coke though, the Board vide Consent Order dated 21/07/2017 has permitted the unit to handle 4.125 MMT/annum of Coaking Cola /Coke, during the year 2016-2017. This prima facie indicates that M/s South West Port has handled an excess amount of 5.987 MMT/annum of Coaking Cola /Coke, during the year 2016-2017 in gross violation of the conditions as stipulated in the Consent to Operate order dated 21/7/2017.

Condition number 6(viii) of the aforesaid Consent order states as follows;

6 (viii). The unit shall submit to this office, the Environmental Statement Report I Form V for the financial year ending April to May March by 30th September of the succeeding year as per the provisions of the rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992

The Board is in receipt Form V dated 21/09/2017, from the unit for the year 2016-2017 stating that the unit has handled a cumulative total of 6012000 (6.01 MMT) during the said year which runs contrary to the data submitted by the MPT to the Board as referred to above.

This prima facie misrepresentation as well as the factual excess handling of Coaking Cola / Coke, during the year 2016-2017 amounts to a gross violation of the conditions as stipulated in the Consent to Operate order dated 21/7/2017 thereby violating the provisions of the Air Act and the Water Act.

Condition number 6(xvii) of the Consent order dated 21/7/2017 states as follows;

6 (xvii). *The unit shall submit a bank guarantee of Rs.5 Lac with a validity period of one year, within 15 days from the date of issue of this Consent as an assurance for shifting CAAQMS station installed at canteen building to a new location as suggested by GSPCB within 45 days from the date of issue of this consent, failing which the Bank guarantee shall be forfeited and further action taken.*

Subsequent to the issue of the consent order dated 21/7/2017, the Board was in receipt of letter dated 8/8/2017 from SWPL requesting the Board to reconsider the decision of the Board (as contained in the consent order) to on the location/siting of the Continuous Ambient Air Quality Monitoring System (CAAQMS). Upon considering the aforesaid letter, the Board is of the opinion that the unit is consistently delaying and disobeying the Boards directions to install the CAAQMS.

Hence in exercise of powers vested under section 31(A) of the Air (Prevention and Control of Pollution) Act, 1981 and under section 33(A) of the Water(Prevention and Control of Pollution) Act, 1974, the management of M/s South West Port Ltd. (Berth no. 5A and 6A) located at Mormugao harbour, Mormugao, Goa, was directed to Show cause as to why the Renewed Consent to Operate order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017, granted to your unit by this Board should not be revoked for handling an excess amount of 5.987 MMT/annum of Coaking Cola /Coke, during the year 2016-2017 in gross violation of the conditions as stipulated in the said Consent to Operate order and for submitting false data in the Form V as submitted by SWPL to the Board as afore stated.

M/s South West Port Ltd approached the High Court of Bombay at Goa vide WP/1092/2017 seeking a direction to the GSPCB to extend the time granted by it for replying to the Show Cause Notice.

The High Court vide order dated 13/12/2017 has recorded the statement of the GSPCB that it had decided to grant two weeks time more to the Petitioner to file its reply. It also noted that the GSPCB would give a personal hearing to SWPL.

This issue was earlier discussed before the Board at its 128th Meeting held on 07/12/2017. In terms of the decision taken by the Board at its 128th meeting and in terms of the order of the Hon'ble High Court dated 13/12/2017, the Board vide letter dated 15/12/2017 informed SWPL that they were granted a further period of two weeks time to file a reply to SCN dated 30/11/2017. In terms of the decision taken by the Board at the 128th meeting, SWPL was further directed to submit a bank guarantee of One Crore to the Board.

SWPL filed WP/1143/217 opposing the imposition of 1 Crore bank guarantee on it by the GSPCB vide its letter dated 15/12/2017. The High Court vide order dated 27/12/2017 passed in the matter accepted the statement of GSPCB that until it disposes off the SCN issued to the petitioner, GSPCB will not insist upon the Petitioners providing the Bank Guarantee of Rs. 1 Crore. In reference to SWPL's request that if GSPCB's final order is adverse the same may not be given effect for a period of at least two weeks from the date of communication; the GSPCB statement that it is open to the Petitioners to make such a request during the course of the personal hearing and the GSPCB will make suitable orders thereon has been recorded.

The Board was then in receipt of a reply dated 28/12/2017 from SWPL, to the SCN dated 30/11/2017.

The Board has afforded the authorized representatives of SWPL a personal hearing before it at its 130th meeting (Special Meeting) in the matter of the show cause dated 30/11/2017. The proceedings of the personal hearing are enclosed herewith.

On considering the submissions of SWPL as contained in their reply dated 28/12/2017 and as put forth during the personal hearing held on 8/1/2017 (and as recorded in the enclosed minutes of personal hearing) the Board after detailed deliberation has concluded as follows;

1. SWPL has failed to establish/dispute the submission of MPT (vide its letter/email dated 25/7/2017) that it has handled a total quantity of 10.112 MMT/annum of Coaking Coal/Coke though the Boards Consent to Operate order dated 21/7/2017 has permitted the unit to handle 4.125 MMT/ annum of coaking coal/Coke during the year 2016-2017.

2. SWPL has not established that it has handled coaking coal/Coke during the year 2016-2017 within the limits as stipulated in the Consent Orders issued by the Board. Neither has it established that has handled coaking coal/coke in terms of the limit stipulated in the renewed consent to operate order dated 21/7/2017.

3. SWPL merely states that any handling of coal/coke in excess or otherwise in the absence of scientific data indicating that such excess handling would have an adverse impact on the environment would not render it liable to action by the Board or for revocation of the consent to operate issued to it by the Board.

4. In light of the above the Board has arrived at a clear finding that SWPL has committed a gross breach of the consent condition no. 2(1) of the Consent order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017, granted to it by the Board, by virtue of the fact that it has handled a total quantity 10.112 MMT/annum of Coaking Coal /Coke though, the Board vide Consent Order dated 21/07/2017 has permitted the unit to handle 4.125 MMT/annum of Coaking Coal /Coke, during the year 2016-2017.

5. Section 21 (4) of the Air (Prevention and Control of Pollution) Act, 1981 states as follows;
'(4) Within a period of four months after the receipt of the application for Consent referred to in sub-section (1), the State Board shall, by order in writing, and for reasons to be recorded in order, grant the consent applied for subject to such conditions and for such period as may be specified in the order, or refuse such Consent:

   Provided that it shall be open to the State Board to cancel such consent before expiry of the period for which it is granted or refuse further consent after such expiry if the conditions subject to which such consent has been granted are not fulfilled:

   Provided further that before cancelling consent or refusing a further consent under the first proviso, a reasonable opportunity of being heard shall be given to the person concerned.

6. Section 27 of the Water (Prevention and Control of Pollution) Act, 1974 states as follows; '27. Refusal or Withdrawal of Consent by the State Board.'

7. In this regard the Board has after providing SWPL a reasonable opportunity of being heard, has come to the conclusion that the condition no 2(1) of Consent to Operate order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017 has not been fulfilled and has infact been grossly violated.

The Board in light of the above and in exercise of the power vested in it under section 21(4) of the Air (Prevention and Control of Pollution) Act, 1981 and in light of what is stated hereinabove decides as follows;

a) Consent order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017 issued by the Board to SWPL under the Air (Prevention and Control of Pollution) Act, 1981 stands cancelled/revoked with immediate effect.

The Board in exercise of the power vested in it under section 27 read with section 25 of the Water (Prevention and Control of Pollution) Act, 1974 and in light of what is stated herein above decides as follows;

b) Consent order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017 issued by the Board to SWPL under the Water (Prevention and Control of Pollution) Act, 1981 also stands cancelled/revoked with immediate effect.

As in the absence of valid consent to operate under the Air Act and the Water Act, SWPL cannot continue operation, the Board in exercise of the power vested in it under section 31(A) of the Air Act and under section 33(A) of the Water Act directs the management of M/s South West Port Ltd to suspend the handling of Coaking Coal /Coke at Berth nos. 5A and 6A at Mormugao Port except to handle/transport the existing cargo at Berth nos. 5A and 6A within 15 days from the date of receipt of this order.

The 15 day period is being granted in order to enable SWPL to handle/transport the existing cargo lying at Berth nos.5A and 6A i.e. Coaking Coal /Coke in a phased manner. The handling/transporting of all existing cargo i.e. coaking coal/coke at Berth nos. 5A and 6A during the 15 day period shall be done under supervision of a nominated official of the Board who shall ensure that adequate pollution control measures are adopted by the SWPL during the said period. SWPL will intimate the Board in respect of excavation/transportation of existing cargo i.e. coaking coal/coke at least 3 days prior in order to depute the Boards official.

In exercise of the power vested in it under section 31(A) of the Air Act and under section 33(A) of the Water Act the Board directs the MPT to ensure that after the expiry of the 15 day period as aforestated SWPL is not permitted to handle any cargo particularly Coaking Coal /Coke at Berth nos. 5A and 6A.

The Member Secretary of the Board shall communicate this order of the Board to SWPL immediately.

Agenda item no. 4

Review of decision taken at the 128th Board meeting in respect of operation of Mooring dolphin facility at the MPT without the Consent to Operate of the Board.

Member Secretary informed the members that the management of Mormugao Port Trust (MPT) was directed to show cause as to why stringent legal action under the relevant provisions of the Water Act and Air Act, that include initiation of criminal prosecution and suspension of all operation of coal and

dusty cargo handling activities at the Port area, should not be directed to be suspended till such time as MPT obtains the Consent to Operate of the Board for the operation of Mooring Dolphins, trans shippers or / and any other activity carried out by the Port up to the territorial limits off shore. MPT was also directed to submit details of the cargo handling activity that is being carried out at the Mooring Dolphin, transhippers etc. by the Port upto the territorial limits off shore, to the Board.

He further informed that the Board at its 128th meeting the Board after detailed deliberation on the matter approved to engage the services of any Institutes of Centre of Excellence (*i.e. NEERI / IIT / MoEF & CC empanelled environmental consultant*) to conduct air-pollution modelling to ascertain likelihood impact of dusty-cargo at the mooring dolphin as well as prescribe remedial pollution control measures / technological interventions for such types of cargo-handling within a period of three months. In addition, the Board also approved to seek Rs. 1 crore in the form of 'Bank Guarantee' and defer the consent application accordingly. The Bank Guarantee to be forfeited for failure to submit within three months.

The Board also noted that till that time, source apportionment studies through Indian Institute of Technology (IIT), Powai - Mumbai will also be commenced from first-week of March, 2018.

After deliberations, the Board decided that as MPT continued operation of the facility without the Consent of the Board as mandated under the Water Act and the Air Act, cannot be permitted more so as there is at present absolutely no pollution control measures being adopted and that since MPT has itself submitted that they have no pollution control measures at the site, it was decided to direct MPT to first suspend operation of coal handling activity at the mooring dolphin facility with immediate effect and thereafter the Board will carry out the studies as stipulated in the 128th meeting.

The meeting ended with thanks to the Chair.

132nd Meeting of the Board
In the 132nd Meeting the Board took the following decisions:

1. The 132nd meeting of the Goa State Pollution Control Board was held on 27th March, 2018 at 2.30 p.m. in the Conference hall of the Goa State Pollution Control Board.

Director of Industries, Trade and Commerce and Chairman, Goa Bagaytdar Sahakari Khjatredi Vikri Saunstha did not attend the meeting.

Agenda item no. 01
Confirmation of the minutes of the 131st meeting of the Board held on 08/01/2018.

The minutes of the 131st meeting of the Board held on 8th January, 2018, meeting duly signed by the members were forwarded vide this office letter no. 4/131/18 -PCB/Adm/19222 dated 09/01/2018. The same were confirmed so as to enter in the minutes Book.

Agenda item no. 02.
Follow up action on the decision taken at the 131st meeting of the Board held on 08/01/2018.

Agenda item nos. 1 to 2 - Consents as approved during the meeting have been issued to the mining units. – The members noted the same.

Agenda item no. 03: The members noted that the matter in respect of M/s. SWPL filed in Appeal no. 7/2018 before the Hon'ble NGT at New Delhi for quashing and setting aside the direction dated 09/01/2018 passed by the Board revoking Consent to Operate and stoppage of all coal/coke handing activities will be heard in the National Green Tribunal on 04/04/2018.

Agenda Item no. 4. The members noted that M/s. Mormugao Port Trust has been issued directions dated 10/01/2018 to suspend operation of coal handling activities at the mooring dolphin facility with immediate effect.

Agenda item no. 03.

Installation of Continuous Ambient Air Quality Monitoring Station (CAAQMS) (MoEF&CC funds)

Member Secretary informed the members that the matter regarding the installation of Continuous Ambient Air Quality Monitoring Station (CAAQMS) was discussed in the 129th meeting of the Board held on 20/12/2017and a decision was taken to first identify/locate a suitable place with requisite space, NOC etc., and thereafter invite fresh quotations for procuring of the instruments/equipment as the present work order will have to be cancelled being considerable time back and the present cost of such CAAQMS could have been dropped/reduced.

Thereafter, a purchase order was issued by the Board vide Order no.3/20/09-PCB/Vol.VII/8626 dated 21/01/2016 to M/s. Envirotech Online Instruments Pvt. Ltd., Hyderabad, the bidder had already processed the procurement and delivered some of the material, the execution/installation was pending for finalisation of alternate site by the Board in view of stop work instruction received from Government of Goa

In view of the above fact, it is proposed to mount the CAAQMS on mobile vehicle instead of a fixed stationery location. An estimate additional amount Rs.28 lakhs plus installation charges towards the installation on a vehicle (vehicle chassis, fabrication of mobile van and fixing of analysers on 19" racks in mobile van) is submitted by the agency.

Members deliberated and decide that the CAAQMS be installed on a mobile van, as the same could be utilised as and when required at different location. Members also agreed for incurring the additional cost to be incurred for the same.

Agenda item no. 04.

Appointment of Panel of Advocates for defending the interests of the Board before the Legal Forums

Member Secretary informed the members that the Board is required to constitute a panel of Advocates for defending the interests of the Board before the Legal Forums, for which the Board is required to set terms and conditions and fee structure.

After perusing the Agenda item and after detailed deliberations, and after considering Orders dated 8/4/2013, 12/1/2018,18/1/2016, 23/6/2017 and 16/6/2017 issued by the Law Department, Government of Goa, (copies enclosed), the Board members decided as follows:-

It shall be ensured that the interest of the Board is upheld, protected and defended by appointing Competent Advocates to appear on behalf of the Board before various Courts and Judicial Forums in and out of the State.

<u>Ld. Senior Advocate A. N. S. Nadkarni:-</u>

Ld. Senior Advocate A. N. S. Nadkarni shall be the Board's Senior Counsel.

The Ld. Senior Advocate of the Board shall be permitted to appear along with a Junior / briefing Advocate and an Advocate on record in matters before Courts / Judicial Forum at New Delhi.

A specific letter of allotment of matter shall be issued to the Ld Sr. Advocate by the Board.

The Chairman shall ensure that Senior Advocate A. N. S. Nadkarni is consulted in respect of all legal matters pertaining to GSPCB that are of High Stakes and/or that involve complicated questions of Law and shall ensure that advice of the Senior Advocate so tendered is duly acted upon by the Board.

In the event of the legal opinion or Conference being required by the Board on such issues or Court matters, the Chairman shall solicit the opinion of the Ld. Senior Advocate and shall on receipt of the same act accordingly.

In so far as the professional fees payable to Ld. Senior Advocate A. N. S Nadkarni are concerned, the Board resolves to pay the following;-

- Ld. Senior Advocate A.N.S. Nadkarni shall be paid a professional fee of **Rs. 3 lakhs per appearance** made by him on behalf of the Board before Courts / Judicial Forums, in allotted matters. (Relevant para (ii) of Order dated 12/01/2018 issued by the Law Department Government of Goa stands adopted.)

The **Junior / briefing Advocate** appearing along with the Boards Senior Counsel as well as the Advocate on record shall be paid a fee of **Rs. 3,000/- per hearing** while the **Advocate on Record (AOR)** that appears along with them shall be paid a fee of **Rs. 3,000/- per hearing**.

The **Junior / briefing Advocate** appearing along with the Boards Senior Counsel shall inform the Board as to the details regarding the AOR and shall also certify the bills submitted by the AOR to the Board for payment.

The Board shall ensure that Ld. Senior Advocate A.N.S. Nadkarni is permitted to travel by Business Class (Air Travel) for attending matters on behalf of the Board as required.

Accommodation for the Ld. Senior Advocate A.N.S. Nadkarni as per his request shall be arranged by the Board for the period during which he is attending matters of the Board out of State as per his request.

Panel of Advocates:-

In addition to the above and in terms of the specific provision of Rule 18 (15) of the Goa Water Rules, the Member Secretary with the approval of the Chairman, is hereby empowered to ensure that all matters / Petitions/ Applications etc., served upon the Board from Private parties / Courts / Judicial Forums etc., are immediately allotted to a Competent Advocate as below:

a.	In respect of Court matters before Hon'ble Supreme Court of India, Principal Bench of the Hon'ble National Green Tribunal at New Delhi and any other Court within the Jurisdiction of New Delhi, the following Panel of Advocates is constituted.	
	i.	Adv. Datta Prasad Lawande
	ii.	Adv. Pratap Venugopal
	iii.	Adv. Salvador Santosh Rebello
	iv.	Adv. Ruchira Gupta
	v.	Adv. Jai A Dehadrai
	vi.	Adv. Arjun Bobde
	vii.	Adv. Mayuri Nayyar Chawla

The above Advocates shall ensure that when they appear before a Court / Judicial Forum at New Delhi along with an Advocate on record, the same shall be done with due intimation to the Board.

b.	In respect of cases before the Hon'ble National Green Tribunal at Pune, the following panel is constituted	
	i.	Advocate Datta Prasad Lawande
	ii.	Advocate Fawia Mesquita
	iii.	Advocate Prachi Sawant

c.	With respect to cases before the Hon'ble High Court of Bombay at Goa and High Court of Bombay, the following panel is constituted;	
	i.	Advocate Datta Prasad Lawande
	ii.	Advocate Pradosh Dangui
	iii.	Advocate Joaquim Godinho
	iv.	Advocate Pravin Phaldessai
	v.	Advocate Deep Shirodkar

d.	In respect of cases before the Administrative Tribunal, Human Rights Commission, Information Commission and other Quasi Judicial Bodies:	
	i.	Advocate Joaquim Godinho
	iii.	Advocate J. B. Faria

e.	In respect of all Criminal matters filed by the Board or concerning the Board before various courts	
	i.	Advocate J. B. Faria

f.	Notwithstanding the above, the Member Secretary with the approval of the Chairman, is empowered to appoint any Advocate (other than those above named) at his discretion to ensure that the interest of the Board is upheld, protected and defended before any Court of Law or Judicial Forum. The fees payable to an Advocate so appointed shall be decided by the Chairman and such decision shall be final and binding.

Professional Fees payable to the Advocates (other than the Ld. Senior Counsel) of the Board:-

A.	The fees payable to Advocate Datta Prasad Lawande shall be as follows:-	
	1.	Fees for appearance before the High Court / Professional fees for each hearing – Rs. 10,000/-(Rupees Ten Thousand only) per case per day before the High Court in respect of all cases, except matters listed for Court "Orders" where fees shall be Rs. 3,000/- (Rupees Three thousand only) per case per day provided that the maximum amount of fees shall not exceed Rupees Eight lakhs per month.
	2.	Fees for appearance before the Supreme Court, Court, Tribunal, Authority outside the State of Goa – Fees of Rs. 75,000/- (Rupees Seventy-five thousand only) per official visit to New Delhi for conferences / per appearance per day in Special Leave Petitions, Writ Petition, Civil applications.
	Relevant portion of Order dated 8/4/2013 issued by Law Department, Government of Goa is adopted.	

B.	In respect of Advocates (other than Adv Datta Prasad Lawande) appearing before Hon'ble Supreme Court of India, Principal Bench of the Hon'ble National Green Tribunal at New Delhi and any other Court within the Jurisdiction of New Delhi, on behalf of the Board in allotted matters.	
	a.	The Advocate shall be paid Rs. 5,500/- (Rupees Five thousand five hundred only) per effective appearance before the Hon'ble Supreme Court of India, Principal Bench of the Hon'ble National Green Tribunal at New Delhi and other Courts at New Delhi and also they shall be entitled to a fee of Rs. 1,000/- (Rupee One Thousand Only) for every drafting of Affidavit or Special Leave Petition. In addition to this, they shall be entitled for reimbursement of an amount of Rs. 2,500/- (maximum) (Rupees Two thousand five hundred only) per month towards miscellaneous expenses such as stationery purchase of papers photo copying of documents, pleading, case extracts / citations etc., subject to production of necessary bills / cash memos / receipts duly certified by respective Advocate. (Relevant portion of Order dated 23/06/2017 issued by the Law Department Government of Goa stands adopted.)
	b.	In the event an Advocate appears on behalf of the Board in an allotted matter along with an AOR then the Advocate shall inform the Board as to the details of the AOR and shall ensure that the bill for appearance of AOR is submitted along with the Bill of the concerned Advocate and certified for payment by him. The Board shall pay professional fee of Rs. 3,000/- to such AOR's who appear on its behalf as aforestated along with the Boards Advocate.
C.	In respect of Advocates (other than Adv Datta Prasad Lawande) appearing before the Hon'ble National Green Tribunal at Pune, on behalf of the Board in allotted matters.	
	a.	The Advocate shall be paid Rs. 5,500/- (Five Thousand Five Hundred Only) per effective appearance before the Hon'ble National Green Tribunal at Pune and also they shall be entitled to a fee of Rs. 1,000/- (Rupee One thousand only) for every drafting of Affidavit or Special Leave Petition. In addition to this, they shall be entitled for reimbursement of an amount of Rs. 2,500/- (maximum) (Rupees Two thousand five hundred only) per month towards miscellaneous expenses such as stationery purchase of papers photo copying of documents, pleading, case extracts / citations etc., subject to production of necessary bills / cash memos / receipts duly certified by respective Advocate.
D.	With respect to Advocates (other than Adv. Datta Prasad Lawande) appearing before the Hon'ble High Court of Bombay at Goa and High Court of Bombay, on behalf of the Board in allotted matters	
	a.	Advocate shall be entitled to Rs. 3,000/- per appearance, in all types of matters/ cases in the High Court of Bombay at Goa, any High Courts or Tribunal of other States etc., with a monthly cap of Rs. 75,000/-. with effect from April, 2018. (Relevant para of Order dated18/01/2016 issued by Law department Government of Goa stands adopted.)
	b.	The Board Advocate shall be entitled to a fee of Rs. 1,000/- (Rupee One Thousand Only) for every drafting of Affidavit or Petition. In addition to this, they shall be entitled for reimbursement of an amount of Rs. 2,500/- (maximum) (Rupees Two thousand five hundred only) per month towards miscellaneous expenses such as stationery purchase of papers photo copying of documents, pleading, case extracts / citations etc., subject to production of necessary bills / cash memos / receipts duly certified by respective Advocate.

E.	In respect of Advocates appearing before the Administrative Tribunal, Human Rights Commission, Information Commission and other Quasi Judicial Bodies, on behalf of the Board in allotted matters	
	a.	Rs. 2,500/- per hearing before the Administrative Tribunal, Rs. 1,000/- before District & Sessions Courts and Subordinate Courts and Rs. 750/- for hearing before Quasi Judicial Forum.
	b.	For drafting and filing of Affidavit and all pleadings Rs. 1,000/- per Affidavit.
F.	In respect of Advocates appearing in all Criminal matters filed by the Board or concerning the Board before various courts, on behalf of the Board in allotted matters.	
	a.	Advocate J.B. Faria who is appointed as a Legal Retainer of the Board shall be paid professional fees, Retainer ship fees and other charges as per the appointment order dated 07/08/2017 issued to him by the Board. However, all General Terms and Conditions as stated at Para 2 of Order dated 16/6/2017 issued by the Law Department Government of Goa shall also be added in the appointment order.

Payment of Bills towards Professional Fees:-

The Bills towards Professional fees are to be submitted by the concerned Advocates to the Board within one month of appearance in a matter and shall be accompanied ***with a Certificate of Appearance*** issued by the concerned Court of Law before which the concerned Advocate has appeared. In the absence of Certificate of Appearance the Bill shall be rejected. The bill should also be affixed with revenue stamp.

All the professional bills presented for payment must be accompanied by copy of allotment letter issued to the Board Advocates and that no other bill is presented previously for payments are claimed in the bill.

Such bills complete in all respects shall be certified by the concerned Board official and approved for payment by the Accounts section of the Board after verifying the compliance with the present terms and conditions.

All Advocates appointed by the Board shall be issued a specific allotment letter and Vakalatanama.

No Advocate other than the Advocate to whom a particular matter has been allotted to shall be permitted to appear on behalf of the Board in the said matter and no claim for professional fees from such an Advocate shall be entertained by the Board. However, an Advocate appearing on behalf of the Board in a particular case may request another Advocate to appear on his behalf on a specific date if he is in any difficulty. ***However, no payment of professional fees shall be made for such an appearance.***

In respect of matters that are tagged together or which are heard along with each other on the same date by the same court; the Board shall pay the Advocate appearing on its behalf, professional fees for single appearance.

Payment towards legal opinion submitted by the Board's Senior Counsel or any other Board Advocate shall be decided by the Chairman.

No additional fees shall be charged or claimed by Boards Advocates (other than the Boards Senior Counsel) for Conferences.

Travelling Expenses:-

In the event Board Advocates are required to attend Court matters out of the State they shall be permitted to travel by Air (Economy Class only) and /or by Road via Taxi or by Train (First Class).

The Board Advocate shall submit a detailed travel plan to the Board at least 2 days in advance / prior to the date of travel indicating the date and time of travel.

The concerned official of the Board dealing with hiring of vehicles, booking of tickets and booking of Hotel accommodation shall ensure that the required travel arrangements for the Board Advocates are made. These arrangements are to be made by the concerned Board official in consultation with the Boards Advocate.

A proper record of such arrangement shall be maintained by the concerned official.

Payment of bills towards travel by the Board Advocate as above are to be certified by the concerned Board Advocate and submitted to the Board office/concerned official for processing and payment.

Accommodation Expenses:-

Board Advocates shall be **reimbursed** expenses incurred by them on Hotel Accommodation, charges for Travel within city and food Bill subject to the following limits.

(i) Hotel Accommodation ..... Rs. 3,000/-
(ii) Charges for Travel Agency Bill (Non AC Taxi charges upto 50 Kms only).
(iii) Food Bill per day ..... Rs. 300/-

Travel by Board Officials for Court matters out of State:-

In the event that an Official/Officials of the Board is/are required to remain present before a Court of Law, out of the State, to assist the Boards Advocate, then the concerned Advocate and /or the briefing Advocate of the Board Senior Counsel shall make a formal request to the Board for deputation of such an Officer at least one week prior to the date on which the official is required to be present before the Court.

All Officials of the Board that are required to travel out of the State to attend Court matters along with official records/files/documents etc are permitted to travel to and from the destination by air (economy class) and all other payments incurred during such travel shall be as per their entitlements. Bills towards travel within the city by Board Officials shall be settled as per actual cost incurred.

No Official shall be permitted to undertake such travel without an express prior order from the Board permitting such travel.

Deputation of officials of the Board for attending Court matters at the request of the Boards Advocate shall be at the discretion of the Member Secretary.

General Terms and Conditions:-

i. The Advocates on panel shall furnish to the Board such information statements, returns, statistic etc., pertaining to the cases conducted by him or under his charge as may be required from time to time.

ii. The Advocates on panel shall be duty bound, when in cases attended to by him is decided against the Board and or its Officers, to give immediately the Judgment passed by the Court, his opinion regarding advisability of filing the appeal, revision etc. from such decision, whether he continues to be on the panel on the date of judgement or otherwise.

iii. The Advocate on panel may during his absence with the permission of the Board appoint a substitute Advocate, who will discharge the duties of the Advocate. However, no Junior should be allowed to contest the matter of the Board but minor work like filing of documents prepared by the Board Advocate can be done through Juniors for which no

fees shall be payable. (This will not be applicable to the Junior/Briefing Advocate to the Boards Senior Counsel at New Delhi and the AOR that will appear along with him and to AOR s that appear along with the Boards Advocates at New Delhi.)

iv. It shall be duty of every Board Advocate to file monthly statement of all the matters handled by him before various Courts showing details of the allotment of matter, date of joining, parties, Case Number, Court in which case is pending, etc., by the 7th day of next month.

v. All the aforestated Advocates shall be intimated as to the aforesaid decision of the Board

vi. In case of any dispute/difficulty in implementation of the aforesaid terms and conditions; the decision of the Chairman of the Board shall be final and binding on all concerned.

The Board further resolves that in addition to the above, hereinafter the power to take all decisions on all issues regarding the appointment of Advocates to represent the Board including issues regarding appointment of Advocates, amount of Professional Fees to be paid to Advocates, Terms and Conditions etc. shall be delegated to the Chairman of the Board and such decisions shall be final and binding.

Agenda item no. 5:

Application for Consent to Operate under Water and Air Act from M/s South West Port Ltd., and for change over from limestone and steel products to iron ore.

Member Secretary informed the members that the Board is in receipt of an application dated 12/1/2018 from M/s South West Port Limited seeking fresh Consent to Operate under the Water Act and the Air Act from the Board in respect of handling of 7.5 million tons per annum of coaking/thermal coal/ coke, 4.38 million tons per annum of Limestone/Dry bulk cargo and 2.0 million tons per annum of Steel Coils/Slabs, Unitised Steel Cargo, at Berth nos. 5A and 6A at MPT.

The Board is also in receipt of a representation from the Goa Foundation objecting to the grant of the aforestated Consent to the SWPL on the ground that the unit has exhausted the consented capacity of coal handling that was initially granted to it by the Board and that the unit itself has claimed that the equipment at its facility is obsolete and continued usage of the same could have an adverse impact on the environment.

The Technical Advisory Committee of the Board has recommended that the application be granted only in respect of non dusty cargo without any enhancement in capacity.

Perusal of the application and its enclosures indicates that the application is not supported by a valid Environmental Clearance issued by the MoEF under the EIA Notification 2006 for the proposed handling of 7.5 million tons per annum of coaking/thermal coal/coke, 4.38 million tons per annum of Limestone (Dry bulk cargo) and 2.0 million tons per annum of Steel Coils/Slabs, Unitised Steel Cargo, at Berth nos. 5A and 6A at MPT.

Documents with the Board clearly indicate that the SWPL has now applied to the MoEF for the grant of Environmental Clearance under the EIA Notification 2006 for Proposed Terminal Capacity Enhancement at Berth nos. 5A and 6A of MPT. This Environmental Clearance has not been granted to SWPL by the MoEF till date.

The Board vide its letters dated 21/1/2018 has objected to the EAC recommendation to the MoEF for granting EC to the aforesaid proposal for the reasons as set out in the letter.

Possession of a prior valid Environmental Clearance issued by the MoEF issued under the EIA Notification 2006 would be a condition precedent for M/s South west Port Limited to carry out operations of cargo handling as aforestated at Berth nos. 5A and 6A at MPT.

The Board had granted M/s SWPL Consent under the Air Act and the Water Act to handle 5.5. MMT/annum of coaking coal and coke. This was subsequently reduced by the Board to 4.125 MMT/ Annum. However in terms of data received from the MPT it is seen that M/s SWPL has in complete defiance of the specific condition contained in the Boards Consent to Operate Orders (mandating it to handle 5.5. MMT/annum of coaking coal and coke and subsequently 4.125 MMT/Annum) has handled excess coaking coal and coke at its facility at Berth nos. 5A and 6A. The Table below illustrates the gross violation of the consent conditions by the SWPL in respect of the consented capacity for handling of coaking coal and coke;

Sr. no.	Year	Consented qty.	Qty. submitted in Env. Statement by M/s SWPL	Actual handled quantity of coal /coke as per MPT records	Excess handling with respect to Consent quantity	Deviation in the qty. in respect of data submitted by MPT and Environmental statement submitted by SWPL
1.	2010-2011	5.5 MMTA				
2.	2011-2012	5.5 MMTA	6.505 MMTA			1.005
3.	2012-2013	5.5 MMTA	7.491 MMTA	6.897 MMTA	1.397 MMTA**	1.991
4.	2013-2014	5.5 MMTA		7.459 MMTA	1.959 MMTA**	
5.	2014-2015	5.5 MMTA	7.495 MMTA	8.065 MMTA	2.565 MMTA**	1.995
6.	2015-2016	5.5 MMTA	7.15 MMTA	9.929 MMTA	4.429 MMTA**	1.65
7.	2016-2017	5.5 MMTA	6.012 MMTA	10.112 MMTA	4.612 MMTA#	0.512
8.	2017-2018	4.125 MMTA		9.032 MMTA (upto 12/02/2018)	4.907 MMTA@	

* *The total permitted capacity including limestone and steel is 7.50 MMT/annum*
** *Vide letter dated 25/05/2016 received from MPT*
\# *Vide letter dated 25/07/2017 received from MPT*
@ *Vide letter dated 21/09/2017 received from MPT*

It is also pertinent to note that on account of gross exceedance of the consented capacity of Coal and Coke by the SWPL at Berth nos. 5A and 6A at MPT, the Board had revoked its Renewed Consent to Operate that was earlier granted to M/s SWPL by the Board. Criminal Proceedings against M/s SWPL have also been initiated by the Board in this regard.

M/s SWPL appears to be relying on a letter dated 24/1/2001 from the Ministry of Shipping, Government of India which is stated to be an Environmental Clearance. However this document appears to be an approval for the construction of two multipurpose cargo berths in MPT and does not specify the quantity or nature of commodity to be handled therein.

It is pertinent to note that the Board while granting its first Consent to operate to the SWPL in 2004 had relied upon an EIA report submitted by the unit that was prepared by Tata AIG Risk Management Services in respect of Proposed Modernization of existing Berth 5 and 6 to General Cargo Berth nos. 5A and 6A at MPT dated February, 2000. The Board had in fact initially granted its Consent for the handling of 3 million tons per annum of coal and subsequently on automization of the facility had granted its Consent for handling of 5.5 million tons per annum of coal.

In any event this EC would be issued under the EIA Notification 1994, whose life would be 5 years from the date of issue, in terms of the Judgement dated 7/2/2018 passed by the Hon Supreme Court of India in Special Leave Application (Civil) no. 32138/2015 and connected matters.

The Hon Supreme Court of India in a number of Judgement particularly in Special Leave Application (Civil) no. 32138/2015 has laid down the principle that a prior Environmental Clearance from the MoEF is a mandatory requirement to be obtained by a project proponent that is categorized as a Category 'A' project under the Schedule to the EIA Notification 2006, prior to commencement of its operation.

The Project of M/s SWPL for which the present fresh Consent to Operate is sought is a project that will specifically require a prior Environmental Clearance from the MoEF.

It is also an established fact that M/s SWPL has submitted an application to the MoEF for the grant of Environmental Clearance under the EIA Notification 2006 for Proposed Terminal Capacity Enhancement at Berth nos. 5A and 6A of MPT. This EC has not been granted to the SWPL till date. In this context it is now seen that though the earlier Consent to Operate granted to the SWPL was for the handling of 5.5 MMT/A of coaking Coal and Coke subsequently reduced to 4.125 MMT/A; M/s SWPL has now submitted a fresh application for grant of Consent to Operate for handling of ***7.5 million tons per annum*** of coaking/Thermal Coal/Coke.

After detailed deliberation and after considering the submissions of the authorized representatives i.e Captain Sharma who submitted that he is CEO of M/s JSW Group of Companies along with Adv. Abhijit Gosavi, who have appeared before the Board today, on this issue and on the issue of grant of Fresh Consent to Operate under the Water Act and the Air Act in terms of the application dated 12/1/2018 submitted by M/s SWPL; the Board after detailed deliberation and in light of the aforesaid is of the firm unanimous opinion that the Board cannot consider the grant of Fresh Consent to Operate under the Water Act and the Air Act to M/s SWPL in terms of the application dated 12/1/2018 submitted by it since as on date the proposed project/activity does not have valid EC from the MoEF and specifically as the applicant has preferred and application for the grant of EC to the MoEF that is yet to be decided by the Authority.

As such in light of the above and in the absence of a valid prior Environmental Clearance from the MoEF and for the reasons as aforestated the application dated 12/1/2018 from M/s South West Port Limited seeking fresh Consent to Operate under the Water Act and the Air Act from the Board, is hereby rejected.

This rejection of the aforesaid application shall be communicated to M/s SWPL by the Board.

In so far as the fresh request for handling of Iron Ore in lieu of Limestone and Steel made by SWPL to the Board; it is seen that the present handling of limestone and steel at SWPL has been permitted by the Hon High Court of Bombay at Goa. Hence the Board has decided that in the event M/s SWPL desires to handle Iron Ore in lieu of Limestone and Steel the same will have to be done only with the leave and permission of the Hon High Court of Bombay at Goa and further this activity would also require a prior EC.

This decision of the Board may be communicated to M/s SWPL.

Agenda item no.6:

Application for renewal of Consent to Establish for setting up of an Integrated Solid Waste Management facility at Cacora at Survey no. 167-168 of Cacora Village, Quepem Taluka

Member Secretary informed the members the Government of Goa through the Department of Science, Technology & Environment submitted an application for Renewal of Consent to Establish

under the Air Act, Water Act and Authorization under the Hazardous Waste Rules, for establishing a Solid Waste Management Facility (SWMF) at Survey no. 167-168 of Cacora Village, Quepem Taluka. The proposed facility had a capacity to handle 100 125 tons/day and it was proposed that this plant be established over an area of 82750 sq. mtrs. Further, the Technical Advisory Committee of the Board at its meeting held on 12/03/2018 had discussed and recommended that Consent to Establish be granted.

The facility would include material segregation and re-cycling stations, where the wet and dry waste would be segregated. The process of bio-methanation, methane gas would be generated, which in turn would be used to generate 0.5 MW of power, which would be of captive consumption for the plant. The sorted material would be either re-cycled or utilized as fuel in cement kilns.

Members were also informed that the facility has been granted Environmental Clearance by SEIAA. The proposed technology and equipment is further improvement as compared to to the plant operating at Calangute. The part of the solid waste would be composted and this compost would be utilized as a fertilizer.

Members approved for grant of renewal of Consent to Establish for setting up of an Integrated Solid Waste Management facility at Cacora at Survey no. 167-168 of Cacora Village, Quepem Taluka.

Agenda item no.7:
Application of M/s Mormugao Port Trust (Mooring Dolphin) for change in product

Member Secretary informed the members that the Port facility is proposing to handle pig iron, limestone, bauxite, break bulk cargo, iron ore pellets and sand at the mooring dolphin.

After deliberations, the members opined that the proposed activity of Mooring Dolphin located off Khariwada coast would require a prior Environmental Clearance, which is not enclosed / submitted with MPT's application.

Members also noted that MPT is not in a position to adopt any pollution control measures at the Mooring Dolphin facility as the facility is in the middle of the sea.

In view of the above facts the Board members after deliberations have decided to reject the application for Consent submitted by the MPT.

Agenda item no. 8:
Revision of fees for Biomedical Waste Authorisation

Member Secretary informed the members that the Health Care Facilities (HCF's) obtain Authorisation under the Biomedical Waste Management & Handling Rules, 1998. The fees for which are notified in Official Gazette dated 21/08/2014. He further informed that the new Rules have not explicitly provided for levy of fees to the health care facilities in respect of application submitted for grant of authorization under the Rules.

Member Secretary further informed that since the Board is an autonomous body and is funded through the fees submitted by the proponents. In view of the expenses incurred by the Board is required to increase processing charges to the HCFs for their application:

The members deliberated and approved the following fee structure, so as to forward the same to the Department of Environment, for issue of a suitable notification.

Sr. No	Categories		Proposed fees (per annum)
1	On bed capacities of health care establishments providing service to indoor patients	Upto 5 beds	Rs.1000/-
		6-25 beds	Rs.1500/-
		26-50 beds	Rs.3000/-
		51-100 beds	Rs.6000/-
		101-200 beds	
		201-500 beds	Rs.15000/-
		501 and above	Rs.20000/-
2	Health care establishments not providing treatment/service to indoor patients (Non-bedded)	Private	Rs.1000/-
		"Not for profit" and Government	
3	Biomedical waste management agencies	Common biomedical waste treatment facility	Rs.10000/-
		Transporter of biomedical waste	Rs.7500/-
		Other biomedical waste handling agencies	Rs.5000/-
4	Research or Educational Institutions /Veterinary Institutions/ Forensic Laboratory/Animal Houses		Rs.5000/-
5	All "Not for profit"		Rs.200/-
6	Govt. institutions and Veterinary Hospitals		Rs.1000/-

Agenda item no.9:
Decision on Bank Guarantee as submitted by the mining units

Member Secretary informed the members that the Board at its 124th Board meeting had directed the mining units for submission of a Bank Guarantee for compliance of the Plan of Action. And to adhere to AAQ standards failing which the mining units jointly and severally should be responsible and Bank guarantee could be forfeited for exceedance of AAQ. Further, the Board has rejected the application for renewal/amendment of mining units post the decision of the Hon. Supreme Court vide no Special Leave application (Civil) No. 32138 of 2015 with SLP(C) Nos. 32699-32727 of 2015. Writ Petition (C) No. 711 of 2015 and Writ Petition (C) No. 720 of 2015.

The Scientific section of the Board should examine the monitoring data of AAQM of various clusters for the period after grant of Consent to mining units till date of operation and give its findings exceedance by respective mining units / clusters as per Consent conditions. The Board would accordingly inititate action for forfeiture of bank guarantee and for issue of show cause notice on case to case basis.

Agenda item no. 10:
Application for Consent to Operate (change in product mix) under the Air Act and the Water Act of M/s Deccan Fine Chemicals (I) Pvt. Ltd. located at Survey No 28, Santa Monica Works, Corlim, Ilhas-Goa.

Member Secretary informed the members that M/s Deccan Fine Chemicals (I) Pvt. Ltd. has submitted an application for Consent to Operate (Change in product mix for rationalization of Pretilachlor capacity from 1400TPA to 2300 TPA) under the Water and Air Act. The previous application for Consent to Establish for the change in product mix was placed before Technical Advisory Committee

and the unit was asked to submit certificate for no increase in pollution load. The unit submitted the said certificate from Birla Institute of Technology & Science, Pilani, Goa campus confirming the same Accordingly, Consent to Establish was placed before 125th Board meeting and was approved. In terms of Office Memorandum of Ministry of Environment and Forest change in product mix is permitted.

Members approved for grant of Consent to operate (change in product mix) under the Air Act and the Water Act of M/s Deccan Fine Chemicals (I) Pvt. Ltd

Agenda item no. 11.

Communication received from the Casino Operators

Member Secretary informed the members that staff of the Board monitors the discharge of the sewage from the vessel to the Sewage tanker, and that the Casino operators have now requested to reschedule the discharge of sewage to Saturday and Sunday also.

The members decided that the discharge of sewage could take place thrice a week from 6.30 am to 9.00 am.

The Member Secretary further informed that the monitoring charges for disposal of sewage from the casinos requires to be enhanced from the Rs. 3000/- per trip to Rs. 5000/- per trip, which involves cost of manpower and transportation. Members agreed to revise the fee to Rs. 5000/- per trip.

Table item no. 01

Application for Consent to Establish – Expansion for enhancement of capacity from 100 TPD to 250 TPD + 20% for the Integrated Solid Waste Management Facility at Saligao at survey no. 47/1 of Village Calangute, Bardez – Goa

Member Secretary informed the members that the Goa Waste Management Corporation through M/s. Hindustan Waste Management Pvt. Ltd. has submitted an application for Consent to Establish- expansion under the Air Act, Water Act and Authorisation under the Hazardous Waste Rules for enhancement in the capacity of the Integrated Solid Waste Management Facility at Saligao from 100 TPD to 250 TPD + 20%. The proposed enhancement is due to increase in the quantity of incoming waste to the plant, increase in catchment area for waste collection and change in waste characteristic. The existing 100 TPD Facility at Saligao after expansion to 250 TPD would cater to 27 Village Panchayats and 6 Municipal Councils. The Technical Advisory Committee of the Board at its meeting held on 26/03/2018 had discussed and approved to grant Consent to Establish- Expansion.

Member Secretary further informed that the facility has Organic Extrusion Process to separate the Dry and Wet Waste and sorting/re-cycling stations for segregation of dry waste. The wet waste is subjected to bio-methanation and methane gas is used to generate 0.4 MW power, which is for the captive consumption for the plant, presently the power generation is more. The segregated dry fraction is either re-cycled or utilized as Refuse Derived Fuel (RDF) in Cement kilns. The wet waste post bio-methanation is composted and compost is used in bio-diversity development and as fertilizer. Post enhancement, the plant will be able to handle 250 TPD + 20% waste.

Member of the Board, Shri Shawn Martins expressed his apprehension of increase in number of trucks carrying waste.

Members deliberated on the issue and it was decided as follows:

a.	Pollution Control Board to quarterly monitor the effectiveness of the plant for pollution control measures.
b.	To ensure that the trucks carrying solid waste are properly covered enroute to the site and no spillage, leachate flows on the road.
c.	To direct the concerned Village Panchayats to ensure that the trucks are covered and have a leachate collection tank.
d.	To check the number of trucks presently being plied and the number of trucks which shall be operated once the expansion facility is operated. Goa Waste Management Corporation to ensure that proper schedule for trucks is maintained.

Table item no. 02
Pollution at the Baga Creek

Member Secretary informed the members that a complaint was received by the office from Mr. Shawn Martins, Board member and the Sarpanch, Village Panchayat Arpora, stating that units located adjacent to the Baga creek are disposing their waste in the Baga creek. Accordingly an inspection was conducted on 06/02/2018.

He further informed that the units are presently been issued show cause notice and based on the reply given in the show cause notice, further action will be initiated. He further informed that inspection of the establishments be carried out which are located across the Baga creek.

Members were of the opinion that the Board should deal with such units discharging raw sewage in public water bodies, by taking stringent action against them and if need be even closure

Table item no. 03
Details of criminal cases filed by the Board on complaints of Member Secretary, Shri Levinson Martins before various Criminal Courts in the State.

The Board Members perused the status of Criminal Cases filed before various Criminal Courts on complaints made to the respective Criminal Courts by the Boards Member Secretary Levinson J Martins. Members noted and approved the same.

III. With the permission of the Chair, the following was discussed:

Shri Shawn Martins informed that musical parties are being held in the coastal belt for duration of one or two days. He suggested that the organisers obtain NOC of the Board under the Noise Rules. Member Secretary clarified that the District Collector has nominated Dy. Collector and Mamlatdars for enforcing the Noise Rules. However when bigger events are being held, permission from GSPCB is obtained.

The meeting ended with thanks to the Chair.

CHAPTER 4

COMMITTEES AND SUB-COMMITTEES CONSTITUTED BY THE BOARD AND THEIR ACTIVITIES

4.1 TECHNICAL ADVISORY COMMITTEE

In order to develop uniformity in approach and to ensure timely clearance of the consent applications, Shri. Jose Manuel Noronha, Chairman of the Board constituted a Technical Committee comprising technically and scientifically qualified professionals which was re-constituted during the year under report vide Order no. 8/11/09-PCB/ Vol.VIII/Tech/20390 dated 25/01/2018. The Committee comprises of the following members:-

1. Dr. Xivanand Verlekar, Retd. Scientist – (Biologist) N.I.O, 606, Pinto Vaddo, Candolim, Bardez Goa.
2. Dr. Sampatrao Dagu Manjare, Associate Professor, BITS PIlani, Goa Campus, Zuarinagar, Goa
3. Prof. Neeraj Bale, Prof (Mechanical Engg.), Agnel Institute of Technology & Design, Assagao, Bardez Goa.
4. Mr. Dilip M. Rege, Karma Gardens, Flat no. 107, SMRC Road, Nr. Regina Mundi School, Chicalim Goa 403711
5. Dr. Mohan Girap, Scientist 'B', Goa State Pollution Control Board, Panaji.
6. Mrs. Francisca Pereira, Scientist 'B', Goa State Pollution Control Board, Panaji.
7. Mrs. Nandan Prabhudessai, Junior Environmental Engineer, Goa State Pollution Control Board, Panaji.
8. Mr. Keshav Fadke, Junior Environmental Engineer, Goa State Pollution Control Board, Panaji
9. Mr. Sanjeev Joglekar, Environmental Engineer, Goa State Pollution Control Board.

The Committee held weekly meetings on every Monday at 4.00 pm in the Conference hall of the Board to scrutinize and make recommendations / comments / suggestions on the applications from industrial units received by the Board for Consent to Establish / Operate / Renewal of Consents under the Water and Air Acts, Authorizations under the Hazardous Waste Rules, Bio-medical Waste Rules, etc. (except those of Green category industries). The applications from green category industries were scrutinized by the technical and scientific sections of the Board and approved by the Chairman on recommendation by the Member Secretary for grant of Consents.

The recommendations of the Technical Advisory Committee meetings, in the form of Minutes, were placed before the Chairman for approval and on approval by Chairman; Consent Orders were issued by the Member Secretary.

4.2 PURCHASE COMMITTEE

Shri. Jose Manuel Noronha, Chairman reconstituted the Purchase Committee under the Scientific Section and Administrative Section vide Orders no.1/5/12-PCB/Vol.XV/673 dated 16/01/2013 and no.1/5/12-PCB/Vol.XV/6732 dated 18/01/2013 respectively. The Committee for Scientific Section comprises the following members:-

1. Mrs. Jenica Sequeira, Scientist 'C', Goa State Pollution Control Board.
2. Accounts cun Administrative Officer, Goa State Pollution Control Board
3. Mrs. Lizette D'Souza, Scientist 'F', National Institute of Oceanography.
4. Environmental Engineer, Goa State Pollution Control Board
5. Mrs. Francisca Pereira, Scientist 'B' Goa State Pollution Control Board
6. Mrs. Natalia Dias, Senior Law Officer, Goa State Pollution Control Board
7. Mr. Rajiv Nevgi, Industrialist, Shriram Sadan, Dattawadi, Mapusa, Goa

The Committee for the Administrative Section comprises the following members:-

1. Environmental Engineer, Goa State Pollution Control Board.
2. Accounts cum Administrative Officer, Goa State Pollution Control Board
3. Senior Law Officer, Goa State Pollution Control Board.
4. Office Superintendent, Goa State Pollution Control Board.

4.3 CONSTITUTION OF DEPARTMENTAL PROMOTION COMMITTEE AND DEPARTMENTAL SELECTION COMMIITTEE IN RESPECT OF GROUP 'A' AND 'B' POSTS.

The committee re-constituted vide Order no.1/5/10-PCB/Vol.XVI/3622 dated 25/07/2013 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The committee comprises of following members.

a.	Chairman of the Board	Chairman of the Commiittee
b.	Director, Department of Science, Technology & Environment, Govt. of Goa, or his representatiove	Member
c.	Ms. Analia Mesquita, Scientist 'F', National Institute of Oceanography, Dona Paula (in case of Scientific posts)	Member
d.	Prof. A.J.C Afonso, B.E (Met.) M.M.S. (incase of Technical Post)	Member
e.	Director, Department of Industries, Trade and Commerce	Member
f.	Member Secretary, Goa State Pollution Control Board	Member

4.4 CONSTITUTION OF A SUB-COMMITTEE TO SUGGEST THE IMPLEMENTATION OF FLEXIBLE COMPLIMENTING SCHEME AT THE GOA STATE POLLUTION CONTROL BOARD

The sub-committee constituted vide Order no.4/110/13-PCB/5885 dated 25/11/2013 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The committee comprises of following members.

a.	Dr. Vassudev Dehprabhu	Convenor
b.	Nominee of the Director of the National Institute of Ocenography	Member
c.	Dr. Marconi Correia	Member
d.	Director, Dept. of Mines and Geology or his nominee	Member

Shri Sanjeev Joglekar, Environmental Engineer of the Board shall assist the Sub-Commiittee in providing the necessary information.

4.5 CONSTITUTION OF A WASTE DISPOSAL COMMITTEE AT THE GOA STATE POLLUTION CONTROL BOARD

The committee constituted vide Order no.3/20/07-pcb/Vol.VII/Part/7286 dated 24/11/2015 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The committee comprises of following members.

a.	Mr. Levinson J. Martins	Chairman
b.	Mr. Sanjeev Joglekar	Member
c.	Mrs. Jenica Sequeira	Member
d.	Mrs. Natalia S. Dias	Member
e.	Mr. Devendra Arlekar	Member
f.	Mrs. Tulita da Costa e Fernandes	Member

CHAPTER 5

MONITORING NETWORK FOR AIR AND WATER QUALITY

The Goa State Pollution Control Board monitors the air and water quality under the Central Pollution Control Board sponsored projects National Air Monitoring Programme (NAMP) and National Water Monitoring Programme (NWMP). The NAMP and NWMP projects covers 18 air quality monitoring locations and 49 water quality monitoring locations respectively within the State of Goa. The details of the projects are given as under.

5.1 National Air Monitoring Programme (NAMP)

This is an ongoing activity funded by the Central Pollution Control Board, New Delhi under the National Air Monitoring Programme (NAMP). Under this programme the Board continued to monitor the ambient air quality at 18 locations within the state of Goa. The following are the stations under the NAMP project.

1. Panaji Town, Near GSPCB Office
2. Vasco Town, Near Electricity Department
3. Near Fire Brigade Station, MPT
4. Assanora
5. Bicholim
6. Honda
7. Codli
8. Amona
9. Usgao
10. Curchorem
11. Sanguem
12. Tilamol-Quepem
13. Margao Town
14. Mapusa Town
15. Ponda Town
16. Kundaim Industrial Estate
17. Cuncolim Industrial Estate
18. Tuem Industrial Estate

The geographical location of the 18 air quality monitoring stations is shown in the map presented in Figure 5.1. Out of the 18 stations, the Board operates 4 stations, i.e., at Vasco, MPT- Mormugao and Panaji and Mapusa. The ambient air quality data for these stations observed during the year are given in Annexure VI. The analytical results show the ambient air quality for the various locations monitored .

The remaining 14 stations are are outsourced to MoEFCC approved laboratories operated by outsourcing to MoEF approved laboratories. The parameters monitored at these locations include NOx, SO_2, PM_{10} and $PM_{2.5}$ are monitored on regular basis. The monthly averages of the ambient air quality data indicates that there is an increase in the level of respirable particulate matter (PM10 and PM2.5) at some locations, in beginning and end of the year . However, the annual averages indicate that the particulate matter levels are on a marginally reducing trend.

Figure 5.1: Map of Goa showing the Ambient Air Quality Monitoring Stations under the National Air Monitoring Programme (NAMP)



5.2 Trend Status of Ambient Air Quality in Goa

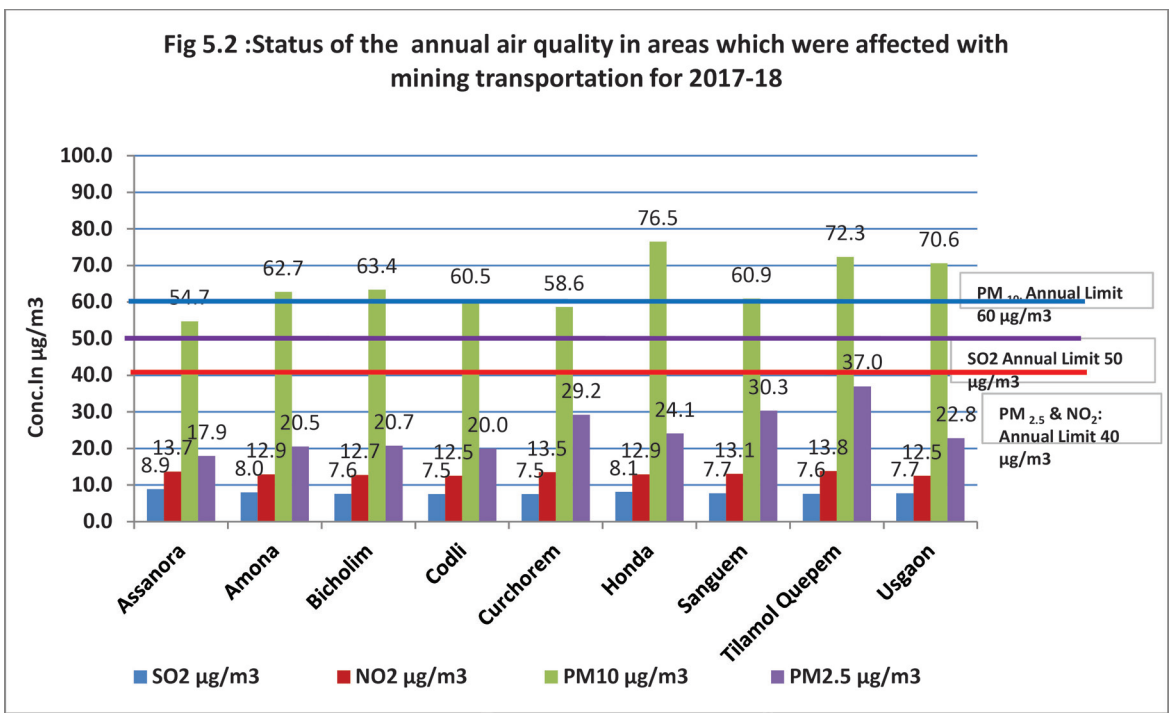
5.2.1 Ambient Air Quality in the Mining Areas of Goa

Under the National Air Monitoring programme (NAMP), the Board through the CPCB sponsored project conducts ambient air quality in areas affected due to mining transportation activities.

The data and graphical representation is placed in Table 5.1 and Fig.5.2. The data indicates that the levels of SO_2, NO_2 and $PM_{2.5}$ levels are within the permissible limits; where as, PM_{10} is exceeding the permissible limits at Amona, Bicholim, Codli, Honda, Sanguem, Tilamol-Quepem and Usgaon

Table 5.1 :Trend status of Annual Air Quality in areas which were affected with mining transportation during April 2017 – March 2018

Sr.No	Parameter Location	SO_2 µg/m³	NO_2 µg/m³	PM10 µg/m³	PM2.5 µg/m³
1	Assanora	8.3	13.4	54.7	17.7
2	Amona	8.0	12.9	62.7	20.5
3	Bicholim	7.6	12.7	63.3	20.7
4	Codli	7.5	12.5	60.5	20.0
5	Curchorem	7.5	17.8	58.6	29.2
6	Honda	8.1	12.9	76.5	24.1
7	Sanguem	7.7	13.1	60.9	30.3
8	Tilamol Quepem	7.6	13.8	72.3	37.0
9	Usgaon	7.7	12.5	70.6	22.8
Sch VII EPR 1986, Annual Limits		**50**	**40**	**60**	**40**

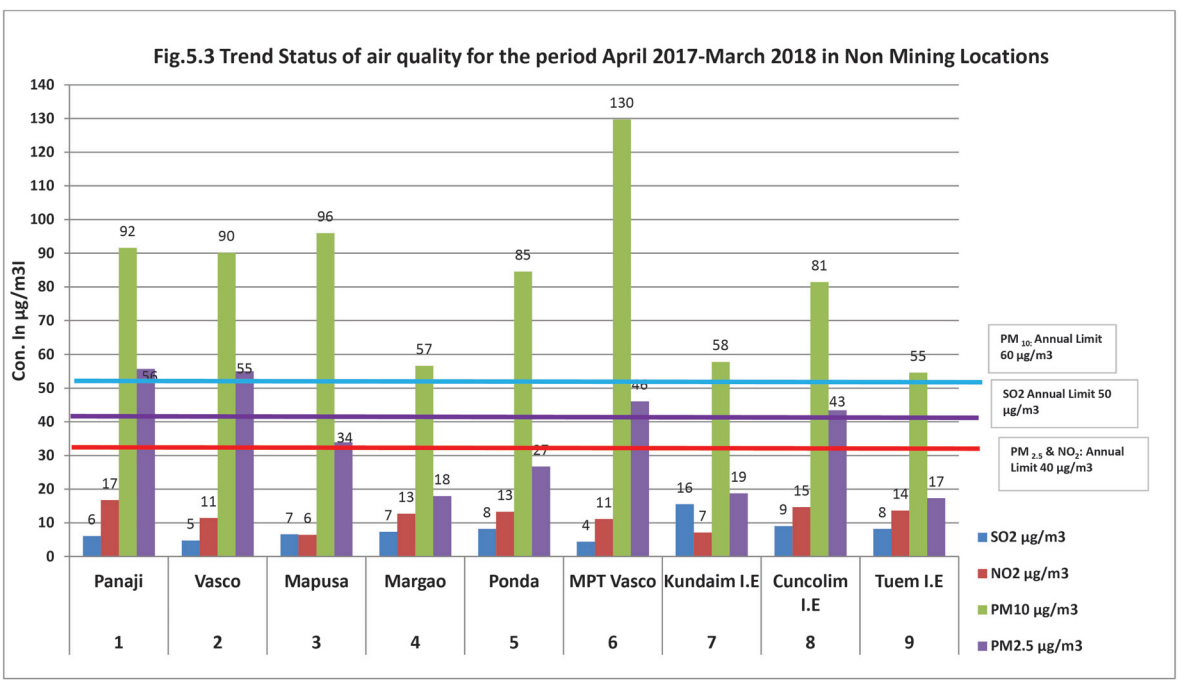


5.2.2 Ambient Air Quality in Other Areas of Goa (Residential/Commercial /IndustrialLocations)

The Board is conducting ambient air quality monitoring at the following locations; viz; Panaji, Vasco, MPT area in Mormugao Taluka, Mapusa, Margao, Ponda , Tuem , Cuncolim and Kundaim Industrial Estate. The annual averages of PM_{10}, $PM_{2.5}$, SO_2 and NO_2 at some of the Towns is shown below in Table 5.2 and Fig 5.3. The data indicates that the levels of SO_2, NO_2 levels are within the permissible limits; where as, PM10 is exceeding the permissible limit at the Panaji, Vasco, Mapuca, Margao, Ponda, MPT port area Mormugao Taluka, and Cuncolim. The $PM_{2.5}$ is found exceeding at Panaji, Vasco, Mapuca, MPT, & Cuncolim Industrial Estate.

Table-5.2: Trend status of Air Quality for the period April 2017 – March 2018 at different locations in Goa

Sr. No	Parameter Location	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³
1	Panaji	6	17	92	-
2	Vasco	5	11	90	-
3	Mapusa	7	6	96	-
4	Margao	7	13	57	18
5	Ponda	8	13	85	27
6	MPT Vasco	4	11	130	-
7	Kundaim I.E	16	7	58	19
8	Cuncolim I.E	9	15	81	43
9	Tuem I.E	8	14	55	17
Sch VII EPR 1986, Annual Limits		**50**	**40**	**60**	**40**



Parameters like Ozone (O3), Lead(Pb), and Carbon Monoxide (CO) have also been monitored at the outsourced 14 locations and are found within prescribed limits (Refer Annexure V). The field observations around the monitoring sites indicates prominence of anthropogenic activities like vehicular movement , construction activities and industrial emissions .

Ambient Air Quality Monitoring data is utilized in the CPCB AQI tool for effective dissemination of air quality information to the common person people in simple linguistic terms that is easily understood by public domain An Expert Group comprising medical professionals, air quality experts, academia, advocacy groups, and SPCBs was constituted and a technical study was awarded to IIT Kanpur. IIT Kanpur and the Expert Group recommended the said AQI scheme. (ref Air Quality Index-CPCB)

There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe, based on eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb) of which a minimum of 3 parameters is a pre-requisite. The short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed. (Refer Table 5.3)

Table 5.3 : AQI Category, Pollutants and Health Breakpoints

AQI Category (Range)	PM_{10} 24-hr	$PM_{2.5}$ 24-hr	NO_2 24-hr	O_3 8-hr	CO 8-hr (mg/m^3)	SO_2 24-hr	NH_3 24-hr	Pb 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5 –1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	430 +	250+	400+	748+*	34+	1600+	1800+	3.5+

One hourly monitoring (for mathematical calculations only)

Based on the measured ambient concentrations, corresponding standards and likely health impact, is determined for each of these pollutants. The AQI values and corresponding ambient concentrations (health breakpoints) as well as associated likely health impacts for the identified eight pollutants are as follows (Refer Table 5.4)

Table 5.4: AQI : Associated Health Impacts	
AQI	**Associated Health Impacts**
Severe (401-500)	**SEVERE : May cause respiratory effects even on healthy people and serious health effect on people with lung/heart diseases**
Very Poor (301–400)	**VERY-POOR : May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases**
Poor (201–300)	**POOR : May cause breathing discomfort to people on prolonged exposure and discomfort to people with heart disease**
Moderately polluted (101–200)	**MODERATELY POLLUTED : May cause breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease Children and older adults**
Satisfactory (51–100)	**SATISFACTORY : May cause minor breathing discomfort to sensitive people**
Good (0–50)	**GOOD : Minimal impact**

The data has also been displayed in term of Air Quality Index (AQI) as provided in Annexure V for the various locations monitored

5.3 Water Quality Monitoring in the State of Goa

5.3.1 National Water Quality Monitoring Programme (NWMP)

The Goa State Pollution Control Board monitors water quality at 49 locations throughout Goa under the Central Pollution Control Board sponsored project NWMP. The water bodies monitored include rivers, wells, canals, lake, reservoir and creek. Among the rivers, the estuarine rivers as well the sweet water rivers which form a part of the network for water intake points for water treatment plants for public water supply have been covered. Ground water sources (well water) located within the industrial estates are also part of this programme.

The 49 locations covered under this programme are distributed throughout Goa such that 26 stations are located in the North District and 23 are located in the South District

NORTH GOA				
Sr. No.	**Type**	**Rivers/ Lake/Canal/Wells**	**CPCB Classification as per designated best use**	**Location**
1	R	Rv. Tiracol	Not classified	Tiracol
2	R	Rv. Chapora	Class 'C'	1.Near Alorna Fort, Pernem
3	R		Not classified	2.Siolim
4	R	Rv. Kalna	Class 'C'	Chandel, Pernem
5	R	Rv. Madei	Class 'C'	Dabos, Valpoi
6	R	Rv. Valvanti	Class 'C'	Sankli, Bicholim
7	R	Rv. Bicholim	Class 'C'	Baranzan Nagar, Bicholim
8	R	Rv. Assanora	Class 'C'	Assanora
9	R	Rv. Sinquerim	Not classified	1.Candolim Side Near Bridge
10	R		Not classified	2.Nerul Temple
11	R	Rv. Khandepar	Class 'C'	Opa – Ponda

12	R	Rv. Mandovi	Sea Water II	Tonca, Marcela
13	R		Not classified	Amona Bridge
14	R		Sea Water II	Mandovi Bridge
15	R		Not classified	IFFI Jetty
16	R		Not classified	Near Hotel Marriot
17	R	Rv. Mapusa	Sea Water II	Culvert on Mapusa-Panaji Highway
18	L	Anjunem Lake	Not classified	Anjunem
19	L	Mayem Lake	Class 'C'	Mayem, Bicholim
20	L	Carambolim Lake	Not classified	Carambolim, Old Goa
21	C	Cumbarjua Canal	Sea Water II	Corlim (Discharge Point of Syngeta Ltd.)
22	W	Well - Kudaim I.E.	Class 'A'	M/s Cadila Healthcare Ltd.
23	W	Well - Corlim I.E.	Class 'A'	Corlim Industrial Estate
24	W	Well - Pilerne I.E.	Class 'A'	M/s Unichem
25	W	Borewell - Bethora I.E.	Class 'A'	Bethora Industrial Estate
26	W	Borewell - Madkaim I.E.	Class 'A'	Madkaim Industrial Estate

SOUTH GOA				
Sr. No.	**Type**	**Rivers/ Lake/Canal/Wells**	**CPCB Classification as per designated best use**	**Location**
1	R	Rv. Zuari	Sea Water II	1.Panchawadi
2	R		Not classified	2.Borim Bridge
3	R		Not classified	3.Marciam Jetty
4	R		Sea Water II	4.D/S of point where Kumbarjua Canal Joins
5	L	Rv. Sal	Not classified	1.Rumder
6	R		Not classified	2.Khareband, Margao
7	R		Sea Water II	3.Pazarconi, Cuncolim (Near Culvert Margao- Cancona NH)
8	R		Not classified	4.Orlim Bridge, Orlim
9	R		Sea Water II	5.Near Hotel Leela, Mobor, Cavelossim
10	R	Rv. Talpona	Class 'C'	1.Canacona
11	R	Rv. Khandepar	Class 'C'	Codli near Bridge, u/s OPA waterworks, Sanguem
12	R	Rv. Kushawati	Class 'C'	Near Bund at Kevona, Rivona, Sanguem
13	L	Salaulim Lake	Class 'C'	Salaulim, Sanguem
14	L	Raia Lake	Not classified	Curtorim
15	L	Saipem Lake	Not classified	Saipem
16	L	Curtorim Lake	Not classified	Curtorim
17	C	Agricultural Canal	Class 'E'	Agricultural Canal upstream of Cuncolim I.E. (1 Km from M/s Nicomet Ind.)

18	C	Agricultural Canal	Class 'E'	Agricultural Canal downstream of Cuncolim I.E. (1 Km from M/s Nicomet Ind.)
19	C	Dando Creek	Class 'C'	Dando Mollo, Velsao, Marmugao
20	W	Well - Verna I.E.	Class 'A'	M/s Cipla Limited
21	W	Well - Sancoale I.E.	Class 'A'	Sancoale Industrial Estate
22	W	Well - Zuari I.E.	Class 'A'	Zuari Industrial Estate, ZuariNagar
23	W	Borewell - Concolim I.E.	Class 'A'	Cuncolim Industrial Estate

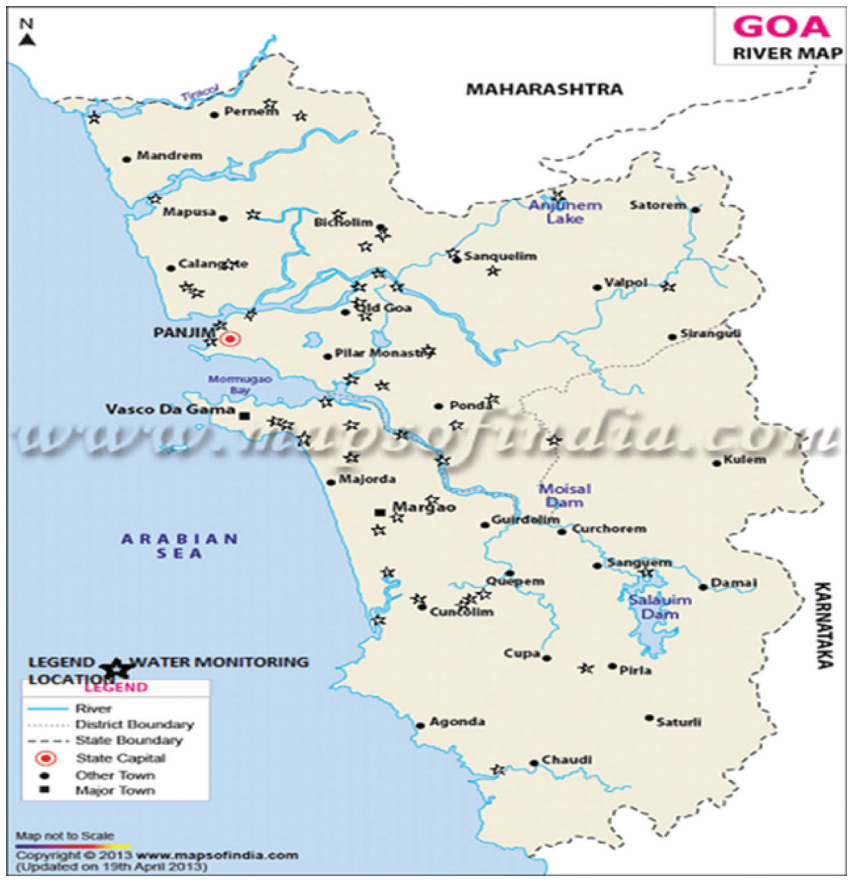
The total 49 locations are divided into two groups i.e., (i) 40 locations which are being monitored monthly and (ii) 9 locations (i.e. Bore wells) are monitored half yearly as per CPCB protocol.

Four Hundred and ninety four samples were collected from all these water bodies and analyzed during the year 2017-2018.

The data of the water samples analyzed during 2017-2018 was interpreted using the Central Pollution Control Board classification on the designated best use of the water body.

From the water quality data analysis it is seen that the fecal coliform of River Mapusa, River Mandovi, River Sal, River Zuari does not comply with the prescribed CPCB standard for Fecal Coliform and Total Coliform values in water samples of River Bicholim and River Valvanti showed exceedence throughout the year. The water quality data during the year is given in Annexure III.

Figure 5.4 : Map of Goa showing the Water Quality Monitoring locations under the National Water Monitoring Programme; MINARS. The monitoring locations are indicated as stars ☆.



CHAPTER 6

PRESENT STATE OF ENVIRONMENT, ENVIRONMENTAL PROBLEMS AND COUNTER MEASURES

During the year under report, the Board initiated various studies with respect to important issues. Some of the studies have been initiated by signing Memorandum of Association (MoU) with reputed Institutions / Companies and some are initiated by the Board Scientists. The details of the studies are as follows:

6.1 COMMISSIONING OF CONTINUOUS AMBIENT AIR QUALITY MONITORING STATION (CAAQMS) Mobile Van on 26/03/2018



Continuous ambient air quality monitoring station (CAAQMS) mobile van

The Goa State Pollution Control Board has commissioned the Continuous Ambient Air Quality Monitoring Station (CAAQMS) Mobile van on 26/03/2018 at the hands of the Chairman and Member Secretary, Goa State Pollution control Board.



Photo - Inauguration by Chairman GSPCB

The Mobile CAAQMS was used for trial operation at MPT Sada within the premises of D type colony. Adjacent to CAAQMS of M/s. Adani MPTL has installed the stationary CAAQMS on 27/03/2018.

The Mobile CAAQMS will monitor for the following air pollutants parameters the ambient air.

1. Ambient Oxides of Nitrogen (NO/NO2 / NOx)
2. Ambient Sulphur dioxide (SO2)
3. Ambient Carbon Monoxide (CO)
4. Ambient Ozone (O3)
5. Ambient Ammonia (NH3)
6. Multi calibration System for Gas calibration and Meteorological Sensors for Wind Direction, Wind Speed, Vertical Wind Speed, Ambient Temperature, Relative Humidity, Solar Radiation & Barometric Pressure and Telescoping Crank– up Meteorological Tower, Flow and Electronic Calibration
7. Ambient PM2.5 and PM10. Suspended Particulate Matter (SPM) Monitor

6.2 REPORT ON SONSHI MINING :

In response to the HIGH COURT OF BOMBAY AT GOA- ORDER W.R.T. PIL (SUO MOTU) NO. 2 OF 2017 and as per the directions of the Board meeting dated 28/04/17, Ambient Air Quality Monitoring (AAQM) was initiated at Sonshi, Navelim and Maina to assess the levels of air borne particulate matter, due to transportation activities. An earlier inspection of the transportation route of the mines at Sonshi Sattari was conducted by the Board Officials on 18/04/2017where it was observed that there was significant air borne dust along the transportation routes in the Sonshi area due to the operation of not only the local 13 mines from Sonshi cluster identified as transporting along the Sonshi –Navelim-Amona or Maina or Sinari or Alcon Jetties:

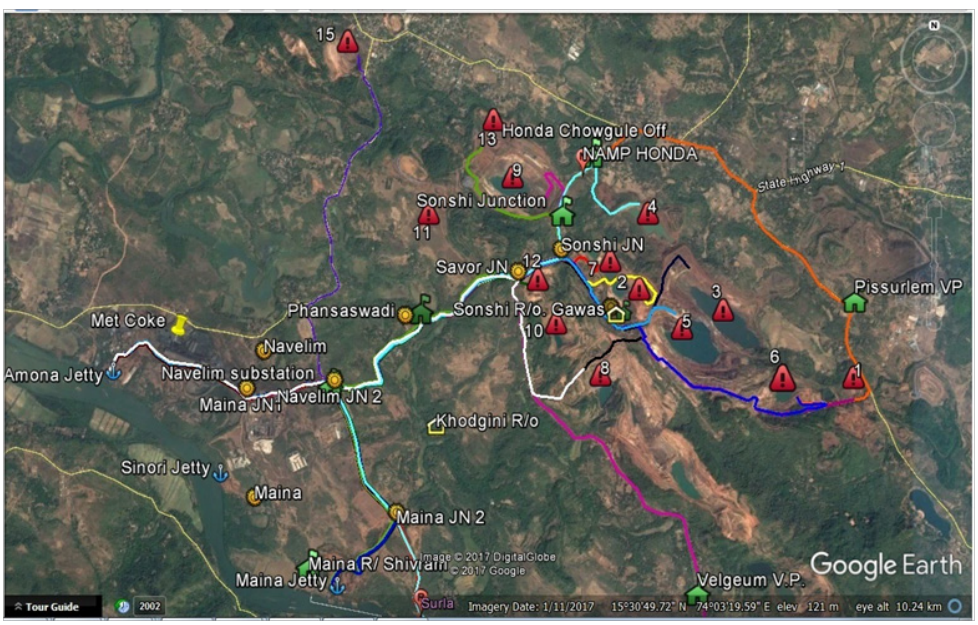
Sr. No	Name of Mining Leases	Transportation Route	Jetty
1	Botvadeacho Dongor Iron Ore Mine (M/s. Sesa Goa Ltd.) (TC No. 28/51)	Sonshi – Sawar Jn- Panaswadi – Navelim Jn- Amona	Amona
2	Mareta Sodo Iron Ore Mine (M/s. Sesa Goa Ltd.) (TC No. 6/55)	Sonshi - Sawar Jn- Panaswadi – Navelim Jn- Amona	Amona
3	Deulem Pissurlem iron ore mine (M/s. R. S. Shetye & Bros.) (TC No. 70/51)	Sonshi- Sawar Jn- Panaswadi- Navelim Jn- Maina	Maina
4	Onda iron ore mine (M/s. Chowgule & Company Ltd.) (TC No. 98/52)	Sonshi Jn- Sawar Jn- Panaswadi- Navelim Jn-Tixem	Tixem
5	Gaval Sonshi iron ore mine (M/s Cosme Costa & Sons) (TC No. 110/53)	Sonshi - Sawar Jn- Panaswadi – Navelim Jn- Amona	Amona
6	Guelliem-e- Gaval iron ore mine (Smt. Geetabala Manohar Naik Parulekar) (TC No. 55/51)	Sonshi- Sawar Jn- Panaswadi- Navelim Jn- Maina	Maina
7	Sem Denominacao Especial Sonshi iron ore mine (M/s. V.G. Quenim) (TC No. 16/55)	Sonshi- Sawar Jn-Panaswadi- Navelim Jn- Maina	Maina

8	Surla –Sonshi iron ore mine (M/s Sesa Resources Limited) (TC No. 5/54, 20/54 & 21/54)	Sonshi - Sawar Jn-Fanaswadi - Navelim- Amona	Amona
9	Cazreachem Culna Cudnem Iron ore Mine (Smt. Kunda R. Gharse) (TC No. 51/52)	Sonshi Jn-Sawar Jn- Dignem-Bayem Surla-Velguem-Ambegal Pale-Vagus	Vagus
10	Dignem iron ore mine (M/s Sociedade Timblo Irmaos Limitada) (TC NO. 92/52)	Dignem-Khodginim-Maina	Maina
11	Cormolachem Moll Cudnem Iron Ore Mine (Kashinath D. S. Talaulikar) (T.C. No. 48/58)	Fanaswadi-Navelim Jn-Maina	Senori, Maina
12	Quelchem Tour Tambdi Mati (Cudnem) Iron Ore Mine (M/s. Sociedade De Fomento Ind. Pvt Ltd) (T.C. No. 14/53)	Sonshi- Sawar Jn-Panaswadi-Navelim Jn- Maina	Maina
13	Cormolem e Bog (Harvalem) Iron Ore Mine (M/s. Sociedade De Fomento Ind. Pvt Ltd) (T.C. No. 45/52)	Sonshi- Sawar Jn-Panaswadi-Navelim Jn- Maina	Maina

, but also the South side mines plying through the said area via Navelim. The Board has a dedicated Ambient Air Quality monitoring (AAQM) location at Honda, under the Central Pollution Control Board National Ambient Air Monitoring Programme (NAMP) (which is located downwind to the Sonshi mining cluster and is the closest location monitored downwind to Sonshi cluster (The Honda AAQM Location was initiated in 2010 till date (Refer Annex V) . In order to bridge the gap in Board AAQM resources, the Board decided to requisition the available samplers from the mining units through MoU's with Mining units. The said monitoring sites were as per CPCB Guidelines namely, Guidelines for Ambient Air Quality Monitoring, NATIONAL AMBIENT AIR QUALITY MONITORING SERIES: NAAQMS/ ... /2003-04, April 2003 and Guidelines for the Measurement of Ambient Air Pollutants: NAAQS Monitoring & Analysis Guidelines Volume-I: Guidelines for Manual Sampling & Analyses, May, 2011, respectively:.

Based on the AAQM data obtained (Refer Tables Below) it was recommended that the mines adopt remedial measures immediately on a short , mid and long term basis .

Google map depicting therein the mining leases and the transportation routes



Conclusion and Recommendation made during the inspection held on 8/04/2017.

Based on the observations of particulate matter exceedances and general site visits, the Board recommended the following measures.

SHORT TERM MEASURES

1. Geo-net fencing at feasible places along the road in vicinity of all residential areas in village. Implemented

2. Possibly divert some transportation via Savar junction, Khodgini village and Khodgini junction to avoid traffic congestion. Implemented

3. Tarring of the un-tarred shoulders along the road from mines to junction. Implemented to mine exits only

4. Installation of cat-eye and delineation measures are to be carried out along the mining route passing through the village.

5. Washing of roads during non-usage times in the evenings.

6. Cleaning of shoulders and drainages on regular frequency all along the road from mines to major junctions right upto jetty

7. Hot-mixing at mine exit and jetty exit (Minimum 50-100mtrs.

8. Continued deployment of truck mounted mechanized road sweeping machine.

9. Repair of existing pot holes on the mining related roads and maintaining the same

10. Ensuring ideal maintenance of vehicles including PUC

MEDIUM TERM MEASURES Installation of

- Rumblers at start of tar roads within the mine and modifying existing speed breakers/humps with due NOC of PWD.

- Wheel washing system at all exits before joining public roads on priority.

.

LONG TERM MEASURES :

- Explore possibilities of sealed sturdy cargo containers that will prevent fugitive losses along the transportation routes before exiting from the mines

- Alternately explore use of cleaner and greener fuels

- Reducing the number of vehicles, by increasing the capacity of the trucks

- Provide additional truck washing station with high power water jets, that should be able to wash the clogged, deposited mud off the truck body and tyres followed by fully tarred road/ concrete road connecting to fully tarred main road, right upto the ore destination.

- The Stock pile yard of the jetties , should have concrete base with elevated berms, with wind screens having a height atleast 3 mtrs above the stock pile height .

- Permanent enclosures for stock pile can be explored.

- Install real time monitoring systems or Continuous Ambient Air Quality Monitoring Systems along the crucial transportation routes in consultation with the Board, to avail instantaneous real time data

- As the height of the dust columns is significant along the transportation routes , explore possibility of installing a curved barricade of approx. 5 mtrs or appropriate height consisting of fibre or any such suitable material with noise insulation erected along the transportation route , keeping in mind to provide access to the public (e.g. Bus stops can have accesses curtained by plastic strips

- Tarring of the un-tarred shoulders along the road from mine to the jetty.

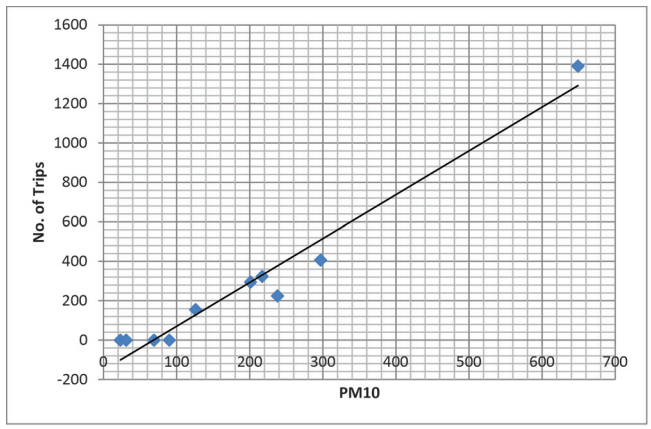
- Also to follow all the recommendations proposed by ISM Dhanbad.
  These short/mid term measures have been completed of underway.

The Ambient Air Quality from 02/05/2017 upto 01/06/2017 were as follows :

Sr. No.	AAQM Location & Dates of Monitoring	PM10 in ug/m3	PM2.5 in ug/m3
1	Residence of Mr. Rohidas Kansekar, Fanaswadi, Navelim 02,04,08,10,12,16,18,23,30th May, 2017 and on 1st June,2017	Exceeded on six days out of 10 days monitored	Exceeded six days out of 10 days monitored
2	Residence of Mr. Prakash Gawas, Sonshi Village, 02,04,08,10,12,16,18,23,30th May, 2017 and on 1st June,2017	Exceeded on six days out of 10 days monitored	Exceeded two days out of 5days monitored
3	Substation electricity dept., Navelim, 02,04,08,10,12,16,18,23,25, 30th May, 2017 and on 1st June,2017	Exceeded 8 days out of 11 days monitored	Within limits on all 10 days monitored
4	Residence of Mr. Shivram Naik, Maina, 04, 12,16,18,23,25 and 30 th May, 2017	Exceeded five days out of seven days monitored	Within limits on all seven days monitored

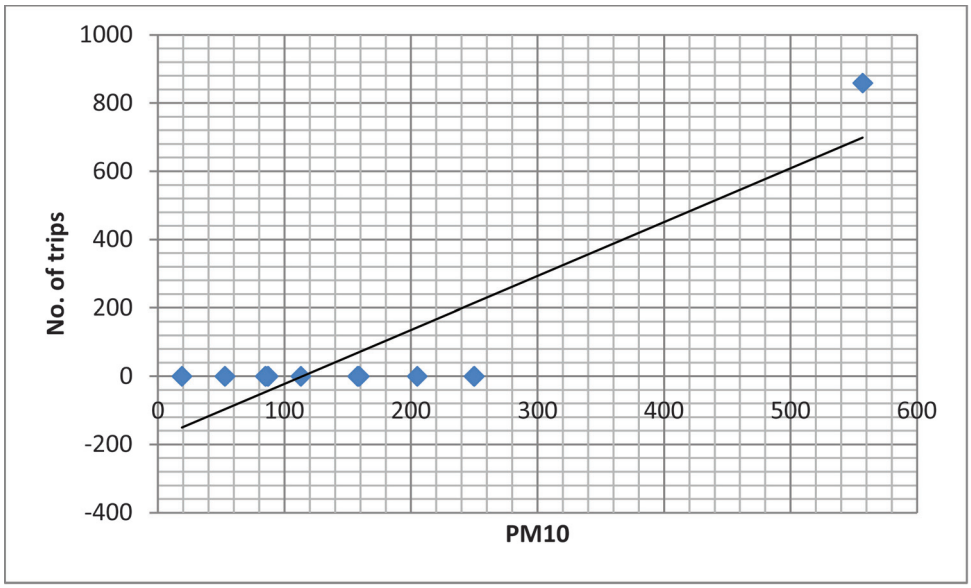
The PM 10 values showed a high correlation with the transporation data submitted by the Directorate of Mining and Geology.

Correlation between PM10 & No. of Trips (Residence, Fanaswadi, Navelim)



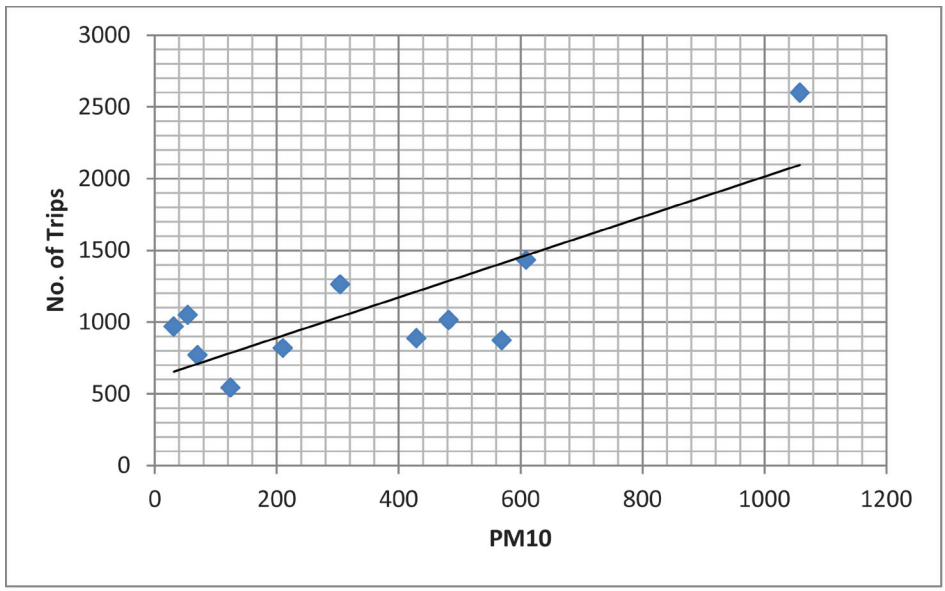
The value of Correlation R is 0.9797. This is a strong positive correlation, which means that high X variable scores go with high Y variable scores (and vice versa).

Correlation between PM10 & No. of Trips (Residence, Sonshi Village.)



The value of Correlation R is 0.8902. This is a strong positive correlation, which means that high X variable scores go with high Y variable scores (and vice versa).

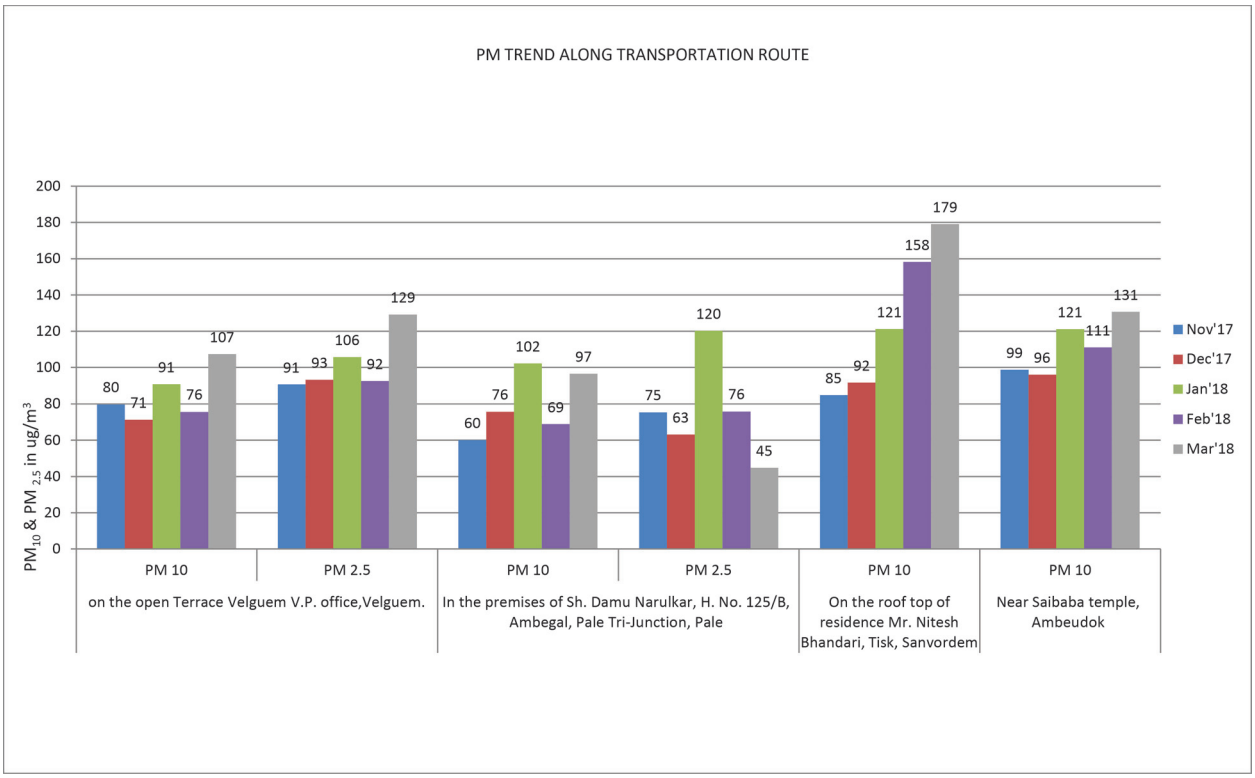
Correlation between PM10 & No. of Trips(Substation Electricity Dept. Navelim)



The value of Correlation R is 0.8015. This is a strong positive correlation, which means that high X variable scores go with high Y variable scores (and vice versa).

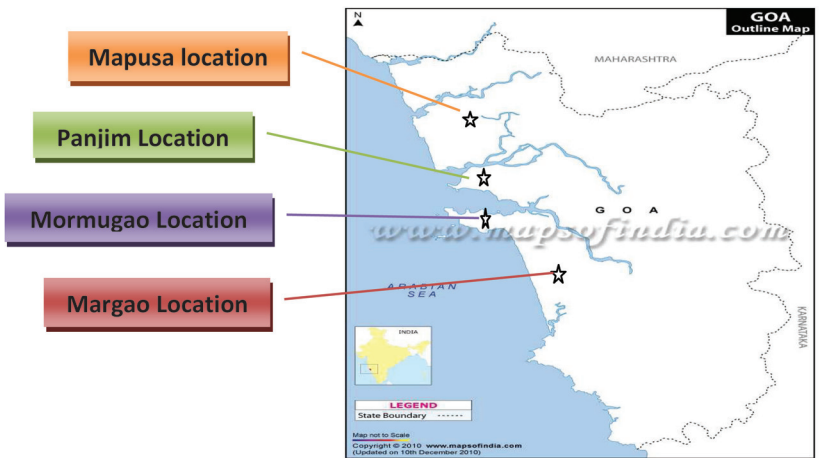
The PM 10 levels at Residence, Maina were also found in exceedance at the beginning of the month of May'17 and found reduced at the end. The PM 2.5 did not show any co-relation.

The Board has continued to monitor along select locations in North and South Goa (Refer figure below).



6.3 Ambient Air Quality and Noise Level Monitoring during Deepawali Festival, 2017:

Data/Observations:



Noise level limits prescribed by CPCB

Category of Area/Zone	Limits in dB (A) Leq	
	Day Time (6.00 am – 10.00 pm)	Night Time (10.00 pm – 6.00 am)
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

*Note: Monitoring values found exceeding the permissible limit are marked red

City : Mapusa

- Latitude & Longitude : 15.60 0N, 73.82 0E
- Climate/Meteorology: Tropical Climate
- Population: 40,122 as per 2001 census
- Major land use: Urban

Monitoring Location: Mapusa Municipality
Description of monitoring site: Silence
Activities around the monitoring location: Vehicle Movement

Data/Observations:

Noise level during Deepawali festival, 2017:

Location A: Mapusa	Normal Day (10-10-2017)			Deepawali Day (19-10-2017)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	51.2	107.2	**78.2**	58.7	99	**78**
19:00 to 20:00 Hr	58.9	99	**77**	56.2	105.2	**75.1**
20:00 to 21:00 Hr	55.5	91.2	**68**	51.4	101.4	**79.3**
21:00 to 22:00 Hr	53.2	87.7	**64.3**	55.5	90.9	**71.5**
22:00 to 23:00 Hr	45.9	98.8	**77.2**	56.3	85.5	**71.1**
23:00 to 24:00 Hr	52.7	79.4	**60.9**	41.8	91.3	**67**

Results: On normal day i.e on 10th October, considering the day time and night time noise level limits for Silence Zone i.e 60 dB for monitoring conducted between 18:00 to 22:00 Hrs and 50 dB for monitoring conducted between 22:00 to 24:00 Hrs, the noise levels were found to be exceeding the permissible limit due to vehicular movement.

On Deepawali day i.e on 19th October, the noise level monitoring exceeds the permissible limit due to bursting of fire crackers and vehicular movement.

City : Panjim

- Latitude & Longitude : 15029'56' N, 73049'40'E
- Climate/Meteorology: Tropical Monsoon Climate
- Population: 1,14,405 as per 2011 census
- Major land use: Urban

Monitoring Location: Patto-Panjim
Description of monitoring site: Commercial
Activities around the monitoring location: Vehicle Movement

Data/Observations:
Noise level during Deepawali festival, 2017:

Location B : Panjim	Normal Day (11-10-2017)			Deepawali Day (19-10-2017)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	*	*	**62.9**	50	87.5	**57.7**
19:00 to 20:00 Hr	*	*	**69.7**	50.8	94.8	**63.1**
20:00 to 21:00 Hr	*	*	**71.6**	48.7	80	**62.1**
21:00 to 22:00 Hr	*	*	**72.7**	45.6	85.9	**61**
22:00 to 23:00 Hr	*	*	**64.6**	44.1	72.6	**55.5**
23:00 to 24:00 Hr	*	*	**64.4**	50.2	64.8	**52.6**

Results: During normal day monitoring i.e on 11th October, considering day time and night time noise level limit for commercial zone i.e 75 dB for monitoring conducted between 18:00 to 22:00 Hrs and 65 dB for monitoring conducted between 22:00 to 24:00 Hrs, the noise levels were found to be within permissible limits.

Similarly on Deepawali day i.e on 19th October, the noise levels were found to be within permissible limits.

* Data could not be retrieved due to software problem.

City : Vasco

- Latitude & Longitude : 15023'53'N, 73048'40'E
- Climate/Meteorology: Tropical Climate
- Population: -
- Major land use: Urban

Monitoring Location: Fuse Call-Office, Vasco
Description of monitoring site: Commercial
Activities around the monitoring location: Vehicle Movement

Data/Observations:
Noise level during Deepawali festival, 2017:

Location C : Vasco	Normal Day (12-10-2017)			Deepawali Day (19-10-2017)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	46.6	86.1	**68.9**	57.2	94.7	**69.1**
19:00 to 20:00 Hr	57.4	86.8	**70.4**	60.3	94.7	**70.1**
20:00 to 21:00 Hr	62.1	83.1	**71.3**	60.7	93.3	**69.5**
21:00 to 22:00 Hr	47.9	80.2	**64.9**	60.2	101.4	**74.1**
22:00 to 23:00 Hr	60.5	81.7	**63.1**	42.7	99.4	**87.8**
23:00 to 24:00 Hr	61	87.6	**66.9**	42.6	113.4	**85.0**

Results: On normal day monitoring i.e on 12th October, considering the day time and night time noise level limit i.e 75 dB for monitoring conducted between 18:00 to 22:00 Hrs and 65 dB for monitoring conducted between 22:00 to 24:00 Hrs, the noise levels were found to be exceeding permissible limits for the time period between 23:00 to 24:00 Hr due to vehicular movement.

On Deepawali day i.e on 19th October, the noise levels from 22:00 to 24:00 Hrs exceeds the permissible limits due to bursting of fire crackers nearby and vehicular movement.

City : Margao

- Latitude & Longitude : 15016'25'N, 73057'29'E
- Climate/Meteorology: Tropical Monsoon Climate
- Population: 1,06,528 as per 2011 census
- Major land use: Urban

Monitoring Location: Municipality Garden
Description of Monitoring Site: Commercial
Activities around the monitoring location: Vehicle Movement

Data/Observations:

Noise level during Deepawali festival, 2017:

Location D : Margao	Normal Day (13-10-2017)		
Time duration	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	32.3	95	**71.3**
19:00 to 20:00 Hr	40.9	100.2	**80.9**
20:00 to 21:00 Hr	52.2	89.2	**73.1**
21:00 to 22:00 Hr	39.1	92.4	**66.1**
22:00 to 23:00 Hr	44.7	90.2	**66.3**
23:00 to 24:00 Hr	35.4	86.1	**58.7**

Results: On normal day monitoring i.e on 13th October, considering the day time and night time noise level limits i.e 75 dB for monitoring conducted between 18:00 to 22:00 Hrs, and 65 dB for monitoring conducted between 22:00 to 24:00 Hrs, the noise level limits were found to be exceeding permissible limits for the time period between 19:00 to 20:00 Hrs and also for the period of 22:00 to 23:00 Hrs due to vehicular movement as there was a football match-U17 World cup at Fatorda stadium .

As per the Noise Pollution (Regulation and Control) rules 2000, A person may, if the noise level exceeds the ambient noise standards by 10 dB(A) or more given in the corresponding columns against any area/zone [or, if there is a violation of any provision of these rules regarding restrictions imposed during night time], make a complaint to the authority.

Ambient Air Quality during Deepawali Festival, 2017						
Monitoring Location	Parameters monitored					
	Pre-Deepawali Day (12.10.2017)			Deepawali Day (19.10.2017)		
	SO_2	NO_2	PM_{10}	SO_2	NO_2	PM_{10}
1- Mapusa	BDL	BDL	30.42	BDL	BDL	88.25
2- Panaji	BDL	21	41	BDL	20	115
3- Vasco	BDL	18	13	BDL	12	96
4- Margao	7.6	11.1	51.9	12.5	17.8	116.9
5- Ponda	9.5	13.3	60.2	13.7	19.1	142.9
NAAQ Standards	**80**	**80**	**100**	**80**	**80**	**100**
*All values (24 hourly Avg) are in $\mu g/m^3$.						

Remarks:

- Note that Pre Deepawali AAQM at Panaji was carried out on 11.10.2017, –
- Panaji -Light motor vehicular movement was observed in all 3 shifts on 11.10.2017 while burning of fire crackers were observed in 2nd and 3rd shift on 19.10.2017
- Mapusa – Light and heavy motor vehicular movement was observed throughout, on both monitoring days.
- Vasco –19.10.2017- light vehicular movement in 1st shift and firecracker burning observed in II and III shift.
- Ponda/Margao – 19.10.2017-No specific observations other then occasional cracker sound.

The pollutant concentration for Panaji, Margao and Ponda is observed to be exceeding w.r.t PM10 on Diwali day.

6.4 Ambient Air Quality Study at Goa Carbon Limited

Goa Carbon Limited (GCL), located in St. Jose de Areal, South Goa District is part of the DEMPO GROUP of companies , a prominent business house in Goa . It is engaged in the manufacture and marketing of Calcined Petroleum Coke. and is the second largest producer of Calcined Petroleum Coke in India having an installed capacity of 100000 MTA. The plant is located approximately 40 kilometers from the Mormugoa Port i.e. MPT, from where GCL transports its coke to the plant

The Board has received a number of public complaints regarding air pollution in the vicinity of the Goa Carbon Ltd area from the public, even from as far as Dicarpale which is approx. more than a km away to the west . In response to the same, an AAQM study was initiated by the Board in Feb'2017, to verify the impact the units activities have on the surrounding residences and the compliance to Board's Consent conditions.

Most of the locations showed significantly high levels of PM 10 which were attributed to poor production handling practices and lack of Adequate Pollution Control Systems (APCS) in place especially in the rotary kiln stack.

The AQI index indicate the air quality as "moderately Polluted" and is predominantly evident at the time of operation in Feb'17. AAQM was continued for March'17 when the unit was in zero production as informed, where the air quality showed a marginal improvement though still predominantly "moderately polluted"

The stack emissions were also found exceeding permissible limits The Rotary kiln stack monitored on 13-02-17 also indicated the Total Particulate Matter (TPM) was exceeding the permissible limit by 63 % and SO2 by 80 %

As the effects of the GCL processs and related activities was evident in the surrounding area indicating a direct impact on life, the unit was directed to install Adequate Pollution Control Systems (APCS) for the rotary kiln process among other measures.

Hence, Board issued directions to the unit to close /suspend the operations on 15/02/17. The unit had taken shut down of operations since 03/02/2018 and further informed that installation of the APCS has been completed and ready to start. Subsequently , Board official inspected the unit M/s. Goa carbon Limited on 06/03/2018 and , closure directions were revoked by the Board as the unit had complied as seen in observations made in Inspection report and consent for trial operation was issued vide No. 5/1985/14-PCB/CI-3910 dated 9/03/2018 for a period of three months. The unit operations is presently being monitored by the Board.

6.5 SOURCE APPORTIONMENT STUDY ON THE AMBIENT AIR QUALITY OF MPT PORT AREA

The Marmugao Port Trust Area ,Vasco ,located in the Mormugao taluka, Goa. The port handles general cargo, petroleum and chemical products, bauxite, wood chips, coal and iron ore and manganese at various berths. After the mining ban in 2012, iron and manganese ore handling has reduced or stopped with some left over's of iron ore heaps still evident at Berth 9.In recent years, iron ore handing through MPT has reduced considerably and during the same period there has been a tremendous increase in handling of coal. Mechanized Handling of coal, at MPT is being carried out by South West Port Limited (SWPL) - Jindal Steel Works (JSW) at berth No 5 and 6 and Adani Mormugao Port Terminal Private Limited (AMPTL) at berth No 7.. The total amount of coal and coke being handled by Ms JSW, M/s Adani and MPT was approx 10 million metric tonnes of coal, per year as per the data submitted by MPT. However current data indicated that production of M/s Jindal Steel Works Limited has exceeded.

The Board had issued closure directions to M/s JSW and M/s MPT- Mooring Dolphins due to their exceedance in handling of coal and conducting operation without Board's Consent respectively.

The Board has also further initiated a Source Apportionment Study through Indian Institute of Technology, Bombay(IIT-Mumbai) under Dr. Virendra Sethi. The site selection for sampling points / locations in and around the Vasco and Mormugao area was carried out and monitoring locations/stations were finalized for the said study within a radius of 3-5 kms of MPT as was determined in the IIT model as being the radial distance for the dust level effect to be felt. The Air monitoring under the said study is to be shortly initiated in May'18.

6.6 Annual Report of Stack Monitoring for the year April 2017 to March 2018

During the year under report, the Goa State Pollution Control Board conducted Stack Emission Monitoring programmes for 56 stacks in 35 different industries within the State of Goa. The units mostly comprise of induction furnaces, reheating furnaces and Boilers. The details of the stack emission monitoring conducted are presented below.

Sr. No.	Area	Industrial Area	Name of Unit	Type of Stack	Date of Sampling
1	Ponda -Goa	-	M/s. MRF LIMITED (UNIT I)	Boiler (25T/hr)	03.04.17
2	-	Kundaim Ind. Estate	M/s.Colgate –Palmolive (India) Limited,	Boiler (600Kg/hr)	05.04.17
3	-	Kundaim Ind. Estate	M/s.Colgate –Palmolive (India) Limited,	Boiler (600Kg/hr)	10.04.17
4	-	Verna Ind. Estate	M/s.FDC Limited (Unit I),	Boiler (600Kg/hr)	12.04.17
5.	-	Bicholim Ind. Estate	M/s.Sahanu Sponge & Power Limited	Reheating Furnace	17.04.17
6.	-	Pissurlem Ind. Estate	M/s.Tyres India	Boiler(1.5T/hr)	19.04.17
7.	Bethora ,Ponda-Goa	-	M/s.United Breweries Ltd	Boiler (8T/hr)	24.04.17
8.	-	Cuncolim Ind. Estate	M/s.Nicomet Industries Ltd	Boiler (4MT/hr)	26.04.17
9.	-	Cuncolim Ind. Estate	M/s.Nicomet Industries Ltd	Boiler (5MT/hr)	03.05.17

Sr. No.	Area	Industrial Area	Name of Unit	Type of Stack	Date of Sampling
10.	Usgaon, Ponda -Goa	-	M/s Merck Limited	Boiler (6T/hr)	08.05.17
11.	Usgaon, Ponda -Goa	-	M/s Merck Limited	Boiler (4T/hr)	10.05.17
12.	Usgaon, Ponda -Goa	-	M/s Merck Limited	Boiler (20T/hr)	16.05.17
13.	Usgaon, Ponda -Goa	-	M/s Merck Limited	Thermo Pac (1 Lakh Kcal/hr)	19.05.17
14.	-	Cuncolim Ind. Estate	M/s John Distilleries Pvt Ltd	Boiler (6T/hr)	22.05.17
15.	Corlim, Ilhas-Goa.	Colvale Ind. Estate	M/s Syngenta India Ltd,	Boiler (10 T/hr)	24.05.17
16	Corlim, Ilhas-Goa.	Colvale Ind. Estate	M/s Syngenta India Ltd,	Pretolachor (4Lakh Kcal/hr)	29.05.17
17.	Sancoale ,Mormugao - Goa	-	M/s. Zuari Agro Chemicals Ltd ,	U- IA (Urea Plant Prilling Tower)	23.10.17
18.	Sancoale, Mormugao - Goa	-	M/s. Zuari Agro Chemicals Ltd ,	NPK-A Fumes Stack (N-CB 201)	25.10.17
19.	Sancoale, Mormugao - Goa	-	M/s. Zuari Agro Chemicals Ltd ,	NPK-B Plant Stack (O5-5D 101)	31.10.17
20.	Sancoale, Mormugao - Goa	-	M/s. Zuari Agro Chemicals Ltd ,	NPK-A Plant De-dusting Stack (N-CB 403)	02.11.17
21.	-	Sancoale Industrial Estate	M/s Ritika Packaging Pvt Ltd	Boiler (3T/ hr)	06.11.17
22.	-	St. Jose de Areal, Salcete-Goa	M/s. Goa Carbon Ltd,	Rotary Kiln (1,00,000MT/annum)	08.11.17
23.	-	St. Jose de Areal, Salcete-Goa	M/s. Goa Carbon Ltd,	Cooler	13.11.17
24.	San-tona Village , Sanguem - Goa.	-	M/s Shraddha Ispat Pvt Ltd	Rotary Kiln (100T/day)	15.11.17
25.	Sancoale, Mormugao - Goa	-	M/s. Zuari Agro Chemicals Ltd ,	U- FD (Urea Plant Dust Separator)	20.11.17
26	Sancoale, Mormugao - Goa	-	M/s. Zuari Agro Chemicals Ltd ,	NPK-A Plant Dryer Stack (N-CB 301)	22.11.17
27.	-	Cuncolim Ind. Estate	M/s. Sunrise Electromelt Ltd	Reheating Furnace (2500MT/MONTH)	29.11.17

Sr. No.	Area	Industrial Area	Name of Unit	Type of Stack	Date of Sampling
28.	-	Cuncolim Ind. Estate	M/s. Trimurty Indutries Ltd	Reheating Furnace (Rolling Mill)	01.12.17
29.	-	St. Jose de Areal, Salcete-Goa	M/s. Goa Carbon Ltd,	Rotary Kiln (1,00,000MT/annum)	06.12.17
30	-	Verna Ind. Estate	M/s. Micro Labs Limited	Boiler (2.0 T/hr)	13.12.17
31	-	Verna Ind. Estate	M/s. Micro Labs Limited	Boiler (2.0 T/hr)	15.12.17
32	-	Kundaim Ind. Estate	M/s. Shivam Ispat Pvt Ltd	Induction Furnace	18.12.17
33	-	Madkaim Ind. Estate	M/s. Goa Ispat ltd	Reheating Furnace Rolling Mill	20.12.17
34	-	Cuncolim Ind. Estate	M/s. Global Ispat Ltd,	Induction Furnace	26.12.17
35	-	Madkaim Ind. Estate	M/s. Twenty First Century Wire Rods ltd	Induction Furnace	28.12.17
36	-	Pilerne Ind. Estate	M/s. Unichem Laboratories ltd	Boiler (850kg/hr)	02.01.18
37	-	Pilerne Ind. Estate	M/s. Unichem Laboratories ltd	Boiler (850kg/hr)	10.01.18
38	-	Honda Ind. Estate	M/s. Fresenius Kabi India Private Limited	Boiler (6.0T/hr)	15.01.18
39	-	Verna Ind. Estate	M/s. Marksans Pharma Limited	Boiler 2.25T/hr	17.01.18
40	-	Honda Ind. Estate	M/s. Fresenius Kabi India Private Limited	Boiler (3.0T/hr)	22.01.18
41	-	Honda Ind. Estate	M/s. Fresenius Kabi India Private Limited	Boiler (10.0T/hr)	24.01.18
42	-	Pissurlem Ind. Estate	M/s Esteem Industries Pvt Ltd	Boiler (3.0T/hr)	29.01.18
43	-	Pissurlem Ind. Estate	M/s VIC Industries	Boiler (2.0T/hr)	01.02.18
44	-	Bicholim Ind. Estate	M/s.Sahanu Sponge & Power Limited	Reheating Furnace	05.02.18
45	-	Bicholim Ind. Estate	M/s Mohit Ispat Ltd	Reheating Furnace	12.02.18
46	-	Pilerne Ind. Estate	M/s. Sandu Pharmaceuticals Ltd,	Boiler (850Kg/hr)	14.02.18
47	-	Usgao Ind. Area	M/s.Nestle India Limited	Boiler (5.0 T/hr)	19.02.18

Sr. No.	Area	Industrial Area	Name of Unit	Type of Stack	Date of Sampling
48	-	Usgao Ind. Area	M/s.Nestle India Limited	Boiler (3.0 T/hr)	22.02.18
49	Calwaddo, Benaulim, Salcete- Goa.	-	M/s.The Indian Hotels Co. Limited	Hot Water Generator (2 lac Kcal/ hr)	26.02.18
50	Candolim, Bardez- Goa.	-	M/s.The Indian Hotels Co. Limited	Hot Water Generator (2 lac Kcal/ hr)	28.02.18
51	Candolim, Bardez- Goa.	-	M/s.The Indian Hotels Co. Limited	Hot Water Generator (6.45 lac Kcal/ hr)	05.03.18
52	Candolim, Bardez- Goa.	-	M/s.The Indian Hotels Co. Limited	Hot Water Generator (4.0 lac Kcal/ hr)	07.03.18
53	-	Cuncolim Ind. Estae	M/s John Distilleries Pvt Ltd	Boiler (6.0 T/hr)	21.03.18
54	-	Cuncolim Ind. Estae	M/s Rukminirama Steel Rolling Pvt Ltd	Reheating Furnace (Rolling Mill)	23.03.18
55	-	Verna Ind. Estate	M/s Launderaids ,	Boiler (2.0 T/hr)	26.03.18
56	-	Verna Ind. Estate	M/s. Blue Cross Laboratories Ltd,	Boiler (600 Kg/hr)	29.03.18

The results of the stack emission monitoring indicate that the emissions from the flue gases are within the permissible limits except for five stacks for which the emissions exceeded the permissible limits.

6.7 Local Action Plan for Clean Air in the State of Goa in collaboration with European Union and TERI



The European Union (EU) along with TERI has selected Goa as one of the pilot study areas for initiating the preparation of the Local Action Plan for Goa for achieving clean air. Their team had visited Goa in Sept'2017 to initiate the same. A two day workshop was conducted for concerned stake holders for capacity building training days aim to introduce the knowledge and skills required to draft and implement Local Air Quality Action Plans through the sharing of EU know-how and best practices as well as established on-going work in Air Quality Management in India.

The aim of the said visit was to understand India's needs in air quality management and offer EU's know-how on air quality (regulatory, technical, economic) and develop a national strategy to ambient air pollution, in particular in urban settings in India."

The EU-TERI team carried out a Preliminary Evaluation of the state of air quality management in Goa including existing air quality monitoring network, emission inventories, and management plans, identification of key stakeholders who may contribute to emissions or may be impacted by the pollution levels, Mapping of SPCB officials /stakeholders training needs, fixing dates for training activities and technical workshop with key stakeholders with invited EU speakers.

The team also visited mining and port sites. These two-day capacity building days preceded a one-day technical workshop event where specific technical subjects were addressed in relation to

possible Local Action Plan measures identified by state board officials in partnership with the delivery team. These were attended by the various stake holders including mining and port representative within the State.

The Local Air Quality Action Plans is presently being drafted by EU representatives.

6.8 M.Tech Programme for the Staff of GSPCB through Birla Institute of Technology and Science, Pilani (BITS)

Memorandum of Understanding (MoU) was signed between the Goa Satte Pollution Control Board (GSPCB) and Birla Institute of Technology & Science, Pilani (BITS) on 5th June 2014. The MoU between BITS and GSPCB is signed with the objective of fostering collaboration between the two organizations to promote academic interaction. The First batch commenced in the year 2014-15 and have completed the same in the year 2016-17 and certificates have been awarded. Subsequently, the programme has been carried forward for the second batch of GSPCB in the year 2017-18.

6.9 National River Conservation Programme (NRCP)

In addition to NWMP, GSPCB monitors the following 3 locations under NRCP (National River Conservation Programme):

Sr. No.	Type	Rivers/ Lake/Canal/Wells	Location
1.	R	River Mandovi	Ribander - Chodna Ferry Point
2.	STP	Influent Sample	Tonca STP
3.	STP	Treated Effluent Sample	Tonca STP

Thirty six samples were collected from these locations and analyzed during the year 2017-2018

From the water quality data analysis it is found that the fecal coliform of River Mandovi at Ribandar, Chodan Ferry point does not comply with the prescribed CPCB standard. The water quality data during the year 2017-2018 is given in -Annexure IV-1.

6.9.1 Besides the NWMP and NRCP, The Goa State Pollution Control Board has monitored Water Quality of Chapoli Dam and Salmona Spring and Coastal Waters.

Monitoring of Water Quality of Chapoli Dam

Chapoli Dam water meets the prescribed limits for Class C classification for pH and Dissolved Oxygen, However it exceeded only at 1 occasion for BOD and Total Coliform in the year 2017-2018.

The water quality data during the year is given in Annexure IV-2.

Monitoring of Water Quality of Salmona Spring

Salmona Spring meets the prescribed limits for Drinking Water Standards for all the parameters except for Chloride, Total Dissolved Solids and Sulphate which exceeds the permissible limits for the month of September 2017.

The water quality data during the year is given in Annexure IV-3.

COASTAL AND INLAND RIVER WATER MONITORING

The Goa State Pollution Control Board monitors water quality at 10 coastal locations and 8 inland river locations throughout Goa for the parameters such as pH, Turbidity, Dissolved oxygen, Biochemical Oxygen Demand, Suspended solids, Fecal Coliform, Oil and Grease (Heavy fractions of petroleum hydrocarbons).

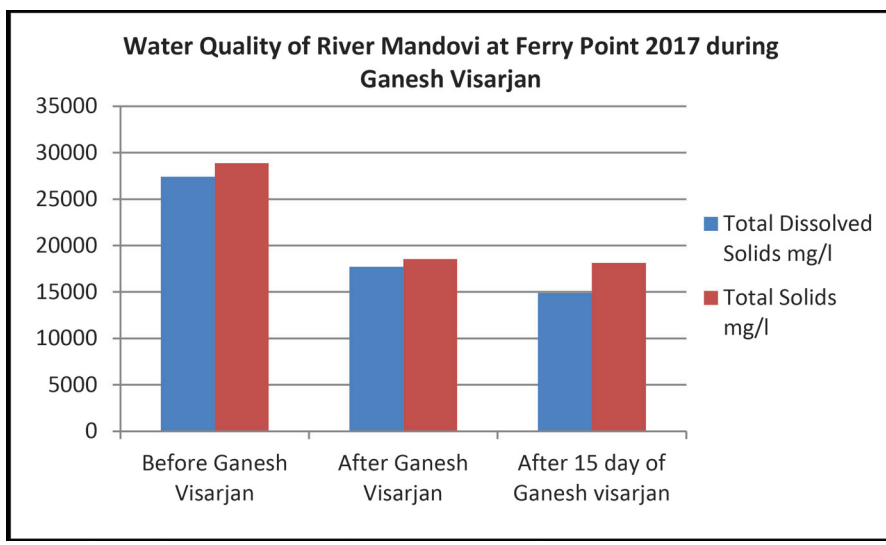
Eighty Two samples were collected from all these water bodies and analyzed during the year 2017-2018 and is Annexed as Annexure IV-4.

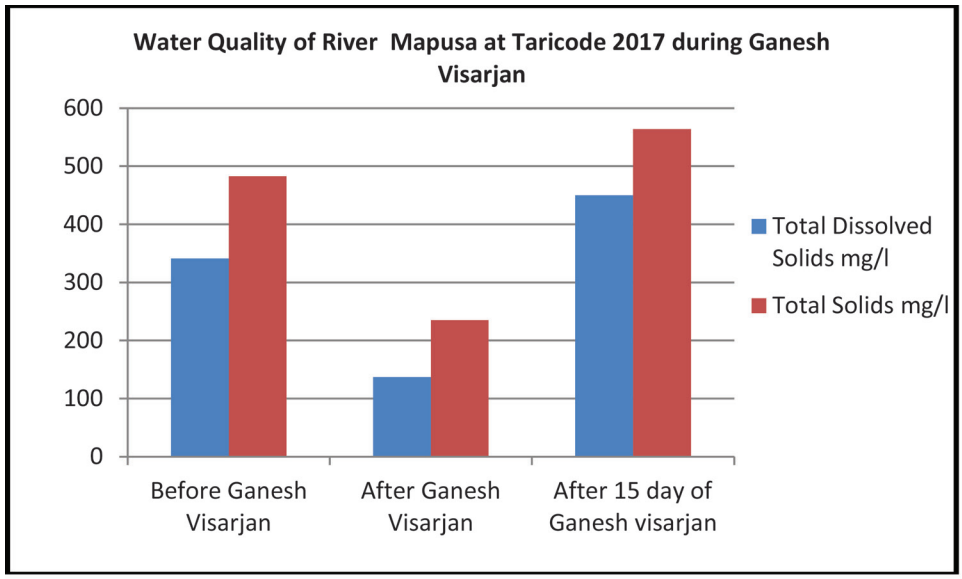
Sr.No.	COASTAL LOCATIONS	Sr.No.	INLAND RIVER LOCATIONS
1.	Tiracol Beach	1.	River Mandovi near Hotel Mariott, Panaji
2.	Miramar Beach	2.	River Mandovi near IFFI Jetty
3.	Calangute Beach	3.	River Sal near Hotel Leela, Mobor
4.	Morjim Beach	4.	River Talpona, Near the Mouth ot River
5.	Mobor Beach	5.	River Zuari at Borim
6.	Baina Beach	6.	River Zuari at Cortalim
7.	Galgibag Beach	7.	River Tiracol
8.	Colva Beach	8.	River Chapora, near Siolim Bridge
9.	Vagator Beach		
10.	Velsao Beach		

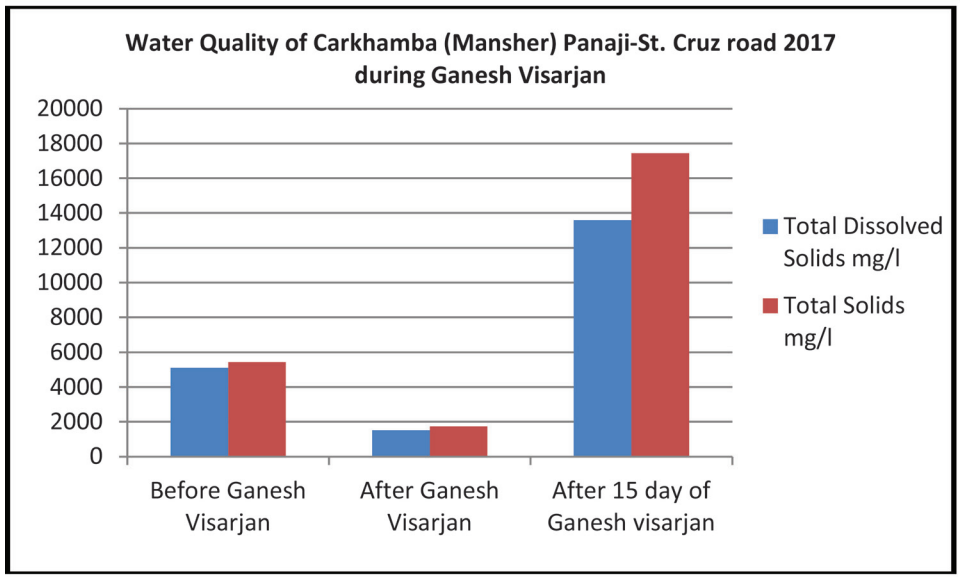
The data of the water samples analyzed during 2017-2018 was interpreted using the Central Pollution Control Board classification on the designated best use of the water body. From the water quality data analysis it is found that the fecal coliform exceeds the prescribed limit at all the locations.

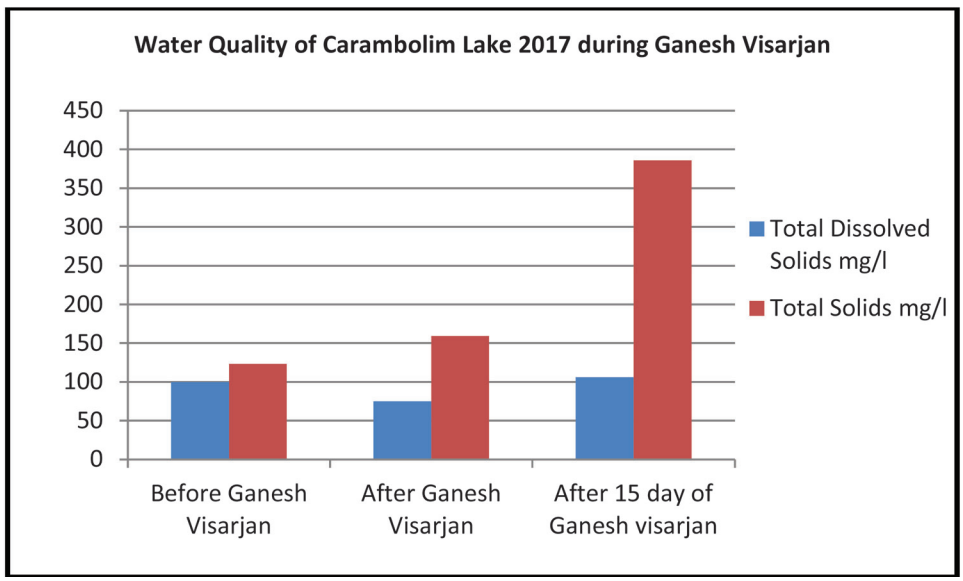
6.10 Monitoring of Water Quality Pre and Post Ganesh Visarjan

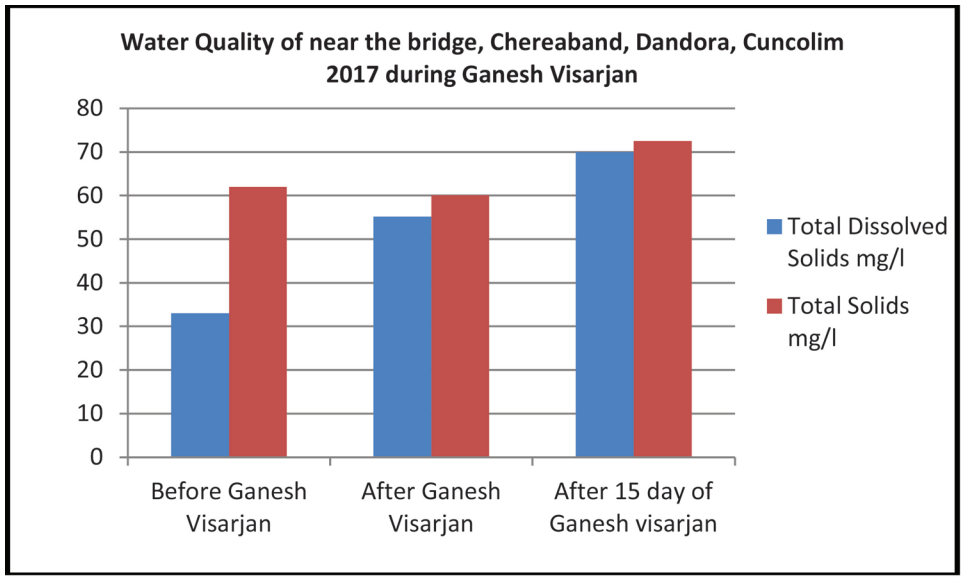
The Goa State Pollution Control Board monitors water quality at 12 locations as per the directives of Central Pollution Control Board, Pre and Post Ganesh Visarjan. As per the water quality data given at Annexure V the measured values indicate increase in Conductivity, Total Solids and Dissolved Solids post Visarjan at almost all locations.

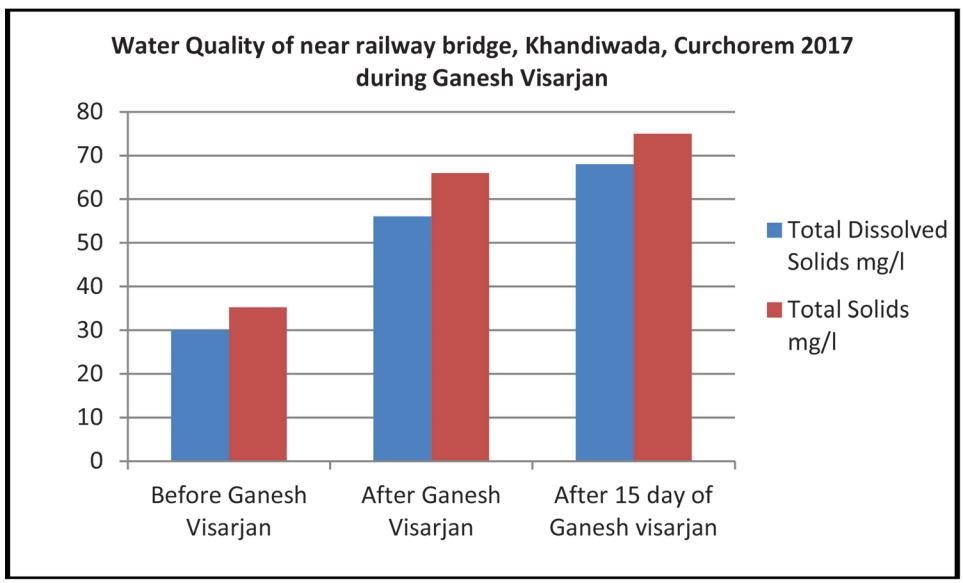


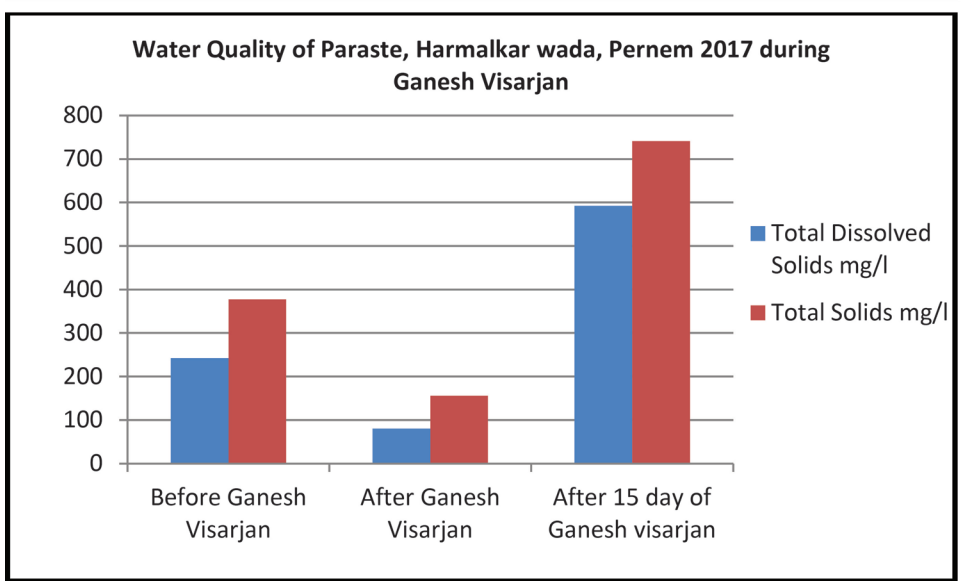

Water Quality of River Mapusa at Taricode 2017 during Ganesh Visarjan
600
500
400
300
200
100
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l

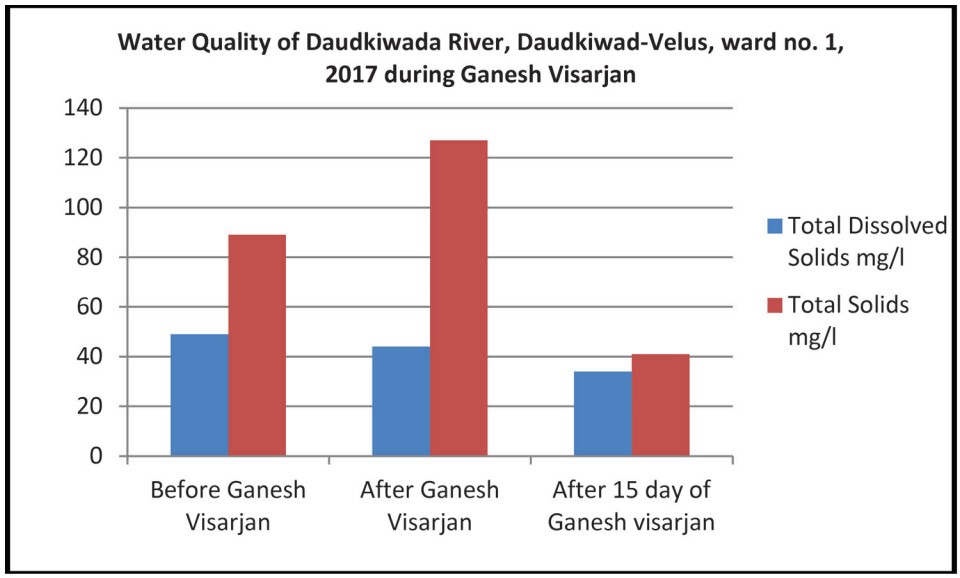

Water Quality of Carkhamba (Mansher) Panaji-St. Cruz road 2017 during Ganesh Visarjan
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l

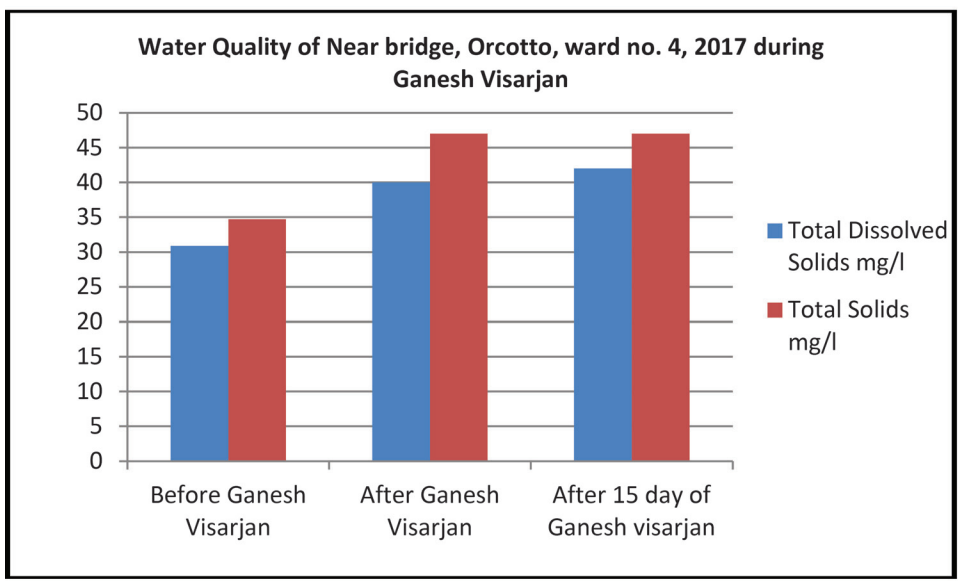

Water Quality of Carambolim Lake 2017 during Ganesh Visarjan
450
400
350
300
250
200
150
100
50
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l

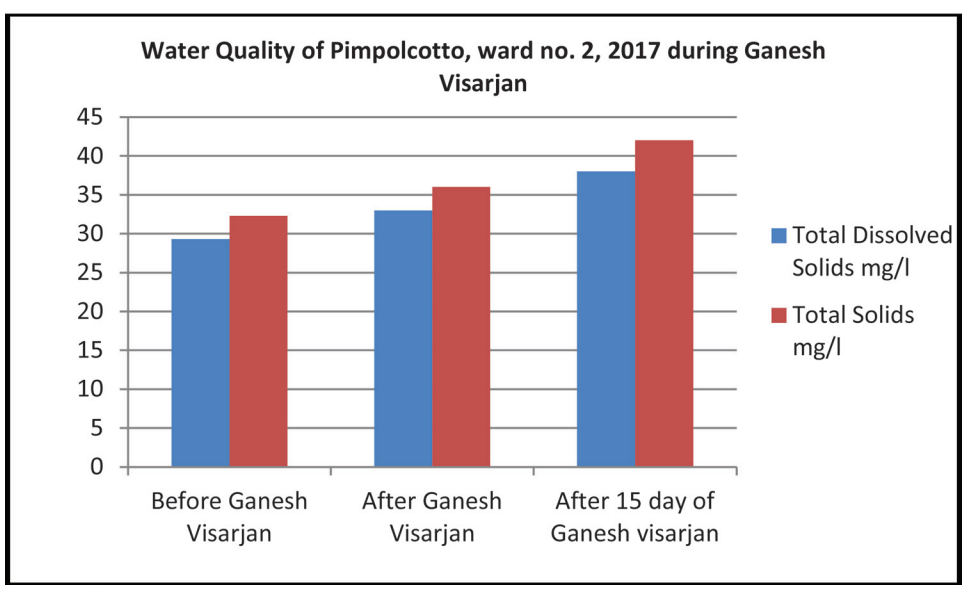

Water Quality of near the bridge, Chereaband, Dandora, Cuncolim 2017 during Ganesh Visarjan
80
70
60
50
40
30
20
10
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l

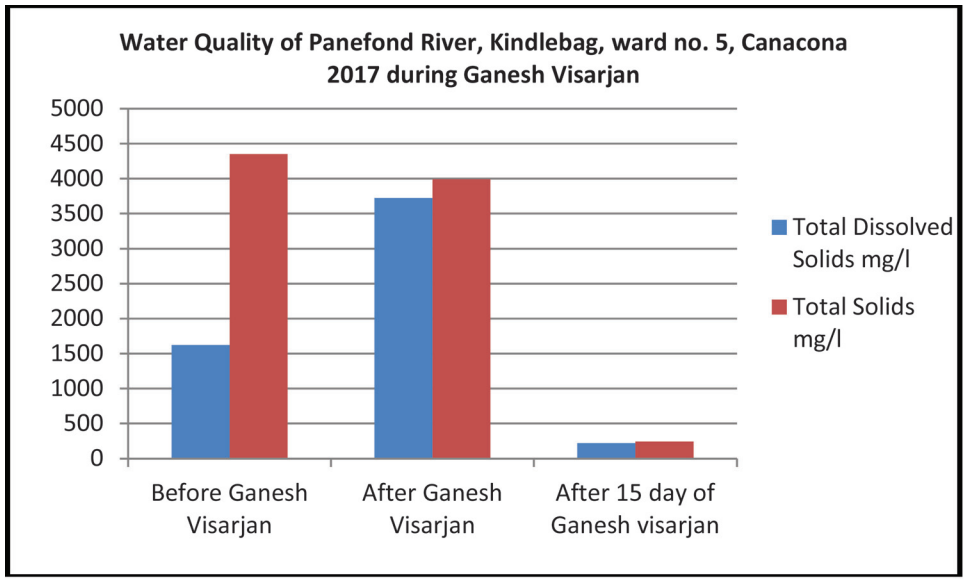

Water Quality of near railway bridge, Khandiwada, Curchorem 2017 during Ganesh Visarjan
80
70
60
50
40
30
20
10
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l

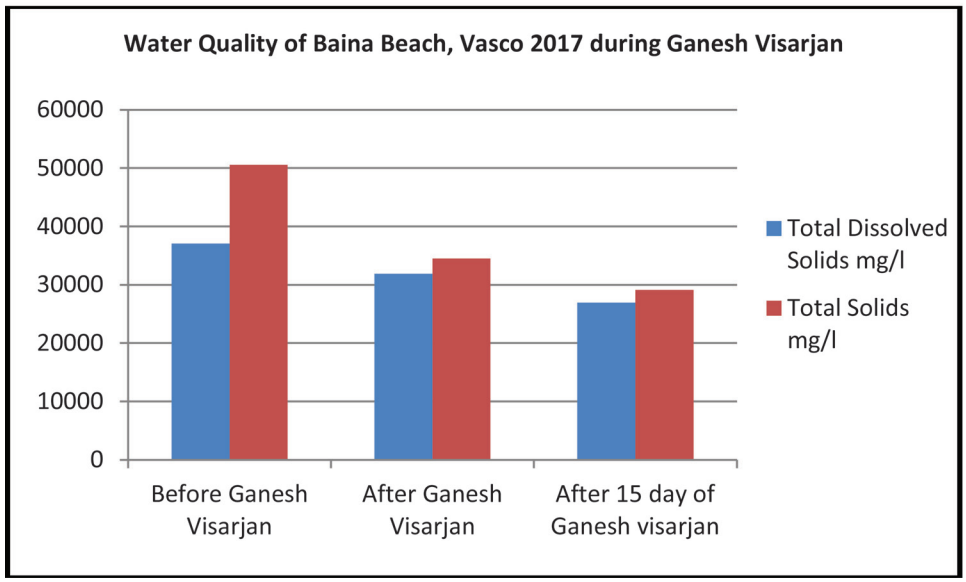

Water Quality of Paraste, Harmalkar wada, Pernem 2017 during Ganesh Visarjan
800
700
600
500
400
300
200
100
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l


Water Quality of Daudkiwada River, Daudkiwad-Velus, ward no. 1, 2017 during Ganesh Visarjan
140
120
100
80
60
40
20
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l


Water Quality of Near bridge, Orcotto, ward no. 4, 2017 during Ganesh Visarjan
50
45
40
35
30
25
20
15
10
5
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l


Water Quality of Pimpolcotto, ward no. 2, 2017 during Ganesh Visarjan
45
40
35
30
25
20
15
10
5
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l


Water Quality of Panefond River, Kindlebag, ward no. 5, Canacona 2017 during Ganesh Visarjan
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l


Water Quality of Baina Beach, Vasco 2017 during Ganesh Visarjan
60000
50000
40000
30000
20000
10000
0
Before Ganesh Visarjan
After Ganesh Visarjan
After 15 day of Ganesh visarjan
Total Dissolved Solids mg/l
Total Solids mg/l

CHAPTER 7

ENVIRONMENTAL TRAINING

7.1 TRAINING / WORKSHOPS/ SEMINARS, ETC., ATTENDED BY BOARD OFFICIALS

During the year under report, the officials of the Board attended training programmes / workshops / seminars etc., organized by reputed Institutions. The details of the same are as follows:

Table 7.1: Trainings Programmes / Workshops / Seminars attended by the Board staff during the year

Name & Designation of the Official	Title of the Seminar	Place	Duration
Mr. Sanjeev Joglekar, Enviromental Engineer	Regional Consultation workshops on National Biodiversity Actipon Plan , National Biodiversit Targets and Sixth National Report to convention on Bio Diversity	Organized by the Department of Biodiversity (Ahmedabad Gujrat)	08-09-2017
	Workshop on Air Quality Management organized by the European Union- (Delegation to India)	Taj Vivanta, Panaji- Goa	16-09-2017
	Regional Conference on Environment 2017	Organized by Department of Science, Technology & Environmnet , Porvorim	07-10-2017 to 08-10-2017
	One day workshop on Restoration of Polluted River strtches Concept and plan	Habitat Centre, Gulmohar Hall, New Delhi	08-01-2018
Mrs. Nandan Prabhudessai, Jr. Environmental Engineer	Traning Programme on Environemtal Regulators- One Week specialized course on development of protocol for granting consent and inspection procedures	New Delhi	11-09-2017 to 15-09-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall, Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018
	Invitation to attend the celeration	NIO Dona Paula	02-02-2018
	1) In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018

Mr. Keshav Fadke, Jr. Environmental Engineer	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji- Goa	16-09-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018
	Invitation to attend the celeration	NIO Dona Paula	02-02-2018
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mr. Rohan Nagvekar, Jr. Environmental Engineer	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji- Goa	16-09-2017
Mr. Amit Shanbag, Jr. Environmental Engineer	Seminar on the Theme Biodiversity & Sustainable Tourism on the Occasion of Celebrating International Day for biodiversity	Dinanath Mangeshkar Auditorium, Kala Academy, Panaji-Goa	22-05-2017 & 23-05-2017
	3 day Residential training Programme on Design, Operation, maintenance and performance of STP, CETPs & CBMWTFs	CSIR-NEERI, CPCB, Nagpur	06-09-2017 to 08-09-2017
Mr. Pravin Faldessai, Jr. Environmental Engineer	Seminar on the Theme Biodiversity & Sustainable Tourism on the Occasion of Celebrating International Day for biodiversity	Dinanath Mangeshkar Auditorium, Kala Academy, Panaji-Goa	22-05-2017 & 23-05-2017
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Shri Abner Rodrigues, Jr. Environmental Engineer	Training programme on Data Management, Collection and Analysis of Environmental Data	New Delhi	10.04.2017 to14/04/ 2017
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mr. Digvijay Dessai, Jr. Environmental Engineer	Training programme on Data Management, Collection and Analysis of Environmental Data	New Delhi	10-04-2017 to 14-04-2017
	Workshop on Source Apportionment, Organized by CPCB	New Delhi	25-04-2017 to 26-04-2017
	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji-Goa	16-09-2017

Mr. Vijay Kansekar, Jr. Environmental Engineer	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mrs. Jenica Sequeria, Scientist 'C'	Workshop on Source Apportionment, Organized by CPCB	Delhi	25-04-2017 to 26-04-2017
	Seminar on the Theme Biodiversity & Sustainable Tourism on the Occasion of Celebrating International Day for biodiversity	Dinanath Mangeshkar Auditorium, Kala Academy, Panaji-Goa	22-05-2017 to 23-05-2017
	Traning Programme on Environemtal Regulators- One Week specialized course on development of protocol for granting consent and inspection procedures	New Delhi	11-09-2017 to 15-09-2017
	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji-Goa	16-09-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house Panaji	12-01-2018 to 13-01-2018
	Development of smart and affordable system for environmnetal quality monitoring	Anil Agarwal Environmnetal trainng Institute Tijara Rajasthan	05-02-2018 to 07-02-2018
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Miss. Connie Fernandes, Scientist 'C'	Workshop on Source Apportionment, Organized by CPCB	New Delhi	25-04-2017 to 26-04-2017
	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji-Goa	16-04-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house Panaji	12-01-2018 to 13-01-2018
	Development of smart and affordable system for environmnetal quality monitoring	Anil Agarwal Environmnetal trainng Institute Tijara Rajasthan	05-02-2018 to 07-02-2018
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018

Dr. Mohan Girap, Scientist 'C'	Workshop on "Ease of Doing Business"	Conference Hall of Inspectorate of Factories & Boilers, Altinho, Panaji	10-08-2017 to 11-08-2018
	Meeting of SPCBs and PCCs	New Delhi	18-09-2017
	Regional Conference on Environment 2017	Organized by Department of Science, Technology & Environmnet , Porvorim Bardez (Conference at Pune)	07-10-2017 to 08-10-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house Panaji	12-01-2018 to 13-01-2018
	To deliberate on the difficulties in implemnetation in the matter of hon. NGT in Almitra Patel V/s Union of India & others	Leela Ambience Hotel, Maharaja	23-01-2018
	Invitation as a Resource Person for the celebration of National Science & Technology for a sustainable future.	Virnoda Village Panchayat Hall Virnoda	28-02-2018
	Invitation as a Resource Person for the Observance of National Science Day 2018.	State Council of Educational Research and Training (SCERT) Porvorim Goa.	08-03-2018
	Deputation of officials of GSPCB orientatation programme on waste Management Legislations as presenter for the worshop reg awareness amd implementation of various Acts and Rules petaining to Waste management organiozed by Goa Waste management corporation.	conferernce hall of the office of Goa waste Management Corporation Saligao Goa	13-03-2018
Mrs. Francisca Pereira, Scientist 'B'	One day Interactive meeting on Importance of NABL Accreditation of Environmental Laboratories	Bangaluru	10/08/2017
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mr. Sanjay Kankonkar, Scientist 'B'	Meeting on National Environmental Helth Programme	New delhi	20-09-2017
	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji-Goa	16-09-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018

Mr. Nilesh Parsekar, Scientific Assistant	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018
Mrs. Anny Dias, Scientific Assistant	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018
Mr. Ganpat Naik, Scientific Assistant	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji- Goa	16-09-2017
	3 day Residential training Programme on Design, Operation, maintenance and performance of STP, CETPs & CBMWTFs	CSIR-NEERI, CPCB, Nagpur	06-09-2017 to 08-09-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018
Mrs. Joshna Mahale, Scientific Assistant	Training Programme on Green Chemistry and Cleaner Technolgy	Centre for Environmnetal Studies , Anna University Guindy Chennai	10-01-2017 to 12-01-2018
	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch) .	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Ms. Chetna Naik, Scientific Assistant	Training Programme on Green Chemistry and Cleaner Technolgy	Centre for Environmnetal Studies , Anna University Guindy Chennai	10-01-2017 to 12-01-2018
Mr. Chaitanya Salgoankar, Scientific Assistant	Workshop on Air Quality Management organized by the European Union-(Delegation to India)	Taj Vivanta, Panaji- Goa	16-09-2017
	Traning Programme on Best Practices in Environmetal Governance	Stockholm Sweden	06-10-2017 to 15-10-2017
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018

Mr. Ravi Naik, Scientific Assistant	Training programme on Air quality Monitoring (Ambient Source Noise) Analysis , Data Interpretation and quality Auurance	Naraina Industrial Area New Delhi	02/01/2018 to 05.01.2018
	Training, discussion/workshop on Air Pollution Control for Goa Iron ore Mining Sector (Organized by Indian Institute of Technology (Indian School of Mines) Dhanbad.	Department of Art and Culture Hall , Sanskruti Bhawan Patto Panaji Goa. At Nalanda Hall EDC house panaji	12-01-2018 to 13-01-2018
Mr. Krishnanath Pednekar, Scientific Assistant	One day Workshop on Advanced Analytical Solutions in Dioxin Analysis	National Institute for Interdisciplinary Science and Technology Thiruvananthapuram.	05-01-2018
Miss. Denza Cardozo, Scientific Assistant	Seminar on the Theme Biodiversity & Sustainable Tourism on the Occasion of Celebrating International Day for biodiversity	Dinanath Mangeshkar Auditorium, Kala Academy, Panaji-Goa	22-05-2017 to 23-05-2017
Mr. Sanmesh Borkar, Senior Laboratory Assistant	Traning Programme on Best Practices in Environmetal Governance	Stockholm Sweden	06-10-2017 to 15-10-2017
Mr. Nilesh Surlekar, Senior Laboratory Assistant	One day Workshop on Advanced Analytical Solutions in Dioxin Analysis	National Institute for Interdisciplinary Science and Technology Thiruvananthapuram.	05-01-2018
Mr. Samir Borkar, Senior Laboratory Assistant	Training programme on Air quality Monitoring (Ambient Source Noise) Analysis , Data Interpretation and quality Auurance	Naraina Industrial Area New Delhi	02-01-2018 to 05-01-2018
Mrs. Jocelyn Coelho, Junior Laboratory Assistant	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch)	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mr. Devendra Arlekar, ACAO	One day Workshop on Techniques of Anchoring/ compering by (Directorate of Official language Panaji Goa)	Nalanda Hall of EDCs Training Complex, EDC House , Panaji Goa.	08-11-2017
Mr. Sulesh Naik, Accountant	CII GOA -PROG on GST Union Budget Changes on direct Taxes and Gst	Vivanta by Taj Panaji Goa.	23-02-2018
Mrs Nevies Miranda , Accts Clerks	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch)	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mrs Indira Raut, Networking Engineer	One day Workshop on Techniques of Anchoring/ compering by (Directorate of Official language Panaji Goa)	Nalanda Hall of EDCs Training Complex, EDC House , Panaji Goa.	08-11-2017
	CII GOA -PROG on GST Union Budget Changes on direct Taxes and Gst	Vivanta by Taj Panaji Goa.	23-02-2018

Mr. Pratik Chari, Engineering Assistant	Workshop on "Ease of Doing Business"	Conference Hall of Inspectorate of Factories & Boilers, Altinho, Panaji	10-08-2017 to 11-08-2017
Mr.Chetan Upadhye, Networking Assistant (Software)	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch)	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018
Mrs. Guadalupe Dias, Record Keeper	One day Workshop on Techniques of Anchoring/ compering by (Directorate of Official language Panaji Goa)	Nalanda Hall of EDCs Training Complex, EDC House , Panaji Goa.	08-11-2017
Ms. Shane Gracias Lower Division Clerk	In house IRCA certificate ISO 14001:2015 Lead Auditor Training course (for 13 Delegates in one batch)	Conference Hall of Goa State Pollution C ontrol Board, Panaji - Goa	19-03-2018 to 23-03-2018

7.2 DEPUTATIONS IN THE BOARD

1. Vide Office order no.64/1/2018/PCE-PWD-ADM(II)/13 dated 26/04/2018 of the Public Works Department, Altinho, Panaji – Goa; Shri Shivanand S. Salelkar, Superintending Engineer is posted as Senior Environmental Engineer, of the Goa State Pollution Control Board on deputation from 13.12.2017 to 12.12.2018.

2. Vide Government Order No. DA/Admn/10-26/2018/11/TR-303 dated 03/05/2018 of the Directorate of Accounts Shri. Sulesh Naik is given additional charge as Accountant of the Board

3. Vide Government Order No. DA/Admn/45-7/07-08(Part)/2017-18/TR-3084/1A dated 14/03/2018 of the Directorate of Accounts Shri. Gautam Kamat is posted as Assiatant Accounts Officer w.e.f. 16/03/2018

7.3 RESIGNATION FROM SERVICE

1. Miss. Lee Ann Antao, Jr. Environment Engineer (Civil) – joined on 03/03/2014 and resigned w.e.f. 19/09/2017.

2. Mr. Nikhil Caeiro, Jr. Environment Engineer (Civil) joined on 24/02/2014 and resigned w.e.f. 05/02/2018

3. Mr. Digvijay Desai, Jr. Environment Engineer (Civil) joined on 03/03/2014 and resigned w.e.f. 05/02/2018

4. Mr. Bento Thomas, Jr. Environment Engineer (Civil) joined on 03/03/2014 and resigned w.e.f. 05/02/2018

5. Mr. Shashank K. Desai, Jr. Environment Engineer (Mechanical) joined on 24/02/2014 and resigned w.e.f. 27/02/2018

CHAPTER 8

LEGAL MATTERS OF THE BOARD

8.1 ACTION TAKEN FOR VIOLATIONS OF THE WATER ACT, THE AIR ACT AND ENVIRONMENT (PROTECTION) ACT

The Board while granting consent to operate under the Water Act and Air Act stipulates specific conditions for compliance by the various industries so as to control the level of pollution. The industrial units have to submit regular monitoring report including the stack analysis reports, water reports etc. for effective implementation of the measures adopted by them. The Board also conducts inspections of the industrial units to monitor the compliance. Wherever non compliance is reported show cause notice, Directions are issued to the concerned units.

Further it is also noted that numerous small scale units are operating without obtaining consent to operate of the Board as required under the Air Act and the Water Act, in such cases the Board has issued Show Cause notices to all such units to apply for consent to operate.

The Board has issued total number of **380** Show Cause Notices and Directions to the units which are operating without consent to operate and also in violations of consent conditions. The Board has issued directions for closure and suspension of the units to 13 numbers of units which have not complied with the conditions stipulated in the consent order and operating without obtaining consent to operate of the Board.

8.2 LITIGATION PROFILE OF THE GOA STATE POLLUTION CONTROL BOARD

The GSPCB is a party in a number of proceedings filed before various Judicial Forums. Presently as on date, the GSPCB is a party before the following Judicial Forums;

1. The Supreme Court of India
   (GSPCB is party Respondent in Public Interest and Civil Writ Petitions)
2. The High Court of Bombay at Goa
   (GSPCB is party Respondent in Public Interest Writ Petitions and Criminal and Civil writ petitions))
3. The High Court of Bombay
   (GSPCB is party Respondent in Civil Writ Petitions)
4. The Principal Bench of the National Green Tribunal at New Delhi
   (GSPCB is party Respondent in Original Applications)
5. The Western Zone Bench of the National Green Tribunal at Pune
   (GSPCB is party Respondent in original Applications and Statutory Appeals)
6. The Administrative Tribunal at Panjim
   (GSPCB is party Respondent in Statutory Appeals)
7. The Judicial Magistrate First Class
   (GSPCB is the Complainant in Criminal Complaints filed by it under provisions of the Water Act and the Air Act)
8. The Human Rights Commission
   (GSPCB is party Respondent in complaints/applications)

In terms of the provisions of the Air Act, Appeals against Consents that are granted by the Board under the Air Act and directions issued under section 31(A) of the Air Act are heard before the Administrative Tribunal at Panaji and subsequent appeals against the orders of the Administrative Tribunal are to be heard before the Western Zone Bench of the NGT at Pune. In terms of the provisions of the Water Act, Appeals against Consents that are granted by the Board under the Water Act are heard before the Western Zone Bench of the NGT at Pune. Appeals against orders passed by the NGT are heard before the Supreme Court of India.

The Board allots matters to Advocates to protect and defend its interests before the Court of Law. Allotment of cases is done by the Chairman of the Board.

The Board has also appointed a Legal Retainer, Adv. J.B. Faria who has been entrusted with the responsibility of filing of Criminal complaints on behalf of the Board before various Criminal Courts against offenders for violations of the provisions of the Water and Air Acts. The Boards Legal Retainer also appears on its behalf in matters before the Human Rights Commission.

The Board at its 132nd meeting has revised the procedure for appointment and allotment of cases that concern it to Advocates to appear on its behalf before various Courts of Law/ Judicial Forums to defend its interests; and also specified the terms and conditions for payment of professional fees.

Present status of pending cases pertaining to GSPCB before Courts of Law

Total number of cases before Hon'ble Supreme Court, New Delhi	3
Total number of cases before Principle Bench NGT New Delhi	9
Total number of cases before Western Bench NGT Pune	25
Total number of cases before High Court of Bombay at Goa	20
Total number of cases before High Court of Bombay	1
Total number of cases before Administrative Tribunal at Panjim-	16
Total number of cases before the District and Session Court	2
Total number of cases before the Judicial Magistrate First Class	18
Total number of cases before the Human Rights Commission	6

8.3 CRIMINAL COMPLAINTS / FIR'S FILED BY GOA STATE POLLUTION CONTROL BOARD

Sr. no	Case no.	Name of the Court/ Jurisdiction	Parties involved	Brief Comments of the case/ matter
1	Cri. Case no.AOA/663/ P&CP Act/17/C	Judicial magistrate First Class, Mapusa	Shri. Levinson J. Martins, The Member Secretary, Goa State Pollution Control Board V/s. M/s. Curlies Restaurant & Ors.	Criminal complaint under section 200 of Cr.PC. read with section 49 of Water (Prevention and Control of Pollution) Act, 1974 and section 43 of Air (Prevention and control of pollution) Act, 1981 for violating the directions which are punishable under section 45(a) of Water (Prevention and Control of Pollution) Act, 1974 and under section 39 of Air (Prevention and control of Pollution) Act, 1981

2	Cr. Case no. 2039/ OA/2017/D	Judicial magistrate First Class, Vasco	Goa State Pollution Control Board V/s. M/s Mormugao Port Trust & ors	Complaint as provided under section 200 of Cr. Pc and under section 43 of the Air (Prevention and Control of Pollution)Act, 1981 for violating the provisions of section 21(5) (v) punishable under section 37 read with section 39 of the Air(Prevention and control of Pollution) Act, 1981
3	Cr. Case no. 2050/ OA/2017/A	Judicial magistrate First Class, Vasco	Goa State Pollution Control Board V/s. M/s. South West Port Ltd. & ors	Complaint as provided under section 200 of Cr. Pc and under section 43 of the Air (Prevention and Control of Pollution)Act, 1981 for violating the provisions of section 21(5) (v) punishable under section 37 read with section 39 of the Air(Prevention and control of Pollution) Act, 1981

DETAILS OF ACTION INITIATED BY THE BOARD FOR THE PERIOD FROM APRIL 2017 TO MARCH 2018

In exercise of the powers vested with the Board, action is initiated for violations of the provisions of the Water (Prevention and Control of Pollution) Act, 1974 Air (Prevention and Control of Pollution) Act, 1981. The Board Officials conducts inspections to verify the pollution control measures adopted by the units/plants/establishments and also whether Consent to Establish/Consent to Operate is obtained. The details of actions initiated is given below:-

Number of Show Cause Notices issued under the provisions of the Water, the Air Act and Rules notified under the Environment (Protection) Act 1986	296
Number of Closure Directions under the provisions of the Water and the Air Act	39
Number of Directions issued under the provisions of the Water and the Air Act	45

8.4 COMPLAINT MECHANISM

The Goa State Pollution Control Board receives numerous complaints on varied subject matters. In order to scrutinize and examine all such complaints, a Complaint Committee has been constituted comprising of Scientist “C”, Senior Law Officer, Environmental Engineer and Engineer Assistant (Computers). The complaints so received are examined so as to verify whether the grievances alleged by the complainants are within the purview of the Water Act, the Air Act or the Rules notified under the Environmental (Protection) Act.

During the year 2015/2016 the Board has received 543 complaints. Upon examining the said complaints it is noted that certain numbers of complaints does not come within the purview of the Board, hence all such complaints were forwarded to the concerned Departments for initiating appropriate action in the matter with the copy endorsed to the complainant. The minutes of the Complaint Committee meeting are also uploaded on the Board website.

The complaints wherein the grievances were regarding air and water pollution the same were inspected and wherever violations are observed appropriate action have been initiated.

8.5 RIGHT TO INFORMATION ACT, 2005

The Right to information Act, 2005 provides access to all information that is available and existing so as to make the functioning of the organizations transparent and accountable. This is clear from a combined reading of section 3and the definitions of 'information' and 'right to information' under clauses (f) and (j) of section 2 of the Act. If a public authority has any information in the form of data or analysed data, or abstracts, or statistics, an applicant may access such information, subject to the exemptions in section 8 of the Act. But where the information sought is not a part of the record of a public authority, and where such information is not required to be maintained under any law or the rules or regulations of the public authority, the Act does not cast an obligation upon the public authority, to collect or collate such non available information and then furnish it to an applicant. A public authority is also not required to furnish information which require drawing of inferences and/or making of assumptions. It is also not required to provide 'advice' or 'opinion' to an applicant, nor required to obtain and furnish any 'opinion' or 'advice' to an applicant. The reference to 'opinion' or 'advice' 49 in the definition of 'information' in section 2(f) of the Act, only refers to such material available in the records of the public authority. Many public authorities have, as a public relation exercise, provided advice, guidance and opinion to the citizens. But that is purely voluntary and should not be confused with any obligation under the RTI Act.

The Goa State Pollution Control Board has appointed the following Officials as Public Information Officer, Assistant Public Information Officer and the First Appellate Authority as per the Right to Information Act, 2005:-

1)	**Chairman**	**First Appellate Authority**
2)	**Senior Law Officer**	**Public Information Officer**
3)	**Assistant Law Officer**	**Asst. Public Information Officer**

Details regarding application received/disposed /appeals filed.

No. of RTI Application received by PIO GSPCB for the period from 2017-18	No. of application where the information is provided within statutory period of 30 days	No. of application where information is rejected quoting the relevant provisions of the RTI Act	No. of application where no reply is communicated	Amount of charges collected u/s 7(3) towards the supply of information (in Rs.)	No of Appeals
1	2	3	4	6	7
290	264	Nil	Nil	26150/-	3

CHAPTER 9

FINANCE AND ACCOUNTS OF THE BOARD

9.1 STATUS OF AUDITING OF ACCOUNTS OF THE BOARD

As per sub-sections 2 & 3 of section 40 of the water (Prevention and Control of Pollution) Act, 1974, the accounts of the Board are to be audited by an Auditor duly qualified to act as an Auditor of Companies under section 226 of the Companies Act, 1956. The said Auditor is to be appointed by the State Government on the advice of Comptroller & Auditor General of India (CAG).

Auditing of the Board accounts for the financial year 2014-15 has been completed. The Audit of accounts of the F.Y. 2015-2016, 2016-2017 is in process of being completed.

9.2 INCOME, EXPENDITURE AND FUNDING

The income and expenditure account of the Board for the year ended 31st March, 2017 is as per table below:

Profit & Loss A/c					
1-Apr-2017 to 31-Mar-2018					
	Goa State Pollution COntrol Board 2017-18			**Goa State Pollution COntrol Board 2017-18**	
Particulars	1-Apr-2017 to 31-Mar-2018		**Particulars**	1-Apr-2017 to 31-Mar-2018	
Direct Expenses		**69323464.00**	**Direct Incomes**		**62009808.39**
Salaries	*69323464.00*		*Air Consent Fees*	*22923881.75*	
Indirect Expenses		**29128620.50**	*Ambient Monitoring Fees*	*2233846.00*	
Advertisement & Publicity	*1823104.00*		*Bio Medical Fees*	*1214471.00*	
Chairman Expenses	*24294.00*		*E- Tendering Application*	*599106.00*	
Office Expenses	*23664032.50*		*NOC Fees*	*7020052.00*	
Computer Consumables	*421171.00*		*Other Receipts*	*5814554.89*	
Electricity Charges	*567528.00*		*RTI Fees*	*53676.00*	
Honorarium	*144700.00*		*Water Consent Fees*	*22150220.75*	
Hospitality Expenses	*1212818.00*		**Indirect Incomes**		**5865730.00**
Lab Advance	*10837.00*		*Bank Guarantee*	*275000.00*	
LTC Advance	*-17700.00*		*Interest on Karnataka Bank FD*	*840703.00*	

Newspaper - MS	*400.00*		*Public Hearing*	*4750027.00*	
Office Advance	*-124844.00*		***Nett Loss***		***30576546.11***
Postage	*141449.00*				
Printing	*141673.00*				
Publications	*790.00*				
Refund of Consent Fees	*35400.00*				
Rent, Rates & Taxes	*95866.00*				
Stationery	*204508.00*				
Telephone Exp	*498154.00*				
Telephone Exp - MS	*15648.00*				
Tour Advance	*28735.00*				
Vehicle Advance	*3580.00*				
Vehicle Hire Charges	*77412.00*				
Wi-Fi	*83376.00*				
World Env Day Expenses	*75689.00*				
Total		**98452084.50**	**Total**		**98452084.50**

The details of the funding received by the Board for the year under report is as follows:

	Funds	**Amount in Lakhs (2017 – 18)**
1.	Central Govt. (Partial reimbursement of NWMP & NAMP expenses by CPCB)	56.93
2.	State Govt. (MoEF & DSTE)	50.50
3.	Share of Water Cess from Central Govt.	-
4.	Fees (consent, NOC, authorization and analysis charges)	585.03
5.	Bank interest	272.00
6.	Public Hearing	90.00
7.	Other receipts (including grants of SEP programming & Right to Information)	664.62
	Total	1719.08

CHAPTER 10

ANY OTHER IMPORTANT MATTERS DEALT WITH BY THE BOARD

10.1 IMPLEMENTATION OF HAZARDOUS AND OTHER WASTE (MANAGEMENT & TRANSBOUNDARY MOVEMENT) RULES, 2016

The Hazardous Waste (Management & Handling) Rules were notified by the Ministry of Environment & Forests in the year 1989 under the provisions of the Environment Protection Act, 1986. Later the Rules were amended in the years 2000, 2003 and 2008 and subsequently, they were modified as the Hazardous and other Wastes (Management &Transboundary Movement) Rules 2016.

The Board grants authorizations to industries generating and handling hazardous wastes. The Goa State Pollution Control Board has identified 1409 (as per XGN records) industrial units generating hazardous waste in Goa upto the period of April 2017. The hazardous waste generated in the State of Goa for the year 2016-2017, is as follows: Incinerated waste (Pharmaceutical Waste etc) 18684 MT, Oil Filters/Empty Tins 1535 nos, Landfill Waste is 3512.6 MT, Recycable Waste (Used/Spent Oil etc) is 912.57 MT, Discarded Empty cans/tins is 35065 nos.

10.2 IMPLEMENTATION OF BIO-MEDICAL WASTE MANAGEMENT RULES, 2016

For the purpose of implementation of the Bio-Medical Waste Management Rules 2016, HCFs have been classified as per bedded and non bedded.

Bedded – 175 nos
Non bedded – 415 nos

Till 31/12/2016, 590 Health Care Units were granted authorizations under the Bio-Medical Waste Management Rules, 2016. The status of the Bio Medical waste generated by these units during the year is given as Table 6 in **Annexure IX.**

10.3 NOISE POLLUTION (REGULATION & CONTROL) RULES, 2000

The Board conducts monitoring of noise levels whenever any specific complaints of noise pollution are received and action is taken accordingly. In pursuance of clause (c) of rule 2 of the Noise Pollution Regulation & Control Rules, 2000, the Government of Goa vide Notification No. 2/51/2000 –II D (G) Vol I has designated (1) District Magistrates (2) Director General of Police (3) Deputy Collector and Sub-Divisional Magistrates (4) Superintendent of Police and Sub-Divisional Police Officers as 'authority' for the maintenance of ambient air quality standards in respect of noise under the said rules, with effect from 21.09.2000. In view of this, the Board forwards to the Competent Authority all the reports of Noise Level Monitoring conducted by the Board for necessary action.

10.4 IMPLEMENTATION OF SOLID WASTES MANAGEMENT RULES, 2016

The Board issues authorization to all the Urban Local Bodies under the provisions of Solid Waste Management Rules 2016. The authorizations have been issued independently for specific purpose to the Municipal Bodies.

As per the Annual Report for the year 2016-2017 submitted to the Central Pollution Control Board, out of 13 Municipal Councils and 1 Municipal Corporation; Seven Municipal Bodies have installed Garbage Treatment Plants and presently all are in operation and six Municipal Bodies have constructed sanitary landfill sites and presently 4 are in operation. Two Municipal Councils are in process of installation of Garbage treatment plant. All the Municipal Bodies have complied with the provisions of Solid Waste Management Rules 2016 in terms of collection, segregation, storage & transportation of the waste.

10.5 IMPLEMENTATION OF PLASTIC WASTE MANAGEMENT RULES, 2016

The Plastic Waste Management Rules, 2016 were notified in March 2016. Subsequent to the notification the Goa State Pollution Control Board implemented the rules within the State of Goa.

For creating awareness among the general public as well all stake holders, public notices were issued in the local newspapers and pamphlets were distributed to the public through local NGO. Public notice was also issued on local dailies for information to manufacturers, importers, stockists, distributors, sellers and users of plastic and compostable carry bags for compliance of the provisions of the rules. The new rules and its requirements are made available on the website of the Board.

There are 35 industries registered with the Board under the new rules. The details of the plastic waste generated are given in Annexure X.

The State Government has constituted a State Level Advisory committee for the purpose of effective monitoring of implementation of these rules. The committee chaired by Director, Municipal Administration has so far held two meetings and has directed each stakeholder to take necessary action as per the responsibilities specified in the rules.

Some initiatives taken under the rules by some of the stake holders submitted to the Board:

a) Goa Waste Management Corporation -
   - Setting up of Integrated Solid Waste Management Facilities
   - Memorandum of Understanding with Cement Companies for co-processing of non-recyclable waste
   - Collection mechanism for non-biodegradable waste from local bodies, schools, highways and beaches.
   - Awareness, Handholding, Meeting & Interaction
   - Training program for School teachers

b) M/s Nestle India Ltd.
   Action Plan –
   (i) To engage SAHAAS Waste Management Pvt. Ltd. (SWMPL), a social enterprise to provide holistic and scientific solutions to manage waste at source.

   (ii) Discussions with Ponda Municipal Council on pyrolysis project for conversion of plastic to fuel.

c) M/s Hindustan Coca-Cola Beverages Pvt. Ltd. (HCCBPL) – HCCBPL has developed a national approach to manage plastic as well as a bottom up approach to address the issue at the local body level.

10.6 IMPLEMENTATION OF BATTERIES (MANAGEMENT AND HANDLING) RULES, 2001

There are 03 units who are involved in manufactures/assembling/pre-conditioners of lead acid battery within the state of Goa. 37 dealers have obtained registration as battery dealers. Most of the Bulk consumers are filing half yearly returns regularly to the Board, while most of the dealers are not filing half yearly returns to this office. Status reports on Batteries Management and handling Rules is under preparation. The details of the returns under the said rules are given in Annexure XI.

10.7 IMPLEMENTATION OF E-WASTES (MANAGEMENT) RULES, 2016

The computer market in the State has been increasing due to lot of commercial development and IT related activities. The State is emerging with a large middle class group who are willing to buy PC's. A large chunk of demand is still met by Assemblers who compete primarily on low cost advantage.

PC usage increases with the increase of the income level and education level of people. Majority of obsolete PC's are diverted to the grey markets, wherein the non functional parts are changed and fixed with the new parts in PC's and further sold back to customers and remaining miscellaneous scraps are sold to scrap-dealers and recyclers.

There are no recyclers in the State specially doing recycling for obsolete Electronic Waste Existing E-waste handling practices are not expected to manage future E-waste generation thus formal recycling center is needed for E-waste collection, segregation, dismantling and recycling of the material. There is a lack of awareness in public regarding E-waste handling, treatment and disposal.

There were six units registered with the Board for collection of E-waste from the State of Goa, which is then sent to the registered recycler for recycling. As per decision taken in the 62nd conference of the Chairmen and Member Secretaries held on 27th June 2017 the Board is in the Process of withdrawing the authorization issued to the collection centres.

The details of annual returns for the year 2016-2017 is annexed as Annexure VIII

10.8 ACHIEVEMENTS MADE BY THE BOARD

Recognition of the Goa State Pollution Control Board under ISO 9001:2015 (Quality Management System) vide certification dated 13.08.2016 and is valid upto 12.08.2019

Recognition of the Goa State Pollution Control Board under BS OHSAS 18001:2007 (Occupational Health and Safety Management System) vide certificstion dated 13.08.2016 and is valid upto 12.08.2019

Recognition of the Goa State Pollution Control Board under ISO 14001:2015 (Environmental Management System) vide certification dated 13.08.2016 and is valid upto 12.08.2019

Recognition of the Goa State Pollution Control Board Laboratory under ISO 17025:2005 (Genral Requirements for Competance of Testing and Calibration Laboratories) vide certification dated 29.09.2016 and is valid upto 21.09.2018

10.9 CELEBRATION OF WORLD ENVIRONMENT DAY

WORLD ENVIRONMENT DAY, 2017 REPORT

World Environment Day (WED), 5th June, is the United Nations' principal vehicle for encouraging

worldwide awareness and action for the environment. It also serves as the 'people's day' for doing something positive for the environment, galvanizing individual actions into a collective power that generates an positive impact on the planet.

This year's theme for WED - 'Connecting People to Nature', the theme for World Environment Day 2017, implores us to get outdoors and into nature, to appreciate its beauty and its importance, and to take forward the call to protect the Earth that we share.

This year's theme invites us to think about how we are part of nature and how intimately we depend on it. It challenges us to find fun and exciting ways to experience and cherish this vital relationship.

The WORLD ENVIRONMENT DAY Programmes were held at Sanskruti Bhavan, Patto Panaji - Goa.

The following programmes were held along with CEE (Centre for Environment Education):

On 2nd June 2017, a Staff children painting/Poster competition based on the UNEP theme, titled : "My way of connecting with nature" was held for all the GSPCB staff children, seeking out the children's views on how they can contribute to towards connecting with nature. The children's Poster's were very inspirational. More than 15 children participated in three categories Junior category aged below 5 years, Sub – Seniors category aged 6 to 12 years and senior aged 13-17 years.





Poster competition organised for the children

On 02nd June'2017 , a Quiz competition was arranged by the Centre for Environment Education(CEE) involving teams from various private Industries and Government Departments on the following **theme: "Connecting people with nature"-** A total of 38 teams participated from both Government Departments/GSPCB/ Stakeholders/Industries/ Commercial Units), where M/s. Nestle India Limited won the first place, Goa State Biodiversity Board won the second place and Goa State Pollution Control Board won the third place.

Sr. No.	Name of participants	Name of the Industry/Department
1.	Mr. Prasad Bhende	M/s. Nestle India Limited, Usgao, Ponda - Goa
2.	Mr. Shailendra Bidye	
1.	Ms. Sneha Bhonsle	Goa State Bio-Diversity Board (GSBB)
2.	Ms. Reshma Kerkar	
1.	Mr. Abner Rodrigues	Goa State Pollution Control Board (GSPCB)
2.	Mr. Shashank Dessai	



Winners of the Quiz Competition.

The Board also organised Best Environmental Practises contest on 2nd June 2017 for industries, wherein participation from three industries was received. The industries namely, M/s Glenmark Pharmaceuticals Ltd, M/s Encube Ethicals Pvt. Ltd. and M/s Abbott India Ltd. gave a brief presentation about various steps undertaken by them towards environment conservation and sustainable use of natural resources.

1st place	M/s Glenmark Pharmaceuticals Ltd., Colvale Industrial Estate, Bardez-Goa
2nd place	M/s Encube Ethicals Pvt. Ltd., Madkaim Industrial Estate, Ponda-Goa
3rd place	M/s Abbott India Ltd., Verna Industrial Estate, Salcette-Goa

On 3rd June, 2017 the Board organised a Nature Camp for the Board staff and their family members at Bhagwaan Mahaveer Sanctuary, Mollem in line of World Environment Day 2017 theme "Connecting People with nature"..



Welcome address by Prof. Janarthanam, Dean, Deaprtment of Life Sciences, Goa University

On 5th June, 2017, Shri Sujeet Dongre –Centre for Environment opened the proceedings of the WED 2017. Prof. Janarthanam, Dean, Deaprtment of Life Sciences, Goa University, gave a welcome address, followed by a brief oration by the Shri. Ranbir Singh – Principal Secretary (Environment), Government of Goa.



Release of the annual report of the board 2016-2017

The Board then released the GSPCB Annual Report of 2016-17 at the hands of the Shri. Dharmendra Sharma, Chief Secretary, Govt. of Goa and Chairman – GSPCB along with Shri. Ranbir Singh – Principal Secretary (Environment), Government of Goa.

The Ministry of Electronics and Information Technology (Meity) in partnership with NASSCOM Foundation, MAIT & CEAMA has embarked upon an Awareness Programme on Environmental Hazard of Electronic Waste under the "Digital India Initiative'. In view of the same they addressed the crowd with the importance of E-Waste Segregation and management and inaugurated E-Waste Bins at the Hand of the Chief Secretary , Govt. of Goa and Chairman –GSPCB, Shri. Dharmendra Sharma



Inaugration of E-waste bins





The session continued with prize distribution and ended with an address by the Chief Secretary, Govt. of Goa and Chairman –GSPC , Shri. Dharmendra Sharma



Prize distribution for poster competition and best environmeental practices Address by the Cheif Secretary, Govt. of Goa & Chairman (GSPCB)

The Vote of Thanks was given by Dr. Mohan Girap, Scientist 'C', Goa State Pollution Control Board.

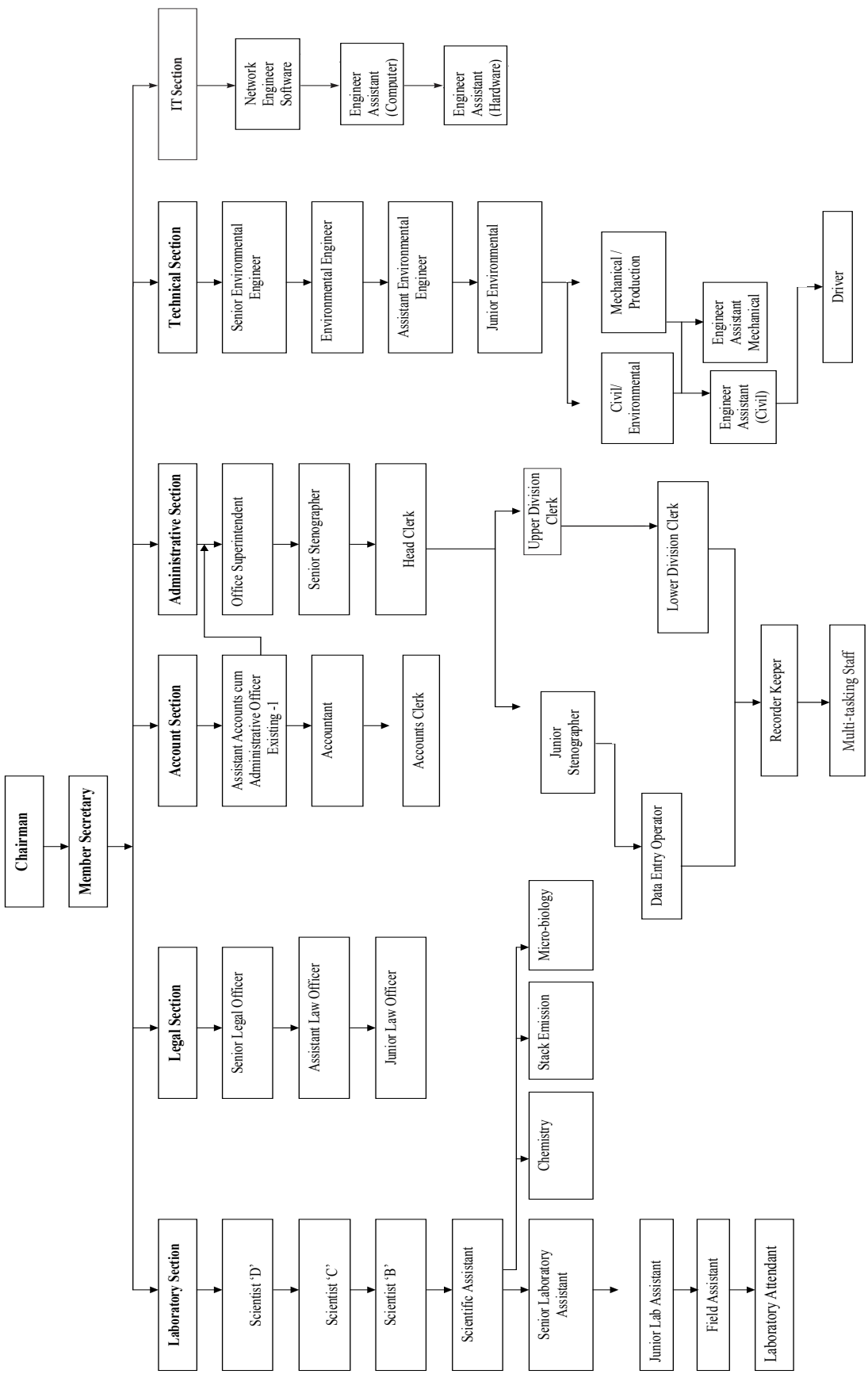
In the evening session on 5th June, 2017 the Board along with Centre for Environment Education(CEE) organised a round table discussion where various stake holders/government departments/ industries/hotels/resorts were invited for participation, to discuss and debate on environmental sustainability where a total of 20 teams participated.

10.10 IMPLEMENTATION OF THE SUPREME COURT GUIDELINES ON PREVENTION OF SEXUAL HARASSSMENT OF WOMEN AT WORKPLACE

Information in this regard, as per the Supreme Court judgment dated 13/08/1997, is that no complaints about sexual harassment at work place were received by the Board during the financial year covered by this report.

ANNEXURE I

ORGANISATION CHART FOR GOA STATE POLLUTION CONTROL BOARD



ANNEXURE II

LIST OF APPLICATIONS FOR CONSENTS TO OPERATE (CCA) AND CONSENT TO ESATABLISH(CTO) UNDER WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 AND AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 AND HAZARDOUS AND OTHER WASTE (MANAGEMENT and TRANSBOUNDRY MOVEMENT), 2016 PROCESSED AND APPROVED BY THE BOARD DURING THE YEAR 2017-2018.

Sr. No.	Industry Name	Taluka	Granted Date
1	Optel Vision India Pvt Ltd	Salcete	08-03-2017
2	Sir Biotech India Ltd	Salcete	17-03-2017
3	Rajan Guest House	Tiswadi	17-03-2017
4	Hotel Dewa Goa	Mormugao	17-03-2017
5	Smartlink Network Systems Limited	Salcete	13-04-2017
6	Smartlink Network Systems Limited	Salcete	13-04-2017
7	National Distilleries	Tiswadi	26-04-2017
8	Pwd Div Xxi Phe 6.7 Mld Stp For Margao Town	Salcete	22-05-2017
9	V.M. Salgaocar & Bro. Pvt. Ltd.(Velguem Surla Iron Ore Mine)	Bicholim	20-06-2017
10	Tito's Resorts & Hospitalities Pvt. Ltd.	Bardez	06-10-2017
11	Marpol Pvt Ltd. Unit I	Quepem	09-10-2017
12	Goa Ore Carriers	Salcete	09-10-2017
13	Carina Beach Resort	Salcete	09-10-2017
14	Sofytech Engineers	Sattari	09-10-2017
15	Watson Pharma Private Limited	Salcete	19-10-2017
16	Cosmos Premises Pvt. Ltd.(Royal Orchid Resort Galaxy)	Salcete	19-10-2017
17	Sainath Industrial Corporation	Bicholim	19-10-2017
18	M\S Concrete Lifestyles (Atlantis)	Bardez	19-10-2017
19	Goa Tourism Development Corporation Ltd.(Farmagudi Residency)	Tiswadi	19-10-2017
20	Cafe Del Mar	Bardez	19-10-2017
21	Goa Tourism Development Corporation Ltd - M.V Santa Monica Pnj-120	Tiswadi	19-10-2017
22	The Big Tap	Bardez	19-10-2017
23	Ivor Braganza	Dharbandora	19-10-2017
24	Kalay Iron Ore Mine, T.C. No. 12\52 & 40\51	Sanguem	26-10-2017
25	Chowgule & Company Private Limited	Ponda	26-10-2017
26	Calsanichomato De Oilomol Iron Ore Mine	Bicholim	26-10-2017
27	M\S Madachem Bat Mines Private Limited	Bicholim	26-10-2017
28	Funskool India Ltd	Tiswadi	26-10-2017
29	Sudarshan Dry Docks	Ponda	26-10-2017
30	Valley View	Bardez	26-10-2017
31	Glosant Shack	Salcete	30-10-2017

32	Sociedade De Fomento Ind. Pvt. Ltd., Coplia Gaichem Paul Mine,T.C. No. 88\52	Sanguem	01-11-2017
33	V.D.Chowgule	Ponda	01-11-2017
34	Nicomet Industries Ltd	Salcete	01-11-2017
35	Ifb Industries Ltd.	Tiswadi	01-11-2017
36	Deccan Fine Chemicals (India) Pvt Ltd	Tiswadi	01-11-2017
37	Nestle India Limited	Ponda	01-11-2017
38	Jaquela Oujacadevicho Mollo Iron Ore Mines Bandekar Brothers Private Limited	Bicholim	01-11-2017
39	Filtertechniks Private Limited	Quepem	01-11-2017
40	D.B.Bandodkar And Sons Pvt.Ltd	Bicholim	01-11-2017
41	Maruti Beverages	Ponda	01-11-2017
42	Kashinath Talaulicar, Cormolachem Moll	Bicholim	01-11-2017
43	Alor Grande Holiday Resort	Bardez	01-11-2017
44	Goa Medical College & Hospital	Tiswadi	01-11-2017
45	M\S Maisie Metal Industries	Salcete	01-11-2017
46	Morpilla Quarry	Salcete	01-11-2017
47	Crispy Palace	Salcete	01-11-2017
48	Sashisandhya Associates (Hotel Yashoda)	Ponda	01-11-2017
49	Anant Residency	Canacona	01-11-2017
50	Tropical Mushrooms (Goa) P. Ltd	Ponda	01-11-2017
51	Eve Resort	Canacona	01-11-2017
52	Metro Radiators & Oil Coolers	Quepem	01-11-2017
53	Gurukrupa Niwas	Canacona	01-11-2017
54	Iconic Softech Solution Pvt. Ltd.	Salcete	01-11-2017
55	A & A Salon & Spa By Aaqil & Afsha	Bardez	01-11-2017
56	Hotel Savoy Palacio	Bardez	01-11-2017
57	Dattaprasad Bakery	Bicholim	01-11-2017
58	Shirdi Steel Re-Rollers Pvt. Ltd	Salcete	14-11-2017
59	Ranbaxy Laboratories Limited	Ponda	14-11-2017
60	Chowgule & Company Private Limited	Pale Mines	14-11-2017
61	G.N. Agrawal, Borchi Mordi Maina Iron Ore Mine	Quepem	14-11-2017
62	Pravinkumar Shantilal Gosalia	Salcete	14-11-2017
63	Goa Glass Fibre Ltd.	Bardez	14-11-2017
64	Gera Developers Pvt. Ltd.	Tiswadi	14-11-2017
65	D B.Bandodkar And Sons Pvt Ltd (Beneficiation Plant)	Bicholim	14-11-2017
66	D.B.Bandodkar And Sons Pvt.Ltd (Kothambi Barge Loading Platform\Facilities)	Bicholim	14-11-2017
67	Sai Service Station Limited	Bardez	14-11-2017
68	Vedanta Ltd.	Sanguem	14-11-2017
69	Tcpl Packaging Limited	Ponda	14-11-2017
70	M\S Oriental Containers Ltd	Ponda	14-11-2017
71	Muktar Minerals Pvt Ltd	Quepem	14-11-2017

72	United Leadoxide Products Pvt Ltd	Ponda	14-11-2017
73	M\S Chowgule & Co. Pvt. Ltd (Shipbuilding Division)	Salcete	14-11-2017
74	Yeshwant Enterprises	Salcete	14-11-2017
75	Leofil Metals	Sanguem	14-11-2017
76	Institute Of Hotel Management Catering Technology & Applied Nutrition	Bardez	14-11-2017
77	M\S Mandovi Dry Docks	Bicholim	14-11-2017
78	M\S Nizam S. Ladji	Bicholim	14-11-2017
79	Ms Seacoast Retreat Hotel	Salcete	14-11-2017
80	Sunrise Cashew Industries(Residential Complex)	Bardez	14-11-2017
81	Misquita Villa	Bardez	14-11-2017
82	Goldfinch Resorts Private Limited	Tiswadi	14-11-2017
83	Majestic	Bardez	14-11-2017
84	Amit Earthmovers	Bicholim	14-11-2017
85	M\S Soft Corner	Pernem	14-11-2017
86	Aditi Packaging Industry	Salcete	14-11-2017
87	Hotel Republica	Tiswadi	14-11-2017
88	Harichandra Holiday Homes (Mahesh H Simepurushkar)	Bardez	14-11-2017
89	Navbharat Cement Products	Mormugao	14-11-2017
90	Metal Craft Engineering	Ponda	14-11-2017
91	Jagdish Pednekars Bakery	Pernem	14-11-2017
92	Readymix Concrete Plant For Construction Of Margao Bypass	Salcete	14-11-2017
93	Waters Beach Lounge & Grill	Bardez	14-11-2017
94	Terra Aqua Tech Services	Salcete	21-11-2017
95	Ghatge Karkera Power Industries	Canacona	21-11-2017
96	M\S Maruskha Stone Industry	Sanguem	23-11-2017
97	Varun Beverages Limited	Sanguem	23-11-2017
98	The Place Sea View	Canacona	23-11-2017
99	Medizest Pharmaceuticals Pvt. Ltd	Salcete	27-11-2017
100	Vic Industries.,	Bardez	27-11-2017
101	Esteem Industries Pvt. Ltd.,	Bardez	27-11-2017
102	Automobile Corporation Of Goa Ltd - Plant -Iii	Sattari	27-11-2017
103	Indoco Remedies Ltd. (Plant I)	Salcete	27-11-2017
104	Goa State Co-Operative Milk Producers Union Ltd.	Ponda	27-11-2017
105	Dempo Shipbuilding & Engineering Pvt. Ltd.	Tiswadi	27-11-2017
106	Goa Thermopack Private Limited	Salcete	27-11-2017
107	Creative Gaming Solutions Pvt. Ltd.,	Tiswadi	27-11-2017
108	Pacl India Limited.,	Bardez	27-11-2017
109	Shantadurga Damodarindustries	Quepem	27-11-2017
110	M\S Labchem	Ponda	27-11-2017
111	Shaikh Polymers	Tiswadi	27-11-2017

112	Harichandra Holiday Homes (Ramesh Naik Simepurushkar)	Bardez	27-11-2017
113	Oorja Wellness Centre	Salcete	27-11-2017
114	Universal S Traders	Mormugao	27-11-2017
115	A X P Palondicar Hunantlo Dongor Iron And Manganese Mine	Mormugao	29-11-2017
116	M\S Shree Gajanana Industries	Quepem	29-11-2017
117	Residential Complex Riviera Sapphire	Bardez	29-11-2017
118	Noorudheen Construction Pvt Ltd	Ponda	29-11-2017
119	Spazio Leisure Resort	Bardez	29-11-2017
120	Gkb Opthalmics Ltd Unit Iii	Bardez	29-11-2017
121	Zuari Indian Oil Tanking Ltd.	Mormugao	12-02-2018
122	M/S Indian Oil Corporation Ltd	Mormugao	28-02-2018
123	M/S-Neville Coutinho Saw Mill	Salcete	28-02-2018
124	M/S Dhuri Pollution Testing Centre	Salcete	28-02-2018
125	M/S Anand Yoga Village	Canacona	01-03-2018
126	M/S Nestle India Limited	Usgao	01-03-2018
127	M/S Niranjan Industries	Salcete	01-03-2018
128	M/S Caculo Motors Pvt Ltd	Tiswadi	
129	Bhaskar Sabhagruha	Tiswadi	05-03-2018
130	Pushpanjali Hospitality Pvt Ltd	Bardez	06-03-2018
131	Secret Garden Residency	Canacona	07-03-2018
132	Big Fish Shack And Huts	Canacona	07-03-2018
133	Chattai	Canacona	07-03-2018
134	D'costa Cottages And Shack	Canacona	07-03-2018
135	Titanic Holiday Home	Canacona	07-03-2018
136	Tienda Advanced Material Pvt Ltd	Salcete	07-03-2018
137	Kamleshwar Workshop	Bardez	07-03-2018
138	Birla Furukawa Fibre Optics Pvt Ltd	Salcete	07-03-2018
139	Digisol Systems Ltd	Salcete	08-03-2018
140	Trimurthi Carpentry Workshop	Quepem	08-03-2018
141	Umiya Builders And Developers-Umiya Quatro-A	Mormugao	08-03-2018
142	Metro's Take Away	Salcete	08-03-2018
143	Samir Alias Laxmikant Kalangutkar(Oasis)	Pernem	08-03-2018
144	Go-Ym Resort	Pernem	08-03-2018
145	Tilve Bakery	Ponda	08-03-2018
146	Dura-Line India Pvt Ltd	Salcete	08-03-2018
147	Prazeres Resorts	Bardez	08-03-2018
148	Goa Carbon Limited	Salcete	08-03-2018
149	Jpl Infrastructure Pvt Ltd	Bardez	08-03-2018
150	Nanu Resorts Pvt Ltd	Pernem	12-12-2017
151	Maximus Breweries & Distilleries Pvt Ltd	Ponda	12-03-2018
152	Halarnkar Industries	Pernem	12-03-2018

153	Yoga Tree Palolem	Canacona	12-03-2018
154	A-1 Industries	Salcete	12-03-2018
155	Leta Furniture Works	Salcete	12-03-2018
156	Igloo Dairy Ser Vices Pvt Ltd	Ponda	12-03-2018
157	Crompton Greaves Ltd	Ponda	12-03-2018
158	Carol In Beach Resort Pvt Ltd	Bardez	12-03-2018
159	Dreamcatcher-Ii	Canacona	13-03-2018
160	Salida Del Sol	Canacona	13-03-2018
161	Om Sai Parvati	Canacona	13-03-2018
162	Marita Restaurant	Canacona	13-03-2018
163	Kamaxi Beach Resort	Canacona	13-03-2018
164	Kamaxi Beach Resort Sy No 312/1 Canacona	Canacona	13-03-2018
165	Palm Trees Heritage	Canacona	13-03-2018
166	Sea Shade	Canacona	13-03-2018
167	Saxony Beach Restaurant	Canacona	14-03-2018
168	Pio's	Canacona	14-03-2018
169	Sai Valentine	Canacona	14-03-2018
170	Marchant Hospitality Pvt Ltd		14-03-2018
171	The Palm Trees	Canacona	14-03-2018
172	Dream Valley Resort	Canacona	14-03-2018
173	Napoleean Inn	Canacona	14-03-2018
174	Temporary Wooden Cottages & Shack	Canacona	14-03-2018
175	La La Land	Canacona	14-03-2018
176	Kineco Limited	Bardez	14-03-2018
177	Messi Fabrication Fabrication Workshop	Salcete	15-03-2018
178	Andores Resort And Spa	Bardez	15-03-2018
179	Virat Enterprises	Salcete	15-03-2018
180	Belladona Plasters Limited	Ponda	15-03-2018
181	Goa Sponge & Power Ltd	Sanguem	15-03-2018
182	Devyani Food Industries Pvt Ltd	Ponda	16-03-2018
183	Sunflower Blossom Guest House	Bardez	16-03-2018
184	Kineco Limited Unit Iii	Bardez	16-03-2018
185	Goa Brewcrafts Pvt Ltd	Bardez	16-03-2018
186	R & H Spaces Pvt Ltd Phase 2	Bardez	19-03-2018
187	Sandesh H.N Karmali	Salcete	21-03-2018
188	Mormugao Port Trust	Mormugao	21-03-2018
189	Glenmark Pharmaceuticals Ltd-Plant Ii	Bardez	21-03-2018
190	Spares Corner	Tiswadi	21-03-2018
191	Metafinn	Ponda	22-03-2018
192	Ramchandra N Shetgaonkar	Pernem	22-03-2018
193	Maitri Guest House	Bardez	23-03-2018
194	Maberest Hotels Pvt Ltd	Bardez	26-03-2018

195	Arbor Brewing Company Pvt Ltd	Pernem	26-03-2018
196	Savitri Niwas	Pernem	27-03-2018
197	Santana Beach Resort	Bardez	27-03-2018
198	Encube Ethicals Pvt Ltd	Ponda	27-03-2018
199	Chandra Cleaners	Bardez	27-03-2018
200	Bharat Petroleum Corporation Ltd	Bardez	27-03-2018
201	Hotel Padma	Pernem	28-03-2018
202	Ukb Electronics Pvt Ltd	Salcete	28-03-2018
203	Olympus Enterprises	Sattari	28-03-2018
204	Healthway Hospitals Pvt Ltd	Tiswadi	28-03-2018
205	Coconut Grove	Canacona	28-03-2018
206	03 Beach Resort		28-03-2018
207	Orange Sky	Canacona	28-03-2018
208	Maria Guest House		28-03-2018
209	Savitri Packaging Products	Salcete	28-03-2018
210	Nature Inn	Bicholim	28-03-2018
211	Amar-Deep Pharmas L.L.P	Pernem	28-03-2018
212	Sameer Enterprises	Mormugao	28-03-2018
213	Hevan Utility Solutions Llp-Ii	Ponda	29-03-2018
214	Hld Food And Beverages	Bicholim	29-03-2018
215	Ocean View Resort	Bardez	29-03-2018
216	Corral Hospitality Pvt Ltd	Pernem	29-03-2018
217	Datwani Developers Pvt Ltd	Bardez	29-03-2018
218	Neelam Engineering Services	Mormugao	29-03-2018
219	Siddhi's Diabetes And Homoeopathic Clinic	Ponda	29-03-2018
220	R.B.S.Candiaparcar	Bardez	29-03-2018
221	Lakshmi Juneja Residential Complex At Sangolda	Bardez	29-03-2018

ANNEXURE III

NWMP DATA FOR THE YEAR 2017 - 2018

Table No. : 3A - RIVER CHAPORA NEAR ALORNA FORT, PERNEM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	6.58	7.06	6.6	6.49	6.28	7.42	6.59	6.91	7.55	7.4	6.97	7.26	6-9
2	Temperature ˚C	30.5	28.9	26.3	28	29	28	28	29.1	27.5	28.5	26	29.3	
3	Conductivity µs/cm	854.5	688.5	78.52	159.9	68.12	60.32	76.07	73.38	96.1	146.5	3730	1874	
4	Dissolved Oxygen mg/l	6.13	7.3	7.16	7	7.2	7.6	7.8	7.4	7.7	7.8	6.8	6.8	4 mg/l or more
5	Turbidity (NTU)	3	4	10	9	31	5	10	4	4	3	3	3	
6	Nitrite Nitrogen mg/l	0.002	0.008	BDL	0.006	0.002	0.001	BDL	0.001	0.002	BDL	0.028	0.005	
7	Nitrogen(Nitrate) mg/l	0.065	0.072	0.27	0.2	0.17	0.03	0.1	0.04	0.11	0.08	BDL	0.52	
8	Phosphate mg/l	BDL	0.04	BDL	BDL	0.01	BDL	BDL	BDL	0.005	0.2	0.004	0.56	
9	BOD mg/l	1	3.5	1.5	0.8	0.4	0.8	1	1.6	1.1	0.9	1.5	1.5	3 mg/l or less
10	COD mg/l	18	20	-	-	8	8	4	2	4	4	8	-	
11	Chloride mg/l	146	195	24	15	100	6	9	5	7	17	1400	20791	
12	Fecal Coliform MPN/100 ml	2300	2300	1300	4900	780	1300	4900	7900	450	1300	4900	4900	
13	Total Coliform MPN/100 ml	4900	3300	2100	7900	1100	2300	7900	13000	780	2300	7900	13000	5000 or less MPN/100 ml
14	Ammonia mg/l	0.07	BDL	0.02	0.08	0.19	0.05		0.14	0.03	0.02	0.05	0.26	
15	Total Dissolved Solids(mg/l)	552	1317	50	55	136	43	49	48	55	109	2235	1200	
16	Total Fixed Solids (mg/l)	-	-	-	-	129	25	20	22	40	55	1959	800	
17	Total Suspended Solid (mg/l)	94	13	38	17	45	75	58	14	4	8	66	11	
18	Hardness(mg/l)	92	92	26	24	40	18	22	34	20	30	340	158	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	1.16	1.96	
20	Boron(mg/l)	-	0.14	1.91	1.87	2.1	0.07	-	1.86	5.87	0.007	2.81	0.44	
21	Sulphate (mg/l)	28	12.5	3.7	5.3	9.2	3.27	3.16	1.71	5.37	2.4	305.2	144.7	
22	Total Alkalinity(mg/l)	36	35	32	32	48	34	34	30	24	32	62	32	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	125.6	109.3	9.3	3.1	3.4	5	7.6	7.5	2	9.9	459.8	197.2	
25	Potassium(mg/l)	5.4	5.8	2.1	1.7	1.2	1.4	1.9	2	0.5	0.5	28.7	19.6	
26	Calcium as CaCO3(mg/l)	30	30	20	12	16	12	14	8.82	4.8	5.6	32.1	16	
27	Magnesium(mg/l)	15	15.1	BDL	2.9	5.8	BDL	BDL	3	1.94	3.9	63.2	28.67	
28	Nickel(mg/l)	0.09						0.014						
29	Copper(mg/l)	0.007						0.007						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.063						0.48						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	1.663						0.58						
35	Manganese (mg/l)	0.87						0.256						

36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3B - RIVER KALNA AT CHANDEL, PERNEM 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	6.13	6.64	6.38	6.48	6.34	7.29	6.44	7.18	7.29	7.4	7.06	6.78	6-9
2	Temperature ˚C	30	28.5	26	27.5	28	28	29	27.1	27	30	25.5	29.2	
3	Conductivity µs/cm	65.69	60.99	40.38	50.89	61.68	60.88	71.18	72.94	50.4	151.7	75.2	68.7	
4	Dissolved Oxygen mg/l	6.91	7.3	6.79	7.4	7.6	7.5	6.9	7.7	7.6	7.7	7.8	7.2	4 mg/l or more
5	Turbidity (NTU)	2	2	28	6	7	6	8	3	4	3	3	2	
6	Nitrite Nitrogen mg/l	0.001	0.003	BDL	0.011	0.002	0.001	BDL	BDL	0.003	BDL	0.01	BDL	
7	Nitrogen(Nitrate) mg/l	0.04	0.04	0.23	0.18	0.01	0.035	0.09	BDL	0.09	0.05	BDL	0.32	
8	Phosphate mg/l	BDL	0.06	BDL	0.003	0.009	0.003	0.02	0.02	0.016	0.01	0.006	BDL	
9	BOD mg/l	1.1	1.2	2.8	1.5	0.6	0.6	0.4	2.5	0.8	0.8	1.1	1.5	3 mg/l or less
10	COD mg/l	8	9		-	5	2	2	2	3	4	4	6	
11	Chloride mg/l	6	8	19	15	8	4	9	7	11	9	5	8	
12	Fecal Coliform MPN/100 ml	1300	1300	4900	4900	1300	2300	2300	2300	4900	1300	1300	7900	
13	Total Coliform MPN/100 ml	3300	2300	7900	7900	1700	3300	4900	3300	7900	1700	1700	24000	5000 or less MPN/100 ml
14	Ammonia mg/l	0.15	0.013	0.03	0.1	0.02	0.07	-	0.09	0.09	0.09	0.02	0.01	
15	Total Dissolved Solids(mg/l)	45	167	27	63	143	39	42.7	56	30	87	46	42	
16	Total Fixed Solids (mg/l)	-	-	-	-	73	18	20	30	17	65	36	30	
17	Total Suspended Solid (mg/l)	68	3	69	10	7	90	83	18	3	22	4	5	
18	Hardness(mg/l)	26	22	20	14	22	22	30	30	30	24	12	22	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	0.65	1.36	
20	Boron(mg/l)	-	0.13	1.43	1.84	1.47	0.01	-	1.72	6.08	0.15	2.82	0.5	
21	Sulphate (mg/l)	1.9	2.7	3.4	2.9	7.6	2.22	BDL	2.31	4.42	2.4	4	3.08	

22	Total Alkalinity(mg/l)	38	24	28	36	52	30	32	34	34	36	44	32	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	5.7	5.3	56.3	1.7	2.6	3.3	7.6	6.9	4.5	2.9	11.8	12.8	
25	Potassium(mg/l)	1.5	1.5	4	2	1.1	1.1	2.1	2	0.4	0.6	1.1	7.1	
26	Calcium as CaCO3(mg/l)	12	14	10	10	12	12	18	4.8	6.4	4.8	4.01	5.6	
27	Magnesium(mg/l)	3.4	1.9	2.43	1	2.4	2.43	2.92	4.4	3.4	2.9	BDL	1.94	
28	Nickel(mg/l)	0.053						0.01						
29	Copper(mg/l)	0.005						0.01						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.056						0.62						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.972						0.91						
35	Manganese (mg/l)	0.353						0.22						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3C - RIVER MAPUSA ON CULVERT ON HIGHWAY MAPUSA-PANAJI 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.16	7.76	6.27	6.23	6.19	7.09	6.4	6.55	6.96	6.9	7.05	6.96	6.5 - 8.5
2	Temperature ˚C	31	29.2	26.1	31	30	30	29	29	26	29	26.1	30	
3	Conductivity ms/cm	11200	9690	247.3	160.2	253.22	159.3	374.35	814.6	1652	7630	11060	11890	
4	Dissolved Oxygen mg/l	7.53	8.1	3.1	3.4	4.2	3.7	4.6	2.7	3.1	4.6	4.7	3.6	4 mg/l or more
5	Turbidity (NTU)	2	2	33	25	15	7	11	2	6	1	1	5	30 NTU
6	Nitrite Nitrogen mg/l	0.003	0.01	0.02	0.05	0.066	0.001	0.01	0.01	0.01	BDL	0.08	0.013	
7	Nitrogen(Nitrate) mg/l	0.047	0.064	0.42	0.11	0.14	0.15	0.18	0.12	0.2	0.16	BDL	0.61	
8	Phosphate mg/l	0.02	0.05	0.02	0.03	0.002	BDL	0.03	0.02	0.033	0.13	0.008	0.035	
9	BOD mg/l	1.5	0.9	2.5	1.7	1.8	1.3	2	1.5	1.5	1.2	4.1	1.8	3 mg/l or less
10	COD mg/l	24	-	-	-	12	14	4	4	5	-	6	-	
11	Chloride mg/l	3545	4349	50	35	600	21	245	163	1712	2428	41	5137	
12	Fecal Coliform MPN/100 ml	4900	7900	14000	3300	3300	7900	13000	11000	220000	13000	7900	4900	100 or less MPN/100 ml
13	Total Coliform MPN/100 ml	7900	13000	17000	4900	4900	11000	17000	17000	92000	17000	14000	7900	
14	Ammonia mg/l	0.41	BDL	0.05	0.06	0.18	0.02		0.18	0.04	0.04	0.03	0.04	
15	Total Dissolved Solids(mg/l)	7631	9340	148	121	232	102	243	461	926	5001	6693	7065	
16	Total Fixed Solids (mg/l)	-	-	-	-	228	41	168	267	750	2592	6605	4230	
17	Total Suspended Solid (mg/l)	62	28	94	24	13	4	130	10	5	22	34	28	
18	Hardness(mg/l)	-	1400	56	40	60	36	52	94	400	960	680	1000	
19	Fluoride(mg/l)	-	-	-		-	-	-	-	-	-	2.28	1.07	
20	Boron(mg/l)	-	2.2	-	4.2	3.2	0.07	-	3.55	6.86	0.39	2.61	0.48	
21	Sulphate (mg/l)	381	416	16.7	12.7	15.5	7.69	10.53	16	294.2	201	530.4	231.5	
22	Total Alkalinity(mg/l)	86	71	32	52	60	46	46	64	60	66	78	106	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	2	
24	Sodium(mg/l)	1387	1488	37.1	17	31.5	16.7	40.6	146	380.7	940	1160	684.4	
25	Potassium(mg/l)	67.2	72.1	4.9	2.8	2.9	2.8	4.4	9	19.9	43.1	64	66.5	
26	Calcium as CaCO3(mg/l)	320	286	36	26	30	22	30	16	80.2	112	8.82	240.5	
27	Magnesium(mg/l)	330	270.8	4.86	3.4	7.3	3.4	5.35	13	48.6	165	58.3	97.2	
28	Nickel(mg/l)	0.237						0.009						
29	Copper(mg/l)	0.027						0.092						
30	Chromium(mg/l)	0.086						ND						
31	Cadmium(mg/l)	BDL						ND						
32	Zinc(mg/l)	0.062						0.52						
33	Lead(mg/l)	0.185						0.016						
34	Iron(mg/l)	0.816						0.42						
35	Manganese (mg/l)	0.435						0.246						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						

39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3D - RIVER ASSANORA AT ASSANORA 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	5.75	6.2	7.03	6.28	5.87	6.85	6.9	6.3	7.09	6.7	6.96	6.77	6-9
2	Temperature °C	29	29.5	28	29.5	28	33	32	27.9	29	28	29	27.5	
3	Conductivity µs/cm	54.06	53.04	138.3	51.91	50.25	52.42	53.01	97.46	62.41	59.3	57.8	59.42	
4	Dissolved Oxygen mg/l	6.5	6.2	6.3	5.7	7.4	6.9	6.6	7.4	6	5.7	7.5	6	4 mg/l or more
5	Turbidity (NTU)	5	4	6	7	50	4	4	5	3	3	4	3	
6	Nitrite Nitrogen mg/l	0.0025	0.001	0.006	0.01	0.002	0.002	0.021	0.002	0.01	BDL	0.01	0.002	
7	Nitrogen(Nitrate) mg/l	0.098	0.066	0.26	0.22	0.15	0.06	0.09	0.12	0.51	0.04	BDL	0.087	
8	Phosphate mg/l	0.068	0.001	BDL	0.01	0.02	BDL	0.007	0.01	0.002	BDL	BDL	0.01	
9	BOD mg/l	1.7	2.6	0.8	0.1	1.9	0.9	1.4	3.3	1.8	1.1	2	2.3	3 mg/l or less
10	COD mg/l	3	3	17	-	14	-	10	7	6	2	16	4	
11	Chloride mg/l	6	8	9	9	9	6	7	15	5	2	8	12	
12	Fecal Coliform MPN/100 ml	1300	1300	2300	790	2400	1300	1300	1100	780	490	790	450	
13	Total Coliform MPN/100 ml	3500	2200	4900	2400	9200	3500	2400	1700	1400	1100	1400	780	5000 or less MPN/100 ml
14	Ammonia mg/l	0.11	BDL	0.25	0.09	0.07	0.1	BDL	0.03	BDL	0.02	BDL	0.2	
15	Total Dissolved Solids(mg/l)	17	36	127	127	33	97	126	67	43	35	72	41	
16	Total Fixed Solids (mg/l)	-	-	-	-	28	56	68	47	38	20	44	22	
17	Total Suspended Solid (mg/l)	32		4	4	28	8	16	12	8	5	2	6	
18	Hardness(mg/l)	16	18	24	24	14	12	20	24	20	34	14	28	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.3	BDL	
20	Boron(mg/l)	-	BDL	0.03	0.28	4.18	0.22	0.18	3.28	4.18	0.42	5.8	BDL	
21	Sulphate (mg/l)	3.13	9.16	2.91	7.46	7.06	3.32	2.55	5.38	7.06	3.26	5.31	BDL	
22	Total Alkalinity(mg/l)	24	30	30	32	26	1.1	36	26	26	72	70	34	
23	Phenolphthalein Alkalinity(mg/l)	0	-	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	4.9	4	5.7	4.8	4.9	42.9	2.8	12.1	1.1	0.4	5.9	27.8	

25	Potassium(mg/l)	1.7	1.4	0.1	0.2	0.1	40.5	1.6	2.2	1	0.8	1	7.5	
26	Calcium as CaCO3(mg/l)	10	14	10	10	8	8	16	4	4.01	4.81	4	5.6	
27	Magnesium(mg/l)	1.5	0.97	3.4	3.4	BDL	BDL	BDL	3.4	2.4	1.75	BDL	3.4	
28	Nickel(mg/l)	0.026						0.009						
29	Copper(mg/l)	0.035						0.012						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.076						0.17						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.892						3.49						
35	Manganese (mg/l)	0.303						0.087						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3E - RIVER VALVANTI AT SANQUELIM 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	6.23	6.7	6.63	6.55	6.22	7.05	7.23	6.04	7.07	7.24	6.96	7.23	6-9
2	Temperature ˚C	31	32	29	29.7	27	32	32	27.6	27.4	28	29	30	
3	Conductivity µs/cm	64.78	83.67	167.9	46.41	59.46	58.81	58.5	88.05	63.18	95.2	57.8	66.16	
4	Dissolved Oxygen mg/l	6.3	6.7	7.5	7.7	7.8	7.7	7.5	7.6	8.3	8.4	7.5	6.5	4 mg/l or more
5	Turbidity (NTU)	4	7	6	4	5	5	5	3	BDL	4	4	4	
6	Nitrite Nitrogen mg/l	0.0027	BDL	0.005	0.002	0.002	0.002	0.002	0.002	0.024	BDL	BDL	0.003	
7	Nitrogen(Nitrate) mg/l	0.102	0.005	0.39	0.21	0.07	0.09	0.11	0.17	BDL	0.07	BDL	0.062	
8	Phosphate mg/l	0.0096	0.02	BDL	0.02	0.04	BDL	0.001	0.008	0.004	BDL	BDL	0.01	
9	BOD mg/l	1.4	4.3	1.1	0.2	0.7	0.5	0.7	2.1	2.2	1.3	1.3	2.1	3 mg/l or less
10	COD mg/l	3	17	13		12		11	7	8	4	4	6	

11	Chloride mg/l	6	13	11	11	9	7	6	10	5	3	8	5	
12	Fecal Coliform MPN/100 ml	24000	17000	24000	7900	4900	4900	4900	7900	4900	4900	4900	4900	
13	Total Coliform MPN/100 ml	54000	22000	54000	11000	7900	7900	7900	13000	7900	7900	7900	7000	5000 or less MPN/100 ml
14	Ammonia mg/l	0.01	BDL	0.04	0.04	0.02	0.09	BDL	0.08	BDL	BDL	0.05	0.2	
15	Total Dissolved Solids(mg/l)	58	56	69	74	41	54	68	55	41	65	34	38	
16	Total Fixed Solids (mg/l)	-	-	-	-	37	33	30	40	36	44	19	20	
17	Total Suspended Solid (mg/l)	4	4	11	16	37	7	10	10	15	6	16	4	
18	Hardness(mg/l)	26	28	26	26	30	20	22	22	18	26	14	30	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.8	0.75	
20	Boron(mg/l)	-	0.2	0.07	0.6	4.38	0.08	0.06	5.95	4.38	0.39	5.5	0.53	
21	Sulphate (mg/l)	4.42	10.2	3.07	4.74	2.67	2.8	2.86	5.92	2.67	2.84	5.31	BDL	
22	Total Alkalinity(mg/l)	28	34	26	22	30	22	42	24	30	34	60	38	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	5.7	7.4	10.7	4.2	5.6	42.9	2.2	8.6	1.2	1.3	5.8	14.1	
25	Potassium(mg/l)	1.4	1.5	0.4	0.6	0.2	40.4	1.5	1.8	1	0.4	1.4	7.2	
26	Calcium as CaCO3(mg/l)	12	22	12	12	24	16	8	5.6	6.41	6.41	4	7.2	
27	Magnesium(mg/l)	3.4	1.46	3.4	3.4	1.5	0.97	3.4	1.94	BDL	2.3	BDL	2.92	
28	Nickel(mg/l)	BDL						0.012						
29	Copper(mg/l)	0.043						0.014						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.06						0.26						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.65						0.83						
35	Manganese (mg/l)	0.307						0.043						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3F - RIVER MADEI AT DABOSE, VALPOI 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	6.68	7.2	6.6	7.11	6.41	7.35	7.65	6.8	7.46	7.38	6.96	7.22	6-9
2	Temperature °C	31	31.5	30	29.5	27	30	30	27.7	30	28	28	31.5	
3	Conductivity µs/cm	123.6	133.62	199.8	66.3	61.27	63.06	63.15	82.04	117.9	101.9	57.8	109.5	
4	Dissolved Oxygen mg/l	6	7.2	6.6	7.9	7.8	7.7	7.6	8	8.4	7.6	7.5	6.7	4 mg/l or more
5	Turbidity (NTU)	5	3	1	6	5	17	16	3	BDL	2	4	3	
6	Nitrite Nitrogen mg/l	0.0022	0.001	0.007	0.02	0.001	0.006	0.023	0.003	0.03	0.14	BDL	0.1	
7	Nitrogen(Nitrate) mg/l	0.032	0.04	0.23	0.11	0.15	0.04	0.07	0.04	BDL	BDL	BDL	0.1	
8	Phosphate mg/l	0.025	0.004	BDL	0.005	0.003	0.02	0.014	0.03	0.004	0.17	0.03	0.02	
9	BOD mg/l	0.9	1.4	1	2	0.5	1.9	2.2	1.9	2.8	1.3	BDL	1.5	3 mg/l or less
10	COD mg/l	2	7	12	-	8	4	6	5	4	8	6	4	
11	Chloride mg/l	6	10	7	7	8	6	8	6	12	5	8	7	
12	Fecal Coliform MPN/100 ml	130	1300	1300	1100	2300	1300	780	1300	1700	780	780	450	
13	Total Coliform MPN/100 ml	230	1700	2300	1400	3300	2300	1300	2100	2200	1300	1100	1300	5000 or less MPN/100 ml
14	Ammonia mg/l	0.12	0.11	0.27	0.05	0.003	0.02	BDL	0.02	BDL	0.05	BDL	0.08	
15	Total Dissolved Solids(mg/l)	116	90	59	71	42	50	46	50	72	69	40	64	
16	Total Fixed Solids (mg/l)	-	-	-	-	35	30	28	34	63	56	13	33	
17	Total Suspended Solid (mg/l)	8	2	6	8	35	8	14	11	10	5	4	5	
18	Hardness(mg/l)	54	62	40	40	22	20	20	24	22	26	14	42	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.7	BDL	
20	Boron(mg/l)	-	-	0.01	0.42	3.04	0.17	0.19	5.53	3.04	0.49	4.3	0.07	
21	Sulphate (mg/l)	2.07	4.46	1.6	5.6	2.62	3.52	10.2	6.11	2.62	2.47	5.31	BDL	
22	Total Alkalinity(mg/l)	58	66	44	46	18	28	122	32	18	44	36	58	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	5.9	4.8	5.6	5.6	4.1	42.8	3.5	5.4	4.8	17.1	5.4	13.2	
25	Potassium(mg/l)	0.9	1.8	0.5	1.3	0.4	40.5	1.4	1.7	0.7	0.3	1.5	7.4	
26	Calcium as CaCO3(mg/l)	36	36	22	22	16	12	12	8	6.41	8.82	4	12	
27	Magnesium(mg/l)	4.4	6.32	4.4	4.4	1.5	2	2.9	BDL	BDL	3.2	BDL	2.9	
28	Nickel(mg/l)	BDL						0.014						
29	Copper(mg/l)	0.044						0.025						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.067						0.04						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.629						0.8						
35	Manganese (mg/l)	0.476						0.074						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						

38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3G - RIVER KHANDEPAR, OPA, PONDA 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	7.56	7.13	7.22	6.42	6.1	7.01	6.68	6.62	7.2	7.1	6.95	7.3	6-9
2	Temperature °C	33	34	27.6	28	29	29	29	29	29	28	29	28.3	
3	Conductivity µs/cm	100.8	107.8	100.7	42.01	52.52	56.54	54.76	65.4	70	124.7	70.77	103.7	
4	Dissolved Oxygen mg/l	7.1	7	7.6	7	7	7.2	7.3	7.6	7.5	7.2	6.7	6.7	4 mg/l or more
5	Turbidity (NTU)	3	2	10	12	3	3	6	4	3	4	9	3	
6	Nitrite Nitrogen mg/l	BDL	BDL	BDL	BDL	0.002	0.002	0.003	0.002	0.01	0.01	BDL	0.001	
7	Nitrogen(Nitrate) mg/l	BDL	0.27	BDL	0.29	0.138	0.06	0.069	0.274	0.08	BDL	0.3	0.07	
8	Phosphate mg/l	0.02	BDL	0.02	0.11	0.01	BDL	0.008	0.05	0.003	0.03	2	0.002	
9	BOD mg/l	1.1	1.4	1.8	0.5	0.8	2.1	1.9	1.5	0.6	1.4	1.6	0.9	3 mg/l or less
10	COD mg/l	2	7	8	-	BDL	3	4	12	6	4	2	18	
11	Chloride mg/l	5	7	13	6	7	10	9	16	7	7	16	12	
12	Fecal Coliform MPN/100 ml	2400	170	1300	3500	490	2400	1300	700	790	780	2300	1300	
13	Total Coliform MPN/100 ml	5400	220	2300	9200	790	5400	2200	1100	1400	1100	4900	3300	5000 or less MPN/100 ml
14	Ammonia mg/l	0.67	0.14	0.01	0.15	BDL	BDL	BDL	0.009	0.13	0.05	0.08	0.11	
15	Total Dissolved Solids(mg/l)	60	42	510	25	28.9	33	37	63	51	82	58	84	
16	Total Fixed Solids (mg/l)	-	-	-		10	19	25	48	13	55	31	29	
17	Total Suspended Solid (mg/l)	27	4	4	10	7	8	7	13	9	10	12	32	
18	Hardness(mg/l)	44	38	32	20	16	20	25	24	28	30	34	36	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	BDL	0.15	
20	Boron(mg/l)	-	5.05	2.3	BDL	0.09	0.27	0.22	0.14	0.14	2.37	BDL	0.07	
21	Sulphate (mg/l)	5.3	BDL	0.6	4.54	1.42	BDL	1.93	1.54	2.89	2.48	3.9	3.37	
22	Total Alkalinity(mg/l)	46	36	35	26	30	10	15	32	32	36	36	40	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	3.6	4.7	6.9	4	3.6	5.1	4.5	4.4	0.2	6	10.8	14	

25	Potassium(mg/l)	1.8	0.6	1.7	0.3	1.2	5.8	2.5	11.5	0.6	0.6	1.2	7	
26	Calcium as CaCO3(mg/l)	26	14	20	8	14	10	14	6.4	5.6	6.4	9.6	8.82	
27	Magnesium(mg/l)	4.37	5.8	2.9	2.92	0.49	2.43	3.6	1.9	3.4	3.4	2.4	3.4	
28	Nickel(mg/l)	0.056						0.094						
29	Copper(mg/l)	0.048						0.012						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.054						0.11						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	1.588						0.27						
35	Manganese (mg/l)	0.147						0.053						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3H - RIVER KHANDEPAR AT CODLI 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	7.35	6.82	7.26	6.44	6.06	7.22	6.68	6.76	7.09	7.2	7.32	7.5	6-9
2	Temperature ˚C	34	34	30.7	28	29	30	30	29	29	28	27	29.6	
3	Conductivity µs/cm	74.85	81.93	91.42	40.93	52.15	96.5	51.53	108	76.4	96.8	44.4	85.6	
4	Dissolved Oxygen mg/l	7.2	7.3	7.5	6.9	7.3	7.6	7.1	7.1	6.7	8.1	7.9	7	4 mg/l or more
5	Turbidity (NTU)	2	2	3	12	3	2	5	3	2	4	4	3	
6	Nitrite Nitrogen mg/l	BDL	BDL	BDL	BDL	0.003	0.002	0.006	0.006	BDL	BDL	BDL	0.009	
7	Nitrogen(Nitrate) mg/l	0.06	BDL	0.02	0.2	0.18	0.07	0.12	0.13	0.12	BDL	0.14	0.55	
8	Phosphate mg/l	BDL	BDL	0.008	0.13	0.07	BDL	BDL	0.03	0.001	0.02	2	0.002	
9	BOD mg/l	0.5	1.2	1.7	0.6	0.5	2	1.8	0.8	0.7	1.6	1.3	4.2	3 mg/l or less
10	COD mg/l	6	10	8	-	BDL	4	6	12	4	6	2	8	
11	Chloride mg/l	5	7	10	6	8	7	5	16	4	4	7	7	

12	Fecal Coliform MPN/100 ml	490	790	1300	2400	490	790	1100	700	2400	1100	200	780	
13	Total Coliform MPN/100 ml	790	1300	2300	3500	790	1300	1700	1100	5400	1400	450	2300	5000 or less MPN/100 ml
14	Ammonia mg/l	0.45	0.16	0.04	0.19	BDL	BDL	BDL	0.02	0.08	BDL	0.02	0.03	
15	Total Dissolved Solids(mg/l)	52	38	587	26	28.8	31	39	44	52	54	31	60	
16	Total Fixed Solids (mg/l)	-	-	-	-	11	13	28	32	28	40	10	33	
17	Total Suspended Solid (mg/l)	15	3	127	25	4	4	8	12	9	10	5	14	
18	Hardness(mg/l)	28	26	32	24	16	18	17	24	26	28	28	36	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	BDL	0.37	
20	Boron(mg/l)	-	5.93	3.2	0.12	0.16	1.4	1.35	0.11	0.62	3.54	BDL	0.14	
21	Sulphate (mg/l)	1.3	BDL	1.1	6.36	1.04	BDL	BDL	2	2.79	2.05	2.8	BDL	
22	Total Alkalinity(mg/l)	38	38	26	32	30	12	20	26	30	34	28	40	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	-	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	2.6	4.7	4.5	3.2	2.9	3.5	3.9	4	0.7	2.1	1.6	7.8	
25	Potassium(mg/l)	2.2	0.6	1.6	0.2	1.2	1.3	1.6	1.5	0.8	0.9	5.1	7.2	
26	Calcium as CaCO3(mg/l)	20	14	20	6	12	12	BDL	4.8	4.8	4	6.4	9.61	
27	Magnesium(mg/l)	1.94	2.9	2.9	4.37	0.97	BDL	BDL	2.9	3.4	4.4	2.9	2.9	
28	Nickel(mg/l)	0.051						0.029						
29	Copper(mg/l)	0.047						0.014						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.074						0.2						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	3.398						0.5						
35	Manganese (mg/l)	0.163						0.05						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3 I - RIVER KUSHAWATI NEAR BUND AT KEVONA, RIVONA, SANGUEM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	7.3	6.82	7.21	6.89	6.02	6.99	6.89	6.7	7.23	7.08	6.99	6.75	6-9
2	Temperature ˚C	31	30	33	29	29.5	28.5	34	30	28.6	28.5	29.1	30.1	
3	Conductivity µs/cm	192.77	212.68	477.5	49.98	62.7	70.77	72.11	79.92	118.6	137.6	88.89	1.79	
4	Dissolved Oxygen mg/l	7.2	7.3	7	7.3	7.5	7.6	7.2	7.3	7.8	7.3	5.9	6.3	4 mg/l or more
5	Turbidity (NTU)	2	4	2	5	5	2	3	5	4	2	3	2	
6	Nitrite Nitrogen mg/l	0.003	0.005	0.001	0.002	BDL	BDL	BDL	BDL	BDL	0.01	0.03	BDL	
7	Nitrogen(Nitrate) mg/l	0.102	0.002	0.12	0.22	0.22	0.22	0.17	BDL	0.16	BDL	0.37	0.37	
8	Phosphate mg/l	0.0003	0.01	0.15	BDL	0.02	BDL	0.017	BDL	BDL	BDL	0.01	BDL	
9	BOD mg/l	1	1.1	1.5	1.3	0.8	1	0.6	1.3	1.5	1.9	1.2		3 mg/l or less
10	COD mg/l	4	13	-	8	10	10	9	8	BDL	4	2	6	
11	Chloride mg/l	9	4	28	16	5	4	6	12	7	10	9	10	
12	Fecal Coliform MPN/100 ml	1300	3500	1300	7900	780	780	780	2300	2300	2300	2300	1300	
13	Total Coliform MPN/100 ml	2400	5400	2400	17000	1300	1100	1300	4900	3300	4900	3300	2300	5000 or less MPN/100 ml
14	Ammonia mg/l	BDL	0.73	0.03	0.16	BDL	BDL	0.03	0.03	0.04	0.1	1	0.36	
15	Total Dissolved Solids(mg/l)	112	142	285	29	36	41	30	44	61	94	56	50	
16	Total Fixed Solids (mg/l)	-	-	-	-	18	22	20	25	33	65	45	27	
17	Total Suspended Solid (mg/l)	8	21	54	33	15	28	16	18	3	10	22	24	
18	Hardness(mg/l)	88	94	15	20	18	20	30	36	56	50	42	32	
19	Fluoride(mg/l)	-	-	-	-	-		-	-	-	-	-	1.42	
20	Boron(mg/l)	-	0.07	0.06	1.27	0.13	0.08	1	2.6	0.09	0.16	-	0.21	
21	Sulphate (mg/l)	4.32	2.62	6.02	BDL	BDL	2.36	5.52	BDL	2.8	3.1	1.85	5.32	
22	Total Alkalinity(mg/l)	108	94	82	84	82	82	46	34	44	74	72	84	
23	Phenolphthalein Alkalinity(mg/l)	-	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	4.8	5.6	22.8	5.2	5.1	5.2	1.6	6.1	1.3	2.3	7.3	22.6	
25	Potassium(mg/l)	1.4	1.8	4.7	0.3	3.9	0.2	1.3	1.8	0.5	0.4	0.7	7.5	
26	Calcium as CaCO3(mg/l)	50	52	6	10	10	6	26	6.4	12	12	13.6	7.2	
27	Magnesium(mg/l)	9.2	10.21	2.19	2.43	2.43	3.4	0.97	4.8	6.8	4.9	1.94	3.4	
28	Nickel(mg/l)	0.026						0.042						
29	Copper(mg/l)	0.015						0.02						
30	Chromium(mg/l)	0.085						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.06						0.17						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.707						0.94						
35	Manganese (mg/l)	0.701						0.03						
36	Cobalt (mg/l)	BDL						BDL						

37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3J - RIVER TALPONA AT CANACONA 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	9.21	6.78	9.08	6.85	6.55	7.06	5.8	7.06	6.82	7.07	7.14	6.19	6-9
2	Temperature ˚C	34	34	31	29.3	30	29	34	30	29	28	26	27	
3	Conductivity µs/cm	173.8	75.52	157.7	59.25	62.48	59.56	57.4	59.5	76.8	65.6	69.7	68.24	
4	Dissolved Oxygen mg/l	4.9	6.6	5	7.5	8.1	7.8	7.8	7.9	6.8	7.5	6.7	7.6	4 mg/l or more
5	Turbidity (NTU)	6	12	7	3	3	6	4	2	2	2	2	3	
6	Nitrite Nitrogen mg/l	0.011	0.03	0.02	0.003	0.004	0.002	0.002	BDL	0.02	BDL	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	0.066	0.45	0.04	0.82	0.21	0.02	0.2	0.13	0.23	BDL	BDL	BDL	
8	Phosphate mg/l	0.04	0.04	BDL	BDL	0.005	BDL	0.01	BDL	0.03	0.102	BDL	0.02	
9	BOD mg/l	6.8	3.4	0.8	0.4	0.6	0.8	0.8	1.1	0.7	1.3	1	1.1	3 mg/l or less
10	COD mg/l	30	10	10	8	14	6	6	8	10	8	4	22	
11	Chloride mg/l	40	11	13	6	6	13	9	9	6	7	8	6	
12	Fecal Coliform MPN/100 ml	33	790	33	490	230	230	490	330	1300	1300	20	78	
13	Total Coliform MPN/100 ml	49	1700	49	1400	330	490	790	790	9200	1700	45	170	5000 or less MPN/100 ml
14	Ammonia mg/l	8.77	0.04	0.65	0.09	0.02	BDL	0.01	0.035	0.14	0.01	0.62	0.19	
15	Total Dissolved Solids(mg/l)	120	193	95	41	82	39	35	33	45	42	47	39	
16	Total Fixed Solids (mg/l)	-	-	-	-	-	-	21	19	32	33	53	45	
17	Total Suspended Solid (mg/l)	8	12	6	6	8	29	7	51	3	8	3	3	
18	Hardness(mg/l)	56	18	26	24	16	22	20	18	24	16	30	20	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	0.3	0.71	
20	Boron(mg/l)	0.014	0.19	1.42	0.02	2.79	0.78	2.66	BDL	0.75	0.72	0.01	3.6	

21	Sulphate (mg/l)	1.05	2	1.87	4.05	3.66	2.6	0.69	BDL	BDL	6.1	BDL	3.59	
22	Total Alkalinity(mg/l)	64	36	20	20	20	38	32	36	40	24	22	70	
23	Phenolphthalein Alkalinity(mg/l)	18	0	0	0	0	0	0	BDL	0	0	0	0	
24	Sodium(mg/l)	10.3	1.1	31.6	5.3	5.3	4.9	6.8	9	1.6	5.4	3.1	15.1	
25	Potassium(mg/l)	0.2	0.2	1.7	0.5	1.5	0.5	3.8	2.2	0.6	0.5	1.6	7.1	
26	Calcium as CaCO3(mg/l)	52	14	14	10	8	16	8	3.2	5.6	4	4.8	4.81	
27	Magnesium(mg/l)	0.97	BDL	2.9	3.4	BDL	BDL	2.9	2.43	2.43	1.46	4.3	2	
28	Nickel(mg/l)	BDL						0.051						
29	Copper(mg/l)	0.03						0.007						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.034						0.074						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.408						0.87						
35	Manganese (mg/l)	0.2						0.037						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3K - RIVER SAL AT PAZORCONI, CUNCOLIM 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for SW II river as per CPCB classification based on designated best use of rivers
1	pH	6.06	6.99	6.47	6.51	6.34	7.28	6	7.05	6.81	6.79	7.8	6.02	6.5 - 8.5
2	Temperature ˚C	31	32	28	29	30	30	30	30	29	27	26	27	
3	Conductivity µs/cm	79.98	83.34	221.4	115.96	121.05	110.9	91.59	231	86.1	125.9	89.7	110.4	
4	Dissolved Oxygen mg/l	4.9	7.03	5.4	6.8	6	6.5	7	6.9	6	6	6.1	5.3	4 mg/l or more
5	Turbidity (NTU)	5	4	49	8	9	9	8	13	3	7	8	5	30 NTU

6	Nitrite Nitrogen mg/l	0.002	BDL	0.02	0.03	0.002	0.003	0.001	0.023	BDL	BDL	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	0.283	1.35	0.09	1.1	0.46	0.28	0.57	0.71	0.34	0.25	0.73	0.29	
8	Phosphate mg/l	0.001	0.02	BDL	0.09	BDL	BDL	0.007	BDL	0.05	0.056	0.02	0.12	
9	BOD mg/l	1.3	2.9	2.4	0.5	1.3	0.6	1.5	3.9	2.6	2.2	2.1	1.4	3 mg/l or less
10	COD mg/l	8		11	15		18	14	22	12	9	8	22	
11	Chloride mg/l	7	250	14	10	10	26	15	18	125	16	125	17	
12	Fecal Coliform MPN/100 ml	1300	7900	17000	1300	780	3300	3300	2300	13000	7900	2300	1300	100 or less MPN/100 ml
13	Total Coliform MPN/100 ml	3500	11000	22000	1700	1300	7000	4900	3300	24000	24000	3300	2300	
14	Ammonia mg/l	0.462	0.02	0.84	2.03	BDL	0.006	0.007	0.026	0.13	0.02	0.62	0.03	
15	Total Dissolved Solids(mg/l)	44	23	125	66	134	70	59	150	50	77	36	61	
16	Total Fixed Solids (mg/l)	-	-	-	-	-	-	29	38	33	62	60	50	
17	Total Suspended Solid (mg/l)	2	17	5	13	16	55	10	57	11	12	6	8	
18	Hardness(mg/l)	22	16	32	28	28	24	36	22	20	20	22	30	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	9.2	0.66	
20	Boron(mg/l)	0.05	BDL	1.1	0.47	4.07	2.18	3.24	BDL	1.42	0.65	6.67	1.1	
21	Sulphate (mg/l)	0.71	86.75	14.95	25.47	53.2	3	8.41	5.75	6.44	63.2	8.97	6.99	
22	Total Alkalinity(mg/l)	38	36	24	20	24	26	34	42	40	20	24	20	
23	Phenolphthalein Alkalinity(mg/l)	-	0	0	0	0	0	0	BDL	0	0	0	0	
24	Sodium(mg/l)	5	1	12.3	12.2	79.5	13.6	7.3	17.8	5.8	2.4	8.7	31.8	
25	Potassium(mg/l)	1.7	0.1	2.2	0.4	4.7	11.5	4.1	4.7	7.6	0.1	0.7	7.5	
26	Calcium as CaCO3(mg/l)	14	14	14	14	12	18	16	4.8	5.6	5.6	4.8	5.61	
27	Magnesium(mg/l)	1.94	BDL	4.4	3.4	3.89	BDL	4.9	2.43	1.46	1.46	2.4	3.89	
28	Nickel(mg/l)	0.148						0.062						
29	Copper(mg/l)	0.036						0.001						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	0.014						BDL						
32	Zinc(mg/l)	0.074						0.055						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	1.168						0.43						
35	Manganese (mg/l)	0.144						0.234						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						

44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3L - RIVER SAL AT MOBOR 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for SW II river as per CPCB classification based on designated best use of rivers
1	pH	7.75	7.94	7.93	8.29	7.91	8.25	7.07	8	7.71	7.98	7.04	8.1	6.5 - 8.5
2	Temperature ˚C	31	34	31	31	31.5	24.2	30	32	27.5	30	27	32	
3	Conductivity µs/cm	43590	54640	65120	37020	47810	51210	48700	51500	48300	47400	36220	55070	
4	Dissolved Oxygen mg/l	5.9	9.6	5.8	6	6.2	2.8	4.5	4.7	5.4	6.2	4.8	5.8	4 mg/l or more
5	Turbidity (NTU)	39	3	11	9	5	3	0.49	2	78	5	12	4	30 NTU
6	Nitrite Nitrogen mg/l	0.018	0.027	0.008	0.003	0.006	0.01	0.06	0.01	0.016	BDL	0.08	0.02	
7	Nitrogen(Nitrate) mg/l	0.103	0.25	0.11	0.29	0.02	0.04	0.11	8.92	0.2	0.2	BDL	0.2	
8	Phosphate mg/l	0.066	0.03	BDL	0.06	0.06	0.11	0.07	0.04	0.046	0.04	0.04	0.01	
9	BOD mg/l	2	5.1	1.5	5.1	2	1.3	3.4	3.2	2	1.2	1.3	0.5	3 mg/l or less
10	Chloride mg/l	18744	21993	20398	15745	21118	19899	22112	5148	19446	23709	18219	21993	
11	Fecal Coliform MPN/100 ml	790	1300	1300	1700	4900	3300	2300	2200	1300	200	3300	1300	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	1300	1700	1700	2200	9400	4900	3300	2700	2300	450	4600	2300	
13	Ammonia mg/l	0.01	0.05	0.57	0.07	0.05	0.09	0.07	0.26	0.06	BDL	1.09	0.12	
14	Total Dissolved Solids(mg/l)	60798	30300	38496	20361	38261	29611	29220	58762	27599	27492	25354	36559	
15	Total Fixed Solids (mg/l)	-	-	-	-	-	-	19560	28032	17005	22195	27400	29086	
16	Total Suspended Solid (mg/l)	266	161	136	375	108	140	35	242	148	10	83	11	
17	Hardness(mg/l)	5000	7220	28200	4600	340	360	5900	13500	5800	7600	5600	7500	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-		4.38	2.7	
19	Boron(mg/l)	-	3.92	3.57	1.78	0.64	0.62	-	11.82	7.19	2.1	7.82	-	
20	Sulphate (mg/l)	2720	1836.7	2736	623	2160	2255	2541.48	2880	2112.5	2372.5	1666.75	1852	
21	Total Alkalinity(mg/l)	126	122	114	148	106	112	104	100	108	104	120	30	
22	Phenolphthalein Alkalinity(mg/l)	5	10	8	4	0	20	8	0	4	0	0	0	
23	Sodium(mg/l)	3794	7574	8218	6247	8412	10577	6724	5109	5898	6918	4692	2545	
24	Potassium(mg/l)	241	302.7	258.6	211.7	256	4029	246.6	236.1	258.5	303.1	188.1	249	
25	Calcium as CaCO3(mg/l)	2000	980	5000	80	180	200	1060	2100	400.8	1603	1122.2	1002	
26	Magnesium(mg/l)	729	1516.3	5637.6	1098	38.9	30.9	1176.12	2770	1166.4	875	680.4	1215	

27	Nickel(mg/l)	0.783						0.02						
28	Copper(mg/l)	0.107						0.014						
29	Chromium(mg/l)	0.058						BDL						
30	Cadmium(mg/l)	BDL						0.038						
31	Zinc(mg/l)	0.1						0.15						
32	Lead(mg/l)	0.801						0.127						
33	Iron(mg/l)	3.855						0.85						
34	Manganese (mg/l)	0.623						0.053						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3M - HARWALE WATERFALL 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	7.04	7.5	6.87	6.82	6.4	7.49	7.5	6.7	7.4	7.68	6.96	7.44	
2	Temperature ˚C	32	32	30	29.4	28	32	32	29.8	29	27	26	32	
3	Conductivity µs/cm	92.65	100.96	179.8	55.96	63.33	62.72	63.1	96.54	97.18	103.5	57800	112.3	
4	Dissolved Oxygen mg/l	7.5	7.5	7.1	7.7	7.7	7.9	7.7	7.4	8.9	8.3	7.5	7	
5	Turbidity (NTU)	10	5	4	7	23	5	5	9	BDL	5	4	6	
6	Nitrite Nitrogen mg/l	0.003	0.007	BDL	0.003	0.004	0.002	0.002	0.002	0.009	0.02	BDL	0.003	
7	Nitrogen(Nitrate) mg/l	0.118	0.248	0.615	0.517	0.13	0.2	0.23	0.29	0.42	0.38	BDL	0.09	
8	Phosphate mg/l	0.008	0.012	BDL	0.01	0.008	0.01	0.007	0.007	BDL	0.01	BDL	0.01	
9	BOD mg/l	1.3	1.6	1.4	0.9	1	1.5	1.7	2.9	1.8	1.2	1.3	0.7	
10	COD mg/l	3	10	17	-	14	-	-	9	6	4	4	2	
11	Chloride mg/l	5	16	10	10	17	7	7	9	8	4	8	7	
12	Fecal Coliform MPN/100 ml	2300	7900	13000	7900	7900	7900	7900	7000	3300	1100	4900	3300	
13	Total Coliform MPN/100 ml	3300	13000	24000	13000	24000	13000	13000	11000	7000	1700	7900	4900	
14	Ammonia mg/l	0.06	BDL	0.136	0.128	0.007	0.07	BDL	0.02	BDL	BDL	BDL	0.21	

15	Total Dissolved Solids(mg/l)	1000	68	55	65	38	48	56	65	63	68	63	67	
16	Total Fixed Solids (mg/l)	-	-	-	-	12	-	40	30	52	36	60	35	
17	Total Suspended Solid (mg/l)	25	6	13	15	12	8	10	10	18	7	16	6	
18	Hardness(mg/l)	16	42	22	22	24	16	28	28	24	48	14	50	
19	Fluoride(mg/l)	-	-	-	-		-	-	-	-	-	2.4	0.11	
20	Boron(mg/l)	-	-	-	0.01	3.28	0.05	0.11	4.8	3.28	0.89	5	0.1	
21	Sulphate (mg/l)	11.56	15.1	3.47	6.54	4.26	2.38	3.6	7.94	4.26	2.37	5.31	2.6	
22	Total Alkalinity(mg/l)	32	40	24	30	20	24	30	26	20	50	62	2.6	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	7.7	4.3	6	5.2	4.7	42.8	2.7	5	1.4	1.6	6.4	12.7	
25	Potassium(mg/l)	1.8	2	0.6	0.4	0.4	40.3	1.5	1.9	0.7	0.6	1.2	7.6	
26	Calcium as CaCO3(mg/l)	10	22	10	10	18	12	8	7.2	7.21	10.42	4	12	
27	Magnesium(mg/l)	1.5	4.86	2.9	2.9	1.5	0.97	4.86	2.43	BDL	3.79	BDL	4.9	
28	Nickel(mg/l)	0.025						0.021						
29	Copper(mg/l)	0.043						0.017						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.039						0.17						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.838	0.89	0.872	0.32	0.41	0.91	0.79	0.61	0.18	0.21	0.28	0.31	
35	Manganese (mg/l)	0.591	0.2	0.009	0.04	0.09	0.05	0.59	0.41	BDL	0.07	0.08	0.01	
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3N - RIVER BICHOLIM, BARAZAN NAGAR, BICHOLIM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	7	7.34	7.06	6.32	5.6	6.88	6.24	6.8	7.1	7.55	7.4	6.29	6-9
2	Temperature ˚C	33	31	30.8	29	30	31	29	28	28	28	30	30	
3	Conductivity µs/cm	199.9	2432	158.25	88.29	84.88	83.96	75.96	278	77	277	87.39	149.8	
4	Dissolved Oxygen mg/l	9.1	5.6	6.5	6	6.7	6.8	6.7	7.3	7.8	8	5.2	13	4 mg/l or more
5	Turbidity (NTU)	3	8	4	9	6	5	9	4	9	7	2	2	
6	Nitrite Nitrogen mg/l	0.1	0.058	0.264	0.01	0.011	BDL	0.01	BDL	BDL	BDL	0.02	BDL	
7	Nitrogen(Nitrate) mg/l	0.69	0.81	3.46	0.98	0.45	0.38	0.41	BDL	0.55	0.24	0.2	0.55	
8	Phosphate mg/l	0.02	0.03	0.05	0.007	0.02	BDL	0.02	0.02	0.024	0.022	0.009	0.14	
9	BOD mg/l	2.6	1.3	2.5	1.2	1.2	1.3	0.6	1.3	4.8	3.6	0.9	5.6	3 mg/l or less
10	COD mg/l	13	14	-	-	4	4	5	3	10	12	4	18	
11	Chloride mg/l	9	1000	16	20	7	10	8	45	9	36	14	11	
12	Fecal Coliform MPN/100 ml	24000	24000	13000	7900	4900	7900	7900	7900	4900	7900	24000	7900	
13	Total Coliform MPN/100 ml	35000	35000	17000	13000	7900	13000	11000	11000	7900	13000	92000	11000	5000 or less MPN/100 ml
14	Ammonia mg/l	0.14	0.003	0.19	0.87	0.05	BDL	BDL	BDL	0.059	0.03	0.11	0.7	
15	Total Dissolved Solids(mg/l)	118	1356	94	67	62	118	142	174	44	159	65	93	
16	Total Fixed Solids (mg/l)	-	-	-	-	-	94	97	105	30	91	37	116	
17	Total Suspended Solid (mg/l)	14	48	26	9	5	12	28	3	10	14	7	9	
18	Hardness(mg/l)	62	260	58	34	30	22	32	52	38	56	52	52	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	0.01	0.99	
20	Boron(mg/l)	-	0.8	1.22	1.2	0.08	0.08	0.12	1.1	0.84	0.84	0.11	3.68	
21	Sulphate (mg/l)	2.65	95.7	4.55	3.2	1.62	BDL	4	BDL	3.6	5.29	4	2.92	
22	Total Alkalinity(mg/l)	70	80	26	38	32	32	42	62	60	50	50	60	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	20.2	346.6	4319	4.6	5.5	43.8	3	12.4	6.6	10.7	12.3	22.3	
25	Potassium(mg/l)	0.5	16.7	148.8	2	1.4	40.5	1.8	2.7	0.1	0.6	0.6	7.7	
26	Calcium as CaCO3(mg/l)	38	120	30	22	18	14	16	9.6	14.4	12	10	13.6	
27	Magnesium(mg/l)	5.83	34	6.8	2.9	2.92	BDL	3.89	6.8	0.5	6.32	6	4.37	
28	Nickel(mg/l)	0.067						0.072						
29	Copper(mg/l)	BDL						0.034						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.069						0.27						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	1.389						0.86						

35	Manganese (mg/l)	1.17						0.151						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3O - MAYEM LAKE AT MAYEM 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	6.68	7.34	7.35	5.78	5.2	6.99	6.15	6.2	6.56	6.96	6.9	7.27	6-9
2	Temperature ˚C	33	32	31.2	29.6	32	32	30	30	29	28	29.7	30	
3	Conductivity µs/cm	56.59	76.65	56.36	38.36	38.18	73.85	53.27	57	59	60.3	29.34	48.54	
4	Dissolved Oxygen mg/l	6.6	7.1	7.7	6.3	7.3	8.8	6.1	4.4	6.6	6.9	5.7	7.8	4 mg/l or more
5	Turbidity (NTU)	5	7	7	7	3	2	3	3	2	7	4	6	
6	Nitrite Nitrogen mg/l	BDL	0.002	0.001	0.05	0.001	0.004	0.076	BDL	BDL	BDL	BDL	0.17	
7	Nitrogen(Nitrate) mg/l	0.47	0.53	0.05	0.78	0.13	0.15	0.22	BDL	BDL	0.05	BDL	BDL	
8	Phosphate mg/l	BDL	0.01	0.05	0.02	0.02	0.04	0.007	BDL	0.027	BDL	0.003	BDL	
9	BOD mg/l	2.2	1.8	1.6	0.5	1	2.2	0.7	1.6	1.6	2.4	1.3	0.8	3 mg/l or less
10	COD mg/l	9	15			2	4	4	2	7	12	4	-	
11	Chloride mg/l	9	10	8	10	4	5	7	8	5	9	7	6	
12	Fecal Coliform MPN/100 ml	1300	1300	220	3500	2300	4900	4900	450	490	930	4900	2300	
13	Total Coliform MPN/100 ml	3500	2200	260	9200	3300	7000	7000	780	1300	1200	11000	4900	5000 or less MPN/100 ml
14	Ammonia mg/l	BDL	0.02	BDL	0.09	0.01	BDL	BDL	BDL	0.2	0.03	0.06	0.09	
15	Total Dissolved Solids(mg/l)	34	44	32	37	23	164	182	32	40	39	21	31	
16	Total Fixed Solids (mg/l)	-	-	-	-	18	81	100	21	30	22	6	45	

17	Total Suspended Solid (mg/l)	44	65	61	5	8	5	12	10	5	10	5	6	
18	Hardness(mg/l)	22	18	30	18	20	12	18	16	18	14	46	18	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-		0.03	1.16	
20	Boron(mg/l)	-	1.55	1.51	1.17	0.09	0.08	0.1	1.4	0.66	1.14	0.09	3.25	
21	Sulphate (mg/l)	BDL	1.45	2.44	1.4	BDL	BDL	3.63	BDL	1.5	1.3	BDL	3.84	
22	Total Alkalinity(mg/l)	28	28	60	22	18	20	34	30	24	18	22	22	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	5	7	6.8	1.3	3	42.3	2	4.6	0.4	5.6	5.4	16.6	
25	Potassium(mg/l)	2.1	1.4	0.1	0.9	0.9	44	1.7	1.7	0.8	1	1.7	7	
26	Calcium as CaCO3(mg/l)	12	12	12	8	10	10	14	4	4	4.8	4	3.21	
27	Magnesium(mg/l)	2.43	1.5	4.37	2.4	2.43	BDL	BDL	1.5	2	0.49	9	2.43	
28	Nickel(mg/l)	0.01						0.074						
29	Copper(mg/l)	BDL						0.024						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.037						0.14						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.763						0.082						
35	Manganese (mg/l)	0.427						0.083						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3P - CUMBHARJUA CANAL, CORLIM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	6.25	7.35	6.49	6.49	6.45	7.67	6.17	6.61	6.74	7.17	7.11	7.19	6.5 - 8.5
2	Temperature ˚C	33.5	35.5	29	29	29	30	30	31	27.2	27.3	28	30	
3	Conductivity µs/cm	46770	50530	5562	5562	517.8	884.7	733.4	15680	22900	35100	32400	41350	
4	Dissolved Oxygen mg/l	4.7	5.7	6.4	6.4	7.2	7.6	3.2	4.5	4.3	5.1	6.4	5.6	4 mg/l or more
5	Turbidity (NTU)	14	10	11	13	10	13	16	12	8	13	5	6	30 NTU
6	Nitrite Nitrogen mg/l	0.045	0.04	0.38	0.08	BDL	0.06	BDL	0.005	0.1	0.02	0.06	BDL	
7	Nitrogen(Nitrate) mg/l	0.06	0.35	0.15	0.75	0.33	0.45	BDL	0.11	0.57	0.13	1.82	0.54	
8	Phosphate mg/l	0.03	0.03	0.05	0.01	0.03	0.03	0.028	0.02	BDL	0.01	0.02	BDL	
9	BOD mg/l	3	3.2	2.1	3.9	1.8	2.7	0.5	0.8	2.5	4.1	2.4	1.4	3 mg/l or less
10	Chloride mg/l	17119	16269.8	10004	777.1	856	221	175	6873	10897	12044	25740	17856	
11	Fecal Coliform MPN/100 ml	230	330	4900	2300	3300	3300	2300	130	1300	780	450	450	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	330	460	7900	4600	7000	4600	4900	230	2300	1700	780	780	
13	Ammonia mg/l	0.93	0.07	BDL	0.08	BDL	BDL	0.05	0.023	0.14	0.09	BDL	BDL	
14	Total Dissolved Solids(mg/l)	26700	28500	3059	3059.1	310	350	447	8909	12595	21057	19580	29920	
15	Total Fixed Solids (mg/l)	-	-	-	-	-	196	334	7798	8245	14716	11289	22961	
16	Total Suspended Solid (mg/l)	81	72	63	158	50	62	26	65	68	113	65	155	
17	Hardness(mg/l)	7000	8000	4000	236	50	80	62	1520	6800	4200	4400	8200	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	1.48	2.98	
19	Boron(mg/l)	5.64	5.73	-	2.48	0.42	0.38	8.05	2.46	2.42	18.2	-	-	
20	Sulphate (mg/l)	6621.1	7278.3	1568.9	24.7	2.76	37	19.31	484	578	1104	1805	1976	
21	Total Alkalinity(mg/l)	110	104	92	42	34	40	42	58	80	96	112	116	
22	Phenolphthalein Alkalinity(mg/l)	0	0	8	0	0	0	0	0	0	0	6	10	
23	Sodium(mg/l)	4904	6900	4521	376.6	87.1	121.4	83.8	3393	2954	4320	4265	2190	
24	Potassium(mg/l)	269.7	281.3	167.3	22.2	4.1	44	6.1	143.1	178.8	203.5	164	192.3	
25	Calcium as CaCO3(mg/l)	1500	2000	800	54	18	24	14	96.19	240	481	400.8	721.4	
26	Magnesium(mg/l)	1336.5	1458	777.6	44.2	7.78	13.6	11.7	311	1507	729	826.2	1555	
27	Nickel(mg/l)	0.652						0.069						
28	Copper(mg/l)	0.074						0.011						
29	Chromium(mg/l)	0.046						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.077						0.19						
32	Lead(mg/l)	0.714						0.237						
33	Iron(mg/l)	1.415						0.71						
34	Manganese (mg/l)	0.554						0.093						

35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3Q - RIVER ZUARI AT PANCHAWADI 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for SW II river as per CPCB classification based on designated best use of rivers
1	pH	7.13	7.01	7.44	6.01	6.47	7.79	6.91	6.9	6.7	6.9	6.9	7	6.5 - 8.5
2	Temperature ˚C	33.5	34	29	29	30	33	30	30	29.5	29	29	30.7	
3	Conductivity µs/cm	18090	7934	16.03	126	102.56	93.04	134.5	7.07	20030	7110	10260	15630	
4	Dissolved Oxygen mg/l	4.9	5.7	6.5	6.6	7.5	7.3	6.9	5.4	4.2	5.8	5.3	5	4 mg/l or more
5	Turbidity (NTU)	6	7	11	16	4	4	12	5	6	5	27	5	30 NTU
6	Nitrite Nitrogen mg/l	0.07	BDL	0.03	0.03	0.002	0.16	0.004	0.004	BDL	BDL	0.02	0.08	
7	Nitrogen(Nitrate) mg/l	0.13	BDL	0.2	0.22	0.16	0.02	0.14	0.043	0.46	BDL	0.13	0.13	
8	Phosphate mg/l	0.06	0.05	0.03	0.15	0.01	BDL	BDL	0.03	0.01	BDL	0.04	0.014	
9	BOD mg/l	0.9	2.1	3.2	2.2	0.9	1	2	1.5	1.5	2.8	1.6	2..4	3 mg/l or less
10	Chloride mg/l	5743	6998	6623	28	117	15	36	2234	6994	7986	3885	5342	
11	Fecal Coliform MPN/100 ml	490	2400	790	4900	1300	3300	1300	1300	450	1300	200	450	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	1300	3500	1300	7900	2300	4900	2300	1700	780	2200	450	780	
13	Ammonia mg/l	0.13	0.14	0.1	0.28	BDL	BDL	BDL	0.02	0.02	0.03	0.27	0.34	
14	Total Dissolved Solids(mg/l)	13977	7434	12675	75	56	67	101	3839	14430	4195	6558	13063	
15	Total Fixed Solids (mg/l)	-	-	-	-	20	36.5	75	3100	4357	3156	4291	3568	
16	Total Suspended Solid (mg/l)	99	36	120	17	10	27	69	31	89	14	70	75	
17	Hardness(mg/l)	1960	1000	960	30	22	50	23	1800	2240	1000	1180	1680	

18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	BDL	0.23	
19	Boron(mg/l)	-	-	-	0.06	0.19	0.58	0.79	1.33	2.63	2.13	BDL	0.41	
20	Sulphate (mg/l)	875.34	95.43	64	12.14	1.84	3.8	4.9	109.7	790	237.7	391	1003	
21	Total Alkalinity(mg/l)	60	58	33	34	30	26	23	46	90	42	48	56	
22	Phenolphthalein Alkalinity(mg/l)	4	0	7	-	0	0	0	0	4	0	0	0	
23	Sodium(mg/l)	1927	373.6	2181	16.9	9.3	9.6	11.2	1059	117	985.1	1260	833	
24	Potassium(mg/l)	120.4	2.2	99.7	1.6	1.5	1.9	14	51.6	2247	45.7	70.8	82	
25	Calcium as CaCO3(mg/l)	380	900	300	16	12	22	19	240.5	160	160.3	321	224	
26	Magnesium(mg/l)	383.9	BDL	160.4	3.4	2.43	6.8	5.4	49.7	447	145.8	92.3	272	
27	Nickel(mg/l)	0.22						0.021						
28	Copper(mg/l)	0.069						0.012						
29	Chromium(mg/l)	BDL						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.073						0.07						
32	Lead(mg/l)	0.18						BDL						
33	Iron(mg/l)	1.086						0.83						
34	Manganese (mg/l)	0.166						0.051						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3R - RIVER ZUARI AT CORTALIM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.69	7.5	7.74	7.66	7.15	8.2	7.12	6.76	7.39	7.47	6.98	7.51	6.5 - 8.5
2	Temperature ˚C	33	34	33	30	31	31	29	30	29.5	29.7	29	30.1	
3	Conductivity µs/cm	46440	50780	52350	6755	14320	28170	27520	43230	45700	46000	37360	49900	
4	Dissolved Oxygen mg/l	6.1	4.9	6.5	6.4	6.8	5.4	5.6	6.5	7.6	5.5	4.9	4.7	4 mg/l or more
5	Turbidity (NTU)	9	32	22	169	8	6	3	22	12	8	7	8	30 NTU
6	Nitrite Nitrogen mg/l	0.002	0.05	0.23	0.005	0.006	0.2	0.01	BDL	0.27	0.18	0.06	0.013	
7	Nitrogen(Nitrate) mg/l	0.02	0.02	0.23	0.06	0.06	0.141	0.11	BDL	0.25	1.46	0.46	0.4	
8	Phosphate mg/l	0.01	0.06	0.04	BDL	0.08	0.06	0.04	BDL	0.03	0.03	0.03	0.12	
9	BOD mg/l	2.2	2	3.2	2.9	1.8	2.4	2.7	2.8	5.1	3.1	1.2	-	3 mg/l or less
10	Chloride mg/l	22368	17120	24950	20058	20694	21085	10396	46386	14764	18594	19275	16144	
11	Fecal Coliform MPN/100 ml	200	1300	450	1300	17000	7900	7900	2300	2300	1300	2300	1700	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	450	1700	780	2300	28000	13000	13000	3300	4900	1700	4600	2200	
13	Ammonia mg/l	0.02	0.01	0.11	1.55	0.03	0.03	0.03	0.03	0.05	0.02	1.1	BDL	
14	Total Dissolved Solids(mg/l)	-	39266	31410	4053	8592	16339	18900	31553	28209	32000	20614	29426	
15	Total Fixed Solids (mg/l)	-	-	-	-	2645	9436	15945	24503	24892	22007	16145	22052	
16	Total Suspended Solid (mg/l)	172	173	128	86	70	78	88	200	64	177	120	83	
17	Hardness(mg/l)	7400	6000	9800	1420	1560	1540	2000	5600	5700	19200	5040	5400	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	-	2.3	
19	Boron(mg/l)	-	9.43	4.94	3.79	-	-	-	5.2	2.37	1.48	-	1.01	
20	Sulphate (mg/l)	2907	2533	33.42	33.42	379.02	843.7	528.1	2619	2020	2713	2165	2627.5	
21	Total Alkalinity(mg/l)	100	100	96	100	94	94	84	90	114	126	116	98	
22	Phenolphthalein Alkalinity(mg/l)	0	8	8	8	8	8	0	10	0	0	0	14	
23	Sodium(mg/l)	376.1	6753	7258	1047	2893.2	3675	3508	777.4	5245	6012	4650	2358	
24	Potassium(mg/l)	251	274.3	232.6	54.9	142.2	145	143.5	323.7	241.8	296.8	185.3	233.4	
25	Calcium as CaCO3(mg/l)	1400	1400	2250	240	280	200	1500	721.4	360.7	1202.4	344.7	481	
26	Magnesium(mg/l)	12.6	1118	1834.65	286.74	286.74	325.62	121.5	923.4	1166.4	3937	1015.7	1020.6	
27	Nickel(mg/l)	0.734						0.021						
28	Copper(mg/l)	0.132						0.007						
29	Chromium(mg/l)	0.077						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.127						0.15						
32	Lead(mg/l)	1.189						0.187						
33	Iron(mg/l)	1.433						0.17						

34	Manganese (mg/l)	0.365						0.239						
35	Cobalt (mg/l)	BDL						0.055						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3S - CREEK AT DANDO MOLLO, VELSAO, MORMUGAO 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for class C river as per CPCB classification based on designated best use of rivers
1	pH	7.81	6.57	7.54	7.02	6.98	7.62	7.34	7.52	7.22	8.02	7.15	8.45	6-9
2	Temperature ˚C	31.2	33	31	29.2	30	25.6	30	31	26.8	28	25.3	32	
3	Conductivity µs/cm	23170	17700	18570	884.2	6242	14660	29590	99200	9440	41100	16990	26650	
4	Dissolved Oxygen mg/l	9.7	12.9	9.9	5.4	6	5.4	6.4	6.8	4.2	9.6	5	9.9	4 mg/l or more
5	Turbidity (NTU)	4	3	2	5	4	9	0.81	8	11	6	10	5	
6	Nitrite Nitrogen mg/l	1.22	1.56	0.38	0.002	0.229	0.02	2.55	0.108	0.012	0.11	0.03	0.21	
7	Nitrogen(Nitrate) mg/l	29.39	24.9	2.26	4.37	10.15	8.81	3.26	6.5	0.22	3.34	0.28	1.7	
8	Phosphate mg/l	3.15	36.43	0.46	0.24	0.24	0.07	0.07	0.26	0.082	0.26	0.11	0.39	
9	BOD mg/l	5.8	6.9	4.3	1.5	2.8	2.7	3.2	4.5	1.4	4.6	2.7	4.2	3 mg/l or less
10	Chloride mg/l	11372	5623	5707	850	1750	2624	27195	3910	3425	23959	8985	10247	
11	Fecal Coliform MPN/100 ml	680	7900	13000	1300	7900	3300	2300	13000	7900	3300	4900	3300	
12	Total Coliform MPN/100 ml	930	13000	17000	2300	13000	4900	4900	17000	11000	4900	13000	4900	5000 or less MPN/100 ml
13	Ammonia mg/l	0.04	22.2	0.63	0.02	0.09	0.09	0.03	0.27	0.25	BDL	0.05	0.28	
14	Total Dissolved Solids(mg/l)	22008	9853	12618	486	3520	3269	17458	23980	6127	25482	11893	17165	
15	Total Fixed Solids (mg/l)	-	-	-	-	-	-	10236	16889	4100	20511	11524	17035	
16	Total Suspended Solid (mg/l)	144	56	88	21	24	83	50	109	20	12	41	23	

17	Hardness(mg/l)	3000	1780	3800	144	100	94	2980	7600	1200	5200	2400	4000	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.48	1.4	
19	Boron(mg/l)	-	3.14	2.5	1.8	0.3	0.38	-	6.9	2.26	3	6.53		
20	Sulphate (mg/l)	1080	484.7	343.68	23.34	306	688	1067	2915	358.7	1882	440.7	735	
21	Total Alkalinity(mg/l)	52	70	72	42	44	38	64	80	90	110	88	36	
22	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	26	0	0	
23	Sodium(mg/l)	2297	2300	2304	154.7	963	2763	3911	12339	1052	5444	2330	1351	
24	Potassium(mg/l)	169.6	167.8	102.9	12.3	45.4	107.8	159.6	425.8	63.1	247.5	120.8	136.4	
25	Calcium as CaCO3(mg/l)	8000	1380	1600	60	64	70	560	1300	160.3	962	641.3	400	
26	Magnesium(mg/l)	534.6	97.2	534.6	20.4	8.7	5.8	588.06	1530.9	194.4	680	194.4	729	
27	Nickel(mg/l)	0.484						0.033						
28	Copper(mg/l)	0.082						0.04						
29	Chromium(mg/l)	BDL						BDL						
30	Cadmium(mg/l)	BDL						0.035						
31	Zinc(mg/l)	0.121						0.1						
32	Lead(mg/l)	0.464						BDL						
33	Iron(mg/l)	1.945						0.69						
34	Manganese (mg/l)	0.347						0.071						
35	Cobalt (mg/l)	BDL						0.052						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3T - RIVER MANDOVI NEAR MANDOVI BRIDGE, PANAJI 2017-2018													
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.6	7.87	7.8	6.93	7.27	7.56	7.58	7.7	7.37	7.7	7.51	7.4	6.5 - 8.5
2	Temperature °C	30	29.9	27	30.5	32	29.5	28	29.3	26	30	26.6	30	
3	Conductivity µs/cm	47200	40810	45300	1485	3650	3470	26930	43910	47100	50800	49.2	46980	
4	Dissolved Oxygen mg/l	5.91	5.4	4.5	5.7	7.8	7.6	5.1	4.7	5	5.4	5.6	5.7	4 mg/l or more
5	Turbidity (NTU)	20	14	8	30	28	25	30	35	64	9	7	5	30 NTU
6	Nitrite Nitrogen mg/l	0.01	0.11	0.08	0.008	0.004	0.02	0.01	0.02	0.026	0.01	0.04	0.019	
7	Nitrogen(Nitrate) mg/l	0.01	0.03	0.1	0.19	0.16	0.09	0.13	0.11	0.2	0.05	BDL	0.75	
8	Phosphate mg/l	0.01	0.06	0.02	0.02	0.04	0.03	0.04	0.03	0.033	0.03	0.025	0.025	
9	BOD mg/l	1.6	1.4	0.5	1.9	0.9	1.4	2.1	1.5	1.2	1.7	1.9	3.5	3 mg/l or less
10	Chloride mg/l	15905	21993	18212	380	2299	1336	10567	14570	22381	19184	23243	16144	
11	Fecal Coliform MPN/100 ml	1700	490	5400	7000	7900	7900	7900	4900	7900	1300	7900	2300	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	2200	700	9200	11000	13000	13000	14000	7900	132000	2300	13000	3300	
13	Ammonia mg/l	0.39	0.08	0.02	0.1	0.1	0.25	-	0.17	0.14	0.02	0.07	0.01	
14	Total Dissolved Solids(mg/l)	25377	71937	27406	1056	2510	2853	18851	30222	26997	37550	29412	27779	
15	Total Fixed Solids (mg/l)	-					1472	9071	22714	20400	22395	27412	17690	
16	Total Suspended Solid (mg/l)	198	199	161	49	33	28	83	237	69	107	216		
17	Hardness(mg/l)	5360	7600	5800	146	140	330	4000	4680	6000	6040	5080	5000	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.6	2.61	
19	Boron(mg/l)	-	1.17	2.97	2.52	3.16	0.4	BDL	-	10.94	2.33	12.86	1.87	
20	Sulphate (mg/l)	2430.8	2028	1767	78.2	83.4	85.41	1454.8	2078	1919.4	2104	2445	1799.9	
21	Total Alkalinity(mg/l)	106	69	108	52	76	46	88	104	104	112	124	104	
22	Phenolphthalein Alkalinity(mg/l)	0	7	12	0	0	0	0	0	6	10	8	8	
23	Sodium(mg/l)	6226	7063	5978	203.2	140.7	563.7	3482	7763	5682	6310	5420	2178	
24	Potassium(mg/l)	256.5	293.9	245.2	11.5	7.4	22.2	158.4	295	251.7	288	189	225.3	
25	Calcium as CaCO3(mg/l)	1120	1800	800	40	30	66	1000	289	721.4	465	37.7	561.1	
26	Magnesium(mg/l)	1030	1409	1215	26	26.7	68.5	729	962	1020.6	1186	1006	874.8	
27	Nickel(mg/l)	1.086						0.017						
28	Copper(mg/l)	0.121						0.094						
29	Chromium(mg/l)	0.016						BDL						
30	Cadmium(mg/l)	BDL						0.045						
31	Zinc(mg/l)	0.105						0.27						
32	Lead(mg/l)	1.265						0.162						
33	Iron(mg/l)	4.303						0.85						
34	Manganese (mg/l)	0.963						0.079						

35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3U - RIVER MANDOVI AT TONCA MARCELA 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for SW II river as per CPCB classification based on designated best use of rivers
1	pH	7.29	7.52	7.49	6.37	5.94	7.35	6.98	7	7.14	7.14	7.07	7.13	6.5 - 8.5
2	Temperature °C	34	31	31.3	29.2	29	30	29	31	29.5	28	29.5	29.6	
3	Conductivity µs/cm	36390	40560	28500	116	166.74	190	218.77	8820	11240	26700	26790	33460	
4	Dissolved Oxygen mg/l	5.3	4.3	5.2	7.2	7.2	7.5	7.8	6.2	5.5	5.5	5.7	5.2	4 mg/l or more
5	Turbidity (NTU)	5	8	4	10	5	6	19	7	6	5	1	4	30 NTU
6	Nitrite Nitrogen mg/l	0.005	0.27	0.32	0.002	0.008	0.035	0.056	0.02	0.1	0.077	0.14	0.228	
7	Nitrogen(Nitrate) mg/l	0.89	0.31	2.29	0.35	0.21	0.26	0.29	0.93	0.68	0.22	BDL	BDL	
8	Phosphate mg/l	0.02	0.03	0.1	BDL	0.002	BDL	0.013	BDL	0.055	0.064	0.01	BDL	
9	BOD mg/l	2.3	1	2.2	0.4	1	0.7	2.3	1.7	1.2	1.8	1.4	2.7	3 mg/l or less
10	Chloride mg/l	11741	14246	11496	50	30	24	25	5048	6988	10151	10927	12978	
11	Fecal Coliform MPN/100 ml	1300	330	230	2400	2400	3500	3300	7900	2300	2300	13	780	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	2200	490	330	5400	3500	5400	4900	13000	4900	3300	23	1300	
13	Ammonia mg/l	BDL	0.16	0.1	0.32	0.02	0.03	0.152	0.07	0.07	0.04	0.13	0.19	
14	Total Dissolved Solids(mg/l)	22594	22324	17100	69	72	100	180	6200	7643.2	15485	19745	20210	
15	Total Fixed Solids (mg/l)	-	-			51	29	130	4488	4585	12500	4849	20222	
16	Total Suspended Solid (mg/l)	54	177	460	12	11	13	18	23	18	73	101	19	
17	Hardness(mg/l)	4600	5600	3200	28	28	28	52	1200	7000	8800	3440	4000	

18	Fluoride(mg/l)	-	-						-	-		1.68	2.44	
19	Boron(mg/l)	-	2.49		1.36	0.12	0.69	0.72	7.4	5.39	5.01	3.17		
20	Sulphate (mg/l)	1463	829.1	959.4	3.8	2.71	2.8	6.73	149.5	458	873	1076	1296.4	
21	Total Alkalinity(mg/l)	100	102	82	28	28	35	44	78	102	78	80	86	
22	Phenolphthalein Alkalinity(mg/l)	4	0	10	0	0	0	0	0	0	0	2	0	
23	Sodium(mg/l)	3660	5618	13.7	13.3	18.2	55.9	23	1580	2506	3957	3321	1966	
24	Potassium(mg/l)	241.2	237.3	2.6	1.7	1.7	41.1	2.6	74.9	140.2	138.1	148.1	176.6	
25	Calcium as CaCO3(mg/l)	900	740	600	12	14	14	22	80.2	1200	320.6	257	721.4	
26	Magnesium(mg/l)	899.1	1181	631.8	3.9	3.4	3.4	7.29	243	972	1944	680	534.6	
27	Nickel(mg/l)	0.996						0.042						
28	Copper(mg/l)	0.098						0.021						
29	Chromium(mg/l)	0.096						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.111						0.87						
32	Lead(mg/l)	0.997						0.08						
33	Iron(mg/l)	0.929						1.64						
34	Manganese (mg/l)	0.253						0.062						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3V - RIVER SELAULIM LAKE AT SELAULIM, SANGUEM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for class C as per CPCB classification based on designated best use**
1	pH	6.44	7.61	7.53	6.49	6.25	7.39	7.03	7.14	7.35	7.07	6.99	6.92	6-9
2	Temperature ˚C	32	35	34	29	29	29	30	30	29.1	28.9	29	29.6	
3	Conductivity µs/cm	57.87	69.77	336.9	45.82	56.03	49.44	41.6	57.37	51	51.7	35.06	50.08	
4	Dissolved Oxygen mg/l	7.2	7.2	7.3	6.5	7.6	7.8	7.8	7.1	7.2	6.5	7.8	-	4 mg/l or more
5	Turbidity (NTU)	4	4	4	3	3	2	2	2	1	1	5	5	
6	Nitrite Nitrogen mg/l	0.00196	0.002	0.002	0.003	BDL	BDL	BDL	BDL	BDL	BDL	0.16	BDL	
7	Nitrogen(Nitrate) mg/l	0.021	0.008	0.02	0.16	0.16	BDL	BDL	BDL	BDL	BDL	0.25	BDL	
8	Phosphate mg/l	0.002	0.012	BDL	BDL	BDL	BDL	0.014	BDL	BDL	BDL	0.01	BDL	
9	BOD mg/l	1.3	1.3	1.5	1.3	0.7	0.2	0.9	1.2	0.1	0.7	2.3		3 mg/l or less
10	COD mg/l	8	12	-	6	6	6	5	7	BDL	4	4	4	
11	Chloride mg/l	6	4	26	16	5	4	4	13	6	4	10	7	
12	Fecal Coliform MPN/100 ml	Nil	Nil	13	7.8	23	13	13	7900	AB-SENT	NIL	23	13	
13	Total Coliform MPN/100 ml	13	13	17	49	79	33	33	13000	<1.8	2	49	33	5000 or less MPN/100 ml
14	Ammonia mg/l	BDL	0.83	BDL	0.34	BDL	BDL	BDL	BDL	0.04	0.03	1.1	0.29	
15	Total Dissolved Solids(mg/l)	60	47	202	28	33	29	23	32	30	29	25	30	
16	Total Fixed Solids (mg/l)	-	-	-	-	20	15	10	16	21	19	10	13	
17	Total Suspended Solid (mg/l)	26	63	69	43	19	27	9	11	4	4	8	18	
18	Hardness(mg/l)	20	28	15	18	20	20	8	16	16	20	34	20	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	-		
20	Boron(mg/l)	-	BDL	1.64	1.37	0.39	0.7	0.83	1.2	0.05	0.24	-	0.23	
21	Sulphate (mg/l)	4.15	2.84	2.55	BDL	BDL	BDL	0.94	BDL	BDL	BDL	2	1.81	
22	Total Alkalinity(mg/l)	35	24	30	24	24	24	24	20	26	36	70	26	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	4.4	5.7	19.5	5	4	4.6	1.4	9.8	0.7	1	3.4	21.1	
25	Potassium(mg/l)	1.9	1.4	0.7	0.4	0.4	0.3	1.3	2	0.6	0.9	1.2	7.1	
26	Calcium as CaCO3(mg/l)	12	12	6	8	10	6	6	4.8	4.81	7.2	8.02	3.2	
27	Magnesium(mg/l)	1.9	3.89	2.19	BDL	BDL	3.4	0.49	4	BDL	BDL	3.4	2.92	
28	Nickel(mg/l)	0.027						BDL						
29	Copper(mg/l)	0.014						0.024						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.059						0.09						
33	Lead(mg/l)	BDL						ND						

34	Iron(mg/l)	0.764	0.42	0.25	0.28	0.21	0.32	1.02	0.18	0.25	0.31	0.35	0.27	
35	Manganese (mg/l)	0.305	0.02	0.04	0.02	0.05	0.03	0.026	0.01	0.02	0.05	0.02	0.03	
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3W - AGRICULTURAL CANAL UPSTREAM OF CUNCOLIM INDUSTRIAL ESTATE 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for Class E as per CPCB classification based on designated best use**
1	pH	6.97	6.89		6.14	6.56	7.06				7.4	7.12	6.21	6-8.5
2	Temperature ˚C	31.5	32		31	30	30				27	26.5	28	
3	Conductivity µs/cm	54.22	62.21		44.8	61.63	109.8				57.95	53	54.43	Max 2250 µs/cm
4	Dissolved Oxygen mg/l	7.2	7.2		9.6	7	7.7	Canal was Dry	Canal was Dry	Canal was Dry	8.8	7.8	8.5	
5	Turbidity (NTU)	2	2		6	5	6				3	2	3	
6	Nitrite Nitrogen mg/l	0.001	BDL		0.015	0.002	0.001				BDL	0.01	BDL	
7	Nitrogen(Nitrate) mg/l	0.001	1.45		0.06	0.25	0.02				BDL	BDL	BDL	
8	Phosphate mg/l	BDL	0.03		0.09	BDL	BDL				0.066	BDL	BDL	
9	BOD mg/l	0.7	2.3		2.7	2.9	4.9				0.8	0.9	BDL	
10	COD mg/l	7	9		12	22	24				10	4	26	
11	Chloride mg/l	5	6		6	6	13				7	7	7	
12	Fecal Coliform MPN/100 ml	2400	3500		2300	790	1300				24000	2300	2300	
13	Total Coliform MPN/100 ml	5400	5400	Canal was Dry	3300	1300	1700				35000	3300	3300	
14	Ammonia mg/l	0.136	0.03		2.01	0.02	BDL				0.03	1.04	0.04	
15	Total Dissolved Solids(mg/l)	36	37		29	89	77				34	36	31	
16	Total Fixed Solids (mg/l)	-	-		-	-	-				20	51	37	
17	Total Suspended Solid (mg/l)	2	6		7	15	49				14	4	6	
18	Hardness(mg/l)	22	24		16	16	18				14	22	14	
19	Fluoride(mg/l)	-	-		-	-	-				-	10	0.47	
20	Boron(mg/l)	0.114	0.05		0.5	3.57	0.89				1.1	0.42	1.69	Max 2mg/l
21	Sulphate (mg/l)	1.25	BDL		5.22	4	3.39				6.12	BDL	BDL	
22	Total Alkalinity(mg/l)	42	32		14	14	22				22	24	34	
23	Phenolphthalein Alkalinity(mg/l)	-	0		0	0	0				0	0	0	
24	Sodium(mg/l)	1.2	0.7		8.1	4.5	4.7				5.6	1.5	11.3	
25	Potassium(mg/l)	2.1	0.1		0.7	1.3	0.2				1.1	1.9	6.9	
26	Calcium as CaCO3(mg/l)	12	20		4	8	10				3.2	4	3.21	
27	Magnesium(mg/l)	2.43	BDL		2.9	BDL	BDL				1.46	2.9	BDL	
28	Nickel(mg/l)	BDL												
29	Copper(mg/l)	0.032												
30	Chromium(mg/l)	BDL												

31	Cadmium(mg/l)	BDL												
32	Zinc(mg/l)	0.065												
33	Lead(mg/l)	BDL												
34	Iron(mg/l)	0.875												
35	Manganese (mg/l)	0.105												
36	Cobalt (mg/l)	BDL												
37	Alpha BHC (mg/l)	BDL												
38	Beta BHC (mg/l)	BDL												
39	Gamma BHC (mg/l)	BDL												
40	Aldrin (mg/l)	BDL												
41	Dieldrin (mg/l)	BDL												
42	O,P-DDT (mg/l)	BDL												
43	P,P-DDT (mg/l)	BDL												
44	Alpha endosulphane (mg/l)	BDL												
45	β-endosulphane (mg/l)	BDL												
46	carboryl (mg/l)	BDL												
47	Anilofos (mg/l)	BDL												
48	Parathion methyl (mg/l)	BDL												
49	Malathion (mg/l)	BDL												
50	Chloropylos (mg/l)	BDL												

Table No. : 3X - AGRICULTURAL CANAL DOWNSTREAM OF CUNCOLIM INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit for Class E as per CPCB classification based on designated best use
1	pH	6.61	8.07	6.85	5.25	4.63	5.76	4.9			7.14	7.11	6.67	6-8.5
2	Temperature ˚C	32	31	29	30	30	30	32			27	26	29	
3	Conductivity µs/cm	52.21	79.84	640.2	1302	1572	1264	987.4			73	27.6	54.69	Max 2250 µs/cm
4	Dissolved Oxygen mg/l	7.2	9.3	5.8	4.9	6.1	5	7.1	Canal was Dry	Canal was Dry	8.8	7.8	8.2	
5	Turbidity (NTU)	3	4	21	2	7	4	2			2	2	3	
6	Nitrite Nitrogen mg/l	0.001	BDL	0.05	0.01	0.006	0.006	0.004			BDL	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	0.01	1.07	0.25	3.36	6.71	1.21	1.98			BDL	BDL	BDL	
8	Phosphate mg/l	BDL	0.03	0.01	0.06	0.17	BDL	0.005			0.077	BDL	0.09	
9	BOD mg/l	0.8	3.2	1.7	0.3	1	0.3	1			1.1	1.3	0.9	
10	COD mg/l	7	10	3	8	16	14	2			13	-	18	
11	Chloride mg/l	5	7	40	53	53	54	64			7	6	5	
12	Fecal Coliform MPN/100 ml	3500	5400	2300	780	130	5400	5400			2300	3300	2300	
13	Total Coliform MPN/100 ml	9200	9200	3300	1300	230	9200	9200			4900	4900	4900	
14	Ammonia mg/l	0.204	0.03	0.37	1.36	0.17	BDL	0.005			0.07	0.78	0.13	

15	Total Dissolved Solids(mg/l)	34	11	390	858	99	832	548			49	17	33	
16	Total Fixed Solids (mg/l)	-	-	-	-	-	-	500			29	44	41	
17	Total Suspended Solid (mg/l)	10	2	8	4	19	744	10			9	3	2	
18	Hardness(mg/l)	18	16	70	200	80	42	2020			22	14	16	
19	Fluoride(mg/l)	-	-	-	-	-	-	-			-	4.2	0.56	
20	Boron(mg/l)	0.014	0.03	2.32	1.22	-	1.83	4.19			1.14	0.07	3.58	Max 2mg/l
21	Sulphate (mg/l)	5.66	BDL	15.49	719.09	842	14.6	8.12			11.85	BDL	BDL	
22	Total Alkalinity(mg/l)	30	34	54	6	6	20	38			22	40	16	
23	Phenolphthalein Alkalinity(mg/l)	-	0	0	0	0	0	0			0	0	0	
24	Sodium(mg/l)	1.6	0.7	27.3	224	180.2	126.2	6.3			5.6	2.4	10.3	
25	Potassium(mg/l)	1.8	0.1	3.4	12.2	9.9	6.3	3.7			0.8	1.9	7	
26	Calcium as CaCO3(mg/l)	8	14	44	100	60	40	340			4.8	4	4.81	
27	Magnesium(mg/l)	2.43	BDL	6.3	24.3	4.86	BDL	408.2			2.43	BDL	BDL	
28	Nickel(mg/l)	0.031						0.072						
29	Copper(mg/l)	0.034						0.004						
30	Chromium(mg/l)	BDL						ND						
31	Cadmium(mg/l)	BDL						0.042						
32	Zinc(mg/l)	0.079						0.054						
33	Lead(mg/l)	BDL						ND						
34	Iron(mg/l)	1.41						0.91						
35	Manganese (mg/l)	0.123						4.507						
36	Cobalt (mg/l)	BDL						2.14						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3Y - RUMDER LAKE, NUVEM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	6.84	7.06	6.84	6.27	6.37	7.09	6.7	6.86	7.14	7.12	6.77	7.2	
2	Temperature ˚C	32	35	31	29	31	25.3	29	32.8	26.5	29	24.6	32	
3	Conductivity µs/cm	158.9	188.5	323.7	114	111.15	98.47	102.7	166.7	205	83.6	133.7	189.2	
4	Dissolved Oxygen mg/l	3.6	6.4	5.8	4.2	5.9	5.6	5.7	7.5	5.6	8.8	1.9	6.5	
5	Turbidity (NTU)	16	18	16	18	9	8	3	14	14	10	47	4	
6	Nitrite Nitrogen mg/l	0.014	0.62	0.014	0.003	0.04	0.007	0.001	BDL	0.005	BDL	0.23	0.01	
7	Nitrogen(Nitrate) mg/l	0.395	0.65	0.13	1	0.6	0.64	0.39	1.4	0.63	BDL	0.44	0.6	
8	Phosphate mg/l	0.036	0.06	0.02	0.05	0.02	0.02	0.02	0.14	0.052	BDL	BDL	0.01	
9	BOD mg/l	2.7	5.1	2	3.4	-	-	0.6	1.9	1.6	5.8	3	4.1	
10	COD mg/l	18	27	38	30	10	8	18		8	10	8	40	
11	Chloride mg/l	250	23	23	22	26	23	13	22	367	20	25	1000	
12	Fecal Coliform MPN/100 ml	1300	7900	2300	1300	4900	3300	4900	780	1300	200	2300	1300	
13	Total Coliform MPN/100 ml	2300	11000	3300	2100	7900	4900	7900	1100	1700	450	4900	2300	
14	Ammonia mg/l	0.12	0.03	0.39	0.04	0.11	0.04	0.15	0.12	0.1	0.11	1.22	0.06	
15	Total Dissolved Solids(mg/l)	1137	107	201	54	104	146	63	19716	130	49	90	130	
16	Total Fixed Solids (mg/l)	-	-	-	-	-	-	27	15135	76	37	130	111	
17	Total Suspended Solid (mg/l)	57	57	27	17	23	64	57	44	7	28	24	23	
18	Hardness(mg/l)	1400	38	1400	30	26	36	24	66	22	42	56	56	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	0.62	1.3	
20	Boron(mg/l)	-	1.61	2.34	1.2	0.26	0.32	1.27	0.8	1.27	0.01	7.36	13.1	
21	Sulphate (mg/l)	34	19	30.72	11.19	18	18	2.39	0.1	42.7	BDL	406.8	23.2	
22	Total Alkalinity(mg/l)	50	30	60	42	24	26	48	50	52	56	60	96	
23	Phenolphthalein Alkalinity(mg/l)	0	0	4	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	18.5	17.4	212.9	14.2	13.2	7	8.6	18.7	16.4	14.9	32.4	26.4	
25	Potassium(mg/l)	0.8	6.1	11.7	1.3	1.8	8.1	2.3	5.5	2.8	2.4	4.2	8.2	
26	Calcium as CaCO3(mg/l)	200	28	74	16	14	12	18	26	6.4	7.2	16	16	
27	Magnesium(mg/l)	291.6	2.4	322.2	3.4	2.9	5.8	BDL	9.72	1.46	5.8	3.9	3.9	
28	Nickel(mg/l)	0.234						0.034						
29	Copper(mg/l)	0.012						0.027						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.084						0.009						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.872						0.67						

35	Manganese (mg/l)	0.44						0.071						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3Z - RIVER SAL AT ORLIM BRIDGE 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	8.09	7.63	8.8	6.86	7.15	7.79	6.1	7.07	7.06	7.27	6.89	7.55	
2	Temperature ˚C	33.1	35	31	30	31	26.2	30	33	27	28	24.9	33	
3	Conductivity µs/cm	25830	38880	19330	37.7	1073	2554	3038	27300	24900	30	20290	35490	
4	Dissolved Oxygen mg/l	9.9	5.5	9.6	5.2	5.6	4.8	4.6	3.9	4.1	4.5	3.7	4.6	
5	Turbidity (NTU)	11	7	12	12	9	17	2	6	6	8	7	8	
6	Nitrite Nitrogen mg/l	0.071	0.016	0.006	0.002	0.02	BDL	0.001	BDL	0.022	0.02	0.02	0.06	
7	Nitrogen(Nitrate) mg/l	2.58	0.54	0.1	0.96	0.22	0.3	0.39	43.76	0.62	0.83	0.59	0.4	
8	Phosphate mg/l	0.095	0.05	0.04	0.09	21	0.03	0.05	0.03	0.02	0.05	0.06	0.03	
9	BOD mg/l	8.4	2.1	6.2	4.5	3.9	3.6	2.2	1.8	1.3	2.6	2.4	1	
10	Chloride mg/l	11247	13496	5949	1050	1125	187442	881	3133	8928	16721	10232	30865	
11	Fecal Coliform MPN/100 ml	490	130	200	1700	1300	1300	1300	450	780	780	780	780	
12	Total Coliform MPN/100 ml	700	170	450	3300	2300	2300	2300	680	1300	1100	1300	1300	
13	Ammonia mg/l	2.11	0.11	0.65	0.11	0.08	0.03	0.18	0.09	0.1	0.04	4.85	0.12	
14	Total Dissolved Solids(mg/l)	30185	21362	14031	391	1672	1700	1823	160	15401	16500	14203	22546	
15	Total Fixed Solids (mg/l)	-	-					956	149	9090	11298	13618	20130	
16	Total Suspended Solid (mg/l)	137	93	109	18	21	120	44	247	22	18	30	29	
17	Hardness(mg/l)	5000	4600	7200	100	110	102	360	7700	2600	4800	3200	5000	

18	Fluoride(mg/l)	-	-									1.38	2.46	
19	Boron(mg/l)	-	3.84	3.21	1.14	0.08	0.1		11.15	2.68	1.27	0.92		
20	Sulphate (mg/l)	1318	841.8	996.5	815.14	690	395	57.11	2605	1187.2	1189	20.34	897	
21	Total Alkalinity(mg/l)	100	130	90	62	40	38	82	90	84	110	100	56	
22	Phenolphthalein Alkalinity(mg/l)	10	0	0	0	0	0	0	0	4	0	0	0	
23	Sodium(mg/l)	2429	5403	2194	145.8	186.1	444.7	462	4860	2896	3790	2609	1684	
24	Potassium(mg/l)	176.6	230.5	98.8	8.6	7.5	16.9	22.6	219.2	148.5	182.8	141.3	165.9	
25	Calcium as CaCO3(mg/l)	800	980	1400	38	8	12	80	1500	240.5	802	641.3	601	
26	Magnesium(mg/l)	1021	879.7	1409.4	15.1	24.8	21.9	68.04	1506.6	486	680	388.8	851	
27	Nickel(mg/l)	0.587						0.019						
28	Copper(mg/l)	0.089						0.014						
29	Chromium(mg/l)	0.036						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.074						0.8						
32	Lead(mg/l)	0.591						BDL						
33	Iron(mg/l)	1.783						0.87						
34	Manganese (mg/l)	0.425						0.038						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AA - RIVER SAL AT KHAREBAND, MARGAO 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH			6.13	6.2	6.58	6.95	6.02	6.87	6.95	6.91	6.69		
2	Temperature ˚C			29	29	30.5	24.3	29	32	27	29	25.2		
3	Conductivity µs/cm			738.4	125.3	162.25	167.3	135.5	310.7	353	149.5	165.4		
4	Dissolved Oxygen mg/l			2.4	1.9	2.6	1.8	3.6	7.6	1.5	2	0.3		
5	Turbidity (NTU)			17	14	9	13	3	20	13	7	26		
6	Nitrite Nitrogen mg/l			0.35	0.002	0.11	BDL	0.08	2.4	0.015	1.22	6.05		
7	Nitrogen(Nitrate) mg/l			0.43	0.98	0.35	0.51	0.58	0.35	1.05	3.46	5.72		
8	Phosphate mg/l			0.02	0.08	0.12	0.04	0.06	0.24	0.194	0.11	0.24		
9	BOD mg/l			1.9	5	-	-	0.5	1.7	16.8	5.8	4		
10	COD mg/l			-	-	12	-	20	10	-	12	10		
11	Chloride mg/l			42.7	20	25.49	29.49	53.81	50.99	1589.9	37.4	31.4		
12	Fecal Coliform MPN/100 ml			54000	11000	35000	24000	24000	54000	13000	24000	24000		
13	Total Coliform MPN/100 ml			92000	17000	54000	35000	35000	92000	24000	54000	92000		
14	Ammonia mg/l			0.63	0.09	0.23	0.12	0.19	0.82	0.16	0.035	0.15		
15	Total Dissolved Solids(mg/l)			427	75	145	260	84	23980	210	99	105		
16	Total Fixed Solids (mg/l)			-	-	-	-	38	16889	105	49	182		
17	Total Suspended Solid (mg/l)			67	46	10	21	46	46	22	21	33		
18	Hardness(mg/l)			80	40	156	154	56	66	600	400	2600		
19	Fluoride(mg/l)			-	-	-	-	-	-	-	-	0.33		
20	Boron(mg/l)			-	1.18	0.4	0.5	-	6.6	4	0.09	6.27		
21	Sulphate (mg/l)			14.36	2.15	6	94	10.9	3.36	14.98	9.1	4.52		
22	Total Alkalinity(mg/l)			70	38	40	44	58	74	44	64	58		
23	Phenolphthalein Alkalinity(mg/l)			0	0	0	0	0	0	0	0	0		
24	Sodium(mg/l)			32.6	14	19.6	4	40.7	45.6	36.9	33.4	37		
25	Potassium(mg/l)			5.8	1.2	2.5	0.8	4.2	7.7	3.3	2.4	6		
26	Calcium as CaCO3(mg/l)			6	26	16	18	28	38	160.3	80	641.3		
27	Magnesium(mg/l)			18	3.4	34	33	6.8	6.8	48.6	48.6	243		
28	Nickel(mg/l)							0.047						
29	Copper(mg/l)							0.024						
30	Chromium(mg/l)							BDL						
31	Cadmium(mg/l)							BDL						
32	Zinc(mg/l)							0.17						
33	Lead(mg/l)							BDL						

34	Iron(mg/l)							0.21						
35	Manganese (mg/l)							0.088						
36	Cobalt (mg/l)							BDL						
37	Alpha BHC (mg/l)							BDL						
38	Beta BHC (mg/l)							BDL						
39	Gamma BHC (mg/l)							BDL						
40	Aldrin (mg/l)							BDL						
41	Dieldrin (mg/l)							BDL						
42	O,P-DDT (mg/l)							BDL						
43	P,P-DDT (mg/l)							BDL						
44	Alpha endosulphane (mg/l)							BDL						
45	β-endosulphane (mg/l)							BDL						
46	carboryl (mg/l)							BDL						
47	Anilofos (mg/l)							BDL						
48	Parathion methyl (mg/l)							BDL						
49	Malathion (mg/l)							BDL						
50	Chloropylos (mg/l)							BDL						

Table No. : 3AB - RIVER TIRACOL AT KERI, PERNEM 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	8.06	7.85	8	7.2	8.16	8.48	8.06	8.1	7.93	8.07	7.6	7.78	
2	Temperature ˚C	32	32	31	30	31	29	29	30	28	28	29	31.4	
3	Conductivity µs/cm	53530	54170	47700	3360	4529	54260	21820	46100	42700	52880	52800	51560	
4	Dissolved Oxygen mg/l	6.1	6.1	5.7	6.8	7.3	5.7	6.2	6.3	6.9	7.8	6.4	6.2	
5	Turbidity (NTU)	5	4	9	18	10	10	8	3	4	2	3	3	
6	Nitrite Nitrogen mg/l	0.01	0.7	0.008	BDL	0.004	0.008	0.005	BDL	0.02	BDL	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	0.04	BDL	0.16	0.36	0.4	0.12	0.07	0.12	0.16	BDL	BDL	BDL	
8	Phosphate mg/l	0.02	0.07	0.14	BDL	0.018	0.08	0.014	0.05	0.02	0.05	BDL	BDL	
9	BOD mg/l	1.8	1.5	1.9	1.3	1.1	1.9	2	1.9	2.2	2.2	2.2	2.6	
10	Chloride mg/l	20579	22014	21243	913	16620	22993	13016	18590	15948	26742	26417	18620	
11	Fecal Coliform MPN/100 ml	13	240	33	1300	2300	2300	5400	2300	790	330	230	230	
12	Total Coliform MPN/100 ml	23	540	79	2400	4900	4900	9200	4900	1700	490	490	490	
13	Ammonia mg/l	0.08	0.041	0.01	BDL	0.06	0.03	0.14	0.07	0.01	BDL	BDL	BDL	
14	Total Dissolved Solids(mg/l)	40918	35210	28660	1908	3047	41175	14619	32278	26847	31885	35394	30777	
15	Total Fixed Solids (mg/l)	-	-	-	-	2889	35997	9478	26745	13244	28885	26010	28574	
16	Total Suspended Solid (mg/l)	338	59	410	31	23	259	71	218	180	240	61	227	

17	Hardness(mg/l)	7000	9000	5480	328	800	7000	3800	11100	8000	700	3600	7000	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.4	3.01	
19	Boron(mg/l)	-	-	0.8	0.9	1.1	3.45	0.577	12.1	93.02	1.53	3.48	4.01	
20	Sulphate (mg/l)	1117.6	1058.7	2118	65	78	3.66	740	3518.9	1144	2565	2002.4	1990	
21	Total Alkalinity(mg/l)	110	120	148	42	82	148	64	108	118	154	112	122	
22	Phenolphthalein Alkalinity(mg/l)	14	8	12	0	0	12	8	10	12	6	14	10	
23	Sodium(mg/l)	5020	7068	7354	506	842.6	7533	2608	8545	5767	6956	5780	2384	
24	Potassium(mg/l)	290.6	291.6	231.3	25.8	36.4	302.7	110.7	337.7	284.2	336.1	199	255.4	
25	Calcium as CaCO3(mg/l)	1010	2000	980	28	400	2000	600	601.2	400.8	3.21	561.1	721.4	
26	Magnesium(mg/l)	1455.57	1701	1093.5	63	97	1215	777.6	2332.8	1701	150.7	534.6	1263.6	
27	Nickel(mg/l)	0.617						0.025						
28	Copper(mg/l)	0.059						0.009						
29	Chromium(mg/l)	0.04						BDL						
30	Cadmium(mg/l)	0.129						BDL						
31	Zinc(mg/l)	0.14						0.025						
32	Lead(mg/l)	0.697						0.041						
33	Iron(mg/l)	1.231						0.73						
34	Manganese (mg/l)	0.223						0.05						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AC - RIVER CHAPORA NEAR SIOLIM BRIDGE 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	7.86	7.72	7.6	7.29	8.07	8.45	8.33	8.07	7.56	7.94	7.66	7.53	
2	Temperature ˚C	33	32	32	30	32.5	29	30	29	29	28	30	31.3	
3	Conductivity µs/cm	32210	35440	22980	774.5	1077	51520	26550	45400	33200	44690	51300	43820	
4	Dissolved Oxygen mg/l	5.9	6.3	5.7	7	7.8	5.7	6.7	3.7	4.6	6.4	6.5	4.2	
5	Turbidity (NTU)	10	8	12	18	15	11	6	3	8	5	2	6	
6	Nitrite Nitrogen mg/l	0.18	0.02	0.05	BDL	0.005	0.02	0.004	0.01	0.03	0.01	BDL	0.011	
7	Nitrogen(Nitrate) mg/l	0.18	0.27	0.13	0.33	0.38	0.35	0.09	0.08	0.09	BDL	BDL	BDL	
8	Phosphate mg/l	0.02	0.06	0.09	0.01	0.002	0.06	0.022	0.07	0.11	0.027	BDL	BDL	
9	BOD mg/l	2	1.9	4.5	1.9	1.4	1.7	4.2	1.1	1.9	1	2	3.2	
10	Chloride mg/l	11247	14357	9247	194	4249	20791	15833	28570	11692	21244	20791	15745	
11	Fecal Coliform MPN/100 ml	1300	1300	7900	2300	13000	7900	7900	4900	2300	1300	780	780	
12	Total Coliform MPN/100 ml	1700	2200	13000	4900	24000	13000	13000	7900	3300	1700	1100	1300	
13	Ammonia mg/l	0.14	0.027	0.02	BDL	0.02	0.2	0.19	0.04	BDL	BDL	0.02	0.02	
14	Total Dissolved Solids(mg/l)	25220	24808	13601	551	909	39565	17789	31299	23368	26817	34717	26330	
15	Total Fixed Solids (mg/l)	-	-	-	-	842	33931	9340	25541	17204	24917	28200	20557	
16	Total Suspended Solid (mg/l)	202	49	156	7	36	206	81	215	150	230	80	184	
17	Hardness(mg/l)	6000	7000	2540	102	800	9000	4400	11200	5000	600	4200	5200	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.68	2.28	
19	Boron(mg/l)	-	-	0.55	0.62	1.2	3.49	1.21	1.94	0.51	2.15	3.62	3.54	
20	Sulphate (mg/l)	497.9	637.8	550	20	26	1797.24	996.5	2052.7	431.9	1608	2165.1	1719	
21	Total Alkalinity(mg/l)	96	94	52	32	66	56	90	44	152	120	104	138	
22	Phenolphthalein Alkalinity(mg/l)	4	10	18	0	0	12	8	8	10	8	14	2	
23	Sodium(mg/l)	3327	4802	3466	119	230.4	6981	3168	9060	4274	5822	5679	2074	
24	Potassium(mg/l)	195.3	203.3	132.5	5.7	8.7	33931	133.2	339.1	234.4	294.7	195.3	223.4	
25	Calcium as CaCO3(mg/l)	550	1000	440	11	200	3000	600	721.4	400.8	5.61	641.3	561.1	
26	Magnesium(mg/l)	1324.35	1458	510.3	18	146	1458	923.4	2284.2	972	111.8	631.8	923.4	
27	Nickel(mg/l)	0.329						0.051						
28	Copper(mg/l)	0.031						0.007						
29	Chromium(mg/l)	0.035						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.042						0.074						
32	Lead(mg/l)	0.364						BDL						

33	Iron(mg/l)	0.705						0.87						
34	Manganese (mg/l)	0.264						0.156						
35	Cobalt (mg/l)	BDL						0.161						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AD - RIVER SINQUERIM, CANDOLIM SIDE 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limits
1	pH	7.9	7.7	7.6	8	8.02	8.43	8.13	7.87	7.6	7.8	7.62	7.5	
2	Temperature ˚C	32	32	32	32	32	30	30	30	29	27	30	31.1	
3	Conductivity µs/cm	52390	54980	37680	9666	15770	47400	43800	49600	47600	50720	26700	54070	
4	Dissolved Oxygen mg/l	6.4	5.5	3.9	6.9	7	3.9	5.3	4.6	6.3	6.5	5.6	5.2	
5	Turbidity (NTU)	13	11	14	16	17	5	5	4	7	11	5	8	
6	Nitrite Nitrogen mg/l	0.01	0.03	0.01	BDL	0.082	0.013	0.012	0.02	BDL	BDL	0.006	BDL	
7	Nitrogen(Nitrate) mg/l	0.03	0.02	0.23	0.64	0.8	0.33	0.09	0.15	0.12	BDL	BDL	BDL	
8	Phosphate mg/l	0.02	0.03	0.04	BDL	0.01	0.06	0.04	0.05	0.02	0.057		BDL	
9	BOD mg/l	2.9	1.5	1.4	2.6	3.6	1.2	1.6	1.9	3.3	2	2.4	0.8	
10	Chloride mg/l	20339	22014	14745	2185	5248	22748	26809	17220	18639	19494	20547	19494	
11	Fecal Coliform MPN/100 ml	2400	4900	270	1700	13000	4900	7900	3300	2300	450	1100	780	
12	Total Coliform MPN/100 ml	3500	7900	340	3300	22000	7900	13000	4900	3300	780	1400	1300	
13	Ammonia mg/l	0.07	0.068	0.03	0.03	BDL	0.05	0.19	0.03	BDL	0.02	BDL	BDL	
14	Total Dissolved Solids(mg/l)	40551	31339	22617	7769	9236	35116	30061	33567	34374	30835	17391	32713	
15	Total Fixed Solids (mg/l)	-	-	-	-	7924	28852	21658	27239	18700	28847	10100	30952	
16	Total Suspended Solid (mg/l)	286	65	337	37	50	187	185	209	151	241	125	174	
17	Hardness(mg/l)	10000	11000	4380	1100	2000	9000	10000	9500	10000	640	3400	8400	

18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.71	2.04	
19	Boron(mg/l)	-	-	0.66	0.39	0.92	BDL	-	4.7	83.7	2.04	1.03	4.09	
20	Sulphate (mg/l)	1228.2	1160.7	995	204	258	1895	2140.9	1842	1085.78	1533	1514.3	2026	
21	Total Alkalinity(mg/l)	114	122	108	72	108	106	112	102	118	152	108	122	
22	Phenolphthalein Alkalinity(mg/l)	12	8	0	0	0	0	12	0	12	6	12	2	
23	Sodium(mg/l)	5202	7410	5434	1426	230.6	6550	5401	8852	6375	6732	5804	2576	
24	Potassium(mg/l)	323.5	293	191	66.8	101.5	286.9	205.5	355.8	307	322.4	197.8	257.1	
25	Calcium as CaCO3(mg/l)	920	3000	740	160	600	3000	1600	921.8	801.6	4.81	721.4	641.3	
26	Magnesium(mg/l)	2206.4	1944	884.5	170	340	1458	2041.2	1749.6	1944	126.4	388.8	1652	
27	Nickel(mg/l)	0.617						0.006						
28	Copper(mg/l)	0.064						0.002						
29	Chromium(mg/l)	0.063						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.056						0.82						
32	Lead(mg/l)	0.701						0.316						
33	Iron(mg/l)	0.746						0.42						
34	Manganese (mg/l)	0.243						0.107						
35	Cobalt (mg/l)	BDL						0.394						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AE - RIVER SINQUERIM, NEAR GANPATI TEMPLE 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limits**
1	pH	7.85	7.72	7.6	7.61	7.93	7.48	8.04	7.82	7.66	7.81	7.62	7.48	
2	Temperature ˚C	33	31	31	32	32	31	30	30	29	27	29	31.5	
3	Conductivity µs/cm	49260	54180	40900	7915	16050	46210	41490	49100	46400	50570	51400	54190	
4	Dissolved Oxygen mg/l	6.4	5.1	3.9	6.8	7.7	4.2	5.2	4.2	6.3	6.5	6	5.8	
5	Turbidity (NTU)	9	10	25	14	26	5	11	4	7	8	7	12	
6	Nitrite Nitrogen mg/l	0.06	0.05	0.02	BDL	0.003	0.006	0.013	0.02	BDL	BDL	0.006	0.015	
7	Nitrogen(Nitrate) mg/l	0.12	0.09	0.23	0.76	0.98	0.29	1.43	0.19	0.1	0.17	BDL	BDL	
8	Phosphate mg/l	0.01	0.05	0.05	BDL	0.02	0.05	0.05	0.05	0.01	0.045	0.016	BDL	
9	BOD mg/l	2.7	1.6	2.2	2.1	2.6	1.5	-	2	3.6	1.5	2.4	2.4	
10	Chloride mg/l	18664	21536	14995	1943	5748	34979	26809	20009	17661	19619	21281	18494	
11	Fecal Coliform MPN/100 ml	1700	2300	1700	2300	7900	4900	3300	4900	3300	200	3300	1300	
12	Total Coliform MPN/100 ml	2200	3300	2200	4900	11000	7000	4900	7900	4900	450	4900	2300	
13	Ammonia mg/l	0.77	0.027	0.04	0.05	0.12	0.09	0.21	0.02	0.03	0.02	0.03	0.05	
14	Total Dissolved Solids(mg/l)	29556	33592	24558	5431	10247	35063	29798	34643	27898	30616	35132	32496	
15	Total Fixed Solids (mg/l)	-	-	-	-	8298	32132	20570	27714	17135	28500	30900	31296	
16	Total Suspended Solid (mg/l)	279	54	390	24	74	167	190	198	190	249	63	208	
17	Hardness(mg/l)	7000	11000	4560	772	2000	12000	22000	8000	9000	620	4200	7400	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.03	2.97	
19	Boron(mg/l)	-	-	2.3	1.31	1.48	2.2	0.88	6.8	-	1.7	2.71	4.06	
20	Sulphate (mg/l)	863.1	1237.2	1030	122	142	1440.7	1879	2220.6	1132.5	1570	2127.5	2049	
21	Total Alkalinity(mg/l)	114	128	94	62	74	96	108	82	110	150	110	118	
22	Phenolphthalein Alkalinity(mg/l)	8	12	20	0	0	18	12	10	8	6	12	2	
23	Sodium(mg/l)	4709	7661	6459	1089	246	6115	5091	9781	6375	6586	5773	2536	
24	Potassium(mg/l)	329.2	294.3	202.7	55	101	259.6	203.5	330.7	294.8	320.4	194.3	254.7	
25	Calcium as CaCO3(mg/l)	920	2000	900	66	400	4000	1200	681.4	801.6	4.01	881.8	3.21	
26	Magnesium(mg/l)	1477.4	2187	889.4	148	389	1944	5054.4	1530.9	1701	126.4	486	1603.8	
27	Nickel(mg/l)	0.568						0.023						
28	Copper(mg/l)	0.064						0.063						
29	Chromium(mg/l)	0.046						BDL						
30	Cadmium(mg/l)	0.056						BDL						
31	Zinc(mg/l)	0.066						0.77						
32	Lead(mg/l)	0.625						0.242						
33	Iron(mg/l)	2.197						0.98						

34	Manganese (mg/l)	0.557						0.015						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AF - RIVER MANDOVI AT IFFI JETTY 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	7.78	7.94	8.07	8.07	7.92	7.99	8.27	7.91	7.96	7.96	7.24	7.91	
2	Temperature ˚C	33.5	34	29.2	29.2	30	33	30	31	26	27.3	27.8	30	
3	Conductivity µs/cm	49280	54900	16860	16860	28370	44260	47390	50900	52500	51400	25300	54680	
4	Dissolved Oxygen mg/l	6.1	5.7	6	7.3	7.1	6.6	6.6	5.8	6	6.3	6.7	6.1	
5	Turbidity (NTU)	20	10	11	11	8	15	3	3	13	4	7	4	
6	Nitrite Nitrogen mg/l	0.002	0.003	0.06	0.001	BDL	0.08	BDL	BDL	0.08	0.01	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	0.12	0.58	1.56	0.53	0.34	0.39	BDL	BDL	0.95	0.08	0.61	0.5	
8	Phosphate mg/l	0.04	0.02	0.16	0.01	0.07	0.04	0.026	0.024	0.02	0.07	0.03	BDL	
9	BOD mg/l	2.9	1.6	1.1	2.1	2.1	2.3	1.1	1.8	1.5	1.7	2.2	1.2	
10	Chloride mg/l	20155	18698	18455	4274	10273	13796	18455	22243	20594	20009	2332	21036	
11	Fecal Coliform MPN/100 ml	790	330	1300	7900	7900	4900	1700	780	230	780	200	780	
12	Total Coliform MPN/100 ml	1300	490	1700	11000	13000	7900	3300	1300	330	1300	450	1100	
13	Ammonia mg/l	0.72	0.05	0.03	0.03	0.02	0.2	0.05	0.013	0.04	0.05	0.15	0.05	
14	Total Dissolved Solids(mg/l)	28820	30767	30654.1	9273	16454	18321	40673	28324	29400	36175	15433	35441	
15	Total Fixed Solids (mg/l)	-	-	-	-	-	6035	30074	22503	22982	33100	8997	32637	
16	Total Suspended Solid (mg/l)	103	49	90	125	87	100	213	231	240	183	80	177	
17	Hardness(mg/l)	7000	5000	6800	1860	5000	6400	6120	5980	8200	6300	5000	12600	

18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	1.82	2.26	
19	Boron(mg/l)	4.83	5.8	-	1.63	0.05	0.28	7.09	14.78	6.94	9.5	-	5.73	
20	Sulphate (mg/l)	5454.7	5996.1	3158	600	537	5896	2298	2470	2113	2099.2	2255.2	2702	
21	Total Alkalinity(mg/l)	116	102	134	62	86	90	126	126	122	118	122	130	
22	Phenolphthalein Alkalinity(mg/l)	6	8	14	4	0	0	12	14	14	10	8	12	
23	Sodium(mg/l)	5036	7716	8471	2579	5167	964.9	6221	11575	7269	6659	5423	2854	
24	Potassium(mg/l)	339.1	305.5	257.7	105.1	190.7	204.1	241.2	414.5	336.2	295.5	188.9	255.5	
25	Calcium as CaCO3(mg/l)	5000	4000	1400	1700	2000	1100	1000	272	641	561	440.9	801.6	
26	Magnesium(mg/l)	486	243	1312	38.9	729	1288	1244	1064.3	1604	1190	947.7	2575.8	
27	Nickel(mg/l)	1.266						0.011						
28	Copper(mg/l)	0.137						0.017						
29	Chromium(mg/l)	BDL						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.042						0.74						
32	Lead(mg/l)	1.376						0.092						
33	Iron(mg/l)	2.698						0.89						
34	Manganese (mg/l)	1.148						0.038						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AG RIVER MANDOVI NEAR HOTEL MARIOTT 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	7.78	7.93		8.02	7.95	8.59	8.28	7.98	7.94	7.99	7.36	7.92	
2	Temperature ˚C	33	33	29	29	30	33	30	31	26	27.5	28	30	
3	Conductivity µs/cm	49910	54980	20570	20570	36470	43890	47970	51100	52400	52300	47700	54470	
4	Dissolved Oxygen mg/l	5.7	5.2	6.7	7.3	6.7	6.9	6.6	6	5.7	6.7	5.9	5.6	
5	Turbidity (NTU)	5	12	10	10	8	7	4	3	17	4	11	4	
6	Nitrite Nitrogen mg/l	0.001	0.002	0.04	0.002	0.01	0.006	BDL	BDL	0.08	0.01	0.005	BDL	
7	Nitrogen(Nitrate) mg/l	0.01	0.68	0.12	0.51	0.34	0.35	BDL	BDL	1	0.09	0.77	0.28	
8	Phosphate mg/l	0.02	0.017	0.08	0.01	0.02	0.02	0.024	0.02	0.03	0.06	0.02		
9	BOD mg/l	2.4	0.8	1.5		1.3	1.6	0.8	2.1	1	1.4	1.4	1.2	
10	Chloride mg/l	21855	19912	18261	6799	13943	17295	18455	35489	29291	20592	23069	20058	
11	Fecal Coliform MPN/100 ml	1300	490	130	4900	3300	3300	1300	780	1300	450	2300	1300	
12	Total Coliform MPN/100 ml	1700	790	230	7900	4900	4900	2300	1100	2400	780	3300	2300	
13	Ammonia mg/l	0.12	0.01	0.03	0.03	BDL	0.13	0.05	BDL	0.02	0.06	0.07	BDL	
14	Total Dissolved Solids(mg/l)	28555	31468	37400	11313	23705	25716	40567	28300	30916	36375	28895	36768	
15	Total Fixed Solids (mg/l)	-	-	-	-	-	10181	28562	25805	23164	33462	18874	31613	
16	Total Suspended Solid (mg/l)	97	53	87	103	169	175	282	263	260	177	87	137	
17	Hardness(mg/l)	7000	6000	6400	2300	6000	10600	5800	5060	7200	6100	4100	7400	
18	Fluoride(mg/l)	-	-	-	-	-		-	-	-	-	1.63	2.52	
19	Boron(mg/l)	4.84	5.21	-	2.48	BDL	0.31	7.38	13.85	6.58	6	-	6.7	
20	Sulphate (mg/l)	5866.5	6448.7	3153	797	969	4563	2139	2036	2259	2295.3	2247.7	2112	
21	Total Alkalinity(mg/l)	118	98	120	72	100	98	120	122	130	120	120	140	
22	Phenolphthalein Alkalinity(mg/l)	12	10	18	2	0	0	16	16	0	10	8	6	
23	Sodium(mg/l)	4879	7305	7857	2810	6091	959.6	6267	12339	7337	6658	5385	2846	
24	Potassium(mg/l)	312.1	297.2	238.1	119	235.3	201.1	234.7	425.8	339.9	295.8	188.1	249.5	
25	Calcium as CaCO3(mg/l)	3000	4000	1800	1900	3000	1600	960	328.7	561	441	400.8	561.1	
26	Magnesium(mg/l)	972	486	1117.8	97.2	729	2187	1176	1253.9	1409	1215	753.3	1458	
27	Nickel(mg/l)	0.683						0.021						
28	Copper(mg/l)	0.085						0.014						
29	Chromium(mg/l)	BDL						BDL						
30	Cadmium(mg/l)	BDL						0.056						
31	Zinc(mg/l)	0.068						0.7						
32	Lead(mg/l)	0.745						0.069						
33	Iron(mg/l)	0.971						0.32						
34	Manganese (mg/l)	0.291						0.007						

35	Cobalt (mg/l)	BDL						0.23						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AH RIVER MANDOVI AT AMONA 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	7.28		7.51	6.28	5.9	7.33	6.8	7	7.16	7.26	7.1	7.1	
2	Temperature ˚C	33	7.72	31.1	29.1	30	29	29	30	29	28	29.7	29.8	
3	Conductivity µs/cm	31970	38380	25900	149.1	147.52	132.2	187.66	3400	17290	20800	24990	35570	
4	Dissolved Oxygen mg/l	5.1	4.5	5.3	6.3	7.5	6.8	9.9	6.5	5.8	6.6	5.7	5.6	
5	Turbidity (NTU)	4	8	3	10	5	4	21	11	17	21	2	3	
6	Nitrite Nitrogen mg/l	0.005	0.21	0.36	0.002	0.002	0.03	0.09	0.02	0.15	0.097	0.18	0.27	
7	Nitrogen(Nitrate) mg/l	0.9	0.29	2.13	0.32	0.16	0.21	0.25	0.94	0.4	BDL	BDL	BDL	
8	Phosphate mg/l	BDL	0.02	0.09	0.01	0.002	BDL	0.029	BDL	0.034	BDL	0.009	0.02	
9	BOD mg/l	1.5	1.2	2.1	0.2	0.5	1.4	1.6	1.5	2.4	2.8	1.1	1.5	
10	Chloride mg/l	9784	12746	9295	40	25	50	25	4699	6115	8194	10199	10732	
11	Fecal Coliform MPN/100 ml	330	170	490	3500	5400	5400	3500	7000	3300	2200	450	450	
12	Total Coliform MPN/100 ml	490	220	790	9200	9200	9200	5400	11000	4900	3400	780	780	
13	Ammonia mg/l	BDL	0.01	0.03	0.35	0.01	BDL	BDL	0.03	BDL	0.02	0.02	0.05	
14	Total Dissolved Solids(mg/l)	21628	21131	15540	101	68	61	112	2400	9509	12703	14899	19860	
15	Total Fixed Solids (mg/l)	-	-	-	-	43	30	77	3228	6181	9000	3760	19999	
16	Total Suspended Solid (mg/l)	98	189	484	11	4	29	25	14	26	70	82	30	
17	Hardness(mg/l)	5000	5200	3300	32	30	26	28	2100	4000	2400	2560	3200	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	0.83	1.9	

19	Boron(mg/l)	-	2.69	-	1.07	0.87	0.32	0.28	1	2.24	4.46	3.9		
20	Sulphate (mg/l)	1203	778.1	820.17	5.1	2.28	4	8.97	71	904	782.1	1275	1213.1	
21	Total Alkalinity(mg/l)	82	102	84	11	30	40	50	68	78	66	76	80	
22	Phenolphthalein Alkalinity(mg/l)	40	0	6	0	0	0	0	0	0	0	2	0	
23	Sodium(mg/l)	3193	5344	4073	19.2	17.9	55	18.9	1148	2065	2998	3199	1938	
24	Potassium(mg/l)	188.2	235.1	145.6	1.9	1.6	40.8	2.4	52.3	115.5	108.2	143.4	169.5	
25	Calcium as CaCO3(mg/l)	600	900	500	12	20	10	12	160	800	160.3	257	561.1	
26	Magnesium(mg/l)	1069.2	1045	680.4	4.9	2.43	3.9	3.89	413	486	486	467	437.4	
27	Nickel(mg/l)	0.796						0.021						
28	Copper(mg/l)	0.09						0.029						
29	Chromium(mg/l)	0.004						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.095						0.11						
32	Lead(mg/l)	0.871						0.04						
33	Iron(mg/l)	2.975						0.82						
34	Manganese (mg/l)	0.481						0.036						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AI RAIA LAKE 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	7.03	7.17	5.98	6.16	5.98	6.96	7.08	6.76	6.88	7.17	6.01		
2	Temperature ˚C	33	38	38	30	31	31.5	35	30	29.3	29.6	29.6		
3	Conductivity µs/cm	147.8	187.52	416.5	84.61	96.93	85.74	72.21	90.66	104.8	110	133		
4	Dissolved Oxygen mg/l	7	8.1	9.2	6.5	6	5.6	6.9	7.7	4.7	7	7.2		
5	Turbidity (NTU)	19	82	77	6	6	2	2	4	6	6	7		
6	Nitrite Nitrogen mg/l	0.007	0.025	0.012	0.002	BDL	BDL	0.001	BDL	BDL	BDL	BDL		
7	Nitrogen(Nitrate) mg/l	0.01	0.03	0.02	0.03	BDL	0.02	0.02	BDL	0.19	BDL	0.03		
8	Phosphate mg/l	0.0186	0.021	0.02	BDL	BDL	0.02	0.04	0.02	0.03	BDL	0.05		
9	BOD mg/l	6	9.9	8.6	2.4	1	1.7	1.3	2	2	3.9	4.8		
10	COD mg/l	28	56	-	14	10	12	10	11	3	10	18		
11	Chloride mg/l	25	35	25	17	8	9	11	32	13	15	19		
12	Fecal Coliform MPN/100 ml	2300	780	450	2300	450	200	1300	11000	24000	450	7900		
13	Total Coliform MPN/100 ml	3300	1300	780	4900	780	450	2300	22000	35000	780	17000		
14	Ammonia mg/l	0.24	6.15	0.03	0.14	0.01	BDL	0.1	0.04	0.03	0.1	1.45		
15	Total Dissolved Solids(mg/l)	132	146	250	50	57	51	47	55	59	63	96		
16	Total Fixed Solids (mg/l)	-	-	-	-	20	26	34	25	42	50	75		
17	Total Suspended Solid (mg/l)	82	136	114	62	26	35	13	20	16	6	34		
18	Hardness(mg/l)	32	26	25	26	28	26	24	42	38	30	18		
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	-		
20	Boron(mg/l)	-	0.086	0.66	1.92	0.48	0.73	0.34	0.03	0.18	0.37	-		
21	Sulphate (mg/l)	9.56	27.06	30.85	BDL	3.48	2.7	5.55	5	3.9	3.9	5.5		
22	Total Alkalinity(mg/l)	38	30	32	30	26	26	26	26	32	46	32		
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0		
24	Sodium(mg/l)	22.6	24.8	21.4	10.2	5.5	7.7	4.5	11.4	7.4	8	15.3		
25	Potassium(mg/l)	1.7	4	4.8	2.2	5	0.3	2.2	3.5	0.8	0.9	2.1		
26	Calcium as CaCO3(mg/l)	16	16	11	12	16	12	14	12	11.2	7.2	6.4		
27	Magnesium(mg/l)	3.9	2.43	3.4	3.4	3.4	3.4	2.43	2.9	5.3	2.9	0.49		
28	Nickel(mg/l)	BDL						0.059						
29	Copper(mg/l)	0.015						0.01						
30	Chromium(mg/l)	0.054						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.057						0.22						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	2.806						0.2						
35	Manganese (mg/l)	0.85						0.022						

36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AJ SAIPEM LAKE, NAVELIM 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	6.48		6.91	6.72	6.68	7.17	6.43	6.97	6.73				
2	Temperature ˚C	31		31	31	31	26.2	30	31.5	27.8				
3	Conductivity µs/cm	380800		465.8	289.2	323.57	298.6	373.1	332.5	427				
4	Dissolved Oxygen mg/l	0.2		2.5	2.4	2.7	1.1	2.2	7.8	1.9				
5	Turbidity (NTU)	88		18	10	13	22	2	11	61				
6	Nitrite Nitrogen mg/l	1.89		0.26	0.003	0.188	0.01	0.16	5.5	0.02				
7	Nitrogen(Nitrate) mg/l	9.68		2.97	1.27	0.26	0.422	3.25	3.4	7.22				
8	Phosphate mg/l	0.58		0.03	0.18	0.24	0.1	0.13	0.64	0.199				
9	BOD mg/l	7.8		1.8	12	2.6	1.1	8	2.3	1.7				
10	COD mg/l	28		47	20	18	28	16	12	20				
11	Chloride mg/l	46		59	38	46	40	607	117	1468				
12	Fecal Coliform MPN/100 ml	54000		54000	54000	54000	54000	54000	54000	35000				
13	Total Coliform MPN/100 ml	92000		92000	92000	92000	92000	92000	92000	54000				
14	Ammonia mg/l	0.08		0.94	0.01	0.12	0.17	0.16	0.52	0.03				
15	Total Dissolved Solids(mg/l)	220		293	154	191	220	20	275	263				
16	Total Fixed Solids (mg/l)	-		-	-	-	-	13	226	141				
17	Total Suspended Solid (mg/l)	112		71	54	28	71	43	13	65				
18	Hardness(mg/l)	64		130	92	86	98	88	64	600				
19	Fluoride(mg/l)	-		-	-	-	-	-	-	-				

20	Boron(mg/l)	-		3.08	1.17	1.92	1.79	0.18	2.85	1.95				
21	Sulphate (mg/l)	10.3		535.68	10.41	6	11	8.7	3.9	22.8				
22	Total Alkalinity(mg/l)	60		80	108	90	88	56	90	112				
23	Phenolphthalein Alkalinity(mg/l)	0		0	0	6	12	0	0	4				
24	Sodium(mg/l)	39.4		54	28.7	23	17.7	30.3	43.7	50				
25	Potassium(mg/l)	6.5		11.9	5	4.8	3.2	6.3	7.9	13.9				
26	Calcium as CaCO3(mg/l)	42		104	74	18	18	60	46	240.5				
27	Magnesium(mg/l)	5.3		6.3	4.4	16.5	19.4	6.8	4.37	48.6				
28	Nickel(mg/l)	0.087						0.041						
29	Copper(mg/l)	0.035						0.03						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.069						0.11						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	2.97						0.38						
35	Manganese (mg/l)	0.359						0.234						
36	Cobalt (mg/l)	BDL						0.085						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AK CURTORIM LAKE, CURTORIM 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	6.67	6.62	5.02	6.02	6.05	6.95	6.57	6.2	7.29	6.9	6.04	6.93	
2	Temperature ˚C	32	38	36	31	30.5	32	34	30	29	29.5	29.5	29.8	
3	Conductivity µs/cm	163.32	225.62	593.5	77.61	99.61	128.6	120.8	149.1	169.4	143	2.32	2.06	
4	Dissolved Oxygen mg/l	3.6	8.6	7.7	5.5	5	1.6	1.5	5.7	11	4	6.6	-	
5	Turbidity (NTU)	4	200	92	27	6	9	18	22	25	8	6	13	
6	Nitrite Nitrogen mg/l	0.004	1.34	0.008	0.005	0.005	0.01	BDL	BDL	BDL	BDL	0.03	BDL	
7	Nitrogen(Nitrate) mg/l	0.009	0.14	0.2	0.01	BDL	0.04	BDL	BDL	0.11	BDL	0.06	BDL	
8	Phosphate mg/l	0.009	0.011	0.02	BDL	BDL	0.02	0.029	0.02	0.02	BDL	0.03	BDL	
9	BOD mg/l	3.3	7.2	3	1.7	1.4	3.9	1.1	0.9	10.4	3.1	4.7		
10	COD mg/l	24	40	-	12	12	12	15	9	20	16	14	14	
11	Chloride mg/l	26	33.51	15.65	14.68	8.32	9.29	14.7	28	22.3	17	46	30.82	
12	Fecal Coliform MPN/100 ml	1300	7900	1700	3300	930	450	4900	1300	780	450	7900	4900	
13	Total Coliform MPN/100 ml	2300	11000	2200	7900	1200	680	7900	2300	450	780	17000	7900	
14	Ammonia mg/l	0.01	2.11	0.11	0.15	BDL	BDL	0.37	0.36	0.04	0.1	1.27	0.4	
15	Total Dissolved Solids(mg/l)	155	172	355	46	19	71	70	85	92	79	15	100	
16	Total Fixed Solids (mg/l)	-	-			11	36	52	44	86	50	9	62	
17	Total Suspended Solid (mg/l)	54	222	129	74	30	42	33	45	59	21	34	48	
18	Hardness(mg/l)	40	28	47	28	32	30	34	26	42	42	20	42	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	-	1.34	
20	Boron(mg/l)	-	BDL	0.5	2.71	BDL	BDL	0.05	0.2	0.15	0.39	-	0.28	
21	Sulphate (mg/l)	9.93	53.44	0.67	BDL	2.7	BDL	8.83	28	3	BDL	4.18	10.51	
22	Total Alkalinity(mg/l)	135	28	28	28	30	30	54	44	52	70	58	54	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	19.4	26.4	5.7	9.2	9.8	10.2	7.4	30.6	16.3	10.7	37.1	31.8	
25	Potassium(mg/l)	3	6	5.7	0.3	0.1	0.2	3.9	6.6	2.9	2.1	3.8	9.4	
26	Calcium as CaCO3(mg/l)	20	14	26	10	14	12	16	8.8	8.8	9.6	7.2	11.2	
27	Magnesium(mg/l)	4.9	3.4	5.1	4.37	4.37	4.37	4.37	BDL	4.9	4.4	BDL	3.4	
28	Nickel(mg/l)	BDL						0.037						
29	Copper(mg/l)	0.024						0.009						
30	Chromium(mg/l)	0.089						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.055						0.14						
33	Lead(mg/l)	BDL						BDL						

34	Iron(mg/l)	5.163						0.25						
35	Manganese (mg/l)	0.555						0.22						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AL RIVER ZUARI AT MADKAI JETTY 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	7.89	7.65	7.98	7.33	7.67	8.2	7.41	7.6	7.71	7.1	7.06	7.6	
2	Temperature ˚C	33	33	26.7	30	31	33	32	31	30	29	28	29.3	
3	Conductivity µs/cm	49350	41260	46370	4669	5205	24980	25360	41500	49900	46700	40660	37880	
4	Dissolved Oxygen mg/l	5.2	4.6	5.6	6.8	7.8	6.2	6.5	5.8	4.9	5.6	5	5	
5	Turbidity (NTU)	17	21	13	27	17	14	19	13	14	12	16	4	
6	Nitrite Nitrogen mg/l	BDL	0.05	0.05	0.04	0.007	0.043	0.009	0.009	0.1	0.02	0.02	0.06	
7	Nitrogen(Nitrate) mg/l	0.19	0.15	0.2	0.63	0.15	0.09	0.157	0.07	0.32	0.31	0.14	0.01	
8	Phosphate mg/l	0.02	0.06	0.04	0.16	0.09	BDL	BDL	0.05	0.05	0.02	0.06	0.11	
9	BOD mg/l	1.1	2.4	2.4	4.2	3.1	1.8	1.5	1.6	1.9	1.9	1.3	2.4	
10	Chloride mg/l	26274	39238	17744	1353	1846	15737	12141	15153	17605	23709	17872	14691	
11	Fecal Coliform MPN/100 ml	490	130	450	780	1100	450	450	1300	450	200	450	450	
12	Total Coliform MPN/100 ml	790	230	780	1100	1400	780	780	1700	780	450	780	1300	
13	Ammonia mg/l	0.19	0.04	0.01	0.31	0.09	BDL	BDL	0.06	0.02	0.01	1.42	0.07	
14	Total Dissolved Solids(mg/l)	39458	53105	68449	2801	2860	16767	17498	26770	29981	32690	26242	32685	
15	Total Fixed Solids (mg/l)	-	-	-	-	200	9959	18848	22806	13656	25152	11544	8209	
16	Total Suspended Solid (mg/l)	210	238	135	20	54	112	110	102	260	38	130	147	

17	Hardness(mg/l)	5460	6600	5200	480	530	11800	3900	5000	8400	6000	4800	4640	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	BDL	0.66	
19	Boron(mg/l)	-	-	6.1	1.43	4.78	1.19	1.14	7.12	9.65	2.17	BDL	2.11	
20	Sulphate (mg/l)	3311.6	1344.63	45	54.8	77.9	1122	1135	1686	2.43	1689.2	2276	2006	
21	Total Alkalinity(mg/l)	106	100	60	82	48	76	35	104	56	116	116	86	
22	Phenolphthalein Alkalinity(mg/l)	8	8	6	-	0	0	0	0	0	0	4	2	
23	Sodium(mg/l)	5069	899	6410	683.3	905.9	3071	3865	7405	257	6127	5389	1802	
24	Potassium(mg/l)	330.3	4.8	254.6	34.6	38.6	144.3	198.5	266	5680	275.1	186.6	198	
25	Calcium as CaCO3(mg/l)	920	1400	1200	80	98	1200	1500	481	641	1360	481	321	
26	Magnesium(mg/l)	1103.2	1263	972	97.2	105	2576	2760	923	1652	631.8	878	933	
27	Nickel(mg/l)	0.566						0.024						
28	Copper(mg/l)	0.115						0.014						
29	Chromium(mg/l)	BDL						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.085						0.02						
32	Lead(mg/l)	0.648						0.068						
33	Iron(mg/l)	1.802						0.8						
34	Manganese (mg/l)	0.219						0.047						
35	Cobalt (mg/l)	BDL						0.009						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AM RIVER ZUARI AT BORIM BRIDGE 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	7.77	7.25	7.6	6.25	6.24	7.57	7.01	7.13	7.2	7	6.95	7.2	
2	Temperature ˚C	34	34.5	29.7	29	30	33	32	31	29	28	29	28.7	
3	Conductivity µs/cm	35230	22340	27630	475.9	274.7	7190	9332	22500	37200	25300	27630	28910	
4	Dissolved Oxygen mg/l	6.5	5.5	6.6	7	7.6	6.8	6.9	6.3	4.6	5.2	6.1	5.9	
5	Turbidity (NTU)	6	19	28	16	9	3	18	6	9	6	108	13	
6	Nitrite Nitrogen mg/l	0.03	BDL	0.02	BDL	0.002	0.005	0.008	0.002	0.01	0.05	0.12	0.12	
7	Nitrogen(Nitrate) mg/l	0.07	0.314	0.1	0.44	0.16	0.04	0.17	0.12	0.45	0.93	0.05	0.17	
8	Phosphate mg/l	0.02	0.03	0.03	0.14	0.023	BDL	BDL	0.007	0.03	0.03	0.04	0.041	
9	BOD mg/l	1.4	1.8	3	3.3	1.8	2	1.3	2.1	1.6	2.4	3.4	2.5	
10	Chloride mg/l	13065	21743	13996	127	65	2137	3133	7188	12991	12978	11656	9349	
11	Fecal Coliform MPN/100 ml	490	230	1700	7900	7900	1700	1300	450	200	450	2300	1300	
12	Total Coliform MPN/100 ml	700	330	2100	17000	13000	3300	1700	780	450	930	3300	2300	
13	Ammonia mg/l	0.13	0.05	0.04	0.24	0.009	BDL	BDL	0.009	0.02	0.03	0.39	0.002	
14	Total Dissolved Solids(mg/l)	26425	20343	35559	270	151.1	3580	6439	12544	21187	15180	18760	23118	
15	Total Fixed Solids (mg/l)	-	88	-	-	76	1849	3319	10075	12728	12100	14669	7078	
16	Total Suspended Solid (mg/l)	142	88	257	15	18	6	44	24	170	29	114	116	
17	Hardness(mg/l)	3820	3400	2800	120	40	704	740	2600	4000	3200	3800	2960	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	BDL	1.78	
19	Boron(mg/l)	-	-	-	0.59	0.22	2.95	2.22	4.27	4.22	4.26	BDL	1.48	
20	Sulphate (mg/l)	1683.8	919.55	51	39	6.23	17.7	18.6	635.1	1365	834.4	1485	1466	
21	Total Alkalinity(mg/l)	84	56	54	42	32	40	45	60	110	70	88	86	
22	Phenolphthalein Alkalinity(mg/l)	8	2	15	-	0	0	0	0	8	0	0	0	
23	Sodium(mg/l)	3463	5.7	3727	66.5	43.1	665.2	775.2	3587	200	3341	3647	1397	
24	Potassium(mg/l)	234	3.7	158.1	4.3	2.9	45.2	50.3	162.4	4156	161.9	149.5	149	
25	Calcium as CaCO3(mg/l)	640	800	600	80	14	134	150	240.5	601	561.12	401	224	
26	Magnesium(mg/l)	772.74	631.8	535	9.72	6.32	138.5	140.7	486	608	437.4	680	583	
27	Nickel(mg/l)	0.805						0.014						
28	Copper(mg/l)	0.13						0.009						
29	Chromium(mg/l)	BDL						BDL						
30	Cadmium(mg/l)	0.103						0.009						
31	Zinc(mg/l)	0.1						0.09						
32	Lead(mg/l)	0.822						BDL						
33	Iron(mg/l)	8.79						1.3						

34	Manganese (mg/l)	0.403						0.09						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						
43	Alpha endosul-phane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AN CARAMBOLIM LAKE 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	6.64	7.72	7.58	6.53	6.45	7.13	6.78	6.7	7.19	7.28	7.25	7.55	
2	Temperature ˚C	33	30	30.4	29	32	31	30	31	30	28	27	29	
3	Conductivity µs/cm	195.1	235.3	188.73	106.2	135.45	126.3	133.24	146.6	147.2	155.5	283	184	
4	Dissolved Oxygen mg/l	3.6	6	8.5	5.5	6.8	5.7	5	2.8	4.8	5.7	5.7	6.8	
5	Turbidity (NTU)	5	8	5	8	8	1	2	2	4	3	4	6	
6	Nitrite Nitrogen mg/l	BDL	0.006	0.005	0.04	0.002	0.002	BDL	BDL	0.01	BDL	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	BDL	1.23	0.11	1.1	0.53	0.58	0.46	0.85	BDL	BDL	0.17	0.36	
8	Phosphate mg/l	BDL	0.02	0.1	BDL	0.02	BDL	0.034	BDL	0.072	0.006	BDL	0.07	
9	BOD mg/l	1.5	3	5.1	1.3	3.3	1.6	1	1.5	1.5	2.1	0.4	0.8	
10	COD mg/l	28	28	-	-	3	4	4	26	5	11	8	14	
11	Chloride mg/l	23	21	25	15	10	12	11	14	12	19	25	37	
12	Fecal Coliform MPN/100 ml	1700	130	110	490	7900	4900	4900	7900	230	1300	200	490	
13	Total Coliform MPN/100 ml	3500	230	140	790	13000	7000	7900	22000	330	2200	400	700	
14	Ammonia mg/l	0.03	0.002	0.27	0.27	0.02	BDL	BDL	BDL	0.128	0.02	BDL	0.12	
15	Total Dissolved Solids(mg/l)	116	114	113	77	80	100	110	100	106	98	169	120	

16	Total Fixed Solids (mg/l)	-	-	-	-	64	82	88	42	73	76	89	80	
17	Total Suspended Solid (mg/l)	9	28	7	9	62	18	24	10	12	11	18	39	
18	Hardness(mg/l)	56	68	54	42	52	38	56	40	62	40	66	48	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	BDL	0.22	
20	Boron(mg/l)	-	1.23	2.07	1.43	0.01	0.8	1	1.4	1.27	1.46	-	0.24	
21	Sulphate (mg/l)	2.19	5.74	8.12	4.7	3.69	3.4	4.6	3.7	5.6	2.84	BDL	3.8	
22	Total Alkalinity(mg/l)	80	70	52	46	62	65	70	68	60	52	70	46	
23	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	17.9	21.7	21.1	6.7	10.4	45.4	5.4	15.6	10.7	1.3	23.8	30.4	
25	Potassium(mg/l)	1.5	3.3	2.6	1.4	2	41	2.5	3.4	1	0.8	2.1	9	
26	Calcium as CaCO3(mg/l)	44	42	34	32	40	14	38	13.7	12	13.6	16	16.83	
27	Magnesium(mg/l)	2.92	6.3	4.86	2.4	2.92	5.8	4.37	1.5	7.8	1.46	6.3	1.46	
28	Nickel(mg/l)	0.073						0.091						
29	Copper(mg/l)	BDL						0.06						
30	Chromium(mg/l)	0.072						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.052						0.14						
33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	2.732						0.91						
35	Manganese (mg/l)	0.555						0.042						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosul-phane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AO ANJUNEM LAKE 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit**
1	pH	7.35	7.9	7.03	7.09	6.99	7.55	7.59	6.36	7.1	7.4	6.96	7.92	
2	Temperature ˚C	32	32.5	31	29.9	27	32	32	28.2	28.7	27	29	31	
3	Conductivity µs/cm	53.63	52.71	100.3	42.99	56.65	44.19	43.88	58.5	56.82	103.8	57.8	53.74	
4	Dissolved Oxygen mg/l	7.9	7.9	7	8.5	9.1	8.3	8.4	8	7.9	4.9	7.5	7.2	
5	Turbidity (NTU)	3	3	7	12	2	1	1	2	BDL	2	4	2	
6	Nitrite Nitrogen mg/l	0.0015	0.002	0.006	0.002	0.003	0.001	0.001	0.003	BDL	0.01	BDL	0.001	
7	Nitrogen(Nitrate) mg/l	0.024	0.024	0.04	0.13	0.26	0.03	0.05	0.04	0.42	BDL	BDL	BDL	
8	Phosphate mg/l	0.011	0.011	BDL	0.02	0.02	BDL	0.004	0.012	0.021	0.14	BDL	0.09	
9	BOD mg/l	1.5	1.4	0.4	1.9	1.5	1.3	1.5	2	1.7	1.7	1.2	0.4	
10	COD mg/l	2	12	15	-	4	-	7	6	4	8	8	2	
11	Chloride mg/l	6	8	7	7	9	5	9	7	6	9	8	4	
12	Fecal Coliform MPN/100 ml	7.8	79	22	49	130	79	49	78	130	45	23	23	
13	Total Coliform MPN/100 ml	23	220	27	170	540	240	240	130	230	78	46	79	
14	Ammonia mg/l	0.06	BDL	0.11	0.11	0.005	0.2	BDL	0.07	BDL	0.07	0.06	0.156	
15	Total Dissolved Solids(mg/l)	88	36	48	49	37	54	64	37	37	73	31	32	
16	Total Fixed Solids (mg/l)	-	-	-	-	30	31	33	10	27	41	16	18	
17	Total Suspended Solid (mg/l)	9	3	4	8	30	11	12	9	7	5	8	3	
18	Hardness(mg/l)	40	16	28	28	14	12	22	16	16	26	14	22	
19	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	2.1	BDL	
20	Boron(mg/l)	-	-	BDL	0.18	4	0.18	0.16	2.59	3.99	0.35	3.2	0.13	
21	Sulphate (mg/l)	1.09	9.21	0.99	2.96	3.12	1.12	10.03	6.29	3.12	1.15	5.31	BDL	
22	Total Alkalinity(mg/l)	22	32	30	32	24	20	38	18	24	28	30	36	
23	Phenolphthalein Alkalinity(mg/l)	0	-	0	0	0	0	0	0	0	0	0	0	
24	Sodium(mg/l)	4.5	4.4	6.4	4.8	4.9	43.1	5	5.6	2	5.3	3.1	11.2	
25	Potassium(mg/l)	1.9	1.3	0.4	0.5	0.4	40.2	1.6	1.6	1	0.6	1.8	6.9	
26	Calcium as CaCO3(mg/l)	22	8	16	16	8	8	8	3.2	3.21	5.61	4	4.8	
27	Magnesium(mg/l)	4.4	1.94	2.9	2.9	1.5	BDL	3.4	1.94	BDL	2.04	BDL	2.43	
28	Nickel(mg/l)	0.037						0.017						
29	Copper(mg/l)	0.046						0.035						
30	Chromium(mg/l)	BDL						BDL						
31	Cadmium(mg/l)	BDL						BDL						
32	Zinc(mg/l)	0.043						0.21						

33	Lead(mg/l)	BDL						BDL						
34	Iron(mg/l)	0.596						0.95						
35	Manganese (mg/l)	0.648						0.034						
36	Cobalt (mg/l)	BDL						BDL						
37	Alpha BHC (mg/l)	BDL						BDL						
38	Beta BHC (mg/l)	BDL						BDL						
39	Gamma BHC (mg/l)	BDL						BDL						
40	Aldrin (mg/l)	BDL						BDL						
41	Dieldrin (mg/l)	BDL						BDL						
42	O,P-DDT (mg/l)	BDL						BDL						
43	P,P-DDT (mg/l)	BDL						BDL						
44	Alpha endosulphane (mg/l)	BDL						BDL						
45	β-endosulphane (mg/l)	BDL						BDL						
46	carboryl (mg/l)	BDL						BDL						
47	Anilofos (mg/l)	BDL						BDL						
48	Parathion methyl (mg/l)	BDL						BDL						
49	Malathion (mg/l)	BDL						BDL						
50	Chloropylos (mg/l)	BDL						BDL						

Table No. : 3AP BOREWELL/TUBE WELL/ OPEN WELL IN ZUARI INDUSTRIES LTD, ZUARINAGAR 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	Sample not collected as well was dismantled	Sample not collected as well was dismantled	6.5-8.5
2	Temperature ˚C			
3	Conductivity µs/cm			
4	Dissolved Oxygen mg/l			6 mg/l or more
5	Turbidity (NTU)			
6	Nitrite Nitrogen mg/l			
7	Nitrogen(Nitrate) mg/l			
8	Phosphate mg/l			
9	BOD mg/l			2 mg/l or less
10	COD mg/l			
11	Chloride mg/l			
12	Fecal Coliform MPN/100 ml			
13	Total Coliform MPN/100 ml			50 or less MPN/100 ml
14	Ammonia mg/l			
15	Total Dissolved Solids(mg/l)			
16	Total Fixed Solids (mg/l)			
17	Total Suspended Solid (mg/l)			
18	Hardness(mg/l)			

19	Fluoride(mg/l)			
20	Boron(mg/l)			
21	Sulphate (mg/l)			
22	Total Alkalinity(mg/l)			
23	Phenolphthalein Alkalinity(mg/l)			
24	Sodium(mg/l)			
25	Potassium(mg/l)			
26	Calcium as CaCO3(mg/l)			
27	Magnesium(mg/l)			
28	Nickel(mg/l)			
29	Copper(mg/l)			
30	Chromium(mg/l)			
31	Cadmium(mg/l)			
32	Zinc(mg/l)			
33	Lead(mg/l)			
34	Iron(mg/l)			
35	Manganese (mg/l)			
36	Cobalt (mg/l)			
37	Alpha BHC (mg/l)			
38	Beta BHC (mg/l)			
39	Gamma BHC (mg/l)			
40	Aldrin (mg/l)			
41	Dieldrin (mg/l)			
42	O,P-DDT (mg/l)			
43	P,P-DDT (mg/l)			
44	Alpha endosulphane (mg/l)			
45	β-endosulphane (mg/l)			
46	carboryl (mg/l)			
47	Anilofos (mg/l)			
48	Parathion methyl (mg/l)			
49	Malathion (mg/l)			
50	Chloropylos (mg/l)			

Table No. : 3AQ BOREWELL/TUBE WELL/OPEN WELL AT SANCOALE INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	6.16	7.11	6.5-8.5
2	Temperature ˚C	29.9	29	
3	Conductivity µs/cm	127.6	95.65	
4	Dissolved Oxygen mg/l	6.9	7.4	6 mg/l or more
5	Turbidity (NTU)	4	1	
6	Nitrite Nitrogen mg/l	0.034	0.008	
7	Nitrogen(Nitrate) mg/l	0.016	0.29	
8	Phosphate mg/l	0.037	0.02	
9	BOD mg/l	0.1	1.5	2 mg/l or less
10	COD mg/l	2	16	
11	Chloride mg/l	15	44	
12	Fecal Coliform MPN/100 ml	23	NIL	
13	Total Coliform MPN/100 ml	130	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	0.02	0.07	
15	Total Dissolved Solids(mg/l)	1149	57	
16	Total Fixed Solids (mg/l)	-	32	
17	Total Suspended Solid (mg/l)	19	36	
18	Hardness(mg/l)	26	26	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	-		
21	Sulphate (mg/l)	7.7	BDL	
22	Total Alkalinity(mg/l)	24	50	
23	Phenolphthalein Alkalinity(mg/l)	0	0	
24	Sodium(mg/l)	9.8	2	
25	Potassium(mg/l)	1.5	1.6	
26	Calcium as CaCO3(mg/l)	14	22	
27	Magnesium(mg/l)	2.9	BDL	
28	Nickel(mg/l)	BDL	0.031	
29	Copper(mg/l)	0.029	0.021	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.218	0.14	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	1.147	0.88	
35	Manganese (mg/l)	0.844	0.037	
36	Cobalt (mg/l)	BDL	BDL	

37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	
40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AR BOREWELL/TUBE WELL/ OPEN WELL AT VERNA INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	6.8	6.21	6.5-8.5
2	Temperature ˚C	31.5	32	
3	Conductivity µs/cm	277.4	340.6	
4	Dissolved Oxygen mg/l	8	6	6 mg/l or more
5	Turbidity (NTU)	8	0.2	
6	Nitrite Nitrogen mg/l	0.0004	0.001	
7	Nitrogen(Nitrate) mg/l	0.01	0.16	
8	Phosphate mg/l	0.009	0.02	
9	BOD mg/l	1.2	0.5	2 mg/l or less
10	COD mg/l	3	5	
11	Chloride mg/l	30	85	
12	Fecal Coliform MPN/100 ml	Nil	NIL	
13	Total Coliform MPN/100 ml	4.5	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	0.06	BDL	
15	Total Dissolved Solids(mg/l)	112	206	
16	Total Fixed Solids (mg/l)	-	168	
17	Total Suspended Solid (mg/l)	12	20	
18	Hardness(mg/l)	94	80	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	-	1.59	
21	Sulphate (mg/l)	24.8	1321	
22	Total Alkalinity(mg/l)	88	46	
23	Phenolphthalein Alkalinity(mg/l)	0	0	

24	Sodium(mg/l)	24.1	22.5	
25	Potassium(mg/l)	0.6	3.2	
26	Calcium as CaCO3(mg/l)	42	48	
27	Magnesium(mg/l)	12.6	7.78	
28	Nickel(mg/l)	0.047	BDL	
29	Copper(mg/l)	0.019	0.01	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.06	0.29	
33	Lead(mg/l)	BDL	ND	
34	Iron(mg/l)	0.283	0.97	
35	Manganese (mg/l)	0.082	0.042	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	
40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AS BOREWELL/ TUBE WELL/ OPEN WELL KUNDAIM INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	6.8	6.5	6.5-8.5
2	Temperature ˚C	31.5	32	
3	Conductivity µs/cm	277.4	338.8	
4	Dissolved Oxygen mg/l	2.6	2.3	6 mg/l or more
5	Turbidity (NTU)	8	47	
6	Nitrite Nitrogen mg/l	0.003	BDL	
7	Nitrogen(Nitrate) mg/l	0.11	BDL	
8	Phosphate mg/l	0.004	0.23	
9	BOD mg/l	0.6	0.4	2 mg/l or less
10	COD mg/l	10	2	
11	Chloride mg/l	11	10	
12	Fecal Coliform MPN/100 ml	Nil	NIL	

13	Total Coliform MPN/100 ml	<1.8	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	0.48	0.02	
15	Total Dissolved Solids(mg/l)	176	265	
16	Total Fixed Solids (mg/l)	-	124	
17	Total Suspended Solid (mg/l)	6	19	
18	Hardness(mg/l)	102	136	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	3.26	4.33	
21	Sulphate (mg/l)	41.31	15.4	
22	Total Alkalinity(mg/l)	94	118	
23	Phenolphthalein Alkalinity(mg/l)	-	0	
24	Sodium(mg/l)	10.2	6.2	
25	Potassium(mg/l)	6.6	5.6	
26	Calcium as CaCO3(mg/l)	72	88	
27	Magnesium(mg/l)	7.3	11.7	
28	Nickel(mg/l)	0.055	BDL	
29	Copper(mg/l)	0.017	0.021	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.244	0.14	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	6.842	0.38	
35	Manganese (mg/l)	1.508	0.143	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	
40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AT BORE WELL/ TUBE WELL / OPENWELL IN CORLIM INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	5.78	4.4	6.5-8.5
2	Temperature ˚C	31	31	
3	Conductivity µs/cm	81.81	67.28	
4	Dissolved Oxygen mg/l	6.5	5.7	6 mg/l or more
5	Turbidity (NTU)	2	1	
6	Nitrite Nitrogen mg/l	0.006	BDL	
7	Nitrogen(Nitrate) mg/l	0.06	0.91	
8	Phosphate mg/l	0.001	BDL	
9	BOD mg/l	0.3	1.1	2 mg/l or less
10	COD mg/l	6	4	
11	Chloride mg/l	15	13	
12	Fecal Coliform MPN/100 ml	Nil	NIL	
13	Total Coliform MPN/100 ml	<1.8	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	3.56	0.03	
15	Total Dissolved Solids(mg/l)	51	55	
16	Total Fixed Solids (mg/l)	-	23	
17	Total Suspended Solid (mg/l)	9	5	
18	Hardness(mg/l)	10	10	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	3.29	4.29	
21	Sulphate (mg/l)	20.22	BDL	
22	Total Alkalinity(mg/l)	18	18	
23	Phenolphthalein Alkalinity(mg/l)	-	0	
24	Sodium(mg/l)	13	6.9	
25	Potassium(mg/l)	1.6	1.3	
26	Calcium as CaCO3(mg/l)	6	6	
27	Magnesium(mg/l)	1	BDL	
28	Nickel(mg/l)	0.034	BDL	
29	Copper(mg/l)	0.036	0.027	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.122	0.12	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	0.368	1.01	
35	Manganese (mg/l)	1.28	0.046	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	

40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AU BOREWELL/TUBE WELL/OPEN WELL IN PILERNE INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	7.6	7.55	6.5-8.5
2	Temperature ˚C	34	30	
3	Conductivity µs/cm	262.02	291	
4	Dissolved Oxygen mg/l	4.3	7.1	6 mg/l or more
5	Turbidity (NTU)	4	1	
6	Nitrite Nitrogen mg/l	BDL	0.001	
7	Nitrogen(Nitrate) mg/l	0.02	0.003	
8	Phosphate mg/l	0.01	0.03	
9	BOD mg/l	1.4	1.1	2 mg/l or less
10	COD mg/l	BDL	2	
11	Chloride mg/l	13	10	
12	Fecal Coliform MPN/100 ml	Nil	17	
13	Total Coliform MPN/100 ml	<1.8	33	50 or less MPN/100 ml
14	Ammonia mg/l	0.02	0.06	
15	Total Dissolved Solids(mg/l)	157.2	160	
16	Total Fixed Solids (mg/l)	-	18	
17	Total Suspended Solid (mg/l)	129	2	
18	Hardness(mg/l)	94	100	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	-		
21	Sulphate (mg/l)	1.04	10.1	
22	Total Alkalinity(mg/l)	130	126	
23	Phenolphthalein Alkalinity(mg/l)	4	0	
24	Sodium(mg/l)	22.6	18	
25	Potassium(mg/l)	2.2	4.2	
26	Calcium as CaCO3(mg/l)	70	72	
27	Magnesium(mg/l)	5.83	6.8	
28	Nickel(mg/l)	0.074	BDL	

29	Copper(mg/l)	BDL	0.043	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.363	0.82	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	1.851	1.01	
35	Manganese (mg/l)	0.564	0.036	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	
40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AV BORE WELL/TUBE WELL/ OPEN WELL IN CUNCOLIM INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	6.53	5.8	6.5-8.5
2	Temperature ˚C	32	32	
3	Conductivity µs/cm	385.4	748.6	
4	Dissolved Oxygen mg/l	1.6	2.7	6 mg/l or more
5	Turbidity (NTU)	1	5	
6	Nitrite Nitrogen mg/l	0.001	0.002	
7	Nitrogen(Nitrate) mg/l	0.055	1.12	
8	Phosphate mg/l	0.004	0.02	
9	BOD mg/l	2.2	1.3	2 mg/l or less
10	COD mg/l	5	10	
11	Chloride mg/l	22	94	
12	Fecal Coliform MPN/100 ml	Nil	NIL	
13	Total Coliform MPN/100 ml	<1.8	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	0.354	0.02	
15	Total Dissolved Solids(mg/l)	211	416	
16	Total Fixed Solids (mg/l)	-	266	

17	Total Suspended Solid (mg/l)	6	7	
18	Hardness(mg/l)	160	252	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	-	3.6	
21	Sulphate (mg/l)	34.32	9.82	
22	Total Alkalinity(mg/l)	142	164	
23	Phenolphthalein Alkalinity(mg/l)	-	16	
24	Sodium(mg/l)	1.3	7.3	
25	Potassium(mg/l)	0	4.1	
26	Calcium as CaCO3(mg/l)	98	112	
27	Magnesium(mg/l)	15.07	34	
28	Nickel(mg/l)	BDL	0.014	
29	Copper(mg/l)	0.038	0.017	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.222	0.12	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	1.952	0.18	
35	Manganese (mg/l)	0.507	0.225	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	
40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AW BOREWELL/TUBE WELL/OPEN WELL IN BETHORA INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for class A as per CPCB classification based on designated best use
1	pH	5.42	5.64	6.5-8.5
2	Temperature ˚C	31	33	
3	Conductivity µs/cm	100.2	94.78	
4	Dissolved Oxygen mg/l	4.2	4.5	6 mg/l or more
5	Turbidity (NTU)	1	2	
6	Nitrite Nitrogen mg/l	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	2.5	0.05	
8	Phosphate mg/l	0.01	0.03	
9	BOD mg/l	0.6	0.2	2 mg/l or less
10	COD mg/l	BDL	4	
11	Chloride mg/l	15	11	
12	Fecal Coliform MPN/100 ml	Nil	NIL	
13	Total Coliform MPN/100 ml	<1.8	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	0.23	0.02	
15	Total Dissolved Solids(mg/l)	60	72	
16	Total Fixed Solids (mg/l)	-	50	
17	Total Suspended Solid (mg/l)	8	6	
18	Hardness(mg/l)	28	31	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	-		
21	Sulphate (mg/l)	14.16	15.2	
22	Total Alkalinity(mg/l)	22	19	
23	Phenolphthalein Alkalinity(mg/l)	0	0	
24	Sodium(mg/l)	14.2	13	
25	Potassium(mg/l)	2.1	1.9	
26	Calcium as CaCO3(mg/l)	12	14	
27	Magnesium(mg/l)	3.88	4.2	
28	Nickel(mg/l)	0.012	0.08	
29	Copper(mg/l)	0.053	0.017	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.114	0.04	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	0.733	0.98	
35	Manganese (mg/l)	0.147	0.032	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	

40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

Table No. : 3AX BOREWELL/ TUBEWELL/OPENWELL IN MADKAI INDUSTRIAL ESTATE 2017-2018

Sr. No	Parameters	Apr-17	Oct-17	Limit for Class A as per CPCB classification based on designated best use
1	pH	5.83	5.93	6.5-8.5
2	Temperature ˚C	33.5	32	
3	Conductivity µs/cm	68.62	66.19	
4	Dissolved Oxygen mg/l	6.5	4.3	6 mg/l or more
5	Turbidity (NTU)	0.24	0.23	
6	Nitrite Nitrogen mg/l	BDL	BDL	
7	Nitrogen(Nitrate) mg/l	0.02	1.9	
8	Phosphate mg/l	BDL	0.02	
9	BOD mg/l	0.1	0.5	2 mg/l or less
10	COD mg/l	6	3	
11	Chloride mg/l	10	12	
12	Fecal Coliform MPN/100 ml	Nil	NIL	
13	Total Coliform MPN/100 ml	<1.8	<1.8	50 or less MPN/100 ml
14	Ammonia mg/l	0.17	0.14	
15	Total Dissolved Solids(mg/l)	39	49	
16	Total Fixed Solids (mg/l)	-	27	
17	Total Suspended Solid (mg/l)	4	4	
18	Hardness(mg/l)	28	29	
19	Fluoride(mg/l)	-		
20	Boron(mg/l)	-		
21	Sulphate (mg/l)	4.76	5.2	
22	Total Alkalinity(mg/l)	20	20	
23	Phenolphthalein Alkalinity(mg/l)	0	0	
24	Sodium(mg/l)	10.1	15	

25	Potassium(mg/l)	1.8	2	
26	Calcium as Ca(mg/l)	10	13	
27	Magnesium(mg/l)	4.37	3.95	
28	Nickel(mg/l)	0.015	0.091	
29	Copper(mg/l)	0.051	0.016	
30	Chromium(mg/l)	BDL	BDL	
31	Cadmium(mg/l)	BDL	BDL	
32	Zinc(mg/l)	0.041	0.07	
33	Lead(mg/l)	BDL	BDL	
34	Iron(mg/l)	3.625	0.86	
35	Manganese (mg/l)	0.111	0.044	
36	Cobalt (mg/l)	BDL	BDL	
37	Alpha BHC (mg/l)	BDL	BDL	
38	Beta BHC (mg/l)	BDL	BDL	
39	Gamma BHC (mg/l)	BDL	BDL	
40	Aldrin (mg/l)	BDL	BDL	
41	Dieldrin (mg/l)	BDL	BDL	
42	O,P-DDT (mg/l)	BDL	BDL	
43	P,P-DDT (mg/l)	BDL	BDL	
44	Alpha endosulphane (mg/l)	BDL	BDL	
45	β-endosulphane (mg/l)	BDL	BDL	
46	carboryl (mg/l)	BDL	BDL	
47	Anilofos (mg/l)	BDL	BDL	
48	Parathion methyl (mg/l)	BDL	BDL	
49	Malathion (mg/l)	BDL	BDL	
50	Chloropylos (mg/l)	BDL	BDL	

ANNEXYRE IV - 1

National River Conservation Programme Data 2017-18

Table No. : 4A RIVER MANDOVI AT RIBANDAR-CHODAN FERRY, PANAJI 2017-2018														
Sr. No	**Parameters**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.53	7.84	7.78	6.66	6.43	7.38	6.94	7.87	7.79	7.8	7.54	7.53	6.5 - 8.5
2	Temperature ˚C	30	28.4	26.9	30.5	30	29.5	28	29.3	26.5	30	26.9	30.1	
3	Conductivity µs/cm	43600	38420	46480	488.9	726.56	2469	18340	34040	41700	50500	51100	47110	
4	Dissolved Oxygen mg/l	6.09	5.9	6	7.1	6.6	7	5.4	5	-	5.3	5.4	5.7	4 mg/l or more
5	Turbidity (NTU)	5	13	6	31	12	13	9	22	77	5	7	4	30 NTU
6	Nitrite Nitrogen mg/l	0.02	0.14	0.03	0.01	0.006	0.003	0.02	0.01	0.018	0.01	0.031	0.009	
7	Nitrogen(Nitrate) mg/l	0.03	0.05	0.09	0.41	0.34	0.15	0.17	0.11	0.36	0.09	0.25	0.62	
8	Phosphate mg/l	0.007	0.03	0.02	0.03	0.03	BDL	0.03	0.02	0.04	0.03	0.036	0.095	
9	BOD mg/l	2.5	3	1.8	0.1	0.4	1.3	2.7	0.6	1.5	1.5	0.8	1.6	3 mg/l or less
10	Chloride mg/l	15177	20619	16755	160	9797	1336	7436	10685	16266	19062	24243	16511	
11	Fecal Coliform MPN/100 ml	490	1300	2400	4900	4900	3300	7900	3300	7900	1700	2300	4600	100 or less MPN/100 ml
12	Total Coliform MPN/100 ml	790	2400	3500	7900	7900	7000	13000	4900	11000	3300	3300	2300	
13	Ammonia mg/l	0.61	0.09	0.02	0.45	0.19	0.07	-	0.12	0.13	0.02	0.05	0.47	
14	Total Dissolved Solids(mg/l)	23031	50623	31573	360	596	1736	11921	23246	25300	35075	30792	26897	
15	Total Fixed Solids (mg/l)	-	-	-	-	-	1110	6028	16047	19597	18684	27540	19962	
16	Total Suspended Solid (mg/l)	127	257	125	106	15	19	200	185	124	42	190	147	
17	Hardness(mg/l)	5520	7600	6400	60	320	240	2500	3480	7600	6240	5880	5200	
18	Fluoride(mg/l)	-	-	-	-	-	-	-	-	-	-	1.61	2.09	
19	Boron(mg/l)	-	1.28	3.87	2.98	3.44	2.35	2.2	8.12	-	6.21	14.45	1.6	
20	Sulphate (mg/l)	2118	5593	1462	78.2	83	82.56	754.46	1505	2668.6	2317	4648	2916.9	
21	Total Alkalinity(mg/l)	112	65	120	38	76	44	74	88	96	112	140	104	
22	Phenolphthalein Alkalinity(mg/l)	0	4	4	0	0	0	0	4	6	12	6	6	
23	Sodium(mg/l)	5822	6580	6508	69	773.2	397.8	2508	5878	5124	6198	5686	2207	
24	Potassium(mg/l)	256.5	278.2	257.1	4.6	37	14.7	116.8	227	243.2	287	192.7	223.9	
25	Calcium as CaCO3(mg/l)	880	1600	1200	22	74	48	1000	208	481	433	41.7	481	
26	Magnesium(mg/l)	1127	1458	1263.6	9.6	60	42.3	364.5	296	1555.2	1254	11761	972	
27	Nickel(mg/l)	1.217						0.016						
28	Copper(mg/l)	0.121						0.063						
29	Chromium(mg/l)	0.019						BDL						
30	Cadmium(mg/l)	BDL						BDL						
31	Zinc(mg/l)	0.456						0.42						
32	Lead(mg/l)	1.311						0.108						
33	Iron(mg/l)	3.253						0.084						
34	Manganese (mg/l)	0.635						0.054						
35	Cobalt (mg/l)	BDL						BDL						
36	Alpha BHC (mg/l)	BDL						BDL						
37	Beta BHC (mg/l)	BDL						BDL						
38	Gamma BHC (mg/l)	BDL						BDL						
39	Aldrin (mg/l)	BDL						BDL						
40	Dieldrin (mg/l)	BDL						BDL						
41	O,P-DDT (mg/l)	BDL						BDL						
42	P,P-DDT (mg/l)	BDL						BDL						

43	Alpha endosulphane (mg/l)	BDL						BDL						
44	β-endosulphane (mg/l)	BDL						BDL						
45	carboryl (mg/l)	BDL						BDL						
46	Anilofos (mg/l)	BDL						BDL						
47	Parathion methyl (mg/l)	BDL						BDL						
48	Malathion (mg/l)	BDL						BDL						
49	Chloropylos (mg/l)	BDL						BDL						

Table No. : 4B INLET SAMPLE TO STP AT TONCA, PANAJI 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	7.88	7.22	6.04	6.04	6.47	7.15	6.71	6.27	6.69	7.04	6.77	6.47	-
2	BOD mg/l	1520	525	1020	200	250	100	180	633	212	667	175	223	-
3	COD mg/l	-	1240	2560	1000	1130	350	880	840	960	1040	800	620	-
4	Total Suspended Solid (mg/l)	220	224	960	142	225	180	537	490	267	-	-	583	-
5	Phosphate mg/l	-	-	-	-	-	-	6.24	7.61	3.7	9.01	11.52	1.9	-
6	Ammonical Nitrogen mg/l	-	-	-	-	-	-	39.16	0.18	11.5	0.76	40.5	10.58	-
7	Residual Chlorine mg/l	-	-	-	-	-	-	0	0	0	-	-	0	-
8	Fecal Coliform MPN/100 ml	-	-	-	-	-	-	-	-	-	-	-	5400000	-
9	Total Coliform MPN/100 ml	-	-	-	-	-	-	-	-	-	-	-	9200000	-
10	Cadmium mg/l	-	-	-	-	-	-	-	-	-	-	-	BDL	-
11	Copper mg/l	-	-	-	-	-	-	-	-	-	-	-	BDL	-
12	Nickel mg/l	-	-	-	-	-	-	-	-	-	-	-	BDL	-
13	Zinc mg/l	-	-	-	-	-	-	-	-	-	-	-	BDL	-
14	Chromium mg/l	-	-	-	-	-	-	-	-	-	-	-	BDL	-
15	Lead mg/l	-	-	-	-	-	-	-	-	-	-	-	BDL	-

Table No. : 4C OUTLET SAMPLE TO STP AT TONCA, PANAJI 2017-2018

Sr. No	Parameters	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Limit
1	pH	7.41	6.83	7.32	7.32	6.06	6.84	7.04	7.29	7.68	7.06	7.61	6.95	5.5-9
2	BOD mg/l	4.8	10.78	7.2	26	6	4.8	4	4	8	5.5	13.8	12	30
3	COD mg/l	20	30	30	130	30	20	20	40	50	20	30	30	250
4	Total Suspended Solid (mg/l)	14	6	8	80	18	15	6	64	8	13	-	21	100
5	Phosphate mg/l	-	-	-	-	-	-	-	0.05	0.4	0.11	0.07	0.07	-
6	Ammonical Nitrogen mg/l	-	-	-	-	-	-	-	0.021	0.14	0.05	1.96	0.16	50
7	Residual Chlorine mg/l	-	-	-	-	-	-	-	0.53	0.71	0.89	0	0.71	1
8	Fecal Coliform MPN/100 ml	-	-	-	-	-	-	-	-	-	-	-	NIL	-
9	Total Coliform MPN/100 ml	-	-	-	-	-	-	-	-	-	-	-	<1.8	-
10	Cadmium mg/l	-	-	-	-	-	-	-	-	-	BDL	-	BDL	-
11	Copper mg/l	-	-	-	-	-	-	-	-	-	BDL	-	BDL	-
12	Nickel mg/l	-	-	-	-	-	-	-	-	-	BDL	-	BDL	-
13	Zinc mg/l	-	-	-	-	-	-	-	-	-	0.05	-	0.06	-
14	Chromium mg/l	-	-	-	-	-	-	-	-	-	BDL	-	BDL	-
15	Lead mg/l	-	-	-	-	-	-	-	-	-	BDL	-	BDL	-

ANNEXYRE IV - 2

Monitoring of Water Quality of Chapoli Dam 2017-18

Table No. : 5A Chapoli Dam 2017-2018													
Sr. No	**Parameters**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Limit for Class C river as per CPCB classification based on designated best use of rivers**
1	pH	7.15	8.87	7.69	7.7	8.36	5.9	7.64	7.09	7.53	7.14	8.4	6.0-9.0
2	Conductivity µs/cm	59.31	160.01	76.06	78.43	74.64	66.82	68.92	75.8	76.68	236	12.92	
3	Turbidity (NTU)	1.99	8.63	3.86	13.19	11.23	4.39	2.61	3.02	10.39	3.5	9.56	
4	Dissolved Oxygen mg/l	7	9.1	8.2	8.7	9.5	8	11.2	6.8	8.2	8.4	8.5	4 mg/l or more
5	Biochemical Oxygen Demand mg/l	3.4	3	1.8	4.6	4.5	0.5	2.0	0.7	2.9	2.5	1.0	3 mg/l or less
6	Chemical Oxygen Demand mg/l	8	7	5	36	18	4	12	7	7	6	20	
7	Chloride mg/l	8.5	10.2	6.8	6.85	9.5	10	8.5	4	8.81	9	5.99	
8	Nitrite-Nmg/l	BDL	0.008	0.003	0.004	0.002	0.001	0.019	BDL	BDL	0.01	BDL	
9	Nitrate-N mg/l	0.497	0.25	0.004	0.21	0.04	0.31	0.059	BDL	BDL	BDL	BDL	
10	Ammonia mg/l	0.033	0.68	1.37	0.017	0.012	0.002	0.07	0.07	0.05	2.16	0.23	
11	Phosphate mg/l	0.033	0.01	0.06	0.005	0.002	0.002	BDL	0.080	0.022	BDL	0.090	
12	Total Suspended Solids mg/l	6	4	3	8	32	4	7	7	12	6	13	
13	Total Dissolved Solids mg/l	68	90	49	82	49	39	38	45	47	135	9	
14	Total Fixed Solids mg/l	-	-	-	-	-	24	17	28	31	74	13	
15	Sulphate mg/l	BDL	2.85	2.99	3.66	1.67	3.11	BDL	2.64	1.68	BDL	4.07	
16	Hardness as $CaCO_3$ mg/l	22	30	22	16	22	26	22	16	24	26	22	
17	Calcium mg/l	12	10	12	8	14	14	4.8	5.6	4.8	5.6	4.81	
18	Magnesium mg/l	2.4	4.9	2.4	1.94	1.9	2.9	2.43	0.49	2.92	2.9	2.43	
19	Phenophthalein Alkalinity mg/l	0	0	0	0	0	0	0	0	0	0	4	
20	Total Alkalinity mg/l	40	36	30	20	38	30	24	36	30	30	36	
21	Sodium mg/l	1	10.4	7.1	5.3	4.6	148.1	5.6	1.9	5.8	6.5	15.6	
22	Potassium mg/l	0.1	0.9	0.2	1.5	0.4	11.2	1.6	0.5	0.9	1.4	7.1	
23	Boron mg/l	0.1	1.79	0.12	2.79	0.87	2.97	BDL	0.66	0.78	1.32	1.16	
24	Fecal Coliform MPN/100 ml	130	130	23	230	490	490	1300	5400	790	45	33	
25	Total Coliform MPN/100 ml	280	170	79	330	1300	1300	1700	9200	2400	78	49	5000 or less MPN/100 ml

ANNEXYRE IV - 3

Monitoring of Water Quality of Salmona Spring Data 2017-18

Table No. : 6A Salmona Spring at Saligao 2017-2018										
Sr. No	**Parameters**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Permissible limits**
1	pH	5.34	6.82	5.71	6.34	6.51	6.71	7.4	7.12	6.5-8.5
2	Temperature ˚C	31	29	30	28	27	27.5	29	31	-
3	Conductivity µs/cm	98.98	84.74	81	148.6	132	68.45	136.6	57.92	-
4	Dissolved Oxygen mg/l	5.4	7.1	7.1	7.6	5.6	8.2	7.8	7.8	-
5	Turbidity (NTU)	1	1	1	1	5	2	3	2	5
6	Nitrite (Nitrogen) mg/l	0.084	0.002	0.001	BDL	BDL	BDL	BDL	BDL	-
7	Nitrate (Nitrogen) mg/l	-	1.37	1.42	1.63	0.39	BDL	0.35	0.21	45
10	Phosphate mg/l	0.056	0.011	0.006	0.1	BDL	0.02	BDL	BDL	-
11	BOD mg/l	1.6	0.4	0.7	1.3	1.5	1	1.4	0.9	-
12	COD mg/l	12	-	8	7	2	4	10	4	-
13	Chloride mg/l	19	129	14	196	16	18	33	15	200
14	Fecal Coliform MPN/100 ml	NIL	13	4.5	49	130	2400	1300	230	-
15	Total Coliform MPN/100 ml	<1.8	4.5	13	920	350	5400	1700	490	-
16	Ammonia mg/l	0.51	0.03	0.19	0.04	BDL	BDL	BDL	BDL	-
17	Total Dissolved Solids(mg/l)	74	60.0	45	108	80	41	87	35	500
18	Total Fixed Solids (mg/l)	49	28.0	6	77	46	30	50	26	-
19	Total Suspended Solid (mg/l)	10	75	12	15	22	31	22	6	-
20	Hardness(mg/l)	20	14	42	18	12	16	12	14	300
22	Boron(mg/l)	0.44	0.17	-	4.26	0.19	1.47	0.43	1.53	-
23	Sulphate (mg/l)	1.3	6.0	0.94	68.3	1	BDL	7	4.51	200
24	Total Alkalinity(mg/l)	34	34	24	24	12	18	4	12	-
25	Phenolphthalein Alkalinity(mg/l)	0	0	0	0	0	0	0	0	-
26	Sodium(mg/l)	14.6	14.1	7.2	19.7	11.3	18.5	26.5	20.5	-
27	Potassium(mg/l)	1.8	1.9	1.6	2.2	0.8	0.5	1.2	6.9	-
28	Calcium as Ca(mg/l)		-	-	1.6	2.4	4.01	4	4.01	75
29	Calcium as CaCO3(mg/l)	4	8	10	-		-		-	-
30	Magnesium(mg/l)	4	1.458	7.9	3.4	1.46	BDL	0.49	1	30
31	Fluoride (mg/l							0.32		

ANNEXYRE IV - 4

Coastal and Inland River Locations Data 2017-18

Table No. : 7A KERI BEACH, KERI, PERNEM							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	12.15 pm	12.15 pm	14.30 pm	12.15 pm	13.40pm	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Slightly Turbid	Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	29	28	30	28	29	-
9	pH	7.79	7.91	7.8	7.96	7.82	6.5 - 8.5
10	Turbidity (NTU)	10	24	14	8	22	30 NTU
11	Dissolved Oxygen (mg/l)	6.1	6.3	6.6	7.1	6.1	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	2.9	2	2.1	2	0.5	3 mg/l
14	Suspended Solids (mg/l)	27	89	152	121	186	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l
16	Petroleum Hydro-carbons (µg/Lt Chrysene Equiva-lent)	-	-	1.01	0.69	0.41	-
17	Fecal Coliform (MPN/100 ml)	79	49	310	4.5	130	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00075	0.00005	0.000446	0.001 mg/l

Table No. : 7B MORJIM BEACH, TURTLE NESTING SITE, MORJIM							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	13.00 pm	12.45 pm	12.30 pm	1.25 pm	12.20 pm	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Slightly Turbid	Turbid	Colourless	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	28	28	30	29	30	-

9	pH	8	7.93	6.7	8.02	7.93	6.5 - 8.5
10	Turbidity (NTU)	12	27	7	5	27	30 NTU
11	Dissolved Oxygen (mg/l)	5.9	6	6.5	7.6	6.2	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.9	1.6	1.5	2.3	1.1	3 mg/l
14	Suspended Solids (mg/l)	52	120	249	146	198	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	0.66	0.66	0.83	-
17	Fecal Coliform (MPN/100 ml)	33	49	23	7.8	23	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00063	0.000033	0.000073	0.001 mg/l

Table No. : 7C CALANGUTE BEACH, OPP SOUZA LOBA REST.,CALANGUTE

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	14.10 pm	13.45 pm	11.30 am	3.20 pm	15.30 pm	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Slightly Turbid	Colourless	Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	32	29	30	29.2	29	-
9	pH	7.79	7.87	7.6	8.06	7.87	6.5 - 8.5
10	Turbidity (NTU)	10	8	16	6	8	30 NTU
11	Dissolved Oxygen (mg/l)	5.9	6.2	6.8	6.4	6.7	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.8	1.5	1.6	2.6	1.5	3 mg/l
14	Suspended Solids (mg/l)	40	110	165	189	204	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-		1.25	0.75	0.62	-
17	Fecal Coliform (MPN/100 ml)	130	240	130	7.8	49	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00076	0.00011	0.000033	0.001 mg/l

Table No. : 7D MIRAMAR BEACH, MIRAMAR							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	15.00 pm	15.30 pm	10.30 am	3.45 pm	11.0 am	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	31	29	29	29.4	31	-
9	pH	7.9	7.92	7.7	8.08	7.92	6.5 - 8.5
10	Turbidity (NTU)	7	16	19	4	16	30 NTU
11	Dissolved Oxygen (mg/l)	5.9	6.2	7	5.9	6	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.8	1.9	2.1	2.1	2.2	3 mg/l
14	Suspended Solids (mg/l)	70	140	153	211	178	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	1.28	1.76	0.75	-
17	Fecal Coliform (MPN/100 ml)	7.8	240	790	23	240	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00088	0.000095	0.000153	0.001 mg/l

Table No. : 7E GALGIBAG BEACH, TURTLE NESTING SITE, CANCONA							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	12.45 pm	1.30 pm	13.10 pm	4.20pm	12.30 pm	-
3	Weather	Sunny	Sunny	Raining	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	29	29	28	29	31.1	
9	pH	7.31	7.76	7.32	7.9	7.9	6.5 - 8.5
10	Turbidity (NTU)	9	1	10	1	1	30 NTU
11	Dissolved Oxygen (mg/l)	6.1	6.9	6.9	7.4	6.1	NLT 5.0 mg/l

13	Biochemical Oxygen Demand (mg/l)	2	0.8	1.6	3.4	1.8	3 mg/l
14	Suspended Solids (mg/l)	48	120	236	333	95	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	3.38	0.71	0.51	-
17	Fecal Coliform (MPN/100 ml)	23	240	330	4.5	49	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00103	0.000053	0.000067	0.001 mg/l

Table No. : 7F MOBOR BEACH, BEHIND HOTEL LEELA, MOBOR

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	14.00 pm	2.10 pm	14.15 pm	2.40 pm	14.30 pm	-
3	Weather	Sunny	Sunny	Cloudy	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	31	30	30	29	31	-
9	pH	7.1	7.94	7.3	7.9	8	6.5 - 8.5
10	Turbidity (NTU)	5	1	11	4	1	30 NTU
11	Dissolved Oxygen (mg/l)	6.0	6.8	7	6.2	6.1	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.6	1.2	1.3	0.5	1	3 mg/l
14	Suspended Solids (mg/l)	57	140	187	205	142	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	2.23	1.39	0.55	-
17	Fecal Coliform (MPN/100 ml)	13	7.8	2400	2	33	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00018	0.00019	0.000041	0.001 mg/l

Table No. : 7G COLVA BEACH, COLVA

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	14.45 pm	3.30 pm	15.00 pm	1.30 pm	15.15 pm	-

3	Weather	Sunny	Sunny	Cloudy	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	Beach activity	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odoulesss	-
6	Colour	Turbid	Slightly Turbid	Turbid	colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	30	30	29	29	31.2	-
9	pH	7.7	7.71	6.6	8	8	6.5 - 8.5
10	Turbidity (NTU)	16	1	19	4	1	30 NTU
11	Dissolved Oxygen (mg/l)	6.1	6.3	6.5	6.7	6	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	2.3	1.2	0.8	1.3	2.6	3 mg/l
14	Suspended Solids (mg/l)	61	78	49	229	126	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	4.23	0.65	0.7	-
17	Fecal Coliform (MPN/100 ml)	1300	240	1300	13	49	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00045	0.000047	0.000346	0.001 mg/l

Table No. : 7H BAINA BEACH, VASCO

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	15.30 pm	5.10 pm	15.45 pm	12.30 pm	16.30 pm	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	Beach Activity	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	30	29	28	29	32.1	-
9	pH	7.71	7.86	7.11	7.4	8	6.5 - 8.5
10	Turbidity (NTU)	6	1	10	3	1	30 NTU
11	Dissolved Oxygen (mg/l)	6.5	6.8	6.6	6.7	6.2	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	2.4	1.3	0.9	4.7	0.9	3 mg/l
14	Suspended Solids (mg/l)	53	170	160	255	147	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	0.1 mg/l

16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	1.67	0.97	0.49	-
17	Fecal Coliform (MPN/100 ml)	79	240	240	130	49	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00071	0.000033	0.000032	0.001 mg/l

Table No. : 7 I VAGATOR BEACH

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	Samples not collected from May 2017 upto September 2017 as the sampling was initiated from December 2017			22/12/2017	-	-
2	Time				3.00 pm	-	-
3	Weather				Sunny	-	-
4	Activity				NIL	-	-
5	Odour				Odourless	-	-
6	Colour				Colourless	-	-
7	Floating Matter				NIL	-	-
8	Temperature (°C)				29.1	-	-
9	pH				8.03	-	6.5 - 8.5
10	Turbidity (NTU)				5	-	30 NTU
11	Dissolved Oxygen (mg/l)				6.3	-	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)				1	-	3 mg/l
14	Suspended Solids (mg/l)				139	-	-
15	Oil & Grease (mg/l)				<10.0	-	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)				-	-	-
17	Fecal Coliform (MPN/100 ml)				4.5	-	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	-	-	-	0.001 mg/l

Table No. : 7J VELSAO BEACH							
Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	Samples not collected from May 2017 upto September 2017 as the sampling was initiated from December 2017			22/12/2017	-	-
2	Time				12.50 pm	-	-
3	Weather				Sunny	-	-
4	Activity				NIL	-	-
5	Odour				Odourless	-	-
6	Colour				Colourless	-	-
7	Floating Matter				NIL	-	-
8	Temperature (°C)				28	-	-
9	pH				7.9	-	6.5 - 8.5
10	Turbidity (NTU)				3	-	30 NTU
11	Dissolved Oxygen (mg/l)				5.9	-	NLT 5.0 mg/l
13	Biochemical Oxygen Demand (mg/l)				0.6	-	3 mg/l
14	Suspended Solids (mg/l)				206	-	
15	Oil & Grease (mg/l)				<10.0	-	0.1 mg/l
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)				-	-	-
17	Fecal Coliform (MPN/100 ml)				7.8	-	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	-	-	--	0.001 mg/l

Table No. : 7K RIVER MANDOVI NEAR HOTEL MARIOTT, CAMPAL							
Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	15.35 pm	15.50 pm	10.45 am	4.00 pm	10.40 am	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Colourless	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	30	28	29	29.4	30	
9	pH	7.15	7.8	7.4	7.93	7.8	6.5-8.5
10	Turbidity (NTU)	5	8	9	6	8	30 NTU
11	Dissolved Oxygen (mg/l)	5.7	6.2	7.1	6	6.2	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	2	2	1.5	0.5	1.6	3.0 mg/l

14	Suspended Solids (mg/l)	54	70	100	112	176	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	1.89	1.11	4.13	-
17	Fecal Coliform (MPN/100 ml)	45	7000	7900	490	1700	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00019	0.00013	0.000013	-

Table No. : 7L RIVER MANDOVI , IFFI JETTY

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	15.15 pm	16.10 pm	10.55 pm	4.15 pm	10.50 am	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	30	28	29	29.5	30	-
9	pH	7.11	7.83	7.32	8.02	7.83	6.5-8.5
10	Turbidity (NTU)	5	12	10	9	12	30 NTU
11	Dissolved Oxygen (mg/l)	5.6	6.8	6.9	6.1	6	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	3	2.3	2.3	3.5	2.2	3.0 mg/l
14	Suspended Solids (mg/l)	39	88	101	121	180	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	1.66	0.94	0.9	-
17	Fecal Coliform (MPN/100 ml)	78	2300	4900	230	780	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00051	0.000073	0.00018	-

Table No. : 7M RIVER TIRACOL, KERI							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	12.15 pm	12.00 pm	14.45 pm	12.00 pm	13.10 pm	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	Ferry	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Slightly Turbid	Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	29	28	31	28	29	-
9	pH	7.7	7.82	7.92	7.92	7.91	6.5-8.5
10	Turbidity (NTU)	11	22	15	9	24	30 NTU
11	Dissolved Oxygen (mg/l)	5.6	4.7	6.6	7.2	5.6	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.6	2.6	2.1	3.9	0.7	3.0 mg/l
14	Suspended Solids (mg/l)	15	89	144	110	291	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	3.42	0.47	0.47	-
17	Fecal Coliform (MPN/100 ml)	33	3500	2400	130	540	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00031	0.000024	0.00136	-

Table No. : 7N RIVER CHAPORA, NEAR SIOLIM BRIDGE, SIOLIM							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	15/05/2017	18/8/2017	20/09/2017	22/12/2017	21/03/2018	-
2	Time	13.40 pm	13.10 pm	12.00 pm	2.00 pm	12.10 pm	-
3	Weather	Sunny	Sunny	Sunny	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	30	28	29	29	30	-
9	pH	7.9	7.83	7.5	7.94	7.83	6.5-8.5
10	Turbidity (NTU)	3	13	11	6	13	30 NTU
11	Dissolved Oxygen (mg/l)	5.2	3.4	7.4	6	6.2	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.2	1.4	1.8	0.6	2.1	3.0 mg/l

14	Suspended Solids (mg/l)	29	70	59	92	171	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	1.98	0.99	1.01	-
17	Fecal Coliform (MPN/100 ml)	1300	2300	7900	3300	1300	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00035	0.000026	0.000673	-

Table No. : 7O RIVER TALPONA AT THE MOUTH OF THE RIVER

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	13.00 pm	2.10 pm	13.20 pm	4.00 pm	13.00 pm	-
3	Weather	Sunny	Sunny	Raining	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Colourless	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	28	30	28	29	31.2	-
9	pH	7.2	6.8	7.4	7.1	6.8	6.5-8.5
10	Turbidity (NTU)	5	2	10	BDL	2	30 NTU
11	Dissolved Oxygen (mg/l)	6.5	7.1	8.1	7.2	6.8	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	2.4	1.7	1.9	1.5	1.2	3.0 mg/l
14	Suspended Solids (mg/l)	62	71	52	148	14	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	3.55	1.5	1.44	-
17	Fecal Coliform (MPN/100 ml)	49	3500	230	78	33	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00018	0.00049	0.000101	-

Table No. : 7P RIVER SAL NEAR HOTEL LEELA, MOBOR

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	14.15 pm	2.45 pm	14.25 pm	2.25 pm	14.10 pm	-
3	Weather	Sunny	Sunny	Cloudy	Cloudy	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-

6	Colour	Colourless	Slightly Turbid	Slightly Turbid	Slightly Turbid	Colourless	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	29	30	29	29	31.8	-
9	pH	6.7	7.73	7.5	7.9	7.8	6.5-8.5
10	Turbidity (NTU)	4.28	1.59	9.18	3.26	0.57	30 NTU
11	Dissolved Oxygen (mg/l)	6.2	6	5.4	5.8	6.2	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	0.9	1.1	1.7	0.5	0.6	3.0 mg/l
14	Suspended Solids (mg/l)	83	98	104	273	110	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	4.34	1.3	0.99	-
17	Fecal Coliform (MPN/100 ml)	490	230	3300	450	450	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00103	0.00002	0.000086	-

Table No. : 7Q RIVER ZUARI AT BORIM

Sr. No	Parameters	May-17	Aug-17	Sep-17	Dec-17	Mar-18	Limits
1	Date	29/05/2017	18/8/2017	25/09/2017	27/12/2018	27/03/2018	-
2	Time	11.00 am	4.00 pm	11.15 am	12.50 am	12.30 pm	-
3	Weather	Sunny	Sunny	Raining	Sunny	Sunny	-
4	Activity	NIL	NIL	NIL	NIL	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Slightly Turbid	Slightly Turbid	Turbid	Slightly Turbid	Turbid	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	29	29	28	28	31.1	-
9	pH	7.9	6.88	7.9	7.21	7.3	6.5-8.5
10	Turbidity (NTU)	10	1	20	5	5	30 NTU
11	Dissolved Oxygen (mg/l)	5	6.1	6.6	7.5	6.1	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	1.7	1.3	1.6	4.3	1.7	3.0 mg/l
14	Suspended Solids (mg/l)	51	120	382	322	3	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	2.57	1.36	1.06	-
17	Fecal Coliform (MPN/100 ml)	3500	24000	1700	330	130	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00039	0.00011	0.000306	-

Table No. : 7R RIVER ZUARI AT CORTALIM							
Sr. No	**Parameters**	**May-17**	**Aug-17**	**Sep-17**	**Dec-17**	**Mar-18**	**Limits**
1	Date	29/05/2017	18/8/2017	25/09/2017	22/12/2018	20/03/2018	-
2	Time	10.30 am	4.45 pm	10.45 am	11.30 am	17.15 pm	-
3	Weather	Sunny	Sunny	Cloudy	Sunny	Sunny	-
4	Activity	Ferry	Ferry	Ferry	Ferry	NIL	-
5	Odour	Odourless	Odourless	Odourless	Odourless	Odourless	-
6	Colour	Turbid	Slightly Turbid	Turbid	Turbid	Turbid	-
7	Floating Matter	NIL	NIL	NIL	NIL	NIL	-
8	Temperature (°C)	28	29	29	30	32.1	-
9	pH	7.7	7.39	7.7	7.6	7	6.5-8.5
10	Turbidity (NTU)	15	2	22	9	2	30 NTU
11	Dissolved Oxygen (mg/l)	4.9	5.1	6.6	7.4	4.9	NLT 4.0 mg/l
13	Biochemical Oxygen Demand (mg/l)	0.9	2	2.4	2.1	1.6	3.0 mg/l
14	Suspended Solids (mg/l)	95	110	58	214	262	-
15	Oil & Grease (mg/l)	<10.0	<10.0	<10.0	<10.0	<10.0	-
16	Petroleum Hydrocarbons (µg/Lt Chrysene Equivalent)	-	-	5.97	1.74	1.25	-
17	Fecal Coliform (MPN/100 ml)	250	4900	7900	1300	1300	100/100 ml (MPN)
18	Mercury (mg/l)	-	-	0.00017	0.000034	0.000026	-

ANNEXYRE V

WATER QUALITY DATA AT GANESH VISARJAN PLACES 2017

GANESH VISARJAN DATA FOR THE YEAR 2017

Table No. : 8A River Mandovi at Ferry Point 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	07/08/2017 1.00 pm	01/09/2017 10.10 am	13/09/2017 10.30 am
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	7.8	8.1	8.13
7	Temperature (°C)	29	29	32
8	Conductivity (ms/cm)	44.36	17.74	23.61
9	Turbidity (NTU)	13	14	8
10	Dissolved Oxygen (mg/l)	6.1	6.4	5.4
11	Biochemical Oxygen Demand (mg/l)	2.1	2.6	1.7
12	Total Dissolved Solids (mg/l)	27408	17714	14884
13	Total Solids (mg/l)	28855	18535	18135
14	Chromium (mg/l)	ND	ND	ND
15	Lead (mg/l)	ND	ND	ND
16	Zinc (mg/l)	0.51	0.37	0.45
17	Copper (mg/l)	0.01	ND	ND

Table No. : 8B River Mapusa at Taricode- Mapusa 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	7/8/2017 11.00 am	01/09/2017 10.45 am	13/09/2017 11.15 am
2	Weather	Cloudy	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Slight smell
5	Human Activity	NIL	NIL	Garbage on the bank of river
6	pH	6.39	7.17	7.35
7	Temperature (°C)	31	30	32
8	Conductivity (ms/cm)	0.547	0.2265	0.7331
9	Turbidity (NTU)	6	6	3
10	Dissolved Oxygen (mg/l)	2.2	1.9	1.6
11	Biochemical Oxygen Demand (mg/l)	1.5	1	0.8
12	Chemical Oxygen Demand (mg/l)	8	10	6

13	Total Dissolved Solids (mg/l)	341	137	450
14	Total Solids (mg/l)	483	235	564
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.05	0.04	0.23
18	Copper (mg/l)	ND	ND	ND

Table No. : 8C Carambolim Lake at Carambolim 2017

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	Date & Time	08/08/2017 3.15 pm	01/09/2017 11.00 am	13/09/2017 12.40 am
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	7.23	7.04	6.27
7	Temperature (°C)	30	30	30
8	Conductivity (µs/cm)	157.77	123.3	171.2
9	Turbidity (NTU)	8	3	3
10	Dissolved Oxygen (mg/l)	6.3	5.5	4.5
11	Biochemical Oxygen Demand (mg/l)	4.7	2.2	2.4
12	Chemical Oxygen Demand (mg/l)	12	6	6
13	Total Dissolved Solids (mg/l)	100	75	106
14	Total Solids (mg/l)	123	159	386
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.17	0.92	0.09
18	Copper (mg/l)	0.02	ND	0.02

Table No. : 8D Carkhamba (Mansher) Panaji – St. Cruz road 2017

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	Date & Time	07/08/2017 1.10 pm	01/09/2017 10.20 am	13/09/2017 10.45 am
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	7.48	7.91	8.05
7	Temperature (°C)	33	33	32
8	Conductivity (ms/cm)	8.414	2.52	22.82
9	Turbidity (NTU)	6	16	3
10	Dissolved Oxygen (mg/l)	7.3	5.7	5.8

11	Biochemical Oxygen Demand (mg/l)	2.4	2.6	2.7
12	Chemical Oxygen Demand (mg/l)	16	12	48
13	Total Dissolved Solids (mg/l)	5109	1524	13592
14	Total Solids (mg/l)	5439	1734	17435
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.04	0.41	0.27
18	Copper (mg/l)	0.19	0.03	0.04

Table No. : 8E Near the bridge , Chereaband , Dandora, Cuncolim 2017

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	Date & Time	8/8/2017 11.45 am	04/09/2017 11.45 am	15/09/2017 12.45 pm
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	6.59	7.01	6.89
7	Temperature (°C)	30	30	30
8	Conductivity (µs/cm)	72.14	65.23	80.42
9	Turbidity (NTU)	5	5	3
10	Dissolved Oxygen (mg/l)	7.3	7.4	7.4
11	Biochemical Oxygen Demand (mg/l)	1.6	0.2	2.4
12	Chemical Oxygen Demand (mg/l)	8	8	9
13	Total Dissolved Solids (mg/l)	33	55	70
14	Total Solids (mg/l)	62	60.09	72.51
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.17	0.21	0.09
18	Copper (mg/l)	ND	ND	ND

Table No. : 8F Near Railway bridge, Khandiwada , Curchorem 2017

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	Date & Time	8/8/2017 1.30 pm	04/09/2017 2.45 pm	15/09/2017 2.30 pm
2	Weather	Cloudy	Sunny	Sunny
3	Colour	Colourless	Colourless	Slightly turbid
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	5.75	7.09	6.78
7	Temperature (°C)	30	30	30

8	Conductivity (µs/cm)	51.87	99.69	114.92
9	Turbidity (NTU)	6	5	9
10	Dissolved Oxygen (mg/l)	7.2	5.8	4.5
11	Biochemical Oxygen Demand (mg/l)	1.2	1	1.1
12	Chemical Oxygen Demand (mg/l)	2	3	4
13	Total Dissolved Solids (mg/l)	30	56	68
14	Total Solids (mg/l)	35	66	75
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.14	0.07	0.21
18	Copper (mg/l)	ND	ND	0.004

Table No. : 8G Paraste, Harmalkar wada, Pernem 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	07/08/2017 11.40 am	01/09/2017 11.30 am	13/09/2017 11.45 am
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	6.97	7.3	7.61
7	Temperature (°C)	30	30	34
8	Conductivity (µs/cm)	388.42	126.3	899.1
9	Turbidity (NTU)	4	9	13
10	Dissolved Oxygen (mg/l)	7.3	6.9	6.9
11	Biochemical Oxygen Demand (mg/l)	0.7	0.3	0.5
12	Chemical Oxygen Demand (mg/l)	4	4	6
13	Total Dissolved Solids (mg/l)	242	80	592
14	Total Solids (mg/l)	377	156	741
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.03	0.14	0.15
18	Copper (mg/l)	0.02	ND	ND

Table No. : 8H Daudkiwada River, Daudkiwada-velus, ward no. 1, Valpoi 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	07/08/2017 12.30 pm	01/09/2017 12.15 pm	13/09/2017 11.45 am
2	Weather	Heavy Rain	Sunny	Sunny
3	Colour	Colourless	Colourless	Turbid
4	Odour	Odourless	Odourless	Odourless

5	Human Activity	NIL	NIL	NIL
6	pH	6.75	7.06	6.14
7	Temperature (°C)	28	29	29
8	Conductivity (µs/cm)	70.64	72.82	48.16
9	Turbidity (NTU)	13	5	74
10	Dissolved Oxygen (mg/l)	6.8	8	6.6
11	Biochemical Oxygen Demand (mg/l)	1	1.5	2
12	Chemical Oxygen Demand (mg/l)	4	4	6
13	Total Dissolved Solids (mg/l)	49	44	34
14	Total Solids (mg/l)	89	127	41
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.21	0.87	0.12
18	Copper (mg/l)	ND	ND	ND

Table No. : 8 l Near bridge, Orcotto, ward no. 4, Sanguem 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	8/8/2017 3.00 pm	4/9/2017 2.00 pm	15/09/2017 1.45 pm
2	Weather	Cloudy	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	5.76	7.22	6.63
7	Temperature (°C)	28	27	29
8	Conductivity (µs/cm)	53.36	70.24	71.52
9	Turbidity (NTU)	10	7	6
10	Dissolved Oxygen (mg/l)	6.7	7.6	6.2
11	Biochemical Oxygen Demand (mg/l)	0.6	1	1
12	Chemical Oxygen Demand (mg/l)	4	5	6
13	Total Dissolved Solids (mg/l)	30.9	40	42
14	Total Solids (mg/l)	34.7	47	47
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.09	0.37	0.02
18	Copper (mg/l)	ND	0.01	0.01

Table No. : 8J Pimpolcotto, ward no. 2, Sanguem 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	8/8/2017 12.10 pm	4/9/2017 12.05 pm	15/09/2017 11.50 am
2	Weather	Cloudy	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	5.9	7.9	6.16
7	Temperature (°C)	29	30	30
8	Conductivity (µs/cm)	51.4	58.75	63.98
9	Turbidity (NTU)	4	4	4
10	Dissolved Oxygen (mg/l)	7.5	7.3	7.3
11	Biochemical Oxygen Demand (mg/l)	0.9	0.5	0.6
12	Chemical Oxygen Demand (mg/l)	2	3	4
13	Total Dissolved Solids (mg/l)	29	33	38
14	Total Solids (mg/l)	32	36	42
15	Chromium (mg/l)	ND	ND	ND
16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.54	0.27	0.41
18	Copper (mg/l)	ND	ND	0.004

Table No. : 8K Panefond River, Kindlebag, ward no. 5, Canacona 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	08/08/2017 2.30 pm	04/09/2017 2.45 pm	15/09/2017 2.30 pm
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	7.26	7.93	7.31
7	Temperature (°C)	30	30	30
8	Conductivity (µs/cm)	7381	10540	12850
9	Turbidity (NTU)	7	7	6
10	Dissolved Oxygen (mg/l)	8	7.4	6.4
11	Biochemical Oxygen Demand (mg/l)	2.1	0.7	1.6
12	Chemical Oxygen Demand (mg/l)	26	17	12
13	Total Dissolved Solids (mg/l)	1621	3725	220
14	Total Solids (mg/l)	4350	3992	241
15	Chromium (mg/l)	ND	ND	ND

16	Lead (mg/l)	ND	ND	ND
17	Zinc (mg/l)	0.12	0.04	0.09
18	Copper (mg/l)	0.03	ND	ND

Table No. : 8L Baina Beach, Vasco 2017				
Sr.No	**Parameters**	**Before Ganesh Visarjan**	**After Ganesh Visarjan**	**After 15 day of Ganesh visarjan**
1	Date & Time	08/08/2017 11.30 am	04/09/2017 4.05 pm	15/09/2017 11.35 am
2	Weather	Sunny	Sunny	Sunny
3	Colour	Colourless	Colourless	Colourless
4	Odour	Odourless	Odourless	Odourless
5	Human Activity	NIL	NIL	NIL
6	pH	7.72	8.86	8.19
7	Temperature (°C)	29	30	30
8	Conductivity (ms/cm)	58.35	49.54	54.09
9	Turbidity (NTU)	26	5	3
10	Dissolved Oxygen (mg/l)	6.7	6.6	6.2
11	Biochemical Oxygen Demand (mg/l)	1.8	2.4	1.2
12	Total Dissolved Solids (mg/l)	37077	31909	26909
13	Total Solids (mg/l)	50563	34482	29125
14	Chromium (mg/l)	ND	ND	ND
15	Lead (mg/l)	ND	ND	ND
16	Zinc (mg/l)	0.04	0.21	0.4
17	Copper (mg/l)	ND	ND	0.008

ANNEXURE VI

AIR MONITORING DATA FOR THE YEAR 2017-2018

Table No. : 9.1 FUSE CALL OFFICE VASCO (APRIL2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
04-04-2017	4.0	BDL	46.0	46.0	GOOD
06-04-2017	4.0	BDL	149.0	133.0	MODERATELY POLLUTED
11-04-2017	5.0	BDL	144.0	129.0	MODERATELY POLLUTED
13-04-2017	BDL	BDL	75.0	75.0	SATISFACTORY
18-04-2017	BDL	9.0	90.0	90.0	SATISFACTORY
20-04-2017	BDL	BDL	113.0	109.0	MODERATELY POLLUTED
25-04-2017	BDL	BDL	82.0	82.0	SATISFACTORY
27-04-2017	BDL	BDL	68.0	68.0	SATISFACTORY
Limits^:-	80	80	100		

Table No. : 9.2 FUSE CALL OFFICE VASCO (MAY 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
02-05-2017	BDL	BDL	106.0	104.0	MODERATELY POLLUTED
04-05-2017	BDL	BDL	261.0	167.0	MODERATELY POLLUTED
09-05-2017	BDL	BDL	113.0	109.0	MODERATELY POLLUTED
11-05-2017	BDL	BDL	153.0	135.0	MODERATELY POLLUTED
16-05-2017	5.0	12.0	105.0	104.0	MODERATELY POLLUTED
18-05-2017	5.0	11.0	59.0	59.0	SATISFACTORY
23-05-2017	5.0	14.0	41.0	41.0	GOOD
25-05-2017	BDL	BDL	96.0	96.0	SATISFACTORY
30-05-2017	BDL	BDL	160.0	140.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.3 FUSE CALL OFFICE VASCO (JUNE 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
01-06-2017	4.0	9.0	92.0	92.0	SATISFACTORY
06-06-2017	BDL	12.0	69.0	69.0	SATISFACTORY
13-06-2017	BDL	21.0	99.0	99.0	SATISFACTORY
15-06-2017	5.0	18.0	61.0	61.0	SATISFACTORY
20-06-2017	BDL	14.0	36.0	36.0	GOOD
22-06-2017	6.0	BDL	86.0	86.0	SATISFACTORY
29-06-2017	6.0	12.0	43.0	43.0	GOOD
Limits^:-	**80**	**80**	**100**		

Table No. : 9.4 FUSE CALL OFFICE VASCO (JULY 2017)					
SAMPLING DATE	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI REMARKS**
04-07-2017	9.0	9.0	28.0	28.0	GOOD
06-07-2017	7.0	13.0	63.0	63.0	SATISFACTORY
11-07-2017	8.0	14.0	31.0	31.0	GOOD
13-07-2017	8.0	16.0	122.0	115.0	MODERATELY POLLUTED
25-07-2017	7.0	18.0	103.0	102.0	MODERATELY POLLUTED
27-07-2017	4.0	9.0	85.0	85.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	

Table No. : 9.5 FUSE CALL OFFICE VASCO (AUGUST 2017)					
SAMPLING DATE	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI REMARKS**
01-08-2017	8.0	20.0	221.0	180.0	MODERATELY POLLUTED
03-08-2017	5.0	19.0	67.0	67.0	SATISFACTORY
08-08-2017	10.0	26.0	41.0	41.0	GOOD
14-08-2017	12.0	18.0	28.0	28.0	GOOD
17-08-2017	8.0	10.0	99.0	99.0	SATISFACTORY
22-08-2017	4.0	14.0	56.0	56.0	SATISFACTORY
29-08-2017	4.0	BDL	45.0	45.0	GOOD
31-08-2017	6.0	17.0	103.0	102.0	MODERATELY POLLUTED
Limits^:-	80	80	100		

Table No. : 9.6 FUSE CALL OFFICE VASCO (SEPTEMBER 2017)					
SAMPLING DATE	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI REMARKS**
05-09-2017	8.0	19.0	37.0	37.0	GOOD
07-09-2017	7.0	11.0	35.0	35.0	GOOD
12-09-2017	6.0	13.0	53.0	53.0	SATISFACTORY
14-09-2017	BDL	BDL	117.0	112.0	MODERATELY POLLUTED
21-09-2017	BDL	11.0	20.0	20.0	GOOD
26-09-2017	7.0	22.0	41.0	41.0	GOOD
28-09-2017	BDL	12.0	49.0	49.0	GOOD
Limits^:-	**80**	**80**	**100**		

Table No. : 9.7 FUSE CALL OFFICE VASCO (OCTOBER 2017)					
SAMPLING DATE	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI REMARKS**
03-10-2017	5.0	BDL	42.0	42.0	GOOD
05-10-2017	BDL	14.0	46.0	46.0	GOOD
10-10-2017	BDL	17.0	39.0	39.0	GOOD
12-10-2017	BDL	18.0	13.0	23.0	GOOD
17-10-2017	4.0	14.0	52.0	52.0	SATISFACTORY
19-10-2017	BDL	12.0	96.0	96.0	SATISFACTORY
24-10-2017	BDL	11.0	51.0	51.0	GOOD
26-10-2017	BDL	16.0	34.0	34.0	GOOD
31-10-2017	4.0	13.0	53.0	53.0	GOOD
Limits^:-	**80**	**80**	**100**		

Table No. : 9.8 FUSE CALL OFFICE VASCO (NOVEMBER 2017)						
SAMPLING DATE	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**$PM_{2.5}$ µg/m³**	**AQI**	**AQI REMARKS**
02-11-2017	BDL	17.0	98.0	*	98.0	SATISFACTORY
07-11-2017	BDL	BDL	115.0	*	110.0	MODERATELY POLLUTED
09-11-2017	BDL	13.0	84.0	36.0	84.0	SATISFACTORY
14-11-2017	BDL	9.0	146.0	64.0	131.0	MODERATELY POLLUTED
16-11-2017	BDL	10.0	244.0	75.0	195.0	MODERATELY POLLUTED
21-11-2017	4.0	12.0	94.0	45.0	94.0	SATISFACTORY
23-11-2017	9.0	9.0	38.0	*	38.0	GOOD
28-11-2017	BDL	22.0	93.0	*	93.0	SATISFACTORY
30-11-2017	6.0	14.0	83.0	*	83	SATISFACTORY
Limits^:-	**80**	**80**	**100**			

Table No. : 9.9 FUSE CALL OFFICE VASCO (DECEMBER 2017)					
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	AQI	AQI Remarks
05-12-2017	7.0	12.0	60.0	60.0	SATISFACTORY
07-12-2017	4.0	17.0	65.0	65.0	SATISFACTORY
12-12-2017	BDL	13.0	72.0	82.0	SATISFACTORY
14-12-2017	6.0	BDL	61.0	81.0	SATISFACTORY
20-12-2017	5.0	21.0	182.0	155.0	MODERATELY POLLUTED
22-12-2017	BDL	BDL	197.0	165.0	MODERATELY POLLUTED
26-12-2017	BDL	BDL	84.0	84.0	SATISFACTORY
28-12-2017	BDL	BDL	132.0	121.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.10 FUSE CALL OFFICE VASCO (JANUARY' 2018)					
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI Remarks**
02-01-2018	4	20	197	164	MODERATELY POLLUTED
04-01-2018	-	-	-	-	-
09-01-2018	8	BDL	79	79	SATISFACTORY
11-01-2018	5	BDL	112	108	MODERATELY POLLUTED
17-01-2018	5	15	98	98.0	SATISFACTORY
19-01-2018	BDL	19	98	98.0	SATISFACTORY
24-01-2018	13	17	66	66.0	SATISFACTORY
31-01-2018	5	BDL	125	117.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.11 FUSE CALL OFFICE VASCO (FEBRUARY '2018)					
Sampling Date	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI Remarks
02-02-2018	BDL	BDL	104	103	MODERATELY POLLUTED
07-02-2018	BDL	BDL	94	94	SATISFACTORY
09-02-2018	BDL	10	69	69	SATISFACTORY
14-02-2018	9	BDL	61	61	SATISFACTORY
16-02-2018	15	15	144	129	MODERATELY POLLUTED
21-02-2018	BDL	13	88	88	SATISFACTORY
23-02-2018	4	16	76	76	SATISFACTORY
28-02-2018	6	BDL	98	98	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.12 FUSE CALL OFFICE VASCO (MARCH '2018)					
Sampling Date	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI Remarks
07-03-2018	BDL	15	73	73	SATISFACTORY
09-03-2018	5	14	55	55	SATISFACTORY
14-03-2018	BDL	15	100	100	SATISFACTORY
16-03-2018	9	18	297	247	POOR
21-03-2018	17	12	57	57	SATISFACTORY
23-03-2018	5	BDL	201	167	MODERATELY POLLUTED
28-03-2018	BDL	BDL	75	75	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.13 FIRE STATION MPT (APRIL 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
04-04-2017	4.0	BDL	141.0	127.0	MODERATELY POLLUTED
06-04-2017	BDL	BDL	183.0	155.0	MODERATELY POLLUTED
11-04-2017	8.0	9.0	179.0	152.0	MODERATELY POLLUTED
13-04-2017	5.0	BDL	154.0	136.0	MODERATELY POLLUTED
18-04-2017	BDL	BDL	241.0	193.0	MODERATELY POLLUTED
20-04-2017	BDL	BDL	137.0	125.0	MODERATELY POLLUTED
25-04-2017	BDL	BDL	122.0	115.0	MODERATELY POLLUTED
27-04-2017	BDL	BDL	84.0	84.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.14 FIRE STATION MPT (MAY 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
02-05-2017	BDL	23.0	47.0	37.0	47.0	GOOD
04-05-2017	6.0	23.0	174.0	43.0	149.2	MODERATELY POLLUTED
09-05-2017	BDL	31.0	168.0	46.0	145.2	MODERATELY POLLUTED
11-05-2017	BDL	12.0	372.0	*	327.3	VERY-POOR
16-05-2017	5.0	BDL	83.0	*	83.0	SATISFACTORY

18-05-2017	BDL	BDL	117.0	*	111.6	MODERATELY POLLUTED
23-05-2017	BDL	BDL	153.0	65.0	135.3	MODERATELY POLLUTED
25-05-2017	BDL	BDL	229.0	43.0	185.5	MODERATELY POLLUTED
30-05-2017	8.0	BDL	206.0	*	170.3	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**			

Table No. : 9.15 FIRE STATION MPT (JUNE 2017)

Sampling Date	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI Remarks
01-06-2017	BDL	BDL	177	151.2	MODERATELY POLLUTED
06-06-2017	BDL	9	74	74.0	SATISFACTORY
13-06-2017	BDL	BDL	58	58.0	SATISFACTORY
15-06-2017	4	13	59	59.0	SATISFACTORY
20-06-2017	BDL	17	108	105.6	MODERATELY POLLUTED
22-06-2017	5	BDL	175	149.8	MODERATELY POLLUTED
29-06-2017	6	BDL	70	70.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.16 FIRE STATION MPT (JULY 2017)

SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
04.07.17	BDL	BDL	59	59.0	SATISFACTORY
06.07.17	BDL	10	74	74.0	SATISFACTORY
13.07.17	BDL	11	189	159.1	MODERATELY POLLUTED
25.07.17	5	BDL	108	105.6	MODERATELY POLLUTED
27.07.17	BDL	BDL	81	81.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.17 FIRE STATION MPT (AUGUST 2017)

SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
01-08-2017	8	11	116	110.9	MODERATELY POLLUTED
03-08-2017	5	BDL	83	83.0	SATISFACTORY
08-08-2017	8	BDL	89	89.0	SATISFACTORY
14-08-2017	12	9	109	106.3	MODERATELY POLLUTED
17-08-2017	10	9	59	59.0	SATISFACTORY
22-08-2017	4	BDL	71	71.0	SATISFACTORY
29-08-2017	BDL	BDL	41	41.0	GOOD
31-08-2017	6	17	78	78.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.18 FIRE STATION MPT (SEPTEMBER 2017)					
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	AQI	AQI Remarks
05-09-2017	6	22	79	79	SATISFACTORY
07-09-2017	7	18	59	59	SATISFACTORY
12-09-2017	5	17	107	104.96	MODERATELY POLLUTED
14-09-2017	BDL	BDL	167	144.56	MODERATELY POLLUTED
21-09-2017	5	17	106	104.3	MODERATELY POLLUTED
26-09-2017	4	22	77	77	SATISFACTORY
28-09-2017	4	14	109	106.28	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.19 FIRE STATION MPT (OCTOBER 2017)					
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	AQI REMARKS
10/3/2017	8	12	93	93.0	SATISFACTORY
10/5/2017	7	18	91	91.0	SATISFACTORY
10/10/2017	4	11	147	131.4	MODERATELY POLLUTED
10/12/2017	BDL	18	106	104.3	MODERATELY POLLUTED
10/17/2017	BDL	19	153	135.3	MODERATELY POLLUTED
10/19/2017	BDL	20	84	84.0	SATISFACTORY
10/26/2017	BDL	BDL	91	91.0	SATISFACTORY
10/31/2017	4	9	153	135.3	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.20 FIRE STATION MPT (NOVEMBER 2017)						
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	AQI	AQI REMARKS
02-11-2017	BDL	11	84	56	84.0	SATISFACTORY
07-11-2017	BDL	BDL	518	-	518.0	SEVERE
09-11-2017	4	BDL	355	55	306.0	VERY-POOR
14-11-2017	BDL	27	332	76	282.0	POOR
16-11-2017	4	20	159	32	139.0	MODERATELY POLLUTED
21-11-2017	4	BDL	168	28	145.0	MODERATELY POLLUTED
23-11-2017	12	11	85	59	85.0	SATISFACTORY
28-11-2017	5	BDL	65	44	65.0	SATISFACTORY
30-11-2017	BDL	14	141	59	127.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.21 FIRE STATION MPT (DECEMBER 2017)						AQI Remarks
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	AQI	
05-12-2017	5.0	17	59	24	59	SATISFACTORY
07-12-2017	6.0	24.0	98	50	98	SATISFACTORY
12-12-2017	5	27.0	57	31	57	SATISFACTORY

14-12-2017	7.0	BDL	140	90	127	MODERATELY POLLUTED
20-12-2017	BDL	BDL	235	39	190	MODERATELY POLLUTED
22-12-2017	BDL	BDL	239	58	193	MODERATELY POLLUTED
26-12-2017	BDL	BDL	70	29	70	SATISFACTORY
28-12-2017	BDL	20	131	*	121	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**			

Table No. : 9.22 FIRE STATION MPT (JANUARY 2018):inside port limits

Sampling Date	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI Remarks
02-01-2018	BDL	20	300	33	250	POOR
04-01-2018	18	BDL	109	59	106	MODERATELY POLLUTED
09-01-2018	12	BDL	147	18	131	MODERATELY POLLUTED
11-01-2018	4	17	70	38	70	SATISFACTORY
17-01-2018	4	BDL	269	24	219	POOR
19-01-2018	BDL	16	112	64	108	MODERATELY POLLUTED
24-01-2018	4	BDL	108	56	106	MODERATELY POLLUTED
31-01-2018	5	11	109	33	106	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**			

Table No. : 9.23 FIRE STATION MPT (FEBRUARY 2018)

Sampling Date	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI Remarks
02-02-2018	BDL	14	92	52	92	SATISFACTORY
07-02-2018	BDL	BDL	85	28	85	SATISFACTORY
09-02-2018	4	9	58	35	58	SATISFACTORY
14-02-2018	4	13	150	55	133	MODERATELY POLLUTED
16-02-2018	BDL	23	149	58	133	MODERATELY POLLUTED
21-02-2018	BDL	13	92	50	92	SATISFACTORY
23-02-2018	7	27	75	44	75	SATISFACTORY
28-02-2018	10	BDL	105	*	104	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**			

Table No. : 9.24 FIRE STATION MPT (MARCH' 2018)

Sampling Date	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI Remarks
07-03-2018	BDL	17	74	*	74	SATISFACTORY
16-03-2018	8	18	48	*	48	GOOD
21-03-2018	17	19	200	*	166	MODERATELY POLLUTED
23-03-2018	BDL	10	143	*	129	MODERATELY POLLUTED
28-03-2018	BDL	BDL	205	*	170	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**			

Table No. : 9.25 PANAJI (APRIL 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
4/5/2017	BDL	13.0	55.0	43.0	55.0	SATISFACTORY
4/7/2017	BDL	BDL	198.0	45.0	165.0	MODERATELY POLLUTED
4/10/2017	BDL	BDL	115.0	37.0	110.0	MODERATELY POLLUTED
4/12/2017	4.0	BDL	195.0	21.0	163.0	MODERATELY POLLUTED
4/19/2017	BDL	BDL	178.0	22.0	152.0	MODERATELY POLLUTED
4/21/2017	BDL	BDL	57.0	18.0	57.0	SATISFACTORY
4/26/2017	BDL	BDL	212.0	58.0	174.0	MODERATELY POLLUTED
4/28/2017	5.0	18.0	80.0	79.0	80.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.26 PANAJI (MAY 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
5/3/2017	BDL	10.0	102.0	33.0	102.0	MODERATELY POLLUTED
5/5/2017	BDL	BDL	271.0	17.0	221.0	POOR
5/10/2017	BDL	BDL	101.0	9.0	101.0	SATISFACTORY
5/12/2017	BDL	10.0	180.0	*	153.0	MODERATELY POLLUTED
5/17/2017	BDL	14.0	361.0	*	314.0	VERY POOR
5/19/2017	6.0	16.0	37.0	*	37.0	GOOD
5/24/2017	BDL	BDL	67.0	*	67.0	SATISFACTORY
5/26/2017	BDL	17.0	165.0	65.0	143.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.27 PANAJI (JUNE 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
6/2/2017	BDL	10.0	73.0	*	73.0	SATISFACTORY
6/7/2017	BDL	10.0	34.0	*	34.0	GOOD
6/9/2017	BDL	BDL	84.0	*	84.0	SATISFACTORY
6/14/2017	7.0	13.0	45.0	*	45.0	GOOD
6/21/2017	5.0	19.0	20.0	*	20.0	GOOD
6/23/2017	5.0	BDL	189.0	*	159.0	MODERATELY POLLUTED
6/28/2017	5.0	12.0	37.0	*	37.0	GOOD
6/30/2017	6.0	BDL	64	*	64.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.28 PANAJI (JULY 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
7/5/2017	4.0	9.0	150.0	*	133.0	MODERATELY POLLUTED
7/7/2017	8.0	18.0	55.0	*	55.0	SATISFACTORY
7/12/2017	9.0	24.0	34.0	*	34.0	GOOD
7/14/2017	9.0	12.0	56.0	*	56.0	SATISFACTORY
7/21/2017	BDL	BDL	43.0	*	43.0	GOOD
7/26/2017	6.0	12.0	39.0	*	39.0	GOOD
7/28/2017	BDL	BDL	143.0	*	129.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.29 PANAJI (AUGUST 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
8/2/2017	6.0	BDL	148.0	*	132.0	MODERATELY POLLUTED
8/4/2017	4.0	11.0	130.0	*	120.0	MODERATELY POLLUTED
8/9/2017	10.0	10.0	19.0	*	19.0	GOOD
8/11/2017	11.0	10.0	43.0	*	43.0	GOOD
8/16/2017	15.0	12.0	67.0	*	67.0	SATISFACTORY
8/18/2017	13.0	24.0	34.0	*	34.0	GOOD
8/21/2017	14.0	37.0	59.0	*	59.0	SATISFACTORY
8/30/2017	6.0	35	72	*	72.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.30 PANAJI (SEPTEMBER 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
9/1/2017	6.0	BDL	38.0	*	38.0	GOOD
9/6/2017	8.0	13.0	202.0	*	168.0	MODERATELY POLLUTED
9/8/2017	4.0	BDL	77.0	*	77.0	SATISFACTORY
9/15/2017	BDL	BDL	31.0	*	31.0	GOOD
9/20/2017	6.0	27.0	28.0	*	34.0	GOOD
9/22/2017	5.0	22.0	74.0	*	74.0	SATISFACTORY
9/27/2017	6.0	18.0	49.0	*	49.0	GOOD
9/29/2017	BDL	18	34	*	34.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.31 PANAJI (OCTOBER 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
10/4/2017	5.0	16.0	220.0	*	180.0	MODERATELY POLLUTED
10/6/2017	4.0	18.0	46.0	*	46.0	GOOD
10/11/2017	BDL	21.0	41.0	*	41.0	GOOD
10/16/2017	BDL	12.0	25.0	*	25.0	GOOD
10/19/2017	BDL	20.0	115.0	81.0	110.0	MODERATELY POLLUTED
10/25/2017	BDL	35.0	33.0	*	33.0	GOOD
10/27/2017	BDL	17.0	68.0	*	68.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.32 PANAJI (NOVEMBER 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
11/1/2017	BDL	10.0	87.0	*	87.0	SATISFACTORY
11/3/2017	BDL	BDL	71.0	*	71.0	SATISFACTORY
11/8/2017	BDL	21.0	79.0	*	72.0	SATISFACTORY
11/10/2017	BDL	17.0	32.0	*	32.0	GOOD
11/15/2017	4.0	17.0	101.0	72.0	101.0	SATISFACTORY
11/17/2017	BDL	15.0	95.0	64.0	95.0	SATISFACTORY
11/22/2017	BDL	20.0	170.0	*	147.0	MODERATELY POLLUTED
11/24/2017	BDL	16.0	159.0	8.0	139.0	MODERATELY POLLUTED
11/29/2017	4.0	37.0	109.0	36.0	106.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.33 PANAJI (DECEMBER 2017)						
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	$PM_{2.5}$ µg/m³	AQI	AQI REMARKS
12/1/2017	BDL	33	85	10.0	85	SATISFACTORY
12/6/2017	BDL	33	65	*	65	SATISFACTORY
12/8/2017	4	25	66	*	66	SATISFACTORY
12/13/2017	BDL	14	69	*	69	SATISFACTORY
12/15/2017	BDL	19	80	*	80	SATISFACTORY
12/18/2017	4	33	72	*	72	SATISFACTORY
12/21/2017	4	34	57	*	57	SATISFACTORY
12/27/2017	BDL	36	86	*	86	SATISFACTORY
12/29/2017	BDL	31	214	*	176	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.34 PANAJI (JANUARY 2018)						
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**$PM_{2.5}$ µg/m³**	**AQI**	**AQI Remarks**
1/3/2018	18	14	96	*	96	SATISFACTORY
1/5/2018	17	13	106	*	104	MODERATELY POLLUTED
1/10/2018	15	15	117	*	112	MODERATELY POLLUTED
1/12/2018	BDL	10	99	*	99	SATISFACTORY
1/17/2018	BDL	18	95	*	95	SATISFACTORY
1/19/2018	9	15	84	*	84	SATISFACTORY
1/24/2018	4	14	45	*	45	GOOD
1/30/2018	6	11	124	*	116	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.35 PANAJI (FEBRUARY 2018)						
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**$PM_{2.5}$ µg/m³**	**AQI**	**AQI Remarks**
2/1/2018	BDL	13	106	FPS not working	104	MODERATELY POLLUTED
2/6/2018	BDL	18	108		106	MODERATELY POLLUTED
2/8/2018	BDL	20	64		64	SATISFACTORY
2/13/2018	4	5	56		56	SATISFACTORY
2/15/2018	4	25	43		43	SATISFACTORY
2/20/2018	BDL	24	79		79	SATISFACTORY
2/22/2018	BDL	15	89		89	SATISFACTORY
2/27/2018	4	24	112		109	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.36 PANAJI (MARCH 2018)						
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**$PM_{2.5}$ µg/m³**	**AQI**	**AQI Remarks**
3/1/2018	BDL	22	104	*	103	MODERATELY POLLUTED
3/6/2018	5	9	64	*	64	SATISFACTORY
3/8/2018	5	BDL	88	*	88	SATISFACTORY
3/13/2018	9	BDL	95	*	95	SATISFACTORY
3/15/2018	6	BDL	111	*	108	MODERATELY POLLUTED
3/20/2018	BDL	14	80	*	80	SATISFACTORY
3/22/2018	4	12	104	*	103	MODERATELY POLLUTED
3/27/2018	4	BDL	66	*	66	SATISFACTORY
3/29/2018	5	12	68		68	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**		

Table No. : 9.37 MAPUSA(APRIL 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
4/4/2017	BDL	BDL	122	122	MODERATELY POLLUTED
4/6/2017	BDL	BDL	108	108	MODERATELY POLLUTED
4/11/2017	BDL	BDL	78	78	SATISFACTORY
4/13/2017	BDL	BDL	105	104	MODERATELY POLLUTED
4/18/2017	11	BDL	46	46	GOOD
4/20/2017	12	BDL	50	50	GOOD
4/25/2017	BDL	BDL	92	92	SATISFACTORY
4/27/2017	12	BDL	78	78	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.38 MAPUSA(MAY 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
5/2/2017	BDL	BDL	124	124	MODERATELY POLLUTED
5/4/2017	BDL	BDL	65	65	SATISFACTORY
5/9/2017	BDL	BDL	66	66	SATISFACTORY
5/11/2017	BDL	BDL	58	58	SATISFACTORY
5/17/2017	10	BDL	66	66	SATISFACTORY
5/19/2017	13	BDL	65	65	SATISFACTORY
5/24/2017	BDL	BDL	59	59	SATISFACTORY
5/26/2017	14	10	53	53	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.39 MAPUSA(JUNE 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
02/06/2017	BDL	BDL	33.0	33.0	GOOD
06/06/2017	13.0	BDL	37.0	37.0	GOOD
13/06/2017	13.0	BDL	75.0	75.0	SATISFACTORY
15/06/2017	BDL	BDL	27.0	27.0	GOOD
20/06/2017	BDL	14.0	25.0	25.0	GOOD
22/06/2017	14.0	11.0	20.0	20.0	GOOD
27/06/2017	BDL	BDL	15.0	15.0	GOOD
29/06/2017	BDL	28.0	75.0	75.0	SATISFACTORY
Limits^:-	**80.0**	**80.0**	**100.0**		

Table No. : .9.40 MAPUSA(JULY 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
04/07/2017	BDL	BDL	32.0	32.0	GOOD
06/07/2017	BDL	BDL	29.0	29.0	GOOD
11/07/2017	15.0	BDL	19.0	19.0	GOOD
13/07/2017	13.0	BDL	13.0	16.3	GOOD
20/07/2017	BDL	BDL	28.0	28.0	GOOD
25/07/2017	BDL	BDL	31.0	31.0	GOOD
Limits^:-	**80.0**	**80.0**	**100.0**		

Table No. : 9.41 MAPUSA(AUGUST 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
01/08/2017	13.0	BDL	34.0	34.0	GOOD
08/08/2017	8.0	10.0	42.0	42.0	GOOD
10/08/2017	11.0	BDL	5.0	14.0	GOOD
16/08/2017	9.0	14.0	47.0	47.0	GOOD
18/08/2017	27.0	10.0	43.0	43.0	GOOD
21/08/2017	22.0	9.0	40.0	40.0	GOOD
23/08/2017	10.0	BDL	51.0	51.0	SATISFACTORY
29/08/2017	BDL	BDL	32.0	32.0	GOOD
31/08/2017	BDL	23.0	77.0	77.0	SATISFACTORY
Limits^:-	**80.0**	**80.0**	**100.0**		

Table No. : 9.42 MAPUSA(SEPTEMBER 2017)					
SAMPLING DATE	SO_2 µg/m³	NO_2 µg/m³	PM_{10} µg/m³	AQI	AQI REMARKS
05/09/2017	32.0	BDL	68.0	68.0	SATISFACTORY
07/09/2017	52.0	BDL	37.0	65.0	SATISFACTORY
12/09/2017	11.0	BDL	38.0	38.0	GOOD
14/09/2017	10.0	BDL	35.0	35.0	GOOD
19/09/2017	7.0	15.0	8.0	19.0	GOOD
21/09/2017	11.0	BDL	33.0	33.0	GOOD
26/09/2017	10.0	BDL	51.0	51.0	SATISFACTORY
28/09/2017	9.0	BDL	37.0	37.0	GOOD
Limits^:-	**80.0**	**80.0**	**100.0**		

Table No. : 9.43 MAPUSA(OCTOBER 2017)					
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	AQI	AQI REMARKS
03/10/2017	4.0	12.0	50.0	50.0	GOOD
05/10/2017	BDL	BDL	62.0	62.0	SATISFACTORY
10/10/2017	BDL	BDL	30.0	30.0	GOOD
12/10/2017	BDL	BDL	42.0	42.0	GOOD
16/10/2017	BDL	BDL	27.0	27.0	GOOD
19/10/2017	BDL	BDL	88.0	88.0	SATISFACTORY
24/10/2017	BDL	BDL	73.0	73.0	SATISFACTORY
26/10/2017	BDL	BDL	50.0	50.0	GOOD
31/10/2017	*	*	*	*	*
Limits^:-	**80**	**80**	**100**		

Table No. : 9.44 MAPUSA(NOVEMBER 2017)					
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	AQI	AQI REMARKS
02/11/2017	BDL	BDL	223.0	182.0	MODERATELY POLLUTED
07/11/2017	BDL	BDL	110.0	107.0	MODERATELY POLLUTED
09/11/2017	BDL	BDL	120.0	114.0	MODERATELY POLLUTED
14/11/2017	BDL	10.0	138.0	125.0	MODERATELY POLLUTED
16/11/2017	BDL	BDL	132.0	121.0	MODERATELY POLLUTED
21/11/2017	BDL	BDL	62.0	62.0	Satisfactory
23/11/2017	5.0	BDL	101.0	101.0	Satisfactory
28/11/2017	BDL	BDL	60.0	60.0	Satisfactory
30/11/2017	7.0	11.0	87.0	87.0	Satisfactory
Limits^:-	**80**	**80**	**100**		

Table No. : 9.45 MAPUSA(DECEMBER' 2018)					
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	AQI	AQI Remarks
12/2/2017	BDL	11	28	28	GOOD
12/7/2017	4	BDL	39	39	GOOD
12/12/2017	4	BDL	68	68	SATISFACTORY
12/14/2017	4	BDL	53	53	SATISFACTORY
12/18/2017	7	23	95	95	SATISFACTORY
12/21/2017	BDL	23	131	121	MODERATELY POLLUTED
12/26/2017	BDL	24	111	108	MODERATELY POLLUTED
12/28/2017	9	22	141	127	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.46 MAPUSA(JANUARY 2018)					
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI Remarks**
1/2/2018	6	36	84	84	SATISFACTORY
1/4/2018	20	9	100	100	SATISFACTORY
1/9/2018	12	BDL	150	133	MODERATELY POLLUTED
1/11/2018	4	BDL	118	112	MODERATELY POLLUTED
1/16/2018	4	BDL	130	120	MODERATELY POLLUTED
1/18/2018	BDL	BDL	118	112	MODERATELY POLLUTED
1/23/2018	BDL	23	100	100	SATISFACTORY
1/25/2018	BDL	BDL	66	66	SATISFACTORY
1/31/2018	BDL	BDL	143	129	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.47 MAPUSA(FEBRUARY 2018)					
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI Remarks**
2/2/2018	BDL	BDL	111	108	MODERATELY POLLUTED
2/7/2018	BDL	BDL	91	91	SATISFACTORY
2/9/2018	BDL	BDL	64	64	SATISFACTORY
2/14/2018	BDL	BDL	99	99	SATISFACTORY
2/16/2018	4	13	97	97	SATISFACTORY
2/21/2018	BDL	22	98	98	SATISFACTORY
2/23/2018	BDL	BDL	131	121	MODERATELY POLLUTED
2/28/2018	BDL	BDL	147	131	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**		

Table No. : 9.48 MAPUSA(MARCH 2018)					
Sampling Date	**SO_2 µg/m³**	**NO_2 µg/m³**	**PM_{10} µg/m³**	**AQI**	**AQI Remarks**
3/7/2018	6	BDL	196	164	SATISFACTORY
3/9/2018	5	BDL	61	61	SATISFACTORY
3/14/2018	7	BDL	65	65	MODERATELY POLLUTED
3/16/2018	7	12	48	48	MODERATELY POLLUTED
3/21/2018	12	BDL	67	67	MODERATELY POLLUTED
3/23/2018	BDL	BDL	127	118	MODERATELY POLLUTED
3/28/2018	BDL	BDL	206	170	SATISFACTORY
Limits^:-	**80**	**80**	**100**		

Table No. : 9.49 MARGAO (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.04.2017	7.4	15.6	60.3	19.1	2.37	<0.5	<0.01	60.0	SATISFACTORY
06.04.2017	6.6	16.1	57.5	18.1	<0.5	<0.5	<0.01	58.0	SATISFACTORY
11.04.2017	7.9	15.8	62.9	19.8	<0.5	<0.5	<0.01	63.0	SATISFACTORY
14.04.2017	6.8	15.5	83.6	26.2	2.61	<0.5	<0.01	84.0	SATISFACTORY
18.04.2017	7.0	16.2	55.4	18.0	<0.5	<0.5	<0.01	57.0	SATISFACTORY
20.04.2017	6.5	15.7	51.6	16.7	2.11	<0.5	<0.01	57.0	SATISFACTORY
25.04.2017	6.8	16.1	65.7	20.6	2.09	<0.5	<0.01	66.0	SATISFACTORY
27.04.2017	6.9	16.0	59.2	18.9	2.63	<0.5	<0.01	59.0	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.50 MARGAO (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.05.2017	7.8	13.6	59.2	19.0	1.92	<0.5	<0.01	59.0	SATISFACTORY
06.05.2017	6.4	11.9	60.9	19.3	<0.5	<0.5	<0.01	61.0	SATISFACTORY
09.05.2017	7.9	13.2	58.3	18.2	<0.5	<0.5	<0.01	58.0	SATISFACTORY
11.05.2017	7.1	14.2	61.5	19.2	2.63	<0.5	<0.01	62.0	SATISFACTORY
16.05.2017	7.5	9.5	78.3	24.5	<0.5	<0.5	<0.01	78.0	SATISFACTORY
19.05.2017	6.7	16.1	40.6	12.9	2.42	<0.5	<0.01	57.0	SATISFACTORY
23.05.2017	6.4	14.0	42.2	13.4	1.99	<0.5	<0.01	57.0	SATISFACTORY
25.05.2017	6.5	11.7	37.5	12.5	2.38	<0.5	<0.01	57.0	SATISFACTORY
30.05.2017	7.3	11.6	46.5	14.9	<0.5	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.51 MARGAO (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.06.2017	5.5	10.2	29.1	9.3	1.9	-	<0.01	29.0	GOOD
06.06.2017	6.0	9.8	42.2	13.2	<0.5	-	<0.01	42.0	GOOD
08.06.2017	5.4	10.4	28.2	9.5	<0.5	-	<0.01	28.0	GOOD
13.06.2017	6.0	BDL	25.2	8.0	2.6	-	<0.01	25.0	GOOD
15.06.2017	4.9	BDL	37.9	11.9	<0.5	-	<0.01	38.0	GOOD
20.06.2017	5.9	BDL	24.9	8.1	1.9	-	<0.01	25.0	GOOD
22.06.2017	6.5	BDL	24.8	8.0	2.1	-	<0.01	25.0	GOOD
27.06.2017	5.5	10.4	42.3	13.3	0.7	-	<0.01	42.0	GOOD
29.06.2017	5.9	10.0	37.7	11.9	<0.5	-	<0.01	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.52 MARGAO (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.07.2017	4.8	9.3	65.3	20.5	<0.5	<0.5	<0.01	65.0	Satisfactory
06.07.2017	5.4	9.6	42.5	13.5	<0.5	<0.5	<0.01	43.0	Good
11.07.2017	5.0	BDL	27.0	8.7	<0.5	<0.5	<0.01	27.0	Good
13.07.2017	5.1	BDL	30.3	9.7	0.8	<0.5	<0.01	30.0	Good
18.07.2017	4.4	9.7	25.9	8.3	<0.5	<0.5	<0.01	26.0	GOOD
20.07.2017	4.1	10.5	29.6	9.5	0.8	<0.5	<0.01	30.0	GOOD
25.07.2017	6.9	10.0	29.3	9.4	0.8	<0.5	<0.01	29.0	GOOD
27.07.2017	BDL	9.3	29.0	9.4	<0.5	<0.5	<0.01	29.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.53 MARGAO AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.08.2017	6.3	11.0	43.2	13.6	0.7	<0.5	<0.01	43.0	GOOD
03.08.2017	4.6	11.5	44.6	14.1	<0.5	<0.5	<0.01	45.0	GOOD
08.08.2017	6.4	9.9	29.2	10.0	<0.5	<0.5	<0.01	29.0	GOOD
10.08.2017	5.2	9.8	32.5	10.2	<0.5	<0.5	<0.01	33.0	GOOD
16.08.2017	5.4	10.4	46.3	14.4	0.7	<0.5	<0.01	46.0	GOOD
18.08.2017	4.0	9.4	32.9	10.5	0.8	<0.5	<0.01	33.0	GOOD
21.08.2017	4.8	10.5	37.3	11.5	<0.5	<0.5	<0.01	37.0	GOOD
23.08.2017	5.8	10.2	26.5	11.3	0.9	<0.5	<0.01	27.0	GOOD
30.08.2017	5.3	9.6	40.2	12.7	<0.5	<0.5	<0.01	40.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.54 MARGAO (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.09.2017	6.1	10.6	58.8	18.5	<0.5	<0.5	<0.01	59.0	SATISFACTORY
05.09.2017	7.6	11.7	45.6	14.3	<0.5	<0.5	<0.01	46.0	GOOD
07.09.2017	7.1	10.2	35.7	11.6	0.9	<0.5	<0.01	36.0	GOOD
12.09.2017	6.8	9.5	33.0	10.5	<0.5	<0.5	<0.01	33.0	GOOD
14.09.2017	6.7	11.5	36.7	11.6	0.6	<0.5	<0.01	37.0	GOOD
19.09.2017 @	8.5	11.0	35.7	11.3	<0.5	<0.5	<0.01	36.0	GOOD
21.09.2017	7.7	11.1	33.6	10.8	<0.5	<0.5	<0.01	34.0	GOOD
26.09.2017	7.2	12.6	33.2	10.8	0.9	<0.5	<0.01	33.0	GOOD
28.09.2017	8.1	10.1	27.9	8.8	<0.5	<0.5	<0.01	28.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.55 MARGAO (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.10.2017	8.1	11.8	49.6	15.5	0.7	<0.5	<0.01	50.0	GOOD
07.10.2017 $	9.1	12.4	52.3	16.6	0.8	<0.5	<0.01	52.0	SATISFACTORY
10.10.2017	7.8	12.3	47.5	15.2	<0.5	<0.5	<0.01	48.0	GOOD
12.10.2017	7.6	11.1	51.9	16.2	0.9	<0.5	<0.01	52.0	SATISFACTORY
19.10.2017	12.5	17.8	116.9	36.5	0.7	<0.5	<0.01	111.0	MODERATE
21.10.2017	11.0	13.1	50.1	16.4	<0.5	<0.5	<0.01	50.0	GOOD
24.10.2017	11.9	12.6	49.2	15.5	<0.5	<0.5	<0.01	49.0	GOOD
26.10.2017	8.3	13.4	46.4	15.2	1.1	<0.5	<0.01	46.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.56 MARGAO (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	9.1	12.9	60..3	18.8	<0.5	<0.5	<0.01	60.0	SATISFACTORY
11/4/2017	9.2	11.5	60.8	19.5	0.9	<0.5	<0.01	61.0	SATISFACTORY
11/7/2017	8.9	12.5	52.1	16.5	0.9	<0.5	<0.01	52.0	SATISFACTORY
11/9/2017	7.3	11.2	50.6	15.6	<0.5	<0.5	<0.01	51.0	SATISFACTORY
11/15/2017	9.9	14.6	58	18.3	0.7	<0.5	<0.01	58.0	SATISFACTORY
11/17/2017	9.5	13.2	47.1	14.9	<0.5	<0.5	<0.01	47.0	SATISFACTORY
11/21/2017	10.4	13.4	60.5	19.0	<0.5	<0.5	<0.01	61.0	SATISFACTORY
11/23/2017	8.1	13	75.7	24.5	0.7	<0.5	<0.01	76.0	SATISFACTORY
11/28/2017	8.1	12.7	84.7	26.4	<0.5	<0.5	<0.5	86.0	SATISFACTORY
11/30/2017	8.5	12.9	73.8	23.0	1.4	<0.5	<0.5	74.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.57 MARGAO (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.12.2017	**8.9**	**13.2**	**39.8**	**12.8**	0.6	<0.5	0.75	**40**	GOOD
07.12.2017	**8.2**	**11.6**	**62.4**	**19.6**	<0.5	<0.5	<0.01	**62**	SATISFACTORY
12.12.2017	**9.3**	**13.9**	**55.9**	**18.2**	0.7	<0.5	0.64	**56**	SATISFACTORY
14.12.2017	**9.8**	**13.0**	**74.1**	**24.3**	<0.5	<0.5	<0.01	**74**	SATISFACTORY
21.12.2017	**10.3**	**14.3**	**79.0**	**24.2**	0.7	<0.5	0.75	**79**	SATISFACTORY
23.12.2017	**8.7**	**13.6**	**76.4**	**24.9**	<0.5	<0.5	<0.01	**76**	SATISFACTORY
28.12.2017	**9.5**	**14.0**	**84.0**	**26.1**	<0.5	<0.5	0.96	**84**	SATISFACTORY
30.12.2017	**7.8**	**12.9**	**75.7**	**24.4**	0.7	<0.5	0.89	**76**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.58 MARGAO (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.01.2018	7.8	14.4	86	27	0.6	<0.5	0.78	86	SATISFACTORY
05.01.2018	6.7	15	88.4	27.5	<0.5	<0.5	0.45	88	SATISFACTORY
09.01.2018	8.4	16.7	93.5	29.5	0.8	<0.5	0.64	94	SATISFACTORY
11.01.2018	8.2	13.7	91.6	28.1	<0.5	<0.5	<0.01	92	SATISFACTORY
16.01.2018	8	12.7	81.2	25.4	<0.5	<0.5	0.88	81	SATISFACTORY
18.01.2018	8.6	15.8	81.1	24.8	0.6	<0.5	<0.01	81	SATISFACTORY
24.01.2018	6.9	12.8	72.6	22.5	<0.5	<0.5	0.96	73	SATISFACTORY
26.01.2018	7.5	13.7	89.7	29.8	0.8	<0.5	0.89	90	SATISFACTORY
30.01.2018	6.9	15.2	84.4	26	<0.5	<0.5	<0.01	84	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	1	**4**		

Table No. : 9.59 MARGAO (FEBRUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.02.2018	**8.1**	**13.2**	**77.4**	**24.2**	<0.5	<0.5	0.71	77	SATISFACTORY
07.02.2018	**8.9**	**16.5**	**64.2**	**20.2**	0.65995	<0.5	<0.01	64	SATISFACTORY
09.02.2018	**6.9**	**15.7**	**71.3**	**22.5**	<0.5	<0.5	0.88	71	SATISFACTORY
13.02.2018	**6.0**	**16.0**	**64.4**	**20.5**	0.73102	<0.5	<0.01	64	SATISFACTORY
15.02.2018	**7.7**	**16.2**	**79.5**	**24.6**	<0.5	<0.5	0.7	80	SATISFACTORY
20.02.2018	**7.7**	**15.9**	**73.0**	**23.0**	0.58251	<0.5	<0.01	73	SATISFACTORY
22.02.2018	**8.4**	**13.2**	**80.7**	**25.2**	<0.5	<0.5	0.9	81	SATISFACTORY
26.02.2018	**7.4**	**15.5**	**84.3**	**27.8**	0.68498	<0.5	0.77	84	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	1	**4**		

Table No. : 9.60 MARGAO (MARCH 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.03.2018	8.1	14.9	86.0	27.4	0.7	<0.5	<0.01	86	SATISFACTORY
06.03.2018	7.6	15.7	94.5	29.6	<0.5	<0.5	0.77	95	SATISFACTORY
08.03.2018	8.5	14.7	78.6	24.9	0.7	<0.5	0.58	79	SATISFACTORY
13.03.2018	8.3	14.3	84.1	25.9	<0.5	<0.5	<0.01	84	SATISFACTORY
15.03.2018	9.0	16.4	55.3	19.0	<0.5	<0.5	0.66	55	SATISFACTORY
19.03.2018	8.7	15.6	64.7	20.6	0.6	<0.5	<0.01	65	SATISFACTORY
22.03.2018	7.2	12.9	77.9	24.7	<0.5	<0.5	0.74	78	SATISFACTORY
26.03.2018	8.0	14.2	75.7	25.1	0.7	<0.5	0.88	76	SATISFACTORY
30.03.2018	7.3	14.4	38.9	12.2	<0.5	<0.5	<0.01	39	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	1	**4**		

Table No. : 9.61 BICHOLIM (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.04.2017	8.9	16.3	48.9	15.9	<0.5	<0.5	<0.01	57.0	SATISFACTORY
07.04.2017	9.6	16.3	63.1	20.2	2	<0.5	<0.01	63.0	SATISFACTORY
12.04.2017	8.5	15.4	54.3	17.8	<0.5	<0.5	<0.01	57.0	SATISFACTORY
15.04.2017	8.6	15.7	81.2	26.7	2.4	<0.5	<0.01	81.0	SATISFACTORY
19.04.2017	7.4	17.3	52.4	17.1	<0.5	<0.5	<0.01	57.0	SATISFACTORY
21.04.2017	9.0	16.7	41.6	14.0	1.7	<0.5	<0.01	57.0	SATISFACTORY
26.04.2017	7.8	16.8	69.0	22.6	1.8	<0.5	<0.01	70.0	SATISFACTORY
28.04.2017	7.8	17.0	66.7	22.1	<0.5	<0.5	<0.01	61.0	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.62 BICHOLIM (MAY2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.05.2017	7.1	13.3	128.3	41.2	<0.5	<0.5	<0.01	119.0	MODERATELY POLLUTED
05.05.2017	8.1	13.1	50.5	16.8	2	<0.5	<0.01	57.0	SATISFACTORY
10.05.2017	7.7	13.1	45.3	15.0	<0.5	<0.5	<0.01	57.0	SATISFACTORY
12.05.2017	7.8	13.7	54.8	18.5	2.4	<0.5	<0.01	57.0	SATISFACTORY
17.05.2017	7.4	12.8	66.7	21.5	<0.5	<0.5	<0.01	67.0	SATISFACTORY
19.05.2017	8.0	10.4	54.8	18.3	1.6	<0.5	<0.01	57.0	SATISFACTORY
24.05.2017	5.7	12.2	52.2	17.2	1.4	<0.5	<0.01	57.0	SATISFACTORY
26.05.2017	6.8	10.7	54.8	18.4	<0.5	<0.5	<0.01	57.0	SATISFACTORY
31.05.2017	8.8	14.1	31.1	10.3	<0.5	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.63 BICHOLIM (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.06.2017	5.6	9.7	42.2	13.5	<0.5	-	<0.01	42.0	GOOD
07.06.2017	6.6	12.1	47.0	15.6	2.1	-	<0.01	47.0	GOOD
09.06.2017	5.5	10.5	33.8	11.2	<0.5	-	<0.01	34.0	GOOD
14.06.2017	5.0	12.0	28.4	9.4	2.1	-	<0.01	28.0	GOOD
16.06.2017	6.7	10.4	32.4	10.7	<0.5	-	<0.01	32.0	GOOD
21.06.2017	5.6	9.0	40.4	13.2	1.4	-	<0.01	40.0	GOOD
23.06.2017	4.6	10.6	34.6	11.2	1.3	-	<0.01	35.0	GOOD
28.06.2017	5.4	10.7	34.2	11.4	<0.5	-	<0.01	34.0	GOOD
30.06.2017	8.4	11.1	29.5	9.8	<0.5	-	<0.01	30.0	GOOD
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.64 BICHOLIM (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.07.2017	4.5	BDL	60.7	19.8	<0.5	<0.5	<0.01	61.0	SATISFACTORY
07.07.2017	5.5	BDL	45.9	15.3	2.1	<0.5	<0.01	46.0	GOOD
12.07.2017	4.8	11.0	44.6	14.6	<0.5	<0.5	<0.01	45.0	GOOD
14.07.2017	4.0	12.3	47.6	15.6	2.4	0.546	<0.01	48.0	GOOD
19.07.2017	8.1	11.2	38.6	12.9	<0.5	<0.5	<0.01	39.0	GOOD
21.07.2017	5.2	BDL	34.7	11.6	2.2	<0.5	<0.01	35.0	GOOD
26.07.2017	4.5	11.3	23.9	8.0	1.5	<0.5	<0.01	24.0	GOOD
28.07.2017	5.6	10.3	23.4	8.0	<0.5	<0.5	<0.01	23.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.65 BICHOLIM (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.08.2017	4.3	9.5	28.5	9.4	<0.5	<0.5	<0.01	29.0	GOOD
04.08.2017	7.1	10.7	29.8	9.9	0.8	<0.5	<0.01	30.0	GOOD
09.08.2017	4.9	10.3	52.9	17.0	<0.5	<0.5	<0.01	53.0	SATISFACTORY
11.08.2017	4.8	10.9	29.5	9.9	2.04	0.546	<0.01	30.0	GOOD
17.08.2017	7.2	10.8	30.7	10.0	<0.5	<0.5	<0.01	31.0	GOOD
19.08.2017	6.4	11.5	38.1	12.7	0.99	<0.5	<0.01	38.0	GOOD
21.08.2017	5.1	11.3	38.1	12.4	<0.5	<0.5	<0.01	38.0	GOOD
23.08.2017	7.0	11.9	30.5	10.0	2	<0.5	<0.01	31.0	GOOD
30.08.2017	5.8	11.0	30.7	10.2	<0.5	<0.5	<0.01	31.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.66 BICHOLIM (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.09.2017	6.9	11.6	39.5	13.3	<0.5	<0.5	<0.01	40.0	GOOD
06.09.2017	6.9	10.4	42.1	14.2	0.6	<0.5	<0.01	42.0	GOOD
08.09.2017	9.4	11.3	42.9	14.0	<0.5	<0.5	<0.01	43.0	GOOD
13.09.2017	9.5	11.6	39.1	13.0	0.8	<0.5	<0.01	39.0	GOOD
18.09.2017	9.0	12.9	37.8	12.4	<0.5	<0.5	<0.01	38.0	GOOD
20.09.2017	8.5	12.1	35.8	11.8	0.8	<0.5	<0.01	36.0	GOOD
22.09.2017	9.2	10.2	29.6	9.7	<0.5	<0.5	<0.01	30.0	GOOD
26.09.2017	6.5	11.6	34.9	11.3	0.6	<0.5	<0.01	35.0	GOOD
28.09.2017	7.0	12.7	33.4	11.0	<0.5	<0.5	<0.01	33.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.67 BICHOLIM (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	7.9	11.5	44.3	14.6	<0.5	<0.5	<0.01	44.0	GOOD
06.10.2017	10.5	11.3	42.9	14.1	0.8	<0.5	<0.01	43.0	GOOD
11.10.2017	8.9	13.6	53.5	17.2	<0.5	<0.5	<0.01	54.0	SATISFACTORY
13.10.2017	11.2	13.7	43.3	14.4	0.8	<0.5	<0.01	43.0	GOOD
17.10.2017	10.7	13.2	58.1	18.8	<0.5	<0.5	<0.01	58.0	SATISFACTORY
21.10.2017	7.6	13.4	46.9	15.8	0.6	<0.5	<0.01	47.0	GOOD
25.10.2017	9.8	14.4	56.1	18.2	<0.5	<0.5	<0.01	56.0	SATISFACTORY
27.10.2017	9.6	12.4	52.6	17.0	0.6	<0.5	<0.01	53.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.68 BICHOLIM (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	9.8	13.5	56.5	18.3	0.7	<0.5	<0.01	57.0	SATISFACTORY
11/4/2017	9.7	12.0	59.9	20.4	<0.5	<0.5	<0.01	60.0	SATISFACTORY
11/8/2017	7.9	12.7	58.9	19.1	<0.5	<0.5	<0.01	59.0	SATISFACTORY
11/10/2017	10.9	13.6	58.9	19.4	<0.5	<0.5	<0.01	59.0	SATISFACTORY
11/15/2017	10.1	13.2	56.1	18.4	0.8	<0.5	<0.01	56.0	SATISFACTORY
11/17/2017	8.3	14.2	49.6	16.4	0.9	<0.5	<0.01	50.0	GOOD
11/22/2017	9.1	14.0	70.2	22.7	<0.5	<0.5	<0.01	70.0	SATISFACTORY
11/24/2017	8.2	10.1	77.9	26.0	0.7	<0.5	<0.01	78.0	SATISFACTORY
11/28/2017	7.2	12.7	89.3	29.0	<0.5	<0.5	<0.01	89.0	SATISFACTORY
11/30/2017	7.9	13.3	75.6	25.2	0.7	<0.5	<0.01	76.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.69 BICHOLIM (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
06.12.2017	**8.2**	**12.6**	**60.9**	**20.7**	0.8	<0.5	<0.01	**61**	SATISFACTORY
08.12.2017	**9.2**	**13.2**	**79.3**	**26.0**	<0.5	<0.5	0.95	**79**	SATISFACTORY
13.12.2017	**6.9**	**10.9**	**67.6**	**21.7**	<0.5	<0.5	<0.01	**68**	SATISFACTORY
15.12.2017	**7.7**	**11.2**	**77.5**	**25.4**	<0.5	<0.5	0.54	**78**	SATISFACTORY
20.12.2017	**8.9**	**13.7**	**89.7**	**28.6**	0.8	<0.5	0.85	**90**	SATISFACTORY
22.12.2017	**9.3**	**16.1**	**84.1**	**27.6**	0.9	<0.5	<0.01	**84**	SATISFACTORY
27.12.2017	**10.7**	**13.9**	**86.3**	**28.0**	0.6	<0.5	0.74	**86**	SATISFACTORY
29.12.2017	**8.2**	**15.1**	**80.1**	**25.8**	<0.5	<0.5	0.9	**80**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.70 BICHOLIM (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.01.2018	6.5	14	89.5	26.9	<0.5	<0.5	0.77	90	SATISFACTORY
06.01.2018	6.9	13.2	84.4	28	0.7	<0.5	0.87	84	SATISFACTORY
10.01.2018	7.3	11.7	90.6	29.2	<0.5	<0.5	<0.01	91	SATISFACTORY
12.01.2018	5.8	14.5	86.3	28.2	<0.5	<0.5	0.48	86	SATISFACTORY
17.01.2018	7.2	10.2	82.5	26.6	0.8	<0.5	0.46	83	SATISFACTORY
19.01.2018	8.5	14.8	91.1	29.6	<0.5	<0.5	<0.01	91	SATISFACTORY
24.01.2018	6.6	14.2	84.6	27.3	0.9	<0.5	0.72	85	SATISFACTORY
27.01.2018	7.4	14	88.3	28.6	0.7	<0.5	0.4	88	SATISFACTORY
31.01.2018	6.6	13.4	74.3	24.2	<0.5	<0.5	<0.01	74	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.71 BICHOLIM (FEBRUARY'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.02.2018	8.0	15.6	87.2	28.9	0.7	<0.5	<0.01	87	SATISFACTORY
07.02.2018	7.3	13.7	104.3	34.5	0.8	<0.5	0.7	103	MODERATELY POLLUTED
09.02.2018	9.2	15.3	115.2	36.2	<0.5	<0.5	<0.01	110	MODERATELY POLLUTED
14.02.2018	9.6	16.3	125.9	41.7	1.1	<0.5	0.3	117	MODERATELY POLLUTED
16.02.2018	8.6	15.3	131.5	42.9	<0.5	<0.5	0.9	121	MODERATELY POLLUTED
21.02.2018	8.9	14.9	93.2	31.6	<0.5	<0.5	<0.01	93	SATISFACTORY
23.02.2018	9.0	13.1	142.2	45.8	<0.5	<0.5	0.9	128	MODERATELY POLLUTED
27.02.2018	7.9	14.5	173.4	56.2	0.6	<0.5	<0.01	149	MODERATELY POLLUTED
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.72 BICHOLIM (MARCH 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.03.2018	8.0	13.2	121.6	38.7	<0.5	<0.5	0.9	114	MODERATELY POLLUTED
07.03.2018	6.5	12.5	119.3	39.9	0.7	<0.5	<0.01	113	MODERATELY POLLUTED
09.03.2018	7.7	12.2	120.6	39.2	<0.5	<0.5	0.8	114	MODERATELY POLLUTED
14.03.2018	6.4	15.9	92.1	30.1	<0.5	<0.5	0.7	92	SATISFACTORY
16.03.2018	8.1	11.2	75.6	24.6	0.7	<0.5	<0.01	76	SATISFACTORY
21.03.2018	8.4	14.0	76.3	25.5	<0.5	<0.5	0.8	76	SATISFACTORY
23.03.2018	5.9	14.1	84.8	28.0	0.9	<0.5	<0.01	85	SATISFACTORY
26.03.2018	7.5	14.1	69.0	22.3	0.8	<0.5	0.6	69	SATISFACTORY
28.03.2018	7.1	12.7	68.3	22.6	<0.5	<0.5	<0.01	68	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.73 AMONA (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.04.2017	9.5	18.3	57.7	18.6	1.0	<0.5	<0.01	58.0	SATISFACTORY
07.04.2017	10.0	16.6	75.5	24.0	<0.5	<0.5	<0.01	76.0	SATISFACTORY
12.04.2017	9.8	18.1	81.6	25.7	1.6	<0.5	<0.01	82.0	SATISFACTORY
15.04.2017	7.6	15.5	78.0	24.8	1.0	<0.5	<0.01	78.0	SATISFACTORY
19.04.2017	10.0	18.6	53.5	16.8	<0.5	<0.5	<0.01	57.0	SATISFACTORY
21.04.2017	9.6	18.3	91.3	29.1	2.2	<0.5	<0.01	91.0	SATISFACTORY
26.04.2017	9.2	18.4	149.8	45.9	<0.5	<0.5	<0.01	133.0	MODERATELY POLLUTED
28.04.2017	9.3	18.9	122.6	40.1	1.7	<0.5	<0.01	155.0	MODERATELY POLLUTED
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.74 AMONA (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.05.2017	7.8	12.1	93.8	29.9	0.7	<0.5	<0.01	94.0	SATISFACTORY
05.05.2017	8.5	12.3	123.9	39.6	<0.5	<0.5	<0.01	116.0	MODERATELY POLLUTED
10.05.2017	7.5	11.2	97.5	43.0	1.5	<0.5	<0.01	98.0	SATISFACTORY
12.05.2017	7.2	12.3	112.1	56.2	1.0	<0.5	<0.01	108.0	MODERATELY POLLUTED
17.05.2017	6.4	12.5	44.5	14.3	<0.5	<0.5	<0.01	57.0	SATISFACTORY
20.05.2017	7.7	12.2	54.3	17.3	2.4	<0.5	<0.01	57.0	SATISFACTORY
24.05.2017	7.5	11.8	80.9	26.1	<0.5	<0.5	<0.01	81.0	SATISFACTORY
26.05.2017	7.8	12.9	66.9	21.3	1.6	<0.5	<0.01	67.0	SATISFACTORY
31.05.2017	8.8	14.4	52.0	17.0	1.9	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.75 AMONA (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.06.2017	4.7	10.5	43.8	14.1	<0.5	<0.5	<0.01	44.0	GOOD
07.06.2017	6.5	11.6	44.9	14.5	2.9	<0.5	<0.01	45.0	GOOD
09.06.2017	9.5	14.6	42.0	13.5	1.6	<0.5	<0.01	42.0	GOOD
14.06.2017	5.1	11.2	45.2	14.7	1.1	<0.5	<0.01	45.0	GOOD
16.06.2017	5.1	10.8	40.9	13.2	<0.5	<0.5	<0.01	41.0	GOOD
21.06.2017	6.2	9.7	51.3	16.4	2.3	<0.5	<0.01	51.0	SATISFACTORY
23.06.2017	6.6	10.5	53.6	17.4	<0.5	<0.5	<0.01	54.0	SATISFACTORY
28.06.2017	8.0	12.5	44.4	14.1	<0.5	<0.5	<0.01	44.0	GOOD
30.06.2017	6.0	10.1	37.9	12.3	<0.5	<0.5	<0.01	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.76 AMONA (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.07.2017	7.2	10.7	36.2	11.4	2.6	<0.5	<0.01	46.0	GOOD
07.07.2017	BDL	12.0	46.3	14.8	<0.5	<0.5	<0.01	39.0	GOOD
12.07.2017	7.5	13.1	42.4	13.8	<0.5	<0.5	<0.01	55.0	SATISFACTORY
14.07.2017	7.3	10.4	25.1	8.0	2.5	0.5	<0.01	48.0	GOOD
19.07.2017	7.0	10.4	27.4	8.7	<0.5	<0.5	<0.01	36.0	GOOD
21.07.2017	5.3	14.6	30.9	9.7	<0.5	<0.5	<0.01	30.0	GOOD
26.07.2017	5.4	12.0	25.4	8.1	<0.5	<0.5	<0.01	37.0	GOOD
28.07.2017	7.6	14.9	28.7	9.4	<0.5	<0.5	<0.01	35.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.77 AMONA (AUGUST 2017)								AQI	AQI REMARKS
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3		
02.08.2017	5.5	10.6	35.3	11.3	1.0	<0.5	<0.01	35.0	GOOD
04.08.2017	7.3	9.9	28.5	9.2	<0.5	<0.5	<0.01	29.0	GOOD
09.08.2017	6.4	9.4	37.5	12.2	0.9	<0.5	<0.01	38.0	GOOD
11.08.2017	6.5	9.0	28.7	9.3	1.0	<0.5	<0.01	29.0	GOOD
17.08.2017	7.8	11.6	38.0	12.5	<0.5	<0.5	<0.01	38.0	GOOD
19.08.2017	5.8	9.6	46.6	15.1	<0.5	<0.5	<0.01	47.0	GOOD
21.08.2017	5.9	9.8	40.6	13.2	0.7	<0.5	<0.01	41.0	GOOD
23.08.2017	6.7	10.2	45.0	14.3	<0.5	<0.5	<0.01	45.0	GOOD
30.08.2017	6.8	11.1	31.0	10.2	0.8	<0.5	<0.01	31.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.78 AMONA (SEPTEMBER 2017)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.09.2017	6.6	11.7	39.7	12.3	0.6	<0.5	<0.01	40.0	GOOD
06.09.2017	7.4	11.6	39.2	12.6	<0.5	<0.5	<0.01	39.0	GOOD
08.09.2017	7.9	11.0	36.1	11.7	0.7	<0.5	<0.01	36.0	GOOD
13.09.2017	6.7	11.3	35.6	11.4	<0.5	<0.5	<0.01	36.0	GOOD
15.09.2017	7.0	12.3	29.6	9.6	<0.5	<0.5	<0.01	30.0	GOOD
20.09.2017	7.5	12.8	35.2	11.7	<0.5	<0.5	<0.01	35.0	GOOD
22.09.2017	7.1	10.8	41.2	13.6	0.6	<0.5	<0.01	41.0	GOOD
27.09.2017	7.8	10.7	35.2	11.1	<0.5	<0.5	<0.01	35.0	GOOD
29.09.2017	6.2	10.9	31.7	10.2	0.8	<0.5	<0.01	32.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.79 AMONA (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	8.3	13.8	51.9	16.5	0.6	<0.5	<0.01	52.0	SATISFACTORY
06.10.2017	7.8	13.9	48.3	15.5	<0.5	<0.5	<0.01	48.0	GOOD
11.10.2017	11.9	13.4	47.9	15.9	0.8	<0.5	<0.01	48.0	GOOD
13.10.2107	9.1	11.0	44.0	14.2	<0.5	<0.5	<0.01	44.0	GOOD
17.10.2017	9.2	15.1	67.5	21.4	<0.5	<0.5	<0.01	68.0	SATISFACTORY
21.10.2017	10.5	12.2	50.2	16.2	<0.5	<0.5	<0.01	50.0	GOOD
25.10.2017	7.3	11.6	71.3	23.1	0.7	<0.5	<0.01	71.0	SATISFACTORY
27.10.2017	10.6	13.6	50.6	16.1	<0.5	<0.5	<0.01	51.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.80 AMONA (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.11.2017	10.7	12.5	60.8	19.6	<0.5	<0.5	<0.01	61.0	SATISFACTORY
04.11.2017	9.5	14.1	62.7	20.2	6.0	<0.5	<0.01	63.0	SATISFACTORY
08.11.2017	9.7	12.6	59.1	19.2	<0.5	<0.5	<0.01	59.0	SATISFACTORY
10.11.2017	9.1	11.8	64.4	21.1	<0.5	<0.5	<0.01	64.0	SATISFACTORY
14.11.2017	8.9	14.3	54.8	17.5	<0.5	<0.5	<0.01	55.0	SATISFACTORY
18.11.2017	9.8	10.5	38.7	12.4	0.6	<0.5	<0.01	39.0	GOOD
22.11.2017	9.2	11.2	72.3	23.1	0.7	<0.5	<0.01	72.0	SATISFACTORY
24.11.2017	7.5	14.5	81.2	25.5	0.6	<0.5	<0.01	81.0	SATISFACTORY
28.11.2017	9.1	14.8	79.4	26.5	<0.5	<0.5	<0.01	79.0	SATISFACTORY
30.11.2017	10.3	11.4	89.0	28.3	<0.5	<0.5	<0.01	89.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.81 AMONA (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
06.12.2017	**9.0**	**13.6**	**56.9**	**18.2**	0.6	<0.5	0.84	**57**	SATISFACTORY
08.12.2017	**9.4**	**11.6**	**64.8**	**20.8**	0.7	<0.5	<0.01	**65**	SATISFACTORY
13.12.2017	**8.4**	**11.4**	**54.7**	**17.7**	0.6	<0.5	0.56	**55**	SATISFACTORY
15.12.2017	**7.7**	**12.1**	**65.4**	**21.1**	<0.5	<0.5	<0.01	**65**	SATISFACTORY
20.12.2017	**8.8**	**12.3**	**85.0**	**27.3**	<0.5	<0.5	0.67	**85**	SATISFACTORY
22.12.2017	**7.0**	**14.1**	**80.7**	**26.3**	0.6	<0.5	<0.01	**81**	SATISFACTORY
27.12.2017	**7.3**	**12.2**	**88.1**	**27.8**	<0.5	<0.5	0.23	**88**	SATISFACTORY
29.12.2017	**8.0**	**13.4**	**83.0**	**26.0**	0.6	<0.5	0.98	**83**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.82 AMONA (JANUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.01.2018	8.8	13.1	81.1	26	<0.5	<0.5	0.32	**81**	SATISFACTORY
06.01.2018	9.4	14.6	73.8	23.9	0.6	<0.5	<0.01	**74**	SATISFACTORY
10.01.2018	9.8	14.9	81.5	26.3	<0.5	<0.5	0.46	**82**	SATISFACTORY
12.01.2018	8.4	13.2	86.7	27.9	<0.5	<0.5	<0.01	**87**	SATISFACTORY
17.01.2018	9	11.3	87.5	28.2	<0.5	<0.5	<0.01	**88**	SATISFACTORY
19.01.2018	6.9	15.2	81.3	26.2	<0.5	<0.5	0.65	**81**	SATISFACTORY
24.01.2018	8.6	14.5	55.7	18.3	0.8	<0.5	0.66	**56**	SATISFACTORY
27.01.2018	9.2	14.2	94.3	30.3	<0.5	<0.5	0.86	**94**	SATISFACTORY
31.01.2018	7.2	11.8	79.6	25.9	0.6	<0.5	<0.01	**80**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.83 AMONA (FEBRUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.02.2018	7.2	11.83	89.4	29.2	<0.5	<0.5	0.74	89	SATISFACTORY
07.02.2018	9.0	13.75	77.2	25.8	0.707	<0.5	<0.01	77	SATISFACTORY
09.02.2018	10.5	13.57	76.7	22.8	<0.5	<0.5	0.86	77	SATISFACTORY
14.02.2018	8.7	12.84	86.4	27.5	0.71	<0.5	0.55	86	SATISFACTORY
16.02.2018	9.1	15.07	86.6	28.4	<0.5	<0.5	0.69	87	SATISFACTORY
21.02.2018	9.8	11.21	86.5	28.0	<0.5	<0.5	<0.01	87	SATISFACTORY
23.02.2018	8.6	13.72	88.3	28.7	<0.5	<0.5	<0.01	88	SATISFACTORY
27.02.2018#	7.1	12.7828	98.3	31.4	0.859	<0.5	0.87	98	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.84 AMONA(MARCH' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
03.03.2018	8.7	12.90	90.0	28.4	<0.5	<0.5	<0.01	90	SATISFACTORY
07.03.2018	8.9	13.60	89.2	29.3	0.6	<0.5	0.88	89	SATISFACTORY
09.03.2018	9.7	18.20	51.0	26.7	<0.5	<0.5	<0.01	81	SATISFACTORY
14.03.2018	8.4	16.10	74.7	24.5	0.6	<0.5	0.56	75	SATISFACTORY
16.03.2018	9.1	9.80	69.0	23.1	0.6	<0.5	<0.01	69	SATISFACTORY
21.03.2018	6.8	13.30	64.4	21.0	0.7	<0.5	0.65	64	SATISFACTORY
23.03.2018	6.5	15.00	74.4	23.9	0.7	<0.5	0.77	74	SATISFACTORY
26.03.2018	8.6	12.3	73.4	23.8	<0.5	<0.5	0.71	73	SATISFACTORY
28.03.2018	7.1	16.2	80.4	25.7	0.6	<0.5	<0.01	80	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.85 ASSANORA (APRIL 2017)									
SAMPLING DATE	SO_2 µg/ m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
05.04.2017	9.2	16.1	62.3	20.6	3.0	<0.5	<0.01	62.0	SATISFACTORY
07.04.2017	10.2	15.3	68.8	22.3	<0.5	<0.5	<0.01	69.0	SATISFACTORY
12.04.2017	7.9	17.0	66.6	21.3	<0.5	<0.5	<0.01	67.0	SATISFACTORY
15.04.2017	6.9	17.1	55.6	18.0	2.5	<0.5	<0.01	57.0	SATISFACTORY
19.04.2017	8.6	15.6	46.1	15.3	<0.5	<0.5	<0.01	57.0	SATISFACTORY
21.04.2017	10.2	19.2	49.6	16.0	2.3	<0.5	<0.01	57.0	SATISFACTORY
27.04.2017	8.8	18.6	68.4	21.6	<0.5	<0.5	<0.01	68.0	SATISFACTORY
29.04.2017	9.6	16.2	55.8	18.0	2.4	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.86 ASSANORA (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/m^3	AQI	AQI REMARKS
03.05.2017	8.7	15.5	38.9	13.3	3.0	<0.5	<0.01	57.0	SATISFACTORY
05.05.2017	10.5	11.7	63.7	20.7	<0.5	<0.5	<0.01	64.0	SATISFACTORY
10.05.2017	8.1	13.1	35.1	11.9	<0.5	<0.5	<0.01	57.0	SATISFACTORY
12.05.2017	6.9	12.2	42.8	14.1	2.5	<0.5	<0.01	57.0	SATISFACTORY
17.05.2017	8.5	10.3	49.4	16.4	<0.5	<0.5	<0.01	57.0	SATISFACTORY
19.05.2017	8.5	14.1	39.0	13.2	2.3	<0.5	<0.01	57.0	SATISFACTORY
24.05.2017	8.9	16.2	85.3	26.9	<0.5	<0.5	<0.01	85.0	SATISFACTORY
26.05.2017	8.4	13.9	40.3	13.4	2.4	<0.5	<0.01	57.0	SATISFACTORY
31.05.2017	10.5	16.8	34.2	10.9	<0.5	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.87 ASSANORA (JUNE 2017)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.06.2017	6.6	10.8	41.8	13.7	2.9	-	<0.01	42.0	GOOD
07.06.2017	9.1	12.6	51.3	16.6	<0.5	-	<0.01	51.0	SATISFACTORY
09.06.2017	7.6	11.9	40.5	13.1	<0.5	-	<0.01	41.0	GOOD
14.06.2017	4.4	11.1	40.7	13.8	<0.5	-	<0.01	41.0	GOOD
17.06.2017	6.7	8.8	45.1	14.6	<0.5	-	<0.01	45.0	GOOD
21.06.2017	7.6	10.8	45.2	15.1	2.5	-	<0.01	45.0	GOOD
23.06.2017	6.3	10.2	46.3	14.7	<0.5	-	<0.01	46.0	GOOD
28.06.2017	8.6	12.1	57.3	18.4	2.3	-	<0.01	57.0	SATISFACTORY
30.06.2017	7.3	12.7	50.3	15.9	<0.5	-	<0.01	50.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.88 ASSANORA (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.07.2017	5.0	10.4	52.5	17.5	<0.5	<0.5	<0.01	53.0	SATISFACTORY
07.07.2017	5.9	9.8	55.8	17.8	<0.5	<0.5	<0.01	56.0	SATISFACTORY
12.07.2017	6.9	11.6	35.0	11.1	<0.5	<0.5	<0.01	35.0	GOOD
14.07.2017	7.5	10.7	43.9	15.2	<0.5	<0.5	<0.01	44.0	GOOD
19.07.2017	8.4	11.7	27.7	9.2	<0.5	<0.5	<0.01	28.0	GOOD
21.07.2017	6.2	11.5	38.7	12.7	2.5	<0.5	<0.01	39.0	GOOD
26.07.2017	6.6	12.0	29.3	9.2	<0.5	<0.5	<0.01	29.0	GOOD
28.07.2017	5.5	11.8	25.6	8.4	1.9	<0.5	<0.01	26.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.89 ASSANORA (AUGUST 2017)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.08.2017	5.9	10.4	38.9	12.8	<0.5	<0.5	<0.01	39.0	GOOD
04.08.2017	5.7	11.2	33.1	10.8	0.7	<0.5	<0.01	33.0	GOOD
09.08.2017	7.7	11.0	39.9	12.8	<0.5	<0.5	<0.01	40.0	GOOD
11.08.2017	6.0	9.5	36.0	12.4	<0.5	<0.5	<0.01	36.0	GOOD
17.08.2017	7.3	11.3	31.1	10.1	1.0	<0.5	<0.01	31.0	GOOD
19.08.2017	5.4	10.1	39.6	12.5	<0.5	<0.5	<0.01	40.0	GOOD
21.08.2017	7.2	11.6	34.5	11.2	0.09	<0.5	<0.5	35.0	GOOD
23.08.2017	6.6	11.8	38.2	12.2	<0.5	<0.5	<0.01	38.0	GOOD
30.08.2017	6.9	10.5	26.0	8.2	1.0	<0.5	<0.01	26.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.90 ASSANORA (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.09.2017	8.1	11.7	36.4	12.2	0.9	<0.5	<0.01	36.0	GOOD
06.09.2017	8.4	12.0	34.3	11.1	<0.5	<0.5	<0.01	34.0	GOOD
08.09.2017	8.9	12.6	38.1	12.0	0.8	<0.5	<0.01	38.0	GOOD
13.09.2017	8.3	10.5	38.3	13.4	<0.5	<0.5	<0.01	38.0	GOOD
15.09.2017	6.9	11.6	38.1	12.2	<0.5	<0.5	<0.01	38.0	GOOD
20.09.2017	6.3	12.5	24.0	7.8	0.9	<0.5	<0.01	24.0	GOOD
22.09.2017	7.5	10.7	24.9	8.0	<0.5	<0.7	<0.01	25.0	GOOD
26.09.2017	9.0	12.3	34.9	11.2	<0.5	<0.5	<0.01	35.0	GOOD
28.09.2017	8.5	12.2	32.3	10.3	<0.5	<0.5	<0.01	32.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.91 ASSANORA (OCTOBER 2017)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	9.5	11.6	40.2	13.6	0.6	<0.5	<0.01	40.0	GOOD
06.10.2017	8.8	12.9	47.2	15.1	0.6	<0.5	<0.01	47.0	GOOD
11.10.2017	10.1	13.9	50.7	16.1	<0.5	<0.5	<0.01	51.0	SATISFACTORY
13.10.2017	9.4	12.7	47.8	16.3	<0.5	<0.5	<0.01	48.0	GOOD
17.10.2017	10.9	14.0	47.9	15.3	<0.5	<0.5	<0.01	48.0	GOOD
21.10.2017	10.9	14.1	48.1	15.4	<0.5	<0.5	<0.01	48.0	GOOD
25.10.2017	11.4	14.0	48.7	15.4	<0.5	<0.5	<0.01	49.0	GOOD
27.10.2017	9.9	13.6	48.4	15.6	0.70	<0.5	<0.01	48.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.92 ASSANORA (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	11.7	14.6	39.7	13.6	0.6	<0.5	<0.01	40.0	GOOD
11/4/2017	9.9	12.8	63.3	20.2	0.7	<0.5	<0.01	63.0	SATISFACTORY
11/8/2017	9.7	14.4	49.8	16.0	<0.5	<0.5	<0.01	50.0	GOOD
11/10/2017	9.1	12.6	50.0	17.0	0.7	<0.5	<0.01	50.0	GOOD
11/15/2017	11.3	13.8	63.6	20.4	<0.5	<0.5	<0.01	64.0	SATISFACTORY
11/17/2017	9.0	11.7	64.7	20.1	<0.5	<0.5	<0.01	65.0	SATISFACTORY
11/22/2017	11.3	13.9	43.7	13.7	<0.5	<0.5	<0.01	44.0	GOOD
11/24/2017	10.1	12.7	72.4	23.2	<0.5	<0.5	<0.01	72.0	SATISFACTORY
11/28/2017	10.4	14.4	64.7	20.4	<0.5	<0.5	<0.01	65.0	SATISFACTORY
11/30/2017	8.3	14.1	58.3	18.5	<0.5	<0.5	<0.01	58.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.93 ASSANORA (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
06.12.2017	8.5	12.5	59.1	18.8	0.6	<0.5	0.56	59	SATISFACTORY
09.12.2017	8.9	14.9	79.0	25.2	0.7	<0.5	<0.01	79	SATISFACTORY
13.12.2017	9.3	12.1	52.8	17.4	<0.5	<0.5	<0.01	53	SATISFACTORY
15.12.2017	7.5	13.4	60.4	21.1	0.7	<0.5	0.75	60	SATISFACTORY
20.12.2017	10.1	15.5	81.7	25.7	<0.5	<0.5	<0.01	82	SATISFACTORY
22.12.2017	7.9	13.5	59.2	18.7	<0.5	<0.5	0.62	59	SATISFACTORY
27.12.2017	10.1	14.0	87.6	27.4	<0.5	<0.5	<0.01	88	SATISFACTORY
30.12.2017	8.4	13.1	75.8	23.9	<0.5	<0.5	0.9	76	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.94 ASSANORA (JANUARY 2018)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI remarks
04.01.2018	7.7	14.4	90.2	28.8	<0.5	<0.5	0.98	90	SATISFACTORY
06.01.2018	8.2	14.6	94.8	30.9	<0.5	<0.5	<0.01	95	SATISFACTORY
10.01.2018	7.2	14.1	90.8	29	0.8	<0.5	<0.01	91	SATISFACTORY
12.01.2018	6.5	13.3	85.3	27.4	1	<0.5	0.62	85	SATISFACTORY
17.01.2018	9.9	16.9	89	28.3	<0.5	<0.5	<0.01	89	SATISFACTORY
19.01.2018	7.8	15.1	72.3	23.4	<0.5	<0.5	0.6	72	SATISFACTORY
24.01.2018	7	14.7	60.5	19.7	0.7	<0.5	<0.01	61	SATISFACTORY
27.01.2018	6.1	15.4	82.2	26.6	<0.5	<0.5	0.68	82	SATISFACTORY
31.01.2018	6.4	14.8	75.2	24.4	0.9	<0.5	0.52	75	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.95 ASSANORA (FEBRUARY' 2018)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI remarks
02.02.2018	8.3	14.0	81.7	26.8	<0.5	<0.5	0.7	82	SATISFACTORY
07.02.2018	10.2	15.2	75.6	24.9	0.6	<0.5	<0.01	76	SATISFACTORY
09.02.2018	10.8	16.7	76.3	24.7	0.6	<0.5	0.7	76	SATISFACTORY
14.02.2018	8.4	16.5	86.6	29.6	<0.5	<0.5	0.9	87	SATISFACTORY
16.02.2018	8.1	15.0	72.2	23.1	<0.5	<0.5	<0.01	72	SATISFACTORY
21.02.2018	8.9	15.9	72.0	22.5	0.7	<0.5	0.5	72	SATISFACTORY
23.02.2017	11.8	13.8	76.3	24.2	<0.5	<0.5	<0.01	76	SATISFACTORY
27.02.2018	9.0	14.8	87.4	27.7	1.4	1.4	<0.01	87	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.96 ASSANORA (MARCH' 2018)									
Sampling Date	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI remarks
03.03.2018	7.7	14.6	86.9	27.8	0.7	<0.5	0.2	87	SATISFACTORY
07.03.2018	8.0	14.2	85.4	27.6	<0.5	<0.5	<0.01	85	SATISFACTORY
09.03.2018	7.3	14.3	69.2	22.6	0.9	<0.5	0.8	69	SATISFACTORY
14.03.2018	8.2	13.3	57.1	13.7	1.0	<0.5	0.7	57	SATISFACTORY
16.03.2018	9.9	16.5	40.5	14.0	0.8	<0.5	<0.01	41	SATISFACTORY
21.03.2018	6.0	13.1	47.6	15.9	-	<0.5	0.9	48	SATISFACTORY
23.03.2018	7.1	15.5	49.7	16.1	0.8	<0.5	<0.01	50	SATISFACTORY
26.03.2018	7.5	14.8	57.9	18.8	<0.5	<0.5	0.7	58	SATISFACTORY
28.03.2018	8.6	15.6	60.6	19.4	1.0	<0.5	0.5	61	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.97 CODLI (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.04.2017	5.7	15.7	45.3	14.6	<0.5	<0.5	<0.01	57.0	SATISFACTORY
06.04.2017	6.3	17.0	56.3	18.2	<0.5	<0.5	<0.01	57.0	SATISFACTORY
11.04.2017	6.6	16.8	87.0	28.4	1.6	<0.5	<0.01	87.0	SATISFACTORY
13.04.2017	6.3	16.6	78.1	25.3	<0.5	<0.5	<0.01	78.0	SATISFACTORY
18.04.2017	5.3	15.5	63.0	21.3	<0.5	<0.5	<0.01	63.0	SATISFACTORY
20.04.2017	5.4	16.3	69.5	22.4	0.9	<0.5	<0.01	70.0	SATISFACTORY
25.04.2017	5.0	17.0	80.2	25.9	2.35	<0.5	<0.01	80.0	SATISFACTORY
27.04.2017	5.2	15.6	85.1	27.0	<0.5	<0.5	<0.01	85.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.98 CODLI (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.05.2017	6.2	14.9	65.4	20.7	<0.5	<0.5	<0.01	65.0	SATISFACTORY
06.05.2017	7.1	15.9	75.5	29.8	<0.5	<0.5	<0.01	76.0	SATISFACTORY
09.05.2017	7.0	14.3	62.3	20.1	1.6	<0.5	<0.01	62.0	SATISFACTORY
11.05.2017	6.1	15.0	67.1	21.1	<0.5	<0.5	<0.01	67.0	SATISFACTORY
16.05.2017	5.2	14.3	43.8	14.8	<0.5	<0.5	<0.01	57.0	SATISFACTORY
18.05.2017	5.4	13.5	78.9	25.7	0.9	<0.5	<0.01	79.0	SATISFACTORY
23.05.2017	4.9	15.5	117.4	37.0	2.35	<0.5	<0.01	112.0	MODERATELY POLLUTED
25.05.2017	5.2	11.0	100.1	31.8	<0.5	<0.5	<0.01	100.0	SATISFACTORY
30.05.2017	11.4	15.5	25.1	8.5	<0.5	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.99 CODLI (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.06.2017	7.2	10.7	46.7	14.5	<0.5	<0.5	<0.01	47.0	GOOD
06.06.2017	5.5	8.8	42.7	13.7	<0.5	<0.5	<0.01	43.0	GOOD
08.06.2017	6.3	8.6	41.3	13.2	1.3	<0.5	<0.01	41.0	GOOD
13.06.2017	7.3	10.8	43.0	13.9	<0.5	<0.5	<0.01	43.0	GOOD
15.06.2017	6.7	11.1	42.9	14.8	<0.5	<0.5	<0.01	43.0	GOOD
20.06.2017	5.8	10.1	35.7	11.9	0.9	<0.5	<0.01	36.0	GOOD
22.06.2017	6.8	9.9	48.1	14.9	1.4	<0.5	<0.01	48.0	GOOD
27.06.2017	5.6	10.0	47.3	15.2	<0.5	<0.5	<0.01	47.0	GOOD
29.06.2017	6.2	11.5	46.7	15.0	<0.5	<0.5	<0.01	47.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.100 CODLI (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.07.2017	7.2	10.7	36.2	11.4	<0.5	0.524	<0.01	44.0	GOOD
06.07.2017	3.3	12.0	46.3	14.8	<0.5	0.822	<0.01	40.0	GOOD
11.07.2017	7.5	13.1	42.4	13.8	1.3	0.600	<0.01	15.0	GOOD
13.07.2017	7.3	10.4	25.1	8.0	<0.5	0.591	<0.01	29.0	GOOD
18.07.2017	7.0	10.4	27.4	8.7	<0.5	<0.5	<0.01	38.0	GOOD
21.07.2017	5.3	14.6	30.9	9.7	0.9	<0.5	<0.01	28.0	GOOD
25.07.2017	5.4	12.0	25.4	8.1	1.4	<0.5	<0.01	26.0	GOOD
27.07.2017	7.6	14.9	28.7	9.4	<0.5	<0.5	<0.01	25.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.101 CODLI (AUGUST 2017)									
SAMPLING DATE	SO2 µg/m^3	NOX µg/m^3	PM10 µg/m^3	PM2.5 µg/m^3	O3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.08.2017	6.0	9.9	33.6	11.0	0.7	<0.5	<0.01	34.0	GOOD
03.08.2017	6.5	9.8	30.6	10.0	<0.5	<0.5	<0.01	31.0	GOOD
08.08.2017	6.2	10.3	45.8	14.5	0.7	<0.5	<0.01	46.0	GOOD
10.08.2017	6.8	10.9	31.9	10.2	<0.5	<0.5	<0.01	32.0	GOOD
16.08.2017	6.7	9.7	30.8	10.5	<0.5	<0.5	<0.01	31.0	GOOD
18.08.2017	7.1	10.7	40.7	13.8	1.4	<0.5	<0.01	41.0	GOOD
21.08.2017	6.7	8.7	33.2	12.0	1.7	<0.5	<0.01	33.0	GOOD
23.08.2017	5.2	10.6	34.3	12.4	0.8	<0.5	<0.01	34.0	GOOD
31.08.2017	5.8	9.4	38.8	12.6	<0.5	<0.5	<0.01	39.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.102 CODLI (SEPTEMBER 2017)									
SAMPLING DATE	SO2 µg/m^3	NOX µg/m^3	PM10 µg/m^3	PM2.5 µg/m^3	O3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.09.2017	6.7	9.4	45.5	14.7	<0.5	<0.5	<0.01	46.0	GOOD
05.09.2017	5.3	10.0	37.7	12.2	0.8	<0.5	<0.01	38.0	GOOD
07.09.2017	7.9	13.0	42.7	13.8	<0.5	<0.5	<0.01	43.0	GOOD
12.09.2017	5.0	11.2	32.4	10.6	1.0	<0.5	<0.01	32.0	GOOD
14.09.2017	7.4	10.5	48.1	16.5	1.0	<0.5	<0.01	48.0	GOOD
19.09.2017	5.2	BDL	35.7	11.8	0.6	<0.5	<0.01	36.0	GOOD
21.09.2017	7.7	9.6	37.3	13.6	1.2	<0.5	<0.01	37.0	GOOD
26.09.2017	7.0	10.6	44.8	16.3	<0.5	<0.5	<0.01	45.0	GOOD
28.09.2017	8.4	10.0	38.4	12.3	<0.5	<0.5	<0.01	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.103 CODLI (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.10.2017	7.2	11.0	51.2	16.3	<0.5	<0.5	<0.01	51.0	SATISFACTORY
07.10.2017	9.9	10.5	55.3	17.6	1.1	<0.5	<0.01	55.0	SATISFACTORY
10.10.2017	10.8	12.0	52.8	16.9	<0.5	<0.5	<0.01	53.0	SATISFACTORY
12.10.2017	10.0	11.4	50.3	16.0	1.3	<0.5	<0.01	50.0	GOOD
16.10.2017	8.5	10.7	43.2	14.7	1.24	<0.5	<0.01	43.0	GOOD
21.10.2017	9.7	14.0	46.9	15.8	0.8	<0.5	<0.01	47.0	GOOD
24.10.2017	11.2	12.6	51.0	18.2	1.0	0.624	<0.01	51.0	satisfactory
26.10.2017	11.9	13.2	47.9	17.4	<0.5	0.61	<0.01	48.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.104 CODLI (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	8.3	11.8	60.6	19.4	0.6	<0.5	<0.01	61.0	SATISFACTORY
11/4/2017	8.7	10.7	52.9	17.2	<0.5	<0.5	<0.01	53.0	SATISFACTORY
11/7/2017	10.0	12.1	42.6	13.9	<0.5	<0.5	<0.01	43.0	GOOD
11/9/2017	9.7	11.9	61.4	20.1	0.8	<0.5	<0.01	61.0	SATISFACTORY
11/14/2017	9.2	11.6	57.9	20.2	0.6	<0.5	<0.01	58.0	SATISFACTORY
11/16/2017	9.9	11.9	52.4	18.2	0.8	<0.5	<0.01	52.0	SATISFACTORY
11/21/2017	9.7	13.4	48.7	17.6	<0.5	<0.5	<0.01	49.0	GOOD
11/23/2017	9.7	11.7	59.7	20.7	<0.5	<0.5	<0.01	60.0	SATISFACTORY
11/28/2017	8.6	10.4	66.5	21.4	<0.5	<0.5	<0.01	67.0	SATISFACTORY
11/30/2017	8.8	10.2	74.1	23.3	0.7	<0.5	<0.01	74.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.105 CODLI (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.12.2017	8.6	10.1	38.7	12.4	<0.5	<0.5	0.56	39	GOOD
09.12.2017	8.8	14.5	83.5	27.1	0.6	<0.5	<0.01	84	SATISFACTORY
12.12.2017	8.7	10.3	56.4	18.4	<0.5	<0.5	0.64	56	SATISFACTORY
14.12.2017	10.1	11.8	62.8	20.1	0.7	<0.5	<0.01	63	SATISFACTORY
21.12.2017	7.1	14.0	71.0	24.3	<0.5	<0.5	0.88	71	SATISFACTORY
23.12.2017	8.5	10.2	74.9	25.0	0.8	<0.5	<0.01	75	SATISFACTORY
28.12.2017	10.6	13.6	83.5	29.8	<0.5	<0.5	0.78	84	SATISFACTORY
30.12.2017	10.0	11.0	58.0	20.0	<0.5	<0.5	0.88	58	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.106 CODLI (JANUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.01.2018	9.4	14.1	84.5	27.1	<0.5	<0.5	0.22	85	SATISFACTORY
05.01.2018	7.3	15.1	89.4	28.8	1.6	<0.5	<0.01	89	SATISFACTORY
09.01.2018	6.3	15.4	79.7	25.3	0.6	<0.5	0.12	80	SATISFACTORY
11.01.2018	6.7	16.4	77	24.5	<0.5	<0.5	<0.01	77	SATISFACTORY
16.01.2018	7.9	16.2	69.6	23.8	0.7	<0.5	0.56	70	SATISFACTORY
18.01.2018	8.3	16.9	76.2	25.7	1.8	<0.5	0.7	76	SATISFACTORY
23.01.2018	9.4	13.5	79.5	28.3	0.8	<0.5	<0.01	80	SATISFACTORY
25.01.2018	7.8	14.7	80	27.5	<0.5	<0.5	0.86	80	SATISFACTORY
30.01.2018	7	15.1	76.1	24.3	0.6	<0.5	<0.01	76	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.107 CODLI (FEBRUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.02.2018	6.9	11.3	75.5	24.2	<0.5	<0.5	<0.01	76	SATISFACTORY
07.02.2018	7.3	13.4	71.1	23.1	0.83	<0.5	0.55	71	SATISFACTORY
09.02.2018 $	8.6	12.4	142.9	45.6	<0.5	<0.5	0.98	129	MODERATELY POLLUTED
14.02.2018	10.6	11.7	107.1	34.4	0.95	<0.5	<0.01	105	MODERATELY POLLUTED
16.02.2018	8.9	11.0	126.3	42.9	<0.5	<0.5	0.86	118	MODERATELY POLLUTED
21.02.2018	7.9	9.1	73.6	24.9	0.55	<0.5	<0.01	74	SATISFACTORY
23.02.2018	10.8	12.7	125.2	45.0	0.62	<0.5	0.71	117	MODERATELY POLLUTED
27.02.2018	10.6	13.0	129.1	44.2	<0.5	<0.5	0.81	119	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.108 CODLI (MARCH' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.03.2018	9.2	14.9	80.3	26.0	<0.5	<0.5	0.65	80	SATISFACTORY
06.03.2018	8.5	16.6	114.6	36.7	<0.5	<0.5	<0.01	110	SATISFACTORY
08.03.2018	9.8	15.2	92.9	29.6	0.6	<0.5	0.87	93	SATISFACTORY
13.03.2018	10.3	14.0	72.0	23.0	0.60	<0.5	<0.01	72	SATISFACTORY
15.03.2018	9.9	15.6	41.7	14.9	<0.5	<0.5	0.33	42	GOOD
20.03.2018	10.6	13.5	69.0	23.4	<0.5	<0.5	<0.01	69	SATISFACTORY
22.03.2018	8.9	14.8	53.8	19.3	<0.5	<0.5	0.54	54	SATISFACTORY
27.03.2018	8.3	15.3	46.3	16.2	0.8	<0.5	<0.01	46	GOOD
29.03.2018	7.3	15.1	45.9	14.8	0.6	<0.5	0.88	46	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.109 CURCHOREM (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
4/4/2017	6.8	14.9	68.7	32.5	2.58	0.2	0.39	69.0	SATISFACTORY
4/7/2017	6.6	14.6	64.7	29.2	1.88	0.2	0.49	65.0	SATISFACTORY
4/11/2017	7.9	13.8	72.1	36.9	1.53	0.2	0.37	72.0	SATISFACTORY
4/14/2017	7.9	14.5	62.6	33.7	2.11	0.1	0.4	63.0	SATISFACTORY
4/18/2017	6.0	11.5	59.2	31.7	1.82	0.3	0.37	59.0	SATISFACTORY
4/21/2017	7.2	14.0	64.4	30.8	1.17	0.1	0.43	64.0	SATISFACTORY
4/25/2017	6.6	12.3	64.1	32.5	2.11	0.1	0.44	64.0	SATISFACTORY
4/28/2017	7.0	15.6	68.2	36.1	3.11	0.2	0.41	68.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.110 CURCHOREM (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
5/3/2017	5.3	12.8	60.5	32.1	2.29	0.1	0.34	61.0	SATISFACTORY
5/5/2017	7.2	14.0	71.4	35.4	3.17	0.2	0.37	71.0	SATISFACTORY
5/9/2017	6.5	12.6	62.3	33.3	2.52	BDL	0.35	62.0	SATISFACTORY
5/12/2017	6.6	13.3	61.6	27.9	1.35	0.1	0.3	62.0	SATISFACTORY
5/16/2017	6.2	15.4	62.6	29.2	1.47	0.1	0.33	63.0	SATISFACTORY
5/19/2017	6.7	12.3	56.1	30.0	1.17	BDL	0.36	56.0	SATISFACTORY
5/23/2017	6.5	12.6	56.6	30.0	1.47	0.1	0.37	57.0	SATISFACTORY
5/26/2017	6.3	13.6	56.3	28.7	1.88	0.2	0.34	56.0	SATISFACTORY
5/30/2017	6.3	13.1	48.4	22.1	0.18	BDL	0.34	48.0	good
Limits^:-	**80**	**80**	**100**	**5.3**	**180**	**1**	**4**		

Table No. : 9.111 CURCHOREM (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
2/6/2017	6.8	13.3	47.4	20.4	0.00	-	0.31	47.0	GOOD
6/6/2017	5.2	13.5	49.0	27.1	0.00	-	0.31	49.0	GOOD
9/6/2017	6.7	12.2	40.6	24.2	0.00	-	0.32	41.0	GOOD
13/6/2017	5.3	12.0	43.3	24.6	0.00	-	0.35	43.0	GOOD
16/6/2017	6.6	12.2	43.5	22.1	0.00	-	0.33	44.0	GOOD
20/6/2017	6.7	13.1	43.5	21.2	0.00	-	0.33	44.0	GOOD
23/6/2017	7.7	14.8	44.6	24.6	0.00	-	0.32	45.0	GOOD
27/6/2017	7.1	14.6	44.8	22.5	0.00	-	0.33	45.0	GOOD
30/6/2017	7.7	14.3	42.6	23.7	0.00	-	0.33	43.0	GOOD
Limits^:-	**80**	**80**	**100**	**5.3**	**180**	**1**	**4**		

Table No. : 9.112 CURCHOREM (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04/07/17	6.1	13.1	40.7	19.6	0.00	BDL	0.32	41.0	GOOD
07/07/17	7.1	13.8	38.3	19.6	0.00	BDL	0.35	38.0	GOOD
11/07/17	6.9	12.8	40.5	22.1	0.00	BDL	0.31	41.0	GOOD
14/7/2017	5.9	13.0	36.9	19.8	0.47	BDL	0.32	37.0	GOOD
18/7/2017	6.6	13.3	39.0	18.3	0.00	BDL	0.34	39.0	GOOD
21/7/2017	5.6	12.3	41.3	19.2	0.94	BDL	0.36	41.0	GOOD
25/7/2017	6.6	12.8	39.7	21.2	1.00	BDL	0.37	40.0	GOOD
28/7/2017	5.8	12.3	34.9	18.7	1.23	BDL	0.35	35.0	GOOD
Limits^:-	**80**	**80**	**100**	**5.3**	**180**	**1**	**4**		

Table No. : 9.113 CURCHOREM (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
8/1/2017	4.8	12.0	51.2	26.2	BDL	BDL	0.28	51.0	SATISFACTORY
8/4/2017	5.1	11.1	48.0	23.7	BDL	BDL	0.29	48.0	GOOD
8/8/2017	7.2	13.2	47.5	22.2	BDL	BDL	0.36	48.0	GOOD
8/11/2017	7.1	13.2	48.1	22.6	BDL	BDL	0.38	47.0	GOOD
8/15/2017	6.8	13.5	47.5	24.1	BDL	BDL	0.40	48.0	GOOD
8/18/2017	7.1	12.7	47.7	22.4	BDL	BDL	0.31	48.0	GOOD
8/22/2017	7.5	13.6	51.5	24.2	BDL	BDL	0.38	52.0	SATISFACTORY
8/24/2017	6.9	13.7	48.9	23.4	BDL	BDL	0.41	49.0	GOOD
8/29/2017	6.6	13.7	46.9	21.8	BDL	BDL	0.40	47.0	GOOD
Limits^:-	**80**	**80**	**100**	**5.3**	**180**	**1**	**4**		

Table No. : 9.114 CURCHOREM (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
9/1/2017	6.7	13.0	51.5	25.4	2.47	ND	0.37	52.0	SATISFACTORY
9/5/2017	5.8	12.0	57.6	26.6	2.05	ND	0.36	58.0	SATISFACTORY
9/8/2017	6.5	14.7	61.9	29.9	2.70	0.1	0.33	62.0	SATISFACTORY
9/12/2017	7.9	15.2	53.8	26.7	1.76	ND	0.42	54.0	SATISFACTORY
15/09/2017	7.4	14.4	60.5	29.5	2.88	0.1	0.38	61.0	SATISFACTORY
19/09/2017	6.9	13.6	41.4	19.1	1.06	ND	0.39	41.0	GOOD
22/09/2017	5.8	11.7	46.8	23.3	0.00	ND	0.44	47.0	GOOD
26/09/2017	6.5	13.1	37.9	21.6	0.47	ND	0.46	38.0	GOOD
29/09/2017	5.8	12.3	41.4	22.9	0.76	0.1	0.42	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**5.3**	**180**	**1**	**4**		

Table No. : 9.115 CURCHOREM (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/m^3	CO µg/ m^3	AQI	AQI REMARKS
10/3/2017	7.2	14.2	59.0	30.0	7.46	0.1	0.42	59.0	SATISFACTORY
10/6/2017	7.5	15.7	57.6	28.3	12.04	ND	0.48	58.0	SATISFACTORY
10/10/2017	6.5	11.9	62.9	32.1	10.98	ND	0.44	63.0	SATISFACTORY
13/10/2017	6.7	13.0	70.4	35.4	11.45	0.1	0.50	70.0	SATISFACTORY
17/10/2017	7.5	15.5	64.6	35.0	12.15	ND	0.48	65.0	SATISFACTORY
20/10/2017	8.1	16.2	58.9	31.6	6.28	ND	0.51	59.0	SATISFACTORY
24/10/2017	6.5	13.4	65.7	34.1	10.04	0.1	0.49	66.0	SATISFACTORY
27/10/2017	7.4	14.9	62.3	30.4	7.63	ND	0.41	62.0	SATISFACTORY
31/10/2017	7.6	16.0	61.9	30.0	7.81	ND	0.47	62.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**5.3**	**180**	**1**	**4**		

Table No. : 9.116 CURCHOREM (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
3/11/2017	7.0	13.0	67.3	33.7	8.98	ND	0.43	67.0	SATISFACTORY
7/11/2017	6.2	13.1	68.9	36.7	10.22	0.1	0.38	69.0	SATISFACTORY
10/11/2017	7.2	15.6	70.6	37.1	11.16	ND	0.38	71.0	SATISFACTORY
14/11/2017	7.0	14.5	65.0	32.9	9.57	0.1	0.40	65.0	SATISFACTORY
17/11/2017	8.1	16.3	60.1	32.5	10.33	0.1	0.41	60.0	SATISFACTORY
21/11/2017	7.9	14.8	62.8	32.5	14.56	ND	0.48	63.0	SATISFACTORY
24/11/2017	7.1	13.6	72.3	38.3	16.20	0.1	0.51	72.0	SATISFACTORY
28/11/2017	8.2	16.7	81.0	41.7	15.68	0.1	0.55	81.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.117 CURCHOREM (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.12.2017	6.8	11.7	59.2	30.0	12.10	ND	0.43	59	SATISFACTORY
05.12.2017	5.5	11.5	53.2	25.4	8.5	0.1	0.38	54	SATISFACTORY
08.12.2017	6.5	13.2	63.6	28.3	9.61	0.1	0.38	64	SATISFACTORY
12.12.2017	6.0	11.9	60.8	30.8	10.95	ND	0.4	61	SATISFACTORY
15.12.2017	6.3	14.3	62.5	30.4	12.77	0.1	0.41	63	SATISFACTORY
19.12.2017	6.7	12.8	62.8	32.5	10.9	ND	0.48	63	SATISFACTORY
22.12.2017	5.8	13.2	62.0	32.6	11.43	ND	0.51	62	SATISFACTORY
26.12.2017	6.4	13.9	59.4	30.4	13.89	0.1	0.55	59	SATISFACTORY
29.12.2017	5.9	13.6	64.3	33.2	14.41	0.1	0.49	64	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.118 CURCHOREM (JANUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02/01/2018	7.0	13.7	67.1	33.9	9.2	0.1	0.4	67	SATISFACTORY
05/01/2018	6.6	13.1	69.2	32.7	10.8	ND	0.4	69	SATISFACTORY
09/01/2018	8.5	15.9	78.8	40.0	11.0	0.1	0.4	79	SATISFACTORY
12/01/2018	7.1	16.2	70.6	33.4	10.5	ND	0.4	71	SATISFACTORY
16/01/2018	8.5	16.1	68.5	34.0	10.3	0.1	0.4	69	SATISFACTORY
19/01/2018	7.8	14.6	74.2	37.0	14.6	0.1	0.5	74	SATISFACTORY
23/01/2018	8.2	15.2	72.3	38.3	16.6	ND	0.5	72	SATISFACTORY
26/01/2018	8.9	18.3	81.0	41.7	16.2	0.1	0.6	81	SATISFACTORY
30/01/2018	9.0	15.5	61.9	30.0	9.7	0.1	0.5	62	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.119 CURCHOREM (FEBRUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
2/2/2018	9.3	9.9	56.7	25.3	8.8	ND	0.5	57	SATISFACTORY
2/6/2018	9.0	9.2	66.0	28.1	10.4	0.1	0.4	66	SATISFACTORY
2/9/2018	12.2	11.4	62.2	28.6	11.4	0.1	0.4	63	SATISFACTORY
2/13/2018	11.9	12.3	56.9	27.0	10.3	ND	0.4	57	SATISFACTORY
2/16/2018	12.1	10.6	59.7	27.5	13.3	0.1	0.4	60	SATISFACTORY
2/20/2018	11.8	11.5	64.2	29.2	15.0	ND	0.5	64	SATISFACTORY
3/23/2018	12.8	10.8	61.5	28.4	16.5	0.1	0.6	62	SATISFACTORY
3/27/2018	13.4	12.0	65.2	30.2	12.1	ND	0.6	65	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.120 CURCHOREM (MARCH' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
02.03.2018	9.1	13.8	74.4	35.4	9.1	ND	0.5	74	SATISFACTORY
06.03.2018	10.3	12.3	77.1	32.7	11.4	ND	0.4	77	SATISFACTORY
09.03.2018	9.7	15.1	82.5	37.6	11.3	ND	0.4	83	SATISFACTORY
13.03.2018	10.0	14.1	78.6	33.0	10.5	0.1	0.5	79	SATISFACTORY
16.03.2018	9.9	13.4	66.2	36.7	12.6	ND	0.4	66	SATISFACTORY
20.03.2018	10.4	14.5	64.2	30.5	14.9	0.1	0.5	64	SATISFACTORY
23.03.2018	11.2	13.0	65.4	30.8	15.0	ND	0.5	65	SATISFACTORY
27.03.2018	10.6	14.1	69.0	38.1	11.9	ND	0.6	69	SATISFACTORY
30.03.2018	10.1	14.4	65.6	36.2	12.9	ND	0.4	66	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.121 HONDA (APRIL 2017)									
SAMPLING DATE	SO_2 µg/ m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
05.04.2017	10.2	18.2	148.8	47.0	<0.5	<0.5	<0.01	133.0	MODERATELY POLLUTED
07.04.2017	10.2	19.3	156.4	51.1	1.41	<0.5	<0.01	138.0	MODERATELY POLLUTED
12.04.2017	8.4	20.1	273.2	87.7	<0.5	<0.5	<0.01	223.0	POOR
15.04.2017	10.1	19.2	169.2	56.6	1.25	<0.5	<0.01	146.0	MODERATELY POLLUTED
18.04.2017	10.3	19.0	223.2	73.8	1.61	<0.5	<0.01	182.0	MODERATELY POLLUTED
20.04.2017	10.5	19.1	249.2	83.5	<0.5	<0.5	<0.01	199.0	MODERATELY POLLUTED
24.04.2017	9.6	20.8	223.9	72.4	<0.5	<0.5	<0.01	183.0	MODERATELY POLLUTED
26.04.2017	9.8	16.9	194.9	62.3	3.4	<0.5	<0.01	162.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.122 HONDA (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.05.2017	8.3	15.2	146.5	44.7	0.6	<0.5	<0.01	130.0	MODERATELY POLLUTED
05.05.2017	7.9	13.1	193.3	59.0	1.8	<0.5	<0.01	62.0	SATISFACTORY
10.05.2017	8.9	14.6	108.3	33.5	<0.5	<0.5	<0.01	106.0	MODERATELY POLLUTED
12.05.2017	8.7	12.4	126.1	38.6	1.5	<0.5	<0.01	117.0	MODERATELY POLLUTED
17.05.2017	13.0	13.7	85.1	26.0	2.2	<0.5	<0.01	85.0	SATISFACTORY
19.05.2017	8.0	11.6	95.5	29.1	<0.5	<0.5	<0.01	86.0	SATISFACTORY
24.05.2017	8.5	11.9	112.1	34.2	<0.5	<0.5	<0.01	108.0	MODERATELY POLLUTED
26.05.2017	6.9	12.1	143.7	37.6	2.7	<0.5	<0.01	129.0	MODERATELY POLLUTED
30.05.2017	10.7	13.8	49.1	15.4	<0.5	<0.5	<0.01	54.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.123 HONDA (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.06.2017	9.0	11.6	42.7	13.9	<0.5	<0.5	<0.01	43.0	GOOD
07.06.2017	8.3	10.0	30.9	10.5	3.1	<0.5	<0.01	31.0	GOOD
09.06.2017	7.7	10.6	41.0	12.7	<0.5	<0.5	<0.01	41.0	GOOD
14.06.2017	6.7	10.2	30.0	9.2	1.5	<0.5	<0.01	30.0	GOOD
16.06.2017	6.8	10.8	47.2	14.5	2.4	<0.5	<0.01	47.0	GOOD
21.06.2017	7.1	9.9	40.7	13.0	<0.5	<0.5	<0.01	41.0	GOOD
23.06.2017	7.2	11.9	38.2	11.8	<0.5	<0.5	<0.01	38.0	GOOD
28.06.2017	5.8	11.1	50.4	15.4	2.7	<0.5	<0.01	50.0	GOOD
30.06.2017	7.3	10.6	50.5	15.5	<0.5	<0.5	<0.01	51.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.124 HONDA (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.07.2017	5.1	10.2	31.5	9.7	<0.5	<0.5	<0.01	32.0	GOOD
07.07.2017	6.7	BDL	36.3	11.6	3.1	<0.5	<0.01	36.0	GOOD
12.07.2017	4.3	9.6	28.0	8.7	<0.5	<0.5	<0.01	28.0	GOOD
14.07.2017	5.3	9.7	59.3	18.5	0.7	<0.5	<0.01	59.0	SATISFACTORY
19.07.2017	4.6	11.1	40.5	12.5	1.8	<0.5	<0.01	41.0	GOOD
21.07.2017	5.7	9.9	29.3	9.4	<0.5	<0.5	<0.01	29.0	GOOD
26.07.2017	7.3	9.6	25.8	8.0	<0.5	<0.5	<0.01	26.0	GOOD
28.07.2017	4.8	9.2	28.2	8.7	2.1	<0.5	<0.01	28.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.125 HONDA (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.08.2017	6.5	11.2	31.2	9.6	<0.5	<0.5	<0.01	31.0	GOOD
04.08.2017	8.2	11.6	29.6	9.4	0.9	<0.5	<0.01	30.0	GOOD
09.08.2017	5.4	10.6	29.2	9.1	<0.5	<0.5	<0.01	29.0	GOOD
11.08.2017	5.8	11.3	41.9	12.9	1	<0.5	<0.01	42.0	GOOD
17.08.2017	6.0	10.4	35.1	11.0	<0.5	<0.5	<0.01	35.0	GOOD
19.08.2017	6.7	10.5	41.1	13.0	1.7	<0.5	<0.01	41.0	GOOD
21.08.2017	7.5	10.8	44.2	13.6	0.6	<0.5	<0.01	44.0	GOOD
23.08.2017	5.5	9.4	40.8	12.6	0.9	<0.5	<0.01	41.0	GOOD
30.08.2017	6.0	10.7	37.6	11.6	<0.5	<0.5	<0.01	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.126 HONDA (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.09.2017	9.2	11.6	34.0	10.6	<0.5	<0.5	<0.01	34.0	GOOD
06.09.2017	7.5	11.3	42.3	13.6	0.9	<0.5	<0.01	42.0	GOOD
08.09.2017	9.2	12.2	40.5	12.7	1.0	<0.5	<0.01	41.0	GOOD
13.09.2017	8.5	13.3	38.0	12.0	<0.5	<0.5	<0.01	38.0	GOOD
15.09.2017	7.9	11.2	38.0	12.3	0.8	<0.5	<0.01	38.0	GOOD
20.09.2017	8.8	12.6	37.5	11.7	0.9	<0.5	<0.01	38.0	GOOD
22.09.2017	7.0	11.3	39.1	12.3	<0.5	<0.5	<0.01	39.0	GOOD
26.09.2017	7.8	11.1	32.3	10.1	<0.5	<0.5	<0.01	32.0	GOOD
28.09.2017	8.2	11.7	37.9	12.1	<0.5	<0.5	<0.01	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.127 HONDA (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	7.9	10.7	48.8	15.1	<0.5	<0.5	<0.01	49.0	GOOD
06.10.2017	8.9	9.8	44.6	13.1	0.8	<0.5	<0.01	45.0	GOOD
11.10.2017	9.8	15.1	48.5	15.2	0.6	<0.5	<0.01	49.0	GOOD
13.10.2017	10.4	12.9	50.1	15.7	<0.5	<0.5	<0.01	50.0	GOOD
17.10.2017	9.5	13.9	45.5	14.1	<0.5	<0.5	<0.01	46.0	GOOD
21.10.2017	11.5	13.0	44.0	14.0	0.9	<0.5	<0.01	44.0	GOOD
25.10.2017	9.2	15.2	50.1	15.4	<0.5	<0.5	<0.01	50.0	GOOD
27.10.2017	10.7	12.4	52.2	16.1	<0.5	<0.5	<0.01	52.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.128 HONDA (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	7.5	9.8	53.9	16.5	<0.5	<0.5	<0.01	54.0	SATISFACTORY
11/4/2017	8.0	9.9	54.8	17.7	0.7	<0.5	<0.01	55.0	SATISFACTORY
11/8/2017	9.1	11.6	55.1	17.2	1.3	<0.5	<0.01	55.0	SATISFACTORY
11/10/2017	10.0	12.1	67.7	21.1	<0.5	<0.5	<0.01	68.0	SATISFACTORY
11/15/2017	9.8	13.6	55.0	16.8	<0.5	<0.5	<0.01	55.0	SATISFACTORY
11/17/2017	10.1	12.7	59.9	19.1	0.6	<0.5	<0.01	60.0	SATISFACTORY
11/22/2017	8.1	14.1	65.4	20.1	<0.5	<0.5	<0.01	65.0	SATISFACTORY
11/24/2017	11.0	12.0	76.9	24.2	<0.5	<0.5	<0.01	77.0	SATISFACTORY
11/28/2017	11.0	14.8	87.1	26.9	0.7	<0.5	<0.01	87.0	SATISFACTORY
11/30/2017	8.0	12.0	74.7	22.8	<0.5	<0.5	<0.01	75.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.129 HONDA(DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.12.2017	**7.6**	**9.9**	**49.9**	**15.2**	0.6	<0.5	0.87	**50**	GOOD
06.12.2017	**8.0**	**10.0**	**47.3**	**15.2**	0.7	<0.5	<0.01	**47**	GOOD
14.12.2017	**8.7**	**11.0**	**63.8**	**20.7**	<0.5	<0.5	<0.01	**64**	SATISFACTORY
16.12.2017	**9.3**	**10.9**	**62.9**	**19.8**	<0.5	<0.5	0.56	**63**	SATISFACTORY
20.12.2017	**8.9**	**12.2**	**80.6**	**24.8**	<0.5	<0.5	0.64	**81**	SATISFACTORY
22.12.2017	**8.3**	**13.4**	**51.1**	**16.2**	0.6	<0.5	<0.01	**51**	SATISFACTORY
27.12.2017	**8.9**	**14.9**	**85.9**	**26.3**	<0.5	<0.5	0.98	**86**	SATISFACTORY
29.12.2017	**6.7**	**12.0**	**82.5**	**25.2**	<0.5	<0.5	0.77	**83**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.130 HONDA(JANUARY'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.01.2018	8.4	13.9	89.6	28.1	<0.5	<0.5	0.87	**90**	SATISFACTORY
04.01.2018	7.8	11.9	86.2	27.2	0.6	<0.5	<0.01	**86**	SATISFACTORY
09.01.2018	6.2	11.8	82.6	26.2	<0.5	<0.5	0.36	**83**	SATISFACTORY
12.01.2018	7.8	13.2	77.1	24.2	1	<0.5	0.56	**77**	SATISFACTORY
16.01.2018	8	15.2	87.2	27.5	<0.5	<0.5	0.64	**87**	SATISFACTORY
19.01.2018	6.7	14	81	25.4	0.5	<0.5	<0.01	**81**	SATISFACTORY
24.01.2018	9	13.7	68.4	21.5	<0.5	<0.5	0.44	**68**	SATISFACTORY
27.01.2018	7.7	13.6	95.9	30	0.9	<0.5	0.52	**96**	SATISFACTORY
31.01.2018	7.2	15.6	88.6	28.2	<0.5	<0.5	<0.01	**89**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.131 HONDA(FEBRUARY'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.02.2018	8.9	14.2	91.4	28.0	<0.5	<0.5	<0.01	91	SATISFACTORY
07.02.2018	8.0	13.8	87.9	27.9	1.0	<0.5	0.98	88	SATISFACTORY
09.02.2018	9.6	15.5	86.4	26.8	0.9	<0.5	<0.01	86	SATISFACTORY
14.02.2018	9.4	16.0	89.9	27.8	<0.5	<0.5	0.44	90	SATISFACTORY
16.02.2018	7.4	13.6	93.4	31.3	<0.5	<0.5	0.64	93	SATISFACTORY
21.02.2018	10.3	14.1	81.9	26.5	0.6	<0.5	<0.01	82	SATISFACTORY
23.02.2018	8.0	11.6	144.9	44.4	0.6	<0.5	0.89	130	MODERATELY POLLUTED
27.02.2018#	8.2	12.6	89.7	28.4	<0.5	<0.5	0.71	90	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.132 HONDA(MARCH'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.03.2018	7.5	15.6	67.2	21.1	1.4	<0.5	0.88	67	SATISFACTORY
07.03.2018	7.9	14.7	120.9	37.7	0.6	<0.5	<0.01	114	MODERATELY POLLUTED
09.03.2018	8.0	16.5	120.1	37.5	0.8	<0.5	0.39	113	MODERATELY POLLUTED
14.03.2018	8.2	15.8	100.9	31.8	1.2	<0.5	0.72	101	MODERATELY POLLUTED
16.03.2018	9.0	14.9	62.0	20.5	<0.5	<0.5	<0.01	62	SATISFACTORY
21.03.2018	6.5	15.7	127.0	40.1	0.6	<0.5	0.23	118	MODERATELY POLLUTED
23.03.2018	7.3	13.0	47.3	15.2	<0.5	<0.5	<0.01	47	SATISFACTORY
26.03.2018	7.5	15.2	65.0	20.6	0.9	<0.5	0.51	65	SATISFACTORY
28.03.2018	6.2	13.6	67.0	21.1	<0.5	<0.5	0.55	67	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.133 QUEPEM TILAMOL (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
4/3/2017	8.6	15.8	77.0	42.3	2.52	0.2	0.39	77.0	SATISFACTORY
4/6/2017	8.5	15.3	73.9	38.4	2.11	0.1	0.43	74.0	SATISFACTORY
4/10/2017	7.7	15.8	81.8	37.1	1.53	0.2	0.42	82.0	SATISFACTORY
4/13/2017	7.9	15.0	85.2	44.3	1.88	0.1	0.47	85.0	SATISFACTORY
4/17/2017	7.9	15.3	84.8	44.6	2.99	0.1	0.34	85.0	SATISFACTORY
4/20/2017	8.7	14.1	86.8	42.4	2.58	0.2	0.4	89.0	SATISFACTORY
7/24/2017	8.1	16.0	87.5	46.2	2.29	0.2	0.43	88.0	SATISFACTORY
4/27/2017	8.6	14.6	85.0	41.5	2.47	0.4	0.48	85.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.134 QUEPEM TILAMOL (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
5/2/2017	7.2	14.5	66.8	38.7	2.41	0.1	0.34	67.0	SATISFACTORY
5/4/2017	8.5	13.5	68.0	40.0	1.7	0.1	0.36	68.0	SATISFACTORY
5/8/2017	7.6	14.3	71.3	41.2	2	0.2	0.35	71.0	SATISFACTORY
5/11/2017	6.3	14.6	60.2	28.0	1.76	0.1	0.35	60.0	SATISFACTORY
5/15/2017	6.1	11.8	59.0	27.0	1.88	0.1	0.35	59.0	SATISFACTORY
5/18/2017	6.6	14.3	62.1	33.3	1.94	0.2	0.35	62.0	SATISFACTORY
5/22/2017	6.5	13.3	73.1	40.8	1.64	0.3	0.35	73.0	SATISFACTORY
5/25/2017	6.8	12.6	70.3	37.1	2.35	0.2	0.36	70.0	SATISFACTORY
5/29/2017	6.1	12.8	75.4	42.9	2.11	0.2	0.35	75.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.135 QUEPEM TILAMOL (JUNE 2017)									
SAMPLING DATE	SO_2 µg/ m^3	NO_2 µg/m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
1/6/2017	6.3	12.8	42.2	20.0	0.00	BDL	0.35	42.0	GOOD
5/6/2017	6.0	12.5	46.4	22.1	0.00	0.1	0.39	46.0	GOOD
8/6/2017	7.0	12.8	43.6	18.7	0.00	0.1	0.35	44.0	GOOD
12/6/2017	6.8	13.6	46.2	21.7	0.00	BDL	0.36	46.0	GOOD
15/6/2017	6.0	11.3	40.1	19.2	0.00	BDL	0.36	40.0	GOOD
19/6/2017	6.6	13.1	39.5	19.6	0.00	0.1	0.40	40.0	GOOD
22/6/2017	4.8	12.6	43.9	22.9	0.00	0.1	0.37	44.0	GOOD
26/6/2017	6.6	12.5	38.4	20.8	0.00	BDL	0.35	38.0	GOOD
29/6/2017	6.6	12.2	38.3	20.8	0.00	0.1	0.37	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.136 QUEPEM TILAMOL (JULY 2017)									
SAMPLING DATE	SO_2 µg/ m^3	NO_2 µg/ m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
3/7/17	6.1	13.8	40.5	20.4	0.00	0.2	0.37	41.0	GOOD
6/7/17	6.2	13.8	44.1	24.6	0.00	0.1	0.41	44.0	GOOD
10/7/17	6.7	13.8	40.2	22.1	0.00	0.2	0.40	40.0	GOOD
13/7/2017	7.0	11.1	43.8	22.9	0.59	0.1	0.43	44.0	GOOD
17/7/2017	5.8	10.7	46.2	24.1	0.59	0.1	0.44	46.0	GOOD
20/7/2017	7.1	13.4	41.7	21.6	0.00	0.2	0.46	42.0	GOOD
24/7/2017	6.8	13.5	39.6	21.6	0.53	0.1	0.47	40.0	GOOD
27/7/2017	6.0	10.8	42.6	17.9	0.82	0.2	0.48	43.0	GOOD
31/7/2017	6.6	12.4	40.1	18.7	0.94	0.1	0.43	40.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.137 QUEPEM TILAMOL (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
8/3/2017	6.2	12.9	42.8	17.1	0.00	0.1	0.33	43.0	GOOD
8/7/2017	6.5	13.5	47.7	23.7	0.41	0.1	0.37	48.0	GOOD
8/10/2017	7.1	13.1	50.4	23.9	0.12	0.1	0.36	50.0	GOOD
14/8/2017	5.8	12.4	48.8	22.1	1.35	0.1	0.44	49.0	GOOD
17/8/2017	7.7	14.6	44.0	21.0	1.29	BDL	0.49	44.0	GOOD
21/8/2017	6.1	13.3	47.8	23.7	1.47	BDL	0.39	48.0	GOOD
23/8/2017	6.1	13.2	54.0	27.2	0.00	BDL	0.37	36.0	GOOD
28/8/2017	6.3	12.8	46.0	22.5	0.00	BDL	0.44	46.0	GOOD
31/8/2017	6.3	12.6	49.3	24.1	0.70	BDL	0.42	48.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.138 QUEPEM TILAMOL (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
9/4/2017	7.0	13.3	67.8	32.2	1.88	ND	0.49	68.0	SATISFACTORY
9/7/2017	7.2	14.1	62.5	32.0	2.58	0.10	0.44	63.0	SATISFACTORY
9/11/2017	5.7	11.7	73.3	35.5	3.82	0.10	0.40	73.0	SATISFACTORY
14/09/2017	7.7	14.6	65.1	31.9	1.64	ND	0.45	65.0	SATISFACTORY
18/09/2017	7.1	12.8	53.3	25.8	0.82	0.20	0.37	47.0	SATISFACTORY
21/09/2017	6.5	12.6	45.8	24.1	0.65	ND	0.41	46.0	SATISFACTORY
25/09/2017	6.1	12.0	45.0	22.0	0.23	0.10	0.43	45.0	SATISFACTORY
28/09/2017	7.1	13.3	45.3	21.6	0.65	ND	0.50	45.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.139 QUEPEM TILAMOL (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
10/2/2017	8.4	16.4	69.4	32.9	6.05	0.10	0.53	69.0	SATISFACTORY
10/5/2017	7.3	15.2	63.8	36.2	6.52	0.20	0.45	64.0	SATISFACTORY
10/9/2017	7.1	14.5	64.5	35.8	8.92	ND	0.49	65.0	SATISFACTORY
10/12/2017	7.2	14.0	62.0	34.6	8.98	0.10	0.54	62.0	SATISFACTORY
16/10/2017	7.2	12.6	60.9	33.3	5.75	ND	0.47	61.0	SATISFACTORY
19/10/2017	7.6	14.6	57.6	32.5	7.57	0.10	0.43	58.0	SATISFACTORY
23/10/2017	6.5	13.4	68.8	37.0	3.88	ND	0.46	59.0	SATISFACTORY
26/10/2017	6.1	13.8	71.6	36.2	11.80	ND	0.53	72.0	SATISFACTORY
30/10/2017	8.1	14.5	58.8	30.8	10.80	ND	0.47	59.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.140 QUEPEM TILAMOL (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/ m^3	AQI	AQI REMARKS
2/11/2017	6.3	13.1	73.5	40.0	12.39	0.10	0.47	74.0	SATISFACTORY
6/11/2017	6.7	13.9	69.5	37.9	13.91	ND	0.49	70.0	SATISFACTORY
9/11/2017	7.9	15.6	73.9	38.7	14.21	0.10	0.55	74.0	SATISFACTORY
13/11/2017	8.5	16.4	78.5	40.4	14.33	ND	0.48	79.0	SATISFACTORY
16/11/2017	7.0	14.2	73.4	41.2	14.74	ND	0.52	73.0	SATISFACTORY
20/11/2017	7.5	13.1	70.2	37.1	10.57	0.10	0.52	70.0	SATISFACTORY
23/11/2017	6.2	13.2	75.1	38.3	8.98	0.10	0.51	75.0	SATISFACTORY
27/11/2017	8.5	16.7	81.1	42.9	13.86	ND	0.47	81.0	SATISFACTORY
30/11/2017	7.2	14.0	74.8	38.3	16.56	0.10	0.58	75.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.141 QUEPEM-TILAMOL (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/ m^3	AQI	AQI REMARKS
04.12.2017	6.6	14.3	84.2	43.7	11.55	0.10	0.50	84	SATISFACTORY
07.12.2017	6.0	14.7	78.6	41.2	12.36	0.10	0.45	79	SATISFACTORY
11.12.2017	7.2	17.5	83.0	45.0	14.75	0.10	0.51	83	SATISFACTORY
14.12.2017	8.1	14.9	82.4	42.9	10.10	0.10	0.33	82	SATISFACTORY
18.12.2017	6.7	17.6	87.2	47.9	13.87	ND	0.48	87	SATISFACTORY
21.12.2017	7.5	16.2	82.4	39.3	9.58	0.10	0.55	82	SATISFACTORY
25.12.2017	6.6	15.8	83.3	41.8	11.76	0.20	0.46	83	SATISFACTORY
28.12.2017	8.2	16.5	90.4	43.6	13.91	ND	0.55	82	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.142 QUEPEM-TILAMOL (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/ m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/ m^3	O_3 µg/m^3	Pb µg/ m^3	CO µg/m^3	AQI	AQI REMARKS
1/1/2018	7.8	13.6	87.2	44.7	13.0	ND	0.45	88	SATISFACTORY
4/1/2018	9.5	15.0	85.3	42.4	13.8	ND	0.48	85	SATISFACTORY
8/1/2018	8.5	13.0	87.8	48.3	14.3	0.1	0.55	88	SATISFACTORY
11/1/2018	8.8	14.5	88.2	46.7	13.4	0.1	0.42	88	SATISFACTORY
15/1/2018	8.4	14.7	90.8	49.4	14.8	0.1	0.49	91	SATISFACTORY
18/1/2018	8.2	13.8	79.3	37.9	10.6	0.1	0.53	79	SATISFACTORY
22/1/2018	9.4	11.7	79.6	40.0	9.3	ND	0.49	80	SATISFACTORY
25/1/2018	8.0	18.2	82.2	45.4	13.8	ND	0.48	82	SATISFACTORY
29/1/2018	8.2	13.1	108.7	57.6	17.1	0.2	0.58	109	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.143 QUEPEM-TILAMOL (FEBRUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
2/1/2018	8.7	13.9	102.0	54.6	**13.0**	ND	0.45	101	MODERATELY POLLUTED
2/5/2018	10.5	12.8	97.2	46.6	13.8	ND	0.48	97	SATISFACTORY
2/8/2018	10.1	11.7	98.1	55.0	14.3	0.1	0.55	98	SATISFACTORY
2/12/2018	10.6	12.3	105.6	54.6	13.4	0.1	0.42	104	MODERATELY POLLUTED
2/15/2018	10.4	13.6	115.7	42.9	14.8	0.1	0.49	110	MODERATELY POLLUTED
2/19/2018	10.7	11.6	100.7	53.3	10.6	0.1	0.53	100	SATISFACTORY
2/22/2018	11.8	13.1	124.9	57.9	9.3	ND	0.49	117	MODERATELY POLLUTED
2/26/2018	12.1	11.0	136.3	60.6	13.8	ND	0.48	124	MODERATELY POLLUTED
29-02-2018	8.2	13.1	108.7	57.6	17.1	0.2	0.58	109	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.144 QUEPEM-TILAMOL (MARCH' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.03.2018	11.9	16.3	123.3	56.1	13.1	0.1	0.47	116	MODERATELY POLLUTED
05.03.2018	9.7	15.3	135.9	70.9	14.1	0.1	0.49	136	MODERATELY POLLUTED
08.03.2018	9.5	13.9	121.1	55.6	13.7	0.1	0.54	114	MODERATELY POLLUTED
12.03.2018	9.2	14.6	140.7	66.2	13.6	ND	0.47	127	MODERATELY POLLUTED
15.03.2018	8.1	14.3	94.3	55.3	12.8	0.1	0.51	94	SATISFACTORY
19.03.2018	8.8	13.5	89.7	54.5	10.9	ND	0.54	91	SATISFACTORY
22.03.2018	10.9	14.4	95.8	45.3	9.1	0.1	0.43	96	SATISFACTORY
26.03.2018	9.3	13.4	84.9	45.9	10.2	ND	0.48	85	SATISFACTORY
29.03.2018	9.4	12.1	92.1	48.9	13.6	ND	0.52	92	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.145 SANGUEM (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
4/4/2017	7.4	15.8	70.8	37.3	2.14	0.3	0.35	71.0	SATISFACTORY
4/7/2017	7.0	13.3	78.3	39.4	1.86	0.3	0.31	78.0	SATISFACTORY
4/11/2017	7.4	14.2	88.0	46.3	2.26	0.2	0.35	88.0	SATISFACTORY
4/14/2017	8.1	15.0	79.1	41.2	2.82	0.2	0.34	79.0	SATISFACTORY
4/18/2017	6.6	14.7	76.7	42.0	2.93	0.2	0.38	77.0	SATISFACTORY
4/21/2017	9.5	14.2	84.1	45.7	2.71	0.2	0.35	84.0	SATISFACTORY
4/25/2017	5.8	13.2	73.7	42.3	2.26	0.3	0.39	74.0	SATISFACTORY
4/28/2017	6.6	14.2	81.8	42.1	2.42	0.2	0.36	82.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.146 SANGUEM (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
5/3/2017	6.3	12.6	60.6	28.7	2.76	0.1	0.37	61.0	SATISFACTORY
5/5/2017	7.3	12.6	65.7	32.9	2.59	0.1	0.35	69.0	SATISFACTORY
5/9/2017	7.1	13.2	63.2	28.7	2.82	0.1	0.37	63.0	SATISFACTORY
5/12/2017	6.7	13.2	59.4	28.3	1.97	BDL	0.33	59.0	SATISFACTORY
5/16/2017	6.8	13.1	55.1	30.0	1.97	BDL	0.33	55.0	SATISFACTORY
5/19/2017	5.2	12.1	65.6	33.7	1.92	BDL	0.33	66.0	SATISFACTORY
5/23/2017	6.6	11.8	69.1	36.2	2.14	0.1	0.35	69.0	SATISFACTORY
5/26/2017	6.0	12.6	66.0	31.7	2.65	BDL	0.36	66.0	SATISFACTORY
5/30/2017	6.2	14.8	48.6	24.8	2.59	BDL	0.33	49.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.147 SANGUEM (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02/06/17	6.1	11.4	39.0	19.6	0.00	BDL	0.31	39.0	GOOD
06/06/17	6.9	13.4	38.5	17.9	0.00	BDL	0.36	39.0	GOOD
09/06/17	6.8	12.3	38.9	20.4	0.00	BDL	0.36	39.0	GOOD
13/6/2017	6.2	14.0	35.9	19.2	0.00	0.1	0.35	36.0	GOOD
16/6/2017	5.6	12.3	37.2	20.0	0.00	BDL	0.36	37.0	GOOD
20/6/2017	5.7	12.5	37.3	18.7	0.00	BDL	0.34	37.0	GOOD
23/6/2017	6.8	12.5	34.0	17.5	0.00	BDL	0.37	34.0	GOOD
27/6/2017	5.8	14.0	40.1	20.4	0.00	0.1	0.41	40.0	GOOD
30/6/2017	6.0	12.3	37.3	18.3	0.00	BDL	0.42	37.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.148 SANGUEM (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04/07/17	6.7	12.2	42.5	21.6	0.00	BDL	0.36	43.0	GOOD
07/07/17	7.3	12.5	45.1	24.1	0.00	BDL	0.36	45.0	GOOD
11/07/17	6.6	13.2	37.8	20.8	0.00	BDL	0.37	38.0	GOOD
14/7/2017	6.3	12.1	47.8	23.7	0.90	BDL	0.38	48.0	GOOD
18/7/2017	6.3	13.4	43.6	22.5	0.00	BDL	0.34	44.0	GOOD
21/7/2017	6.6	11.9	42.9	25.4	0.85	0.1	0.35	44.0	GOOD
25/7/2017	6.0	13.4	37.4	17.5	1.13	0.1	0.35	37.0	GOOD
28/7/2017	5.8	12.2	38.0	19.1	1.13	BDL	0.39	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.149 SANGUEM (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
8/1/2017	5.0	11.7	31.8	16.2	0.00	BDL	0.29	32.0	GOOD
8/4/2017	5.7	10.9	32.9	17.1	0.00	BDL	0.32	33.0	GOOD
8/8/2017	6.1	12.0	39.0	19.5	0.17	0.1	0.37	39.0	GOOD
11/8/2017	7.7	14.3	38.7	20.0	0.28	0.1	0.37	39.0	GOOD
15/8/2017	6.5	13.7	44.4	20.0	1.58	0.1	0.41	44.0	GOOD
18/8/2017	7.4	12.9	39.5	18.7	1.41	0.1	0.42	40.0	GOOD
22/8/2017	6.7	12.3	35.6	16.6	0.45	BDL	0.36	36.0	GOOD
24/8/2017	6.5	12.0	36.6	16.2	0.06	BDL	0.34	37.0	GOOD
29/08/2017	5.7	12.0	40.6	20.0	0.39	0.1	0.35	41.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.150 SANGUEM (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
9/1/2017	6.2	12.7	46.9	20.4	3.61	ND	0.35	47.0	GOOD
9/5/2017	7.1	13.0	54.8	23.3	6.15	ND	0.31	55.0	SATISFACTORY
9/8/2017	6.5	13.6	59.4	27.5	3.27	0.1	0.32	59.0	SATISFACTORY
9/12/2017	6.6	12.6	57.6	26.6	2.09	0.1	0.43	58.0	SATISFACTORY
15/09/2017	6.9	13.5	52.3	25.4	4.17	ND	0.47	52.0	SATISFACTORY
19/09/2017	7.6	14.7	38.0	19.1	0.56	ND	0.39	38.0	GOOD
22/09/2017	6.0	11.9	36.1	19.6	0.00	0.1	0.37	36.0	GOOD
26/09/2017	6.1	13.0	51.2	25.4	0.73	0.1	0.42	51.0	satisfactory
29/09/2017	5.8	11.4	40.4	23.7	0.51	ND	0.39	40.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.151 SANGUEM (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
10/3/2017	6.6	13.0	43.2	25.8	7.72	0.10	0.38	43.0	GOOD
10/6/2017	8.4	15.1	56.1	29.1	10.23	0.10	0.40	56.0	SATISFACTORY
10/10/2017	6.2	14.4	62.3	30.4	8.46	ND	0.42	62.0	SATISFACTORY
13/10/2017	6.7	12.9	66.7	33.7	9.42	0.10	0.43	67.0	SATISFACTORY
17/10/2017	7.2	14.3	67.0	34.6	8.51	ND	0.46	67.0	SATISFACTORY
20/10/2017	7.4	16.3	61.3	30.8	7.50	0.20	0.49	61.0	SATISFACTORY
24/10/2017	6.8	13.4	57.3	26.2	11.56	ND	0.45	57.0	SATISFACTORY
27/10/2017	7.3	13.9	76.2	37.9	11.90	ND	0.40	76.0	SATISFACTORY
31/10/2017	8.7	15.4	69.3	33.3	12.07	ND	0.41	69.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.152 SANGUEM (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
3/11/2017	6.5	13.2	64.3	28.0	11.39	ND	0.39	64.0	SATISFACTORY
7/11/2017	7.9	15.5		11.7	11.90	0.1	0.44	78.0	SATISFACTORY
10/11/2017	7.1	14.0	75.3	32.1	12.18	0.1	0.47	75.0	SATISFACTORY
14/11/2017	7.4	15.6	66.5	29.8	10.49	0.10	0.52	67.0	SATISFACTORY
17/11/2017	6.7	12.6	75.6	31.6	9.02	ND	0.48	76.0	SATISFACTORY
21/11/2017	7.7	13.9	71.7	35.4	10.43	0.2	0.50	72.0	SATISFACTORY
24/11/2017	8.5	15.6	75.4	37.9	13.76	0.1	0.57	75.0	SATISFACTORY
28/11/2017	6.9	12.8	76.1	37.1	14.38	0.1	0.58	76.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.153 SANGUEM (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.12.2017	6.7	11.9	65.3	34.2	10.50	0.10	0.45	65	SATISFACTORY
05.12.2017	7.4	14.6	57.9	31.3	12.90	0.1	0.50	58	SATISFACTORY
08.12.2017	6.6	14.4	69.5	34.6	11.60	ND	0.58	70	SATISFACTORY
12.12.2017	7.5	14.7	74.1	38.7	9.40	0.10	0.44	74	SATISFACTORY
15.12.2017	7.2	14.8	72.6	37.1	13.50	ND	0.43	73	SATISFACTORY
19.12.2017	7.5	13.4	69.8	37.1	10.10	0.1	0.39	70	SATISFACTORY
22.12.2017	8.4	10.6	70.6	36.3	12.30	0.1	0.34	71	SATISFACTORY
26.12.2017	8.1	15.3	67.2	36.6	13.90	0.1	0.40	67	SATISFACTORY
29.12.2017	7.1	13.7	71.1	35.2	10.40	ND	0.51	71	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.154 SANGUEM (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01/02/2018	9.9	13.7	65.6	33.3	12.0	0.1	0.4	66	SATISFACTORY
01/05/2018	11.3	12.9	70.4	37.1	2.0	0.1	0.4	70	SATISFACTORY
01/09/2018	7.9	15.2	72.7	35.6	12.6	ND	0.5	73	SATISFACTORY
01/12/2018	9.0	14.3	69.2	32.1	10.5	ND	0.5	69	SATISFACTORY
16/1/2018	7.9	14.3	76.8	38.7	11.8	ND	0.5	77	SATISFACTORY
19/1/2018	8.1	13.3	71.1	34.2	10.8	0.1	0.5	73	SATISFACTORY
23/1/2018	8.5	13.7	75.4	37.9	13.7	0.1	0.6	75	SATISFACTORY
26/1/2018	6.5	12.1	76.1	37.1	14.2	0.2	0.6	76	SATISFACTORY
30/1/2018	11.3	14.7	69.3	33.3	12.7	ND	0.4	69	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.155 SANGUEM (FEBRUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02/02/2018	13.1	10.3	56.6	35.8	11.1	ND	0.4	60	SATISFACTORY
02/06/2018	14.8	BDL	77.3	32.5	13.4	0.1	0.4	77	SATISFACTORY
02/09/2018	10.6	9.5	74.6	33.3	11.6	0.1	0.5	75	SATISFACTORY
13/02/2018	13.2	9.1	76.3	37.8	9.5	0.1	0.5	76	SATISFACTORY
16/02/2018	9.4	11.5	73.9	36.3	11.5	ND	0.5	74	SATISFACTORY
20/02/2018	12.8	11.3	75.2	40.0	11.6	ND	0.5	75	SATISFACTORY
23/02/2018	11.9	10.1	78.8	39.2	13.6	0.1	0.6	79	SATISFACTORY
27/02/2018	12.1	9.3	80.8	38.3	10.4	0.2	0.6	81	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.156 SANGUEM (MARCH 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.03.2018	11.0	11.9	75.1	37.2	11.9	ND	0.4	75	SATISFACTORY
06.03.2018	10.6	12.2	77.1	41.3	13.7	0.1	0.5	77	SATISFACTORY
09.03.2018	9.0	13.1	71.6	36.0	12.3	ND	0.5	72	SATISFACTORY
13.03.2018	9.3	12.5	74.6	42.3	10.7	0.1	0.5	75	SATISFACTORY
16.03.2018	9.4	14.7	82.5	45.9	11.9	ND	0.5	83	SATISFACTORY
20.03.2018	9.9	13.0	75.2	35.9	13.1	ND	0.5	75	SATISFACTORY
23.03.2018	10.1	14.1	70.3	37.9	15.0	ND	0.6	70	SATISFACTORY
27.03.2018	9.9	11.9	80.8	38.3	11.3	0.2	0.6	81	SATISFACTORY
30.03.2018	10.3	13.5	75.7	34.6	12.9	ND	0.5	76	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.157 USGAO (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.04.2017	8.2	15.0	98.2	31.8	1.7	<0.5	<0.01	98.0	SATISFACTORY
07.04.2017	9.2	16.4	119.0	38.7	<0.5	<0.5	<0.01	113.0	MODERATELY POLLUTED
12.04.2017	9.6	16.3	149.4	47.7	<0.5	<0.5	<0.01	133.0	MODERATELY POLLUTED
15.04.2017	7.9	17.1	176.7	56.7	2.1	<0.5	<0.01	151.0	MODERATELY POLLUTED
19.04.2017	7.5	16.3	109.1	35.1	2.1	<0.5	<0.01	106.0	MODERATELY POLLUTED
21.04.2017	6.7	16.9	125.5	40.4	<0.5	<0.5	<0.01	117.0	MODERATELY POLLUTED
26.04.2017	10.1	15.7	171.3	54.7	2.5	<0.5	<0.01	148.0	MODERATELY POLLUTED
28.04.2017	9.4	16.0	141.2	45.1	<0.5	<0.5	<0.01	127.0	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.158 USGAO (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.05.2017	5.8	10.9	157.7	49.8	1.8	<0.5	<0.01	138.0	MODERATELY POLLUTED
05.05.2017	7.8	15.4	158.6	51.6	<0.5	<0.5	<0.01	139.0	MODERATELY POLLUTED
10.05.2017	7.7	9.5	86.2	27.6	<0.5	<0.5	<0.01	86.0	MODERATELY POLLUTED
12.05.2017	8.2	11.8	142.8	45.6	2.3	<0.5	<0.01	129.0	MODERATELY POLLUTED
18.05.2017	6.9	10.2	110.7	36.1	2.1	<0.5	<0.01	107.0	MODERATELY POLLUTED
20.05.2017	6.9	11.5	78.8	25.3	<0.5	<0.5	<0.01	79.0	GOOD
24.05.2017	9.9	BDL	136.5	43.5	2.4	<0.5	<0.01	124.0	MODERATELY POLLUTED
26.05.2017	10.3	13.7	101.3	32.1	<0.5	<0.5	<0.01	101.0	MODERATELY POLLUTED
31.05.2017	9.1	17.4	98.1	32.1	<0.5	<0.5	<0.01	**98.0**	**GOOD**
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.159 USGAO (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.06.2017	7.1	9.8	47.9	15.3	1.8	-	<0.01	48.0	GOOD
07.06.2017	7.4	10.0	54.6	17.7	<0.5	-	<0.01	55.0	SATISFACTORY
09.06.2017	6.3	9.3	44.2	13.9	<0.5	-	<0.01	44.0	GOOD
14.06.2017	7.5	10.8	55.8	17.8	2.3	-	<0.01	56.0	SATISFACTORY
16.06.2017	6.5	10.6	50.8	16.5	2.1	-	<0.01	51.0	SATISFACTORY
21.06.2017	5.1	11.9	52.8	16.9	<0.5	-	<0.01	53.0	SATISFACTORY
24.06.2017	9.4	9.8	48.7	15.6	2.4	-	<0.01	49.0	GOOD
28.06.2017	10.4	12.6	51.3	16.2	<0.5	-	<0.01	51.0	SATISFACTORY
30.06.2017	6.2	11.8	53.3	17.0	<0.5	-	<0.01	53.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.160 USGAO (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.07.2017	4.3	BDL	46.7	15.6	1	-	<0.01	36.0	GOOD
08.07.2017	5.3	9.4	34.1	11.4	<0.5	-	<0.01	46.0	GOOD
12.07.2017	5.2	BDL	32.9	10.5	<0.5	-	<0.01	42.0	GOOD
14.07.2017	6.6	10.7	47.2	15.3	<0.5	-	<0.01	25.0	GOOD
19.07.2017	5.3	10.1	33.1	10.6	<0.5	-	<0.01	27.0	GOOD
21.07.2017	BDL	9.6	39.9	12.8	0.6	-	<0.01	31.0	GOOD
26.07.2017	4.0	9.7	33.2	10.9	<0.5	-	<0.01	25.0	GOOD
28.07.2017	4.9	9.7	32.6	10.5	0.8	-	<0.01	29.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.161 USGAO (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.08.2017	6.9	10.7	27.5	9.4	<0.5	-	<0.01	28.0	GOOD
04.08.2017	6.5	10.8	35.4	11.7	<0.5	-	<0.01	35.0	GOOD
09.08.2017	6.3	9.0	37.2	11.9	<0.5	-	<0.01	37.0	GOOD
11.08.2017	6.4	11.3	27.8	9.0	<0.5	-	<0.01	28.0	GOOD
17.08.2017	7.7	10.4	32.8	10.8	1.3	-	<0.01	33.0	GOOD
19.08.2017	6.6	12.2	34.8	11.0	<0.5	-	<0.01	35.0	GOOD
21.08.2017	7.9	11.5	28.5	9.0	0.7	-	<0.01	29.0	GOOD
23.08.2017	7.3	9.4	41.1	13.0	<0.5	-	<0.01	41.0	GOOD
30.08.2017	6.1	10.5	44.6	14.2	0.6	-	<0.01	45.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.162 USGAO (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.09.2017	8.2	12.7	30.9	10.9	0.6	<0.5	<0.01	31.0	GOOD
06.09.2017	8.3	11.5	43.9	14.7	0.7	<0.5	<0.01	44.0	GOOD
08.09.2017	8.5	11.8	33.6	10.8	<0.5	<0.5	<0.01	34.0	GOOD
13.09.2017	10.5	12.2	38.6	12.6	<0.5	<0.5	<0.01	39.0	GOOD
15.09.2017	8.2	11.1	39.2	12.7	0.7	0.566	<0.01	39.0	GOOD
20.09.2017	6.6	12.3	35.7	12.8	<0.5	<0.5	<0.01	36.0	GOOD
22.09.2017	9.3	10.6	34.2	10.9	<0.5	<0.5	<0.01	34.0	GOOD
27.09.2017	9.7	11.4	29.1	13.4	0.6	<0.5	<0.01	29.0	GOOD
29.09.2017	7.2	12.1	35.2	11.4	<0.5	<0.5	<0.01	35.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.163 USGAO (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	8.2	12.5	44.4	14.9	<0.5	<0.5	<0.01	44.0	GOOD
06.10.2017	6.8	12.2	55.1	18.0	0.6	<0.5	<0.01	55.0	SATISFACTORY
11.10.2017	10.0	15.5	45.1	14.3	0.7	<0.5	<0.01	45.0	GOOD
13.10.2017	10.2	12.3	54.1	17.9	<0.5	<0.5	<0.01	54.0	SATISFACTORY
17.10.2017	9.1	11.5	49.6	15.9	<0.5	<0.5	<0.01	50.0	SATISFACTORY
21.10.2017	9.8	11.2	61.0	19.8	0.6	<0.5	<0.01	61.0	SATISFACTORY
25.10.2017	10.3	13.1	64.2	21.8	<0.5	<0.5	<0.01	64.0	SATISFACTORY
27.10.2017	8.4	11.3	81.1	25.7	<0.5	<0.5	<0.01	81.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.164 USGAO (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/1/2017	8.0	11.7	51.2	17.0	0.8		<0.01	51.0	SATISFACTORY
11/3/2017	6.7	13.8	52.3	17.2	<0.5		<0.01	52.0	SATISFACTORY
11/8/2017	10.8	12.5	60.6	19.3	0.6		<0.01	61.0	SATISFACTORY
11/10/2017	10.6	13.2	55.7	18.0	<0.5		<0.01	56.0	SATISFACTORY
11/15/2017	9.1	13.3	57.6	18.6	<0.5		<0.01	58.0	SATISFACTORY
11/17/2017	7.2	13.4	48.7	15.7	0.6		<0.01	49.0	SATISFACTORY
11/22/2017	8.8	10.5	52.8	16.9	<0.5		<0.01	53.0	SATISFACTORY
11/24/2017	9.0	11.7	88.5	27.6	<0.5		<0.01	89.0	SATISFACTORY
11/28/2017	8.1	13.0	84.1	26.6	0.7		<0.01	84.0	SATISFACTORY
11/30/2017	8.0	12.9	70.8	23.8	0.6		<0.01	71.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.165 USGAO (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
06.12.2017	10.7	15.7	44.3	15.3	0.7	<0.5	0.84	44	GOOD
08.12.2017	7.6	15.5	57.7	19.2	<0.5	<0.5	<0.01	58	SATISFACTORY
13.12.2017	7.4	10.9	51.4	17.1	0.7	<0.5	0.74	51	SATISFACTORY
15.12.2017	8.7	12.4	58.0	19.0	<0.5	<0.5	<0.01	58	SATISFACTORY
20.12.2017	7.3	14.3	79.7	26.0	0.6	<0.5	0.55	80	SATISFACTORY
22.12.2017	7.5	11.6	75.8	24.1	0.6	<0.5	<0.01	76	SATISFACTORY
27.12.2017	8.7	12.6	81.5	26.3	<0.5	<0.5	0.76	82	SATISFACTORY
29.12.2017	6.8	11.9	92.1	28.6	<0.5	<0.5	0.97	92	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.166 USGAO (JANUARY'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.01.2018	8.7	12.7	87.9	29.3	<0.5	<0.5	<0.01	**88**	SATISFACTORY
06.01.2018	6.3	16.6	84.2	28.1	0.6	<0.5	0.98	**84**	SATISFACTORY
10.01.2018	7.8	15.2	84.5	26.7	0.7	<0.5	0.84	**85**	SATISFACTORY
12.01.2018	7	15.8	95.4	30.9	<0.5	<0.5	<0.01	**95**	SATISFACTORY
17.01.2018	7.4	16.8	88.7	28.6	0.7	0.566	0.97	**89**	SATISFACTORY
19.01.2018	4.8	15.3	78.4	25.3	0.7	<0.5	0.88	**78**	SATISFACTORY
24.01.2018	7.6	12.8	82.6	26.6	<0.5	<0.5	0.68	**83**	SATISFACTORY
27.01.2018	7	13.9	95.7	29.9	<0.5	<0.5	0.67	**96**	SATISFACTORY
31.01.2018	6.4	15.5	94.2	30.1	0.6	<0.5	<0.01	**94**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.167 USGAO (FEBRUARY'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.02.2018	6.1	10.4	89.4	28.9	0.6604	<0.5	0.77	89	SATISFACTORY
07.02.2018	7.5	9.7	68.1	22.3	<0.5	<0.5	<0.01	68	SATISFACTORY
09.02.2018	10.8	16.2	71.9	23.0	0.6124	<0.5	0.45	72	SATISFACTORY
14.02.2018	11.5	13.6	87.7	28.5	<0.5	<0.5	<0.01	88	SATISFACTORY
16.02.2018	7.7	10.2	85.6	27.7	<0.5	<0.5	0.64	86	SATISFACTORY
21.02.2018	6.3	10.3	86.2	28.3	<0.5	<0.5	<0.01	86	SATISFACTORY
23.02.2018	9.2	12.1	100.8	31.8	0.5793	<0.5	0.98	101	MODERATELY POLLUTED
27.02.2018	9.5	11.9	88.1	28.1	0.741	<0.5	0.93	88	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.168 USGAO (MARCH'2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.03.2018	8.6	12.3	87.4	29.2	<0.5	<0.5	0.44	87	SATISFACTORY
07.03.2018	5.7	16.3	90.6	30.1	0.8	<0.5	0.71	91	SATISFACTORY
09.03.2018	7.7	15.1	80.5	25.9	0.7	<0.5	0.8	81	SATISFACTORY
14.03.2018	7.3	15.5	102.2	32.3	<0.5	<0.5	<0.01	101	MODERATELY POLLUTED
16.03.2018	8.0	16.4	54.1	17.7	0.6	<0.5	<0.01	54	SATISFACTORY
21.03.2018	6.6	12.9	66.7	21.6	0.7	<0.5	0.56	67	SATISFACTORY
23.03.2018	7.7	12.8	52.1	16.6	<0.5	<0.5	0.77	52	SATISFACTORY
26.03.2018	6.8	13.4	77.4	24.6	<0.5	<0.5	<0.01	77	SATISFACTORY
28.03.2018	6.3	15.1	50.7	16.4	0.7	<0.5	<0.01	51	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.169 CUNCOLIM (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
4/3/2017	6.6	13.1	78.9	35.4	1.75	0.3	0.41	75.0	SATISFACTORY
4/6/2017	7.7	13.9	90.8	35.0	2.51	0.4	0.39	81.0	SATISFACTORY
4/10/2017	7.5	14.0	89.7	50.0	2.95	0.3	0.43	88.0	SATISFACTORY
4/13/2017	6.5	14.2	85.3	46.2	2.79	0.4	0.37	87.0	SATISFACTORY
4/17/2017	9.0	14.4	86.2	40.4	3.11	0.4	0.4	86.0	SATISFACTORY
4/20/2017	7.3	14.8	88.5	39.2	3.33	0.4	0.42	82.0	SATISFACTORY
4/24/2017	7.7	15.1	78.7	46.2	2.4	0.2	0.44	78.0	SATISFACTORY
4/27/2017	6.7	12.5	72.4	44.2	2.02	0.2	0.46	82.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.170 CUNCOLIM (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
5/2/2017	10.0	15.1	83.1	49.6	3.39	0.2	0.35	83.0	SATISFACTORY
5/4/2017	6.8	13.6	87.9	47.4	3.22	0.2	0.34	88.0	SATISFACTORY
5/8/2017	7.7	14.1	98.9	56.7	3.28	0.2	0.38	99.0	SATISFACTORY
5/11/2017	6.0	14.5	86.2	45.9	1.42	0.4	0.32	86.0	SATISFACTORY
5/15/2017	6.1	14.4	75.2	36.2	1.86	0.2	0.33	75.0	SATISFACTORY
5/18/2017	4.7	13.0	61.0	34.6	2.08	0.3	0.39	61.0	SATISFACTORY
5/22/2017	7.3	14.7	64.8	37.9	2.35	0.2	0.41	65.0	SATISFACTORY
5/25/2017	6.5	13.3	72.9	38.3	1.09	0.3	0.37	73.0	SATISFACTORY
5/29/2017	6.6	13	59.8	31.5	0.33	0.2	0.39	60.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.171 CUNCOLIM (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
1/6/2017	5.2	13.1	63.0	39.2	0.00	0.2	0.42	69.0	SATISFACTORY
5/6/2017	4.6	11.5	69.7	37.9	0.00	0.1	0.40	70.0	SATISFACTORY
8/6/2017	6.5	13.3	60.5	30.4	0.00	0.1	0.41	64.0	SATISFACTORY
12/6/2017	7.8	14.4	67.5	32.2	0.00	0.1	0.41	63.0	SATISFACTORY
15/6/2017	7.4	15.0	63.3	31.0	0.00	0.1	0.37	71.0	SATISFACTORY
19/6/2017	7.8	13.1	63.7	34.6	0.00	0.2	0.42	75.0	SATISFACTORY
22/6/2017	5.8	13.1	78.1	35.8	0.00	BDL	0.38	63.0	SATISFACTORY
26/6/2017	6.3	11.9	59.8	29.9	0.00	0.1	0.35	58.0	SATISFACTORY
29/6/2017	6.7	14.8	61.0	28.5	0.00	0.1	0.38	69.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.172 CUNCOLIM (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03/07/17	7.9	13.4	78.2	42.5	0.00	0.3	0.45	78.0	SATISFACTORY
06/07/17	6.5	13.5	64.0	35.8	0.00	0.2	0.47	64.0	SATISFACTORY
10/07/17	7.3	13.9	68.1	35.4	0.00	0.1	0.48	63.0	SATISFACTORY
13/7/2017	8.4	14.2	56.2	24.2	1.09	0.2	0.45	56.0	SATISFACTORY
17/7/2017	7.6	14.1	57.6	28.1	0.82	0.2	0.46	58.0	SATISFACTORY
20/7/2017	6.1	13.5	50.9	25.1	0.33	0.3	0.45	51.0	SATISFACTORY
24/7/2017	7.9	13.3	63.7	32.2	0.66	0.2	0.51	64.0	SATISFACTORY
27/7/2017	6.6	12.9	66.1	32.6	0.60	0.1	0.44	61.0	SATISFACTORY
31/7/2017	6.9	13.4	65.4	32.6	1.20	0.2	0.46	65.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.173 CUNCOLIM (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
8/3/2017	6.9	13.8	61.5	29.3	0.00	-	0.48	62.0	SATISFACTORY
8/7/2017	7.1	14.5	71.7	34.7	0.49	-	0.54	72.0	SATISFACTORY
8/10/2017	6.9	13.6	79.4	37.2	0.87	-	0.62	79.0	SATISFACTORY
14/8/2017	8.0	15.0	77.6	37.1	1.91	-	0.59	78.0	SATISFACTORY
17/8/2017	8.0	15.1	74.4	36.0	1.42	-	0.50	74.0	SATISFACTORY
21/8/2017	8.4	15.1	70.7	35.2	1.64	-	0.49	71.0	SATISFACTORY
23/8/2017	7.2	13.5	68.4	34.0	0.00	-	0.40	68.0	SATISFACTORY
28/8/2017	8.7	16.8	66.4	32.1	0.05	-	0.48	66.0	SATISFACTORY
31/8/2017	7.9	14.4	69.8	34.5	0.60	-	0.51	70.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.174 CUNCOLIM (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
9/4/2017	8.6	15.1	100.8	52.9	2.08	0.2	0.46	101.0	MODERATE
9/7/2017	7.5	14.8	97.0	53.3	2.24	0.1	0.49	97.0	SATISFACTORY
9/11/2017	11.5	20.8	109.0	62.9	3.06	0.2	0.70	110.0	MODERATE
14/09/2017	8.7	17.3	90.9	52.5	2.73	0.2	0.67	91.0	SATISFACTORY
18/09/2017	6.9	14.7	73.4	38.7	0.22	0.1	0.51	73.0	SATISFACTORY
21/09/2017	8.3	16.5	86.0	45.0	0.16	0.2	0.46	86.0	SATISFACTORY
25/09/2017	7.3	15.3	54.0	33.7	0.00	0.1	0.40	57.0	SATISFACTORY
28/09/2017	8.0	16.8	69.0	42.9	0.05	0.1	0.48	72.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.175 CUNCOLIM (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
10/2/2017	10.1	17.0	110.2	61.1	0.65	0.2	0.50	107.0	MODERATE
10/5/2017	8.6	15.3	95.8	53.4	7.60	0.1	0.52	96.0	SATISFACTORY
10/9/2017	9.0	17.6	103.2	51.2	6.39	0.1	0.55	102.0	MODERATE
10/12/2017	10.3	18.2	102.0	51.6	6.04	0.1	0.57	101.0	MODERATE
16/10/2017	11.0	18.8	102.7	52.0	8.47	0.1	0.53	102.0	MODERATE
19/10/2017	7.5	15.1	111.2	57.9	7.92	0.2	0.58	107.0	MODERATE
23/10/2017	7.6	15.4	105.6	58.7	3.55	0.1	0.51	104.0	MODERATE
26/10/2017	9.6	19.9	100.0	48.9	7.27	0.2	0.54	100.0	SATISFACTORY
30/10/2017	9.0	15.9	108.6	52.9	8.58	0.2	0.50	106.0	MODERATE
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.176 CUNCOLIM (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
2/11/2017	8.7	BDL	91.2	52.5	8.91	0.2	0.48	91.0	SATISFACTORY
6/11/2017	10.9	10.9	92.5	52.1	10.38	0.2	0.59	93.0	SATISFACTORY
9/11/2017	9.3	9.3	72.3	36.7	8.14	0.2	0.51	72.0	SATISFACTORY
13/11/2017	10.4	10.4	80.2	41.7	8.03	0.2	0.61	80.0	SATISFACTORY
16/11/2017	9.3	9.3	91.0	52.5	10.55	0.1	0.61	91.0	SATISFACTORY
20/11/2017	11.1	11.1	93.1	49.2	10.76	0.1	0.64	93.0	SATISFACTORY
23/11/2017	11.4	11.4	92.8	53.7	11.91	0.2	0.66	93.0	SATISFACTORY
27/11/2017	7.9	BDL	91.9	51.7	15.74	0.1	0.55	92.0	SATISFACTORY
30/11/2017	11.4	11.4	84.2	48.7	12.62	0.1	0.57	84.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.177 CUNCOLIM (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.12.2017	10.8	18.9	96.4	51.2	12.51	0.1	0.62	96.0	SATISFACTORY
07.12.2017	10.4	15.8	94.3	50.8	12.19	0.2	0.58	94.0	SATISFACTORY
11.12.2017	10.3	16.9	88.9	51.2	10.69	0.1	0.44	89.0	SATISFACTORY
14.12.2017	11.9	19.7	87.2	44.2	13.58	0.2	0.50	87.0	SATISFACTORY
18.12.2017	9.7	16.9	86.2	47.1	12.41	0.1	0.60	86.0	SATISFACTORY
21.12.2017	10.2	18.1	91.1	51.6	11.88	0.1	0.63	91.0	SATISFACTORY
25.12.2017	10.4	19.4	93.9	49.3	10.20	0.1	0.49	94.0	SATISFACTORY
28.12.2017	9.4	21.1	84.4	46.4	9.88	0.2	0.56	84.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.178 CUNCOLIM (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
1/1/2018	9.1	17.6	94.1	46.7	9.4	0.2	0.5	94	SATISFACTORY
4/1/2018	10.1	18.6	91.8	45.1	10.7	0.2	0.6	92	SATISFACTORY
8/1/2018	10.6	16.7	88.0	43.7	7.5	0.1	0.5	88	SATISFACTORY
11/1/2018	10.3	18.7	90.9	45.3	8.9	0.1	0.6	91	SATISFACTORY
1/15/2018	10.4	16.5	92.5	45.8	10.4	0.2	0.6	93	SATISFACTORY
1/18/2018	10.1	17.2	93.1	49.2	11.4	0.2	0.6	93	SATISFACTORY
1/22/2018	11.4	19.4	92.8	53.7	12.8	0.1	0.7	93	SATISFACTORY
1/25/2018	9.7	18.4	91.9	51.7	15.8	0.2	0.6	92	SATISFACTORY
1/26/2018	12.4	19.3	84.2	48.7	13.5	0.1	0.6	84	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.179 CUNCOLIM (FEBRUARY' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
1/2/2018	12.0	11.9	85.8	50.1	8.9	0.2	0.5	86	SATISFACTORY
5/2/2018	12.3	12.4	87.8	52.0	10.2	0.1	0.6	88	SATISFACTORY
8/2/2018	12.4	11.1	72.5	37.7	7.3	0.2	0.5	73	SATISFACTORY
12/2/2018	13.9	13.4	80.8	46.5	8.6	0.2	0.6	81	SATISFACTORY
15/02/2018	11.9	11.4	74.0	41.1	9.7	0.1	0.6	74	SATISFACTORY
19/02/2018	17.4	13.8	84.3	41.3	12.2	0.2	0.7	84	SATISFACTORY
22/02/2018	11.1	13.2	76.0	42.7	11.8	0.2	0.7	76	SATISFACTORY
26/02/2018	12.4	12.0	86.5	45.2	7.5	0.2	0.5	87	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.180 CUNCOLIM (MARCH' 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.03.2018	9.9	14.3	84.3	49.1	9.5	0.1	0.5	84	SATISFACTORY
05.03.2018	9.7	13.6	87.5	45.8	11.1	0.1	0.6	88	SATISFACTORY
08.03.2018	10.6	12.6	86.4	42.3	9.0	0.2	0.5	86	SATISFACTORY
12.03.2018	13.0	14.9	76.3	40.2	9.3	ND	0.6	76	SATISFACTORY
15.03.2018	10.9	13.9	72.9	46.2	10.7	0.2	0.6	77	SATISFACTORY
19.03.2018	14.0	15.2	70.8	51.7	12.6	0.1	0.5	86	SATISFACTORY
22.03.2018	9.2	14.4	73.8	47.2	11.7	0.1	0.6	79	SATISFACTORY
26.03.2018	9.9	13.8	75.8	43.5	10.7	ND	0.5	76	SATISFACTORY
29.03.2018	10.6	12.9	71.4	41.4	12.4	0.2	0.5	71	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.181 KUNDAIM (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.04.2017	7.8	15.2	65.2	21.2	1.7	<0.5	<0.01	65.0	SATISFACTORY
06.04.2017	7.7	16.2	57.0	18.7	<0.5	<0.5	<0.01	57.0	SATISFACTORY
12.04.2017	7.6	15.6	60.9	20.0	<0.5	<0.5	<0.01	61.0	SATISFACTORY
14.04.2017	6.4	15.9	61.4	20.6	1.5	<0.5	<0.01	61.0	SATISFACTORY
18.04.2017	7.2	15.4	58.7	19.4	0.5	<0.5	<0.01	59.0	SATISFACTORY
20.04.2017	6.3	15.2	47.8	15.6	<0.5	<0.5	<0.01	57.0	SATISFACTORY
25.04.2017	7.1	15.6	67.2	22.3	2	<0.5	<0.01	67.0	SATISFACTORY
27.04.2017	6.8	15.1	57.2	19.1	2.5	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.182 KUNDAIM (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/ m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/ m^3	CO µg/m^3	AQI	AQI REMARKS
04.05.2017	5.0	13.0	55.7	18.5	1.7	<0.5	<0.01	57.0	SATISFACTORY
06.05.2017	6.6	13.3	54.3	17.6	<0.5	<0.5	<0.01	57.0	SATISFACTORY
09.05.2017	6.3	12.4	62.2	20.7	<0.5	<0.5	<0.01	62.0	SATISFACTORY
11.05.2017	6.5	11.5	70.8	23.3	1.5	<0.5	<0.01	71.0	SATISFACTORY
16.05.2017	7.8	11.2	61.2	20.4	0.5	<0.5	<0.01	61.0	SATISFACTORY
18.05.2017	6.5	12.5	61.0	19.7	<0.5	<0.5	<0.01	61.0	SATISFACTORY
23.05.2017	6.9	13.3	44.8	14.9	2	<0.5	<0.01	57.0	SATISFACTORY
25.05.2017	6.7	13.5	54.6	18.0	2.5	<0.5	<0.01	57.0	SATISFACTORY
30.05.2017	7.6	11.3	44.6	15.1	180	<0.5	<0.01	57.0	SATISFACTORY
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.183 KUNDAIM (JUNE 2017)									
SAMPLING DATE	SO2 µg/ m3	NOX µg/m3	PM10 µg/m3	PM2.5 µg/ m3	O3 µg/ m3	Pb µg/ m3	CO µg/m3	AQI	AQI REMARKS
01.06.2017	5.0	10.7	31.7	10.4	1.5	<0.5	<0.01	32.0	GOOD
06.06.2017	5.6	BDL	42.8	14.0	<0.5	<0.5	<0.01	43.0	GOOD
09.06.2017	6.9	12.9	40.3	13.1	<0.5	<0.5	<0.01	40.0	GOOD
13.06.2017	5.6	7.6	46.5	15.1	1	<0.5	<0.01	47.0	GOOD
15.06.2017	7.9	10.6	31.5	10.4	0.5	<0.5	<0.01	32.0	GOOD
20.06.2017	6.3	12.1	54.3	17.2	<0.5	<0.5	<0.01	54.0	SATISFACTORY
22.06.2017	6.7	10.1	47.7	15.7	2	<0.5	<0.01	48.0	GOOD
27.06.2017	6.9	11.7	49.0	16.1	2.2	<0.5	<0.01	49.0	GOOD
29.06.2017	8.2	11.5	48.5	15.4	<0.5	<0.5	<0.01	49.0	GOOD
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.184 KUNDAIM (JULY 2017)									
SAMPLING DATE	SO2 µg/ m3	NOX µg/m3	PM10 µg/m3	PM2.5 µg/m3	O3 µg/ m3	Pb µg/ m3	CO µg/m3	AQI	AQI REMARKS
04.07.2017	4.4	BDL	49.1	21.0	0.8	<0.5	<0.01	49.0	GOOD
07.07.2017	4.7	7.8	51.0	20.9	<0.5	<0.5	<0.01	51.0	SATISFACTORY
11.07.2017	5.8	10.8	38.0	12.5	<0.5	<0.5	<0.01	38.0	GOOD
13.07.2017	5.3	10.1	45.3	15.1	1	<0.5	<0.01	45.0	GOOD
18.07.2017	6.2	BDL	25.0	8.2	<0.5	<0.5	<0.01	25.0	GOOD
20.07.2017	4.2	BDL	23.9	7.6	<0.5	<0.5	<0.01	24.0	GOOD
25.07.2017	4.1	BDL	26.3	8.9	1.3	<0.5	<0.01	26.0	GOOD
27.07.2017	5.3	BDL	28.2	9.2	0.7	<0.5	<0.01	28.0	GOOD
Limits^:-	80	80	100	60	180	1	4		

Table No. : 9.185 KUNDAIM (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.08.2017	6.3	10.7	33.1	11.4	0.6	<0.5	<0.01	33.0	GOOD
03.08.2017	6.6	11.8	31.4	10.4	<0.5	<0.5	<0.01	31.0	GOOD
08.08.2017	6.9	9.9	30.1	10.1	<0.5	<0.5	<0.01	30.0	GOOD
10.08.2017	5.7	10.8	33.6	11.1	0.6	<0.5	<0.01	34.0	GOOD
16.08.2017	6.4	11.0	46.6	15.5	1	<0.5	<0.01	47.0	GOOD
18.08.2017	5.7	10.9	37.7	11.9	<0.5	<0.5	<0.01	38.0	GOOD
21.08.2017	6.0	11.6	28.4	9.4	1.3	<0.5	<0.01	28.0	GOOD
23.08.2017	7.1	11.2	33.4	10.8	<0.5	<0.5	<0.01	33.0	GOOD
31.08.2017	6.8	10.5	36.5	11.9	1.3	<0.5	<0.01	37.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.186 KUNDAIM (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.09.2017	7.0	10.9	50.1	16.8	<0.5	<0.5	<0.01	50.0	GOOD
05.09.2017	8.4	12.5	39.8	13.8	0.8	<0.5	<0.01	40.0	GOOD
07.09.2017	9.4	12.4	42.0	13.6	<0.5	<0.5	<0.01	42.0	GOOD
12.09.2017	7.5	11.5	38.5	12.7	0.9	<0.5	<0.01	39.0	GOOD
14.09.2017	9.5	13.8	37.5	12.5	<0.5	<0.5	<0.01	38.0	GOOD
19.09.2017	9.7	11.7	35.5	11.0	<0.5	<0.5	<0.01	36.0	GOOD
21.09.2017	7.8	11.9	35.1	11.4	0.9	<0.5	<0.01	35.0	GOOD
25.09.2017	7.2	11.6	35.3	11.4	<0.5	<0.5	<0.01	35.0	GOOD
27.09.2017	7.4	10.6	37.6	12.4	<0.5	<0.5	<0.01	38.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.187 KUNDAIM (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	10.0	12.4	50.3	16.7	0.6	<0.5	<0.01	50.0	GOOD
07.10.2017	9.6	12.6	41.0	14.1	<0.5	<0.5	<0.01	41.0	GOOD
12.10.2017	9.9	15.1	40.0	13.1	1.2	<0.5	<0.01	40.0	GOOD
14.10.2017	11.7	15.3	47.1	15.6	<0.5	<0.5	<0.01	47.0	GOOD
17.10.2017	8.9	14.7	44.2	14.2	<0.5	<0.5	<0.01	44.0	GOOD
21.10.2017	12.3	15.0	45.9	14.2	<0.5	<0.5	<0.01	46.0	GOOD
24.10.2017	10.7	15.2	53.7	17.4	0.7	<0.5	<0.01	54.0	SATISFACTORY
26.10.2017	10.5	14.6	42.2	13.2	0.6	<0.5	<0.01	42.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.188 KUNDAIM (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	9.9	13	65.5	21.6	<0.5	<0.5	<0.01	66.0	SATISFACTORY
11/4/2017	7.4	12.7	56.8	19.1	0.7	<0.5	<0.01	57.0	SATISFACTORY
11/7/2017	7.0	12.6	65.6	21.4	<0.5	<0.5	<0.01	66.0	SATISFACTORY
11/9/2017	10.3	14.3	61	19.8	<0.5	<0.5	<0.01	61.0	SATISFACTORY
11/14/2017	7.4	12.7	62.5	20.9	1.1	<0.5	<0.01	63.0	SATISFACTORY
11/16/2017	11.6	14	64.6	20.3	0.9	<0.5	<0.01	65.0	SATISFACTORY
11/21/2017	10.6	14	59.4	19.5	0.7	<0.5	<0.01	59.0	SATISFACTORY
11/23/2017	10.1	13	53.1	16.7	0.6	<0.5	<0.01	53.0	SATISFACTORY
11/28/2017	9.6	12.8	77.2	24.7	<0.5	<0.5	<0.01	77.0	SATISFACTORY
11/30/2017	8.4	12	74.6	23	0.8	<0.5	<0.01	75.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.189 KUNDAIM (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.12.2017	10.3	13.3	41.7	13.9	<0.5	<0.5	0.67	42.0	GOOD
07.12.2017	8.1	12.8	73.9	24.6	0.8	<0.5	<0.01	74.0	SATISFACTORY
12.12.2017	8.8	13.2	75.4	24.7	<0.5	<0.5	0.76	75.0	SATISFACTORY
14.12.2017	7.5	12.9	68.7	23.1	1.1	<0.5	0.55	69.0	SATISFACTORY
21.12.2017	7.4	15.8	65.3	21.3	1.0	<0.5	<0.01	65.0	SATISFACTORY
23.12.2017	10	13.8	71	21.9	0.9	<0.5	0.47	71.0	SATISFACTORY
28.12.2017	7.6	11.8	80.6	26.2	0.7	<0.5	<0.01	81.0	SATISFACTORY
30.12.2017	9.5	14.6	71.8	22.9	0.6	<0.5	0.88	72.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.190 KUNDAIM (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.01.2018	8	16.2	159	51.9	0.8	<0.5	<0.01	139	MODERATELY POLLUTED
05.01.2018	6.4	13.6	126.1	42	0.7	<0.5	0.88	117	MODERATELY POLLUTED
09.01.2018	5	15.5	103.1	33.6	<0.5	<0.5	0.56	102	MODERATELY POLLUTED
11.01.2018	8.5	16.7	88.5	29.9	0.8	<0.5	0.22	89	SATISFACTORY
16.01.2018	6.3	13.8	88.5	26.7	<0.5	<0.5	<0.01	89	SATISFACTORY
18.01.2018	9.5	15.1	86.3	25.8	<0.5	<0.5	0.47	86	SATISFACTORY
23.01.2018	9.2	15	72	21.8	0.6	<0.5	0.98	72	SATISFACTORY
25.01.2018	8.3	15.6	72.8	22	0.7	<0.5	<0.01	73	SATISFACTORY
30.01.2018	8	14.5	86.5	26	1.2	<0.5	0.32	87	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.191 KUNDAIM (FEBRUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.02.2018	7.7	15.5	73.0	24.0	<0.5	<0.5	<0.01	73	SATISFACTORY
06.02.2018	6.1	13.8	75.7	25.3	0.64772	<0.5	0.33	76	SATISFACTORY
08.02.2018	7.3	14.5	69.6	22.6	<0.5	<0.5	0.76	70	SATISFACTORY
13.02.2018	5.9	16.1	58.8	19.1	0.82085	<0.5	0.98	59	SATISFACTORY
15.02.2018	6.3	16.5	72.4	23.6	0.62064	<0.5	<0.01	72	SATISFACTORY
22.02.2018	8.5	16.1	72.5	22.8	1.11385	<0.5	0.88	73	SATISFACTORY
24.02.2018	8.8	16.8	67.8	21.6	<0.5	<0.5	<0.01	68	SATISFACTORY
26.02.2018	6.9	17.2	69.8	22.2	1.17401	<0.5	0.81	70	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.192 KUNDAIM (MARCH 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.03.2018	9.1	15.8	96.4	29.3	0.9	<0.5	0.78	96	SATISFACTORY
06.03.2018	8.3	16.0	97.8	29.9	0.7	<0.5	0.58	98	SATISFACTORY
08.03.2018	9.7	14.7	81.3	25.3	<0.5	<0.5	<0.01	81	SATISFACTORY
13.03.2018	8.5	13.7	89.6	27.0	0.9	<0.5	<0.01	90	SATISFACTORY
15.03.2018	7.2	15.3	61.2	19.0	<0.5	<0.5	<0.01	61	SATISFACTORY
20.03.2018	10.5	14.6	70.8	22.0	<0.5	<0.5	0.68	71	SATISFACTORY
22.03.2018	7.6	14.5	72.0	21.2	0.6	<0.5	0.56	72	SATISFACTORY
26.03.2018	9.0	15.5	68.7	19.1	0.7	<0.5	<0.01	69	SATISFACTORY
28.03.2018	8.9	15.3	62.5	18.9	1	<0.5	0.77	63	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.193 TUEM(APRIL2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.04.2017	9.7	15.4	44.2	13.8	<0.5	2.3	<0.01	57.0	SATISFACTORY
07.04.2017	8.3	15.1	57.0	17.9	<0.5	<0.5	<0.01	57.0	SATISFACTORY
12.04.2017	7.3	15.6	50.4	16.2	<0.5	<0.5	<0.01	57.0	SATISFACTORY
15.04.2017	9.3	19.2	76.8	24.3	<0.5	2.5	<0.01	77.0	SATISFACTORY
19.04.2017	9.6	16.7	66.6	21.0	<0.5	<0.5	<0.01	67.0	SATISFACTORY
21.04.2017	10.7	18.1	124.0	39.0	<0.5	2.3	<0.01	116.0	MODERATE
26.04.2017	9.6	16.3	144.4	46.0	<0.5	<0.5	<0.01	130.0	MODERATE
29.04.2017	7.8	15.3	87.9	27.8	<0.5	1.94	<0.01	88.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.194 TUEM (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.05.2017	9.7	15.2	88.9	27.9	2.1	<0.5	<0.01	138	MODERATE
05.05.2017	8.5	14.9	39.1	12.5	<0.5	<0.5	<0.01	139	MODERATE
10.05.2017	8.2	14.5	45.3	15.0	<0.5	<0.5	<0.01	86	SATISFACTORY
12.05.2017	8.1	15.7	54.8	17.2	2	<0.5	<0.01	129	MODERATE
17.05.2017	9.4	13.3	35.5	12.0	<0.5	<0.5	<0.01	107	MODERATE
19.05.2017	9.3	16.2	51.4	16.1	1.8	<0.5	<0.01	79	MODERATE
24.05.2017	9.5	13.1	47.8	15.3	<0.5	<0.5	<0.01	124	MODERATE
26.05.2017	7.7	13.9	38.4	12.5	1.9	<0.5	<0.01	101	MODERATE
31.05.2017	9.2	19.6	53.8	20.7	<0.5	<0.5	<0.01	98	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.195 TUEM (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.06.2017	8.0	12.6	46.9	14.6	2.6	-	<0.01	47.0	GOOD
07.06.2017	5.9	15.6	35.2	11.2	<0.5	-	<0.01	35.0	GOOD
09.06.2017	6.7	10.6	48.4	15.6	<0.5	-	<0.01	48.0	GOOD
14.06.2017	6.5	11.6	32.8	10.4	2.2	-	<0.01	33.0	GOOD
16.06.2017	10.1	11.5	45.2	14.5	<0.5	-	<0.01	45.0	GOOD
21.06.2017	6.6	12.7	49.1	15.3	2.1	-	<0.01	49.0	GOOD
23.06.2017	9.0	12.2	50.1	15.8	<0.5	-	<0.01	50.0	GOOD
28.06.2017	7.2	11.4	47.9	15.6	1.9	-	<0.01	**48.0**	GOOD
30.06.2017	7.2	11.8	34.8	10.9	<0.5	-	<0.01	35.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.196 TUEM (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.07.2017	7.2	10.7	36.2	11.4	2.6	<0.5	<0.01	36	GOOD
07.07.2017	3.3	12.0	46.3	14.8	<0.5	<0.5	<0.01	46	GOOD
12.07.2017	7.5	13.1	42.4	13.8	<0.5	<0.5	<0.01	42	GOOD
14.07.2017	7.3	10.4	25.1	8.0	2.5	<0.5	<0.01	25	GOOD
19.07.2017	7.0	10.4	27.4	8.7	<0.5	<0.5	<0.01	27	GOOD
21.07.2017	5.3	14.6	30.9	9.7	<0.5	<0.5	<0.01	31	GOOD
26.07.2017	5.4	12.0	25.4	8.1	<0.5	<0.5	<0.01	25	GOOD
28.07.2017	7.6	14.9	28.7	9.4	<0.5	<0.5	<0.01	29	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.197 TUEM (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.08.2017	7.4	11.4	37.6	11.8	0.7	-	<0.01	38.0	GOOD
04.08.2017	5.6	12.6	39.7	12.4	0.9	-	<0.01	40.0	GOOD
09.08.2017	6.8	10.9	27.4	8.7	<0.5	-	<0.01	27.0	GOOD
11.08.2017	6.7	9.5	37.1	11.6	<0.5	-	<0.01	37.0	GOOD
17.08.2017	6.9	10.6	43.4	13.7	0.6	-	<0.01	43.0	GOOD
19.08.2017	5.5	12.4	40.2	12.6	<0.5	-	<0.01	40.0	GOOD
21.08.2017	6.8	12.1	31.9	10.0	0.9	-	<0.01	39.0	GOOD
23.08.2017	6.2	11.3	45.0	14.5	<0.5	-	<0.01	45.0	GOOD
30.08.2017	5.9	10.9	33.6	10.6	<0.5	-	4	34.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.198 TUEM (SEPTEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.09.2017	6.4	11.7	37.7	11.8	0.7	<0.5	<0.01	38	GOOD
06.09.2017	7.2	9.8	41.8	12.9	0.8	<0.5	<0.01	42	GOOD
08.09.2017	8.9	12.3	43.3	13.8	<0.5	<0.5	<0.01	43	GOOD
13.09.2017	7.5	11.3	34.5	10.9	0.7	<0.5	<0.01	35	GOOD
15.09.2017	7.6	10.6	42.8	13.1	<0.5	<0.5	<0.01	43	GOOD
20.09.2017	7.7	11.2	42.5	13.3	<0.5	<0.5	<0.01	43	GOOD
22.09.2017	7.8	11.3	37.4	11.9	1.1	<0.5	<0.01	37	GOOD
26.09.2017	7.3	12.2	32.5	10.5	<0.5	<0.5	<0.01	33	GOOD
28.09.2017	7.1	12.1	32.3	10.5	<0.5	<0.5	<0.01	32	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.199 TUEM (OCTOBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.10.2017	8.0	11.9	42.3	13.3	<0.5	<0.5	<0.01	42.0	GOOD
06.10.2017	9.2	12.1	48.7	15.0	0.8	<0.5	<0.01	49.0	GOOD
11.10.2017	13.5	15.1	46.5	14.6	<0.5	<0.5	<0.01	47.0	GOOD
13.10.2017	11.6	14.8	52.3	16.6	<0.5	<0.5	<0.01	52.0	SATISFACTORY
17.10.2017	11.3	12.3	51.3	16.3	0.9	<0.5	<0.01	51.0	SATISFACTORY
21.10.2017	10.9	15.2	49.9	16.0	<0.5	<0.5	<0.01	50.0	GOOD
25.10.2017	10.5	14.3	48.5	14.8	7.0	<0.5	<0.01	49.0	GOOD
27.10.2017	9.8	14.6	39.5	13.3	<0.5	<0.5	<0.01	40.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.200 TUEM(NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	10.2	13.6	60.2	18.8	<0.5	<0.5	<0.01	60	SATISFACTORY
11/4/2017	12.4	14.7	56.7	17.2	0.7	<0.5	<0.01	57	SATISFACTORY
11/8/2017	10.3	14.6	48.4	15.0	<0.5	<0.5	<0.01	48	GOOD
11/11/2017	10.4	13.4	51.3	16.0	<0.5	<0.5	<0.01	51	SATISFACTORY
11/15/2017	8.0	12.5	53.0	17.0	0.9	<0.5	<0.01	53	SATISFACTORY
11/17/2017	8.3	14.4	53.1	17.1	<0.5	<0.5	<0.01	53	SATISFACTORY
11/22/2017	9.3	14.0	79.9	25.0	6.0	<0.5	<0.01	80	SATISFACTORY
24.11.2017	10.8	11.6	67.9	21.7	<0.5	<0.5	<0.01	68	SATISFACTORY
28.11.2017	8.6	14.0	86.3	26.9	0.6	<0.5	<0.01	86	SATISFACTORY
30.11.2017	9.4	14.0	70.3	23.0	<0.5	<0.5	<0.01	70	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.201 TUEM (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
06.12.2017	7.9	10.5	57.2	18.5	<0.5	<0.5	<0.01	57	SATISFACTORY
08.12.2017	6.9	12.9	66.7	20.6	<0.5	<0.5	0.88	67	SATISFACTORY
13.12.2017	9.1	13.6	63.9	20.3	<0.5	<0.5	0.54	64	SATISFACTORY
15.12.2017	10.1	11.7	44.7	14.1	1.2	<0.5	<0.01	45	GOOD
20.12.2017	8.6	15.4	67.7	21.7	0.9	<0.5	<0.01	68	SATISFACTORY
22.12.2017	9.3	13.5	49.5	15.5	0.6	<0.5	<0.01	50	GOOD
28.12.2017	8.9	13.8	77.0	24.4	0.6	<0.5	0.52	77	SATISFACTORY
30.12.2017	7.9	12.5	58.6	19.0	<0.5	<0.5	0.6	59	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.202 TUEM (JANUARY '2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.01.2018	6.2	13.6	86.1	26.8	0.7	<0.5	0.77	**86**	SATISFACTORY
06.01.2018	8.1	13.8	87.3	27.1	<0.5	<0.5	0.98	**87**	SATISFACTORY
10.01.2018	8.5	11.6	72.5	22.7	0.8	<0.5	0.56	**73**	SATISFACTORY
12.01.2018	7.8	15.3	67.1	20.9	<0.5	<0.5	<0.01	**67**	SATISFACTORY
17.01.2018	8.7	14.8	79.7	24.8	0.6	<0.5	0.48	**80**	SATISFACTORY
19.01.2018	7	14	73.4	22.6	<0.5	<0.5	<0.01	**73**	SATISFACTORY
24.01.2018	7.9	15	62.7	20.1	0.6	<0.5	<0.01	**63**	SATISFACTORY
27.01.2018	7.1	15.8	67	21.2	<0.5	<0.5	0.58	**67**	SATISFACTORY
31.01.2018	8.6	14.7	74.7	23.7	0.8	<0.5	<0.01	**75**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.203 TUEM (FEBRUARY '2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
02.02.2018	8.3	15.4	75.2	23.8	0.7375	<0.5	<0.01	75	SATISFACTORY
07.02.2017	6.7	13.1	51.0	16.0	<0.5	<0.5	0.84	51	SATISFACTORY
09.02.2018	10.1	15.5	73.9	23.0	<0.5	<0.5	0.68	74	SATISFACTORY
14.02.2018	8.5	16.5	72.7	22.7	<0.5	<0.5	<0.01	73	SATISFACTORY
16.02.2018	9.5	15.7	66.0	20.3	0.6541	<0.5	0.98	66	SATISFACTORY
21.02.2018	10.3	14.3	68.6	21.7	0.5711	<0.5	<0.01	69	SATISFACTORY
23.02.2018	7.6	16.7	64.7	20.7	1.17	<0.5	0.49	65	SATISFACTORY
27.02.2018	9.6	14.7	61.7	19.7	0.6371	<0.5	0.85	62	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.204 TUEM (MARCH '2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.03.2018	6.4	14.5	67.0	20.7	<0.5	<0.5	0.77	67	SATISFACTORY
07.03.2018	8.4	15.1	67.7	20.6	<0.5	<0.5	0.98	68	SATISFACTORY
09.03.2018	7.9	13.6	61.7	19.6	0.8	<0.5	0.56	62	SATISFACTORY
14.03.2018	8.8	14.0	69.7	21.9	<0.5	<0.5	<0.01	70	SATISFACTORY
16.03.2018	7.7	16.1	67.8	21.8	0.6	<0.5	0.48	68	SATISFACTORY
21.03.2018	6.8	14.4	55.0	17.7	<0.5	<0.5	<0.01	55	SATISFACTORY
23.03.2018	6.1	16.2	60.9	19.4	0.6	<0.5	<0.01	61	SATISFACTORY
26.03.2018	5.5	15.3	59.6	19.3	<0.5	<0.5	0.58	60	SATISFACTORY
28.03.2018	6.3	15.2	25.3	8.1	0.8	<0.5	<0.01	25	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.205 PONDA (APRIL 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.04.2017	8.0	19.4	97.5	31.3	1.5	<0.5	<0.01	98.0	SATISFACTORY
06.04.2017	8.0	15.2	87.7	27.7	<0.5	<0.5	<0.01	88.0	SATISFACTORY
11.04.2017	7.8	18.2	95.4	29.4	<0.5	<0.5	<0.01	95.0	SATISFACTORY
14.04.2017	9.9	17.8	92.4	29.2	1.3	<0.5	<0.01	92.0	SATISFACTORY
19.04.2017	9.3	18.0	76.9	24.7	<0.5	<0.5	<0.01	77.0	SATISFACTORY
21.04.2017	7.5	18.4	79.4	25.6	1.11	<0.5	<0.01	97.0	SATISFACTORY
25.04.2017	9.8	16.2	102.9	32.8	<0.5	<0.5	<0.01	102.0	MODERATELY POLLUTED
27.04.2017	9.1	19.8	87.0	27.5	1.13	<0.5	<0.01	87.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.206 PONDA (MAY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.05.2017	7.3	12.4	110.2	35.3	1	<0.5	<0.01	107.0	MODERATELY POLLUTED
06.05.2017	8.0	14.4	85.8	27.9	<0.5	<0.5	<0.01	86.0	SATISFACTORY
09.05.2017	7.5	12.8	76.7	24.5	1.5	<0.5	<0.01	77.0	SATISFACTORY
11.05.2017	6.4	15.4	75.0	23.9	1.2	<0.5	<0.01	75.0	SATISFACTORY
16.05.2017	7.2	13.2	74.5	23.6	<0.5	<0.5	<0.01	75.0	SATISFACTORY
18.05.2017	7.2	15.1	76.6	23.7	0.8	<0.5	<0.01	77.0	SATISFACTORY
23.05.2017	8.2	13.6	82.2	25.6	<0.5	<0.5	<0.01	82.0	SATISFACTORY
25.05.2017	8.5	13.4	100.3	31.9	0.9	<0.5	<0.01	100.0	SATISFACTORY
30.05.2017	7.7	13.2	70.1	22.3	1.2	<0.5	<0.01	70.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.207 PONDA (JUNE 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.06.2017	7.9	12.5	31.9	10.4	1	-	<0.01	32.0	GOOD
06.06.2017	9.9	12.6	40.7	13.1	<0.5	-	<0.01	41.0	GOOD
08.06.2017	7.4	11.8	45.3	14.0	1.5	-	<0.01	45.0	GOOD
13.06.2017	6.4	13.2	49.3	15.7	1.2	-	<0.01	49.0	GOOD
15.06.2017	7.2	11.5	41.7	13.4	<0.5	-	<0.01	42.0	GOOD
20.06.2017	7.1	12.0	49.4	15.3	0.8	-	<0.01	49.0	GOOD
22.06.2017	8.3	12.4	51.7	16.1	<0.5	-	<0.01	52.0	SATISFACTORY
27.06.2017	8.8	12.9	49.5	15.6	0.9	-	<0.01	50.0	GOOD
29.06.2017	7.8	12.8	56.4	17.6	1.2	-	<0.01	56.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.208 PONDA (JULY 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
04.07.2017	8.5	BDL	46.3	15.1	1	<0.5	<0.01	46.0	GOOD
06.07.2017	4.8	9.8	50.0	15.9	<0.5	<0.5	<0.01	50.0	GOOD
11.07.2017	8.0	13.4	26.4	8.5	<0.5	<0.5	<0.01	26.0	GOOD
13.07.2017	5.0	11.1	30.5	8.1	-	<0.5	<0.01	31.0	GOOD
18.07.2017	6.9	10.8	25.5	8.4	<0.5	<0.5	<0.01	26.0	GOOD
20.07.2017	4.4	BDL	25.9	8.1	1.1	<0.5	<0.01	26.0	GOOD
25.07.2017	7.6	10.8	26.4	8.4	<0.5	<0.5	<0.01	26.0	GOOD
27.07.2017	4.9	BDL	31.7	10.0	<0.5	<0.5	<0.01	32.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.209 PONDA (AUGUST 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.08.2017	7.4	11.3	34.8	11.2	1.3	-	<0.01	35.0	GOOD
03.08.2017	6.6	9.1	41.5	13.5	<0.5	-	<0.01	42.0	GOOD
08.08.2017	5.9	12.5	34.0	10.8	0.6	-	<0.01	34.0	GOOD
10.08.2017	5.9	10.5	41.8	13.4	0.6	-	<0.01	42.0	GOOD
16.08.2017	8.0	10.7	54.6	17.8	<0.5	-	<0.01	55.0	SATISFACTORY
18.08.2017	4.7	BDL	54.1	16.8	0.9	-	<0.01	54.0	SATISFACTORY
21.08.2017	6.1	11.4	27.6	8.8	<0.5	-	<0.01	28.0	GOOD
23.08.2017	5.9	9.0	29.5	9.3	<0.5	-	<0.01	30.0	GOOD
30.08.2017	7.0	11.2	24.8	7.9	0.7	-	<0.01	25.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.210 PONDA (SEPTEMBER 2017)									
SAMPLING DATE	SO2 µg/m3	NOX µg/m3	PM10 µg/m3	PM2.5 µg/m3	O3 µg/m3	Pb µg/m3	CO µg/m3	AQI	AQI REMARKS
01.09.2017	8.2	11.8	44.4	14.8	<0.5	<0.5	<0.01	44.0	GOOD
08.09.2017	7.7	10.6	47.1	15.0	0.7	<0.5	<0.01	47.0	GOOD
10.09.2017	6.5	10.2	45.7	14.3	<0.5	<0.5	<0.01	46.0	GOOD
12.09.2017	8.7	12.2	33.8	11.2	1.1	<0.5	<0.01	34.0	GOOD
14.09.2017	7.6	12.1	38.6	12.7	<0.5	<0.5	<0.01	39.0	GOOD
19.09.2017	8.1	12.3	38.1	11.6	0.9	<0.5	<0.01	38.0	GOOD
21.09.2017	9.3	11.0	34.5	10.8	<0.5	<0.5	<0.01	35.0	GOOD
26.09.2017	6.8	12.9	33.8	10.7	0.6	<0.5	<0.01	34.0	GOOD
28.09.2017	7.3	10.9	34.0	10.7	<0.5	<0.5	<0.01	34.0	GOOD
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.211 PONDA (OCTOBER 2017)									
SAMPLING DATE	SO2 µg/m3	NOX µg/m3	PM10 µg/m3	PM2.5 µg/m3	O3 µg/m3	Pb µg/m3	CO µg/m3	AQI	AQI REMARKS
03.10.2017	9.4	12.1	49.2	16.2	0.6	<0.5	<0.01	49.0	GOOD
05.10.2017	8.2	12.5	44.8	14.4	1.0	<0.5	<0.01	45.0	GOOD
10.10.2017	8.6	13.0	52.0	16.0	<0.5	<0.5	<0.01	52.0	SATISFACTORY
12.10.2017	9.5	13.3	60.2	19.2	0.7	<0.5	<0.01	60.0	SATISFACTORY
19.10.2017	13.7	19.1	142.9	46.7	0.9	<0.5	<0.01	129.0	MODERATELY POLLUTED
21.10.2017	12.2	15.1	47.5	14.9	<0.5	<0.5	<0.01	48.0	GOOD
24.10.2017	11.0	13.3	48.2	15.9	<0.5	<0.5	<0.01	48.0	GOOD
26.10.2017	10.3	14.2	51.4	16.4	<0.5	<0.5	<0.01	51.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.212 PONDA (NOVEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
11/2/2017	9.2	11.0	68.2	22.0	0.6	<0.5	<0.01	68.0	SATISFACTORY
11/4/2017	9.5	13.4	54.8	27.6	0.9	<0.5	<0.01	55.0	SATISFACTORY
11/7/2017	8.8	11.4	46.7	14.4	<0.5	<0.5	<0.01	47.0	GOOD
11/9/2017	7.0	12.0	63.3	20.6	0.7	<0.5	<0.01	63.0	SATISFACTORY
11/14/2017	9.2	12.3	62.0	20.2	0.8	<0.5	<0.01	62.0	SATISFACTORY
11/16/2017	7.6	12.8	93.4	28.4	<0.5	<0.5	<0.01	93.0	SATISFACTORY
11/21/2017	6.4	13.5	72.7	23.3	<0.5	<0.5	<0.01	79.0	SATISFACTORY
11/23/2017	9.1	12.2	90.8	28.6	0.7	<0.5	<0.01	91.0	SATISFACTORY
11/28/2017	9.0	11.6	94.1	29.3	<0.5	<0.5	<0.01	94.0	SATISFACTORY
11/30/2017	7.2	13.2	94.7	29.5	1.3	<0.5	<0.01	95.0	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.213 PONDA (DECEMBER 2017)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
05.12.2017	**8.3**	**13.7**	**45.6**	**14.9**	0.6	<0.5	0.65	**46**	GOOD
07.12.2017	**10.1**	**12.0**	**82.1**	**25.7**	0.9	<0.5	<0.01	**82**	SATISFACTORY
12.12.2017	**9.4**	**13.8**	**77.8**	**24.0**	<0.5	<0.5	0.87	**78**	SATISFACTORY
14.12.2017	**7.7**	**12.6**	**84.0**	**27.4**	0.7	<0.5	<0.01	**84**	SATISFACTORY
21.12.2017	**6.4**	**13.8**	**91.7**	**29.7**	0.8	<0.5	<0.01	**92**	SATISFACTORY
23.12.2017	**8.9**	**10.6**	**69.0**	**21.4**	<0.5	<0.5	0.89	**69**	SATISFACTORY
28.12.2017	**8.8**	**14.2**	**91.9**	**29.0**	0.8	<0.5	0.62	**92**	SATISFACTORY
30.12.2017	**9.1**	**10.3**	**75.6**	**23.7**	0.8	<0.5	0.98	**76**	SATISFACTORY
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.214 PONDA (JANUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
03.01.2018	9.6	15.5	159.6	51	<0.5	<0.5	<0.01	**140**	MODERATELY POLLUTED
05.01.2018	7.5	14.2	156.3	48.6	0.8	<0.5	0.56	**138**	MODERATELY POLLUTED
09.01.2018	9.3	13.3	176.5	54.5	<0.5	<0.5	0.87	**151**	MODERATELY POLLUTED
11.01.2018	7.7	15.5	147	47.2	0.7	<0.5	<0.01	**131**	MODERATELY POLLUTED
16.01.2018	8.6	18.8	141	45	<0.5	<0.5	<0.01	**127**	MODERATELY POLLUTED
18.01.2018	9.7	15.4	168.6	51.3	0.6	<0.5	0.48	**146**	MODERATELY POLLUTED
23.01.2018	8.4	15.3	176.4	53.1	1	<0.5	0.87	**151**	MODERATELY POLLUTED
25.01.2018	9.8	17.7	175.5	52.7	0.7	<0.5	0.56	**150**	MODERATELY POLLUTED
30.01.2018	9.4	15	256.7	84.1	<0.5	<0.5	<0.01	**207**	POOR
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.215 PONDA (FEBRUARY 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/m^3	Pb µg/ m^3	CO µg/m^3	AQI	AQI REMARKS
01.02.2018	7.9	14.1	188.0	59.5	0.93289	<0.5	<0.01	159	MODERATELY POLLUTED
06.02.2018	6.6	13.3	162.0	50.7	<0.5	<0.5	<0.01	141	MODERATELY POLLUTED
08.02.2018	6.1	12.0	126.0	38.7	1.009	<0.5	0.98	117	MODERATELY POLLUTED
13.02.2018	9.0	14.9	135.6	43.7	<0.5	<0.5	0.91	124	MODERATELY POLLUTED
15.02.2018	9.2	14.4	158.6	50.6	1.12517	<0.5	0.88	139	MODERATELY POLLUTED
21.02.2018	9.9	13.6	119.9	36.7	1.46772	<0.5	0.89	113	MODERATELY POLLUTED
24.02.2018	9.5	16.7	146.4	45.3	0.76934	<0.5	0.78	131	MODERATELY POLLUTED
26.02.2018	9.2	13.7	156.7	48.9	0.98929	<0.5	<0.01	138	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

Table No. : 9.216 PONDA (MARCH 2018)									
SAMPLING DATE	SO_2 µg/m^3	NO_2 µg/m^3	PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3	O_3 µg/ m^3	Pb µg/m^3	CO µg/m^3	AQI	AQI REMARKS
01.03.2018	10.6	15.6	171.0	52.1	<0.5	<0.5	0.88	147	MODERATELY POLLUTED
06.03.2018	7.4	14.5	149.6	45.3	1.4	<0.5	0.96	133	MODERATELY POLLUTED
08.03.2018	10.4	13.7	146.7	44.9	<0.5	<0.5	0.86	131	MODERATELY POLLUTED
13.03.2018	7.8	14.8	146.7	45.0	1.4	<0.5	<0.01	131	MODERATELY POLLUTED
15.03.2018	8.4	15.4	120.3	37.2	<0.5	<0.5	<0.01	114	MODERATELY POLLUTED
19.03.2018	9.3	12.8	149.0	45.4	1	<0.5	<0.01	133	MODERATELY POLLUTED
22.03.2018	7.9	14.1	185.5	56.1	1.6	<0.5	0.81	157	MODERATELY POLLUTED
27.03.2018	9.2	16.5	153.0	46.5	0.8	<0.5	0.66	136	MODERATELY POLLUTED
29.03.2018	9.5	15.5	122.6	40.0	<0.5	<0.5	0.75	115	MODERATELY POLLUTED
Limits^:-	**80**	**80**	**100**	**60**	**180**	**1**	**4**		

^ 24 hr average, schedule VII EPR,1986 as amended

SO2 : MDL: 4 ug/m3

NO2 : MDL: 9 ug/m3

PM10 : MDL :5 ug/m3

BDL : Below Detection Limit

MDL : Min. Detection Limit

* : FPS was not working

ANNEXURE VII

CLOSURE DIRECTIONS ISSUED UNDER THE WATER ACT AND THE AIR ACT

Sr. No.	Name & Address of the unit	Date & Order No.	Remarks
1.	The collector (South) & District Magistrate, Margao-Goa.	08/06/2017, Leg/4364	The collector is hereby directed to ensure that the operation of the unit M/s. Brat Agro Pvt Ltd, is stopped/sealed/closed within 15 days from the receipt of this direction and submit a compliance report
2.	M/s. Starlight Bar & Restaurant, Trinanvado, Arpora, Bardez-Goa.	12/06/2017, Leg/4578	The unit is directed to suspend/close the operation within 15 days from the receipt of the direction till such time the unit obtained Consent of the Board.
3.	M/s. Impala Distilleriry & Brewery Ltd, Sy no. 22/1 & 5 , Coprimoddi, Assolda, Quepem-Goa.	20/06/2017, LD-62	The unit is directed to close/suspend the operation of the unit within a period of 7 days until such time all the requisite measures for controlling the water pollution is adopted and CTO is obtained.
4.	M/s. Al Simma Glass, Ascona Volar, Benaulim, Salcete-Goa.	01/06/2017, Leg/3854	The unit is directed to close/suspend the operation of the unit within a period of 15 days from the date of receipt of the direction.
5.	M/s.Raje Café,H.no.507/E, Marcuit, Demani, Cuncolim, Salcete-Goa.	06/07/2017, Leg/6315	The unit is directed o suspend/close the operation of the unit within 15 days or till such time the unit obtained valid consent of the board.
6.	M/s.Flying Maya Guest Hosue,H. no. 511, Murod vaddo, Candolim, Bardez-Goa.	20/07/2017, 7339	The unit is hereby directed to close/suspend the operation of the unit within 15 days till it obtained valid CTO from the Board.
7.	M/s Sham Resort Hotels Pvt Ltd.Murod vaddo, Candolim, Bardez-Goa.	20/07/2017, 7340	The unit is hereby directed to close/suspend the operation of the unit within 15 days till it obtained valid CTO from the Board.
8.	Edwin Nunes, Curlies Guest House, Sy no. 45/41, H. no. 774/1, St Micheal waddo, Anjuna, Bardez-Goa.	19/07/2017, LD-64	The unit is directed to suspend the operation of the unit within 2 days until further orders
9.	M/s. Yash Industries, Plot no. B-53, Kundaim Industrial Estate, Ponda-Goa.	28/08/2017, 9770	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
10.	M/s. Metafinn, Plot No. B-51 K, Kundaim Industrial Estate, Ponda-Goa.	28/08/2017, 9771	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.

11.	M/s. T-Ron Industries, Plot no. 116-119, Pissurlem Industrial Estate, Sattari-Goa.	28/08/2017, 9769	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
12.	M/s. Raj Industries, Plot No. 100, Pissurlem Industrial Estate, Sattari-Goa.	28/08/2017, 9768	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
13.	M/s. N.S.Harwalkare Enterprises, Gala no. 6, Honda Industrial Estate, Sattari-Goa.	28/08/2017, 9766	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
14.	M/s. Naik Auto Corporation, Plot No.41, 42, Mapusa Industrial Estate, Mapusa-Goa.	28/08/2017, 6765	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
15.	M/s. Priority Auto, Plot No. U02-J/ U02-K, Phase IV, Verna Industrial Estate, Verna, Salcete-goa.	28/08/2017, 9763	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
16.	M/s. Teera Aqua Tech Service, Plot No. 88, Phase IIIA, Verna Industrial Estate, Verna, Salcete-Goa.	28/08/2017, 9762	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.

17.	M/s. New Millennium Bakers, Plot no. L-107, 108, Verna Industrial Estate, Verna, Salcete-goa.	28/08/2017, 9759	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
18.	M/s. Astra Metal Systems Pvt. Ltd, L-75, Verna Industrial Estate, Verna, Salcete-Goa.	28/08/2017, 9758	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board so as to comply with the prescribed standards stipulated in the Consent Order.
19.	M/s. Muktar Automobile Pvt Ltd, Plot no. L-128, Phase IIIB, Verna Industrial Estate, Verna, Salcete-Goa.	28/08/2017, 9757	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board so as to comply with the prescribed standards stipulated in the Consent Order.
20.	M/s. Shreya Industries, D3-14, Bethora Industrial Estate, Ponda-Goa.	28/08/2017, 9756	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board so as to comply with the prescribed standards stipulated in the Consent Order.
21.	M/s. Laxmi Powder Coating and Enginneering Works, 31, Bethora Industrial Estate, Ponda-Goa.	28/08/2017, 9755	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board so as to comply with the prescribed standards stipulated in the Consent Order.
22.	M/s. Glow Paints Pvt Ltd, 121, Bethora Industrial Estate, Ponda-Goa.	28/08/2017, 9754	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board so as to comply with the prescribed standards stipulated in the Consent Order.

23.	M/s. Shree Gajananth Industries, D3, Bethora Industrial Estate, Ponda-Goa.	28/08/2017, 9753	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
24.	M/s.Tuflite Compositiesm Plot no. 93, Bethora Industrial Estate, Ponda-Goa.	28/08/2017, 9752	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
25.	M/s. Parab Engineering Works, D5/1A, Bethora Industrial Estate, Ponda-Goa.	28/08/2017, 9757	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
26.	M/s.Zinc Coating Industry, Plot No. 76, Behora Industrial Estate, Ponda-Goa.	28/08/2017, 9750	The unit is hereby directed to immediately stop/suspend the operation of the unit and submit compliance report to this office within 3 days from the date of receipt of the direction till such time you install ETP and operate to the satisfaction of the Board and after obtaining CTO as required under the provision of the water Act.
27.	M/s. Rekha Bar & restaurant, St Joaquim Road, Bord, Margao-Goa.	07/09/2017, 10418	The unit is hereby directed to close/suspend the operation of the unit within 15 days from the receipt of the direction.
28.	Mr. Nicholas Monteiro R/o. Vaddy, Merces	08/09/2017, 10562	The unit is hereby directed to close/suspend the operation of the unit within 15 days from the receipt of the direction.
29.	M/s. Sea Valley Bar & Restaurant, anjuna	14/08/2017, 8993	The unit is hereby directed to close/suspend the operation of the unit within 15 days from the receipt of the direction.
30.	Sheila Dhody(Casa Colvale), Colvale Village, Bardez-Goa.	11/09/2017, 10675	The unit is hereby directed to close/suspend the operation of the unit within 15 days from the receipt of the direction.
31.	M/s. Xavier Tooling Enterprises, H. no. 7/2, Galvan Damedem, P.O.Tivem Industrial Estate, Tivim, Bardez-Goa.	13/09/2017, LD-70	The unit is hereby directed to close/suspend the operation of the unit within a period of 15 days from the receipt of the direction.
32.	M/s. Maitrey Cold Storage, Chalta no. 3, P,T,.Sheet no. 9, Panaji-Goa.	15/09/2017, Tech/11032	The unit is directed to close/suspend the operation of the unit within 15 days till the unit obtained CTO from the Board.

33.	Curlis Restaurant, St Michael waddo, Dando, Anjuna, Bardez-Goa.	1 4 / 0 9 / 2 0 1 7 10902-Revocation of CTO	CTO dated 03/03/2016 issued to the unit is revoked in view of the decision taken by the Chairman of the Board and directed to stop the operation of the restaurant until such time a CTO issued by the board.
34.	Sea Paradise, Sy no. 132/2, St Anthony Prais Waddo, Anjuna Bardez	26/10/2017, 13966	The unit is directed to close/suspend the operation of the unit within 15 days from receipt of the directions
35.	M/s. Venice Bar & Restaurant, Margao	17037, 5/12/17	The unit is directed to close/suspend the operation of the unit within 15 days from receipt of the directions for operating without consent
36.	Hotel Vihar -Veg Udupi, Panaji	18117, 21/12/2017	The unit is directed to close/suspend the operation of the unit within 15 days from receipt of the directions for operating without consent
37.	Topline Writing Instruments Pvt. LTd., L-70, L-71, Phase II-D, Verna IE	LD-97, 07/12/2017	The unit is directed to close/suspend the operation of the unit within 15 days from receipt of the directions till such time you install ETP and operate to the satisfaction of the Board
38.	M/s. Goa Carbon Ltd., Sao Jose De Areal, Margao - Goa	ld-132, 15/02/2018	Directed to close/suspend the operations of the unit within 15 days for operating without Consent from the board
39.	Krishna Paradise, C/o. Mr. Shanta Punu Velip, 131/2, Cola Beach, Canacona	21981, 19/02/2018	Directed to close/suspend the operations of the unit within 15 days for operating without Consent from the board

ANNEXURE VIII

Annual Returns of E- Waste for the year 2016 - 2017

1	Name of the State/Union territory	Goa
2.	Name & address of the State Pollution Control Board/ Committee	Goa State Pollution Control Board
3.	Number of authorised Producers, Collection Centres, registered Dismantler and Recyclers For management of e-waste in the State or Union territory under these rule.	a) Producers/Manufacture – 13nos. b) Collection Centres- 06nos. c) Dismantler and Recyclers- 01
4.	Categories of waste collected along with their quantities on a monthly/yearly average basis.	a) IT waste- 37387 Kgs/annum b) Non-IT- 411913Kgs/annum
5.	A summary Statement on Category wise product wise quantity of e-waste Collected.	a) IT wastes- 37387Kg/annum, which include Computers, CPU, UPS, Laptops, Printers etc. b) Non-IT waste- 411913Kg/annum, which includes consumers E-waste i.e. House hold items. Major contributor to non-IT waste is M/s IFB Industries.
6.	Mode of treatment with details.	The E-waste collected from the State of Goa is transported outside States for processing/ recycling. The Goa State Pollution Control Board has authorized 01 unit namely M/s Global E-waste Management System for dismantling of E-waste with capacity 103 MT/annum.
7.	Brief details of collection, dismantling and Recycling facilities.	The Goa State Pollution Control Board has granted authorization for 06 nos. Of Collection Centres. Apart from the collection centres few of the units are disposing their E-waste to Central Pollution Control Board authorized recyclers/ Dismantlers. The Goa State Pollution Control Board has authorized 01 unit namely M/s Global E-waste Management System for dismantling of E-waste with capacity 103 MT/ annum.
8.	Any other information.	
9.	Certified that the above report is for the period from.	1st April 2016 to 31st March 2017

ANNEXURE IX

ANNUAL RETURNS OF BIO-MEDICAL WASTE MANAGEMENT FOR THE YEAR 2016

Annual Report Information on Bio-medical Waste Management

By the SPCBs/PCCs to CPCB for the period January, 2016 to December, 2016.

(1) Name of the State Pollution Control Board / Pollution Control Committee: Goa State Pollution Control Board.

(2) Name of the Nodal Officer with contact telephone no. & e-mail: Mr. Sanjeev Joglekar, (0832) 2438528, 9158008605.

(3) Total no. of HCFs.
- (i) Bedded: 162
- (ii) Non-bedded: 85

(4) Total no. of beds: 3220

(5) Status of authorisation:
- a) Total no. of HCFs applied for authorisation: 597
- b) Total no. of HCFs granted authorisation: 590
- c) Total no. of application under consideration: 07
- d) Total no. of application rejected: Nil
- e) Total no. of HCFs in operation without applying for authorisation: -

(6) Quantity of Bio-medical Waste Generation (in kg/ day):
- a) Bio-medical waste generation by bedded hospitals (in kg/day): 2203.1
- b) Bio-medical waste generation by non-bedded hospitals (in kg/ day): 457.24
- c) Any other

(7) Bio-medical waste treatment & disposal
- a) Captive bio-medical waste treatment & disposal by HCFs (please enclose details as per Annexure-I (a)

S. No.	Healthcare Facility	Treatment & Disposal				
		No. of HCFs having captive treatment facilities	Total installed captive treatment facility			Total bio-medical waste treated & disposed by captive treatment facilities in /day
			Type of treatment equipment	No.	Capacity (in Kg/day)	
(i)	Bedded	162	• Incinerator	1	480.00	450.00
			• Plasma pyrolysis	-		
			• Autoclaves	157	2747.00	1040.00
			• Microwave	-		
			• Hydroclave	1	750.00	600.00
			• Shredder	-		

			• Sharps encapsulation or concrete pit	149	321.00 m3	87.62
			• Deep burial pit	147	595.00 m3	25.3
			• Any other treatment equipment	-		
(ii)	Non bedded	85	• Incinerator	-		
			• Plasma pyrolysis	-		
			• Autoclaves	74	3960	357.00
			• Microwave	-		
			• Hydroclave	-		
			• Shredder	-		
			• Sharps encapsulation or concrete pit	35	75.00 m3	12
			• Deep burial pit	51	207.00 m3	88.00
			• Any other treatment equipment	-		
			Total		9135.00	2659.92

b) Bio-medical waste treatment & disposal by CBWTFs (please enclose details as per Annexure-I)

Not applicable

Total no. of CBWfFs		**Total installed treatment capacity**			**Total biomedical waste treated in kg/day**
In operation	Under Construction	Type of treatment equipment	No.	Total Capacity (in kg/ day)	
		Incinerator			
		Plasma Pyrolysis			
		Autoclave			
		Hydroclave			
		Microwave			
		Shredder			
		Sharps encapsulation or concrete pit			
		Deep burial pits			
		Any other equipment			
		Effluent Treatment Plant			
		Total			

(8) Total bio-medical waste generation: 2660.34

(9) Total bio-medical waste treated & disposed (in kg/day):
- By Captive Treatment Facilities by the HCFs: 2659.92
- ByCBWTFs:Nil

(10) otal no. of violation by:
- HCFs: 250
- CBWTFs:

(11) Show cause notices/ directions issued to defaulters:
- HCFs: 250 nos (for non submission of annual reports)
- CBWTFs:

(12) Any other relevant information:
a) No. of workshops / trainings conducted during the year : 2.00 nos
b) No. of HCFs installed liquid waste treatment facility: -
c) No. of captive incinerators complying to the norms: 1
d) No. of HCFs organised trainings: 05
e) No. of HCFs constituted Bio-medical Waste Management Committees: Nil
f) No. of HCFs submitted Annual Report: 247
g) No. of HCFs practising pre-treatment of lab microbiology & Bio-technology waste: Nil

ANNEXURE X

ANNUAL RETURNS OF PLASTIC WASTE FOR THE YEAR 2016

Name of SPCB/PCC	Estimated Plastic Waste generation Tons Per Annum(TPA) or TPD	No. Of registered Plastic Manufacturing/Recycling (including multilayer, compostable) units (Rule			No. Of unregistered Plastic Manufacturing/ recycling units in residential area	Explicit Pricing of carry bags (Rule 15)	Implementation of Plastic Waste Management (PWM) eg. Collection, segregation, disposal (Co-processing, road construction etc) (Rules 5 & 6)	Complete ban on usages of plastic carrybags etc. In State/UT or partial ban at historical places, pilgrimage places, beaches etc.	Status of Marking and Labelling on carry bags. (Rule 11)	Recommendation of State Level Monitoring Committee on Implementation of PWM Rules,2016 (Rule 16)	No. Of violation and action taken on non-compliance of provisions of PWM Rules, 2016	Submission of Annual Report to SPCBs/PCC by Municipal Bodies.
1	2	3			4	5	6	7	8	9	10	11
		Plastic units	Compostable Plastic units									
Goa State Pollution Control Board	Waste generated through plastic units is Approximately 170 MT/Annum (reused in process/ sold to scrap dealer and waste generated under municipal/local body jurisdiction is approximately 1187 MT/Annum(sold to scrap dealer/sent to co-processing.	35	Nil	13	Nil	Goa No-Biodegradable Act	MOU signed with M/s. ACC, Wadi Vasvadatta cement works for co-processing of plastic waste generated in the State of Goa	No	yes	Monitoring cum Working committee on solid waste Management & High level Task Force	Nil	Yes

ANNEXURE XI

Table 8: Annual Returns of Lead Acid Batteries

Status of Lead Acid Battery (Oct 2016-Sept 2017)								
Sr. No	**Type of Category**	**Total No**	**Total no. Production/Imported/ Consumption/Recycled of LAB/ (Qty)**	**Sale of Batteries in units**	**Total collection of Lead Acid Batteries in units**	**Annual Returns submitted**	**Action taken**	**Remarks**
1	Manufacturer/ Reconditioner	3	14817 no.s	NA	NIL	Yes	Units which have not submitted returns have been directed to do so.	Battery Scrap has been sent to 1.Chloride Alloys India Ltd, 2.Chloride Metals Ltd Pune.. 3. Chloride Metals Ltd. Malur. 4.New Metal Refinery, kalwa, old Belapur road, Navi Mumbai.
2	Assembler	0	0	NA	0	No		
3	Collection Centre	0	Nil	NA	Nil	No		
4	Dealer	37	NIL	32465 no.s	7014 no.s	Yes		
5	Importer	Nil	Nil	Nil	Nil	NA		
6	Blk. Consumer	38	3217	Nil	NA	Yes		
7	Auctioneer	Nil	NA	NA	NA	NA		
8	Recycler	Nil	NA	NA	NA	NA		
1	Details of action initiated/taken against illegel/unauthorised recycler and smelter of used lead acid batteries:							
	No case of such illegelity has been reported/observed by the Board							

ANNEXURE XII

Minutes of the Board Meeting Dated 4th September 2017

MINUTES OF THE ADJOURNED 126TH MEETING OF THE GOA STATE POLLUTION CONTROL BOARD HELD ON 4TH SEPTEMBER, 2017 AT 03.30 P.M. IN THE CONFERENCE HALL OF THE CHIEF SECRETARY, SECRETARIAT, PORVORIM.

1. The adjourned 126th meeting of the Goa State Pollution Control Board (GSPCB) was held on 4th September, 2017 at 03.30 p.m. in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

The following members / officials attended the meeting:

1.	Mr. Dharmendra Sharma, Chairman, Goa State Pollution Control Board.
2.	Principal Chief Conservator of Forests was represented by Chief Conservator of Forests, Mr. Mahesh K. Shambhu.
3.	Director, Department of Industries, Trade and Commerce was represented by Shri. Satish Gaonkar, Information Officer.
4.	Chief Engineer, Water Resources Department was represented by Shri S.H. Nagarajan
5.	Director of Mines and Geology (DMG) was represented by Shri. Manuel Baretto, Dy. Director, II
6.	Director of Tourism was represented by Shri. Subhash Kavlekar, Assistant Director.
7.	Dr. Vasudev Deshprabhu, Pernem Municipal Council, Pernem.
8.	Mrs. Fatima Pereira, Village Panchayat, Velsao.
9.	Mr. Shirang Jamble, Agriculturist, Savoi, Verem
10.	Mr. Levinson J. Martins, Member Secretary, Goa State Pollution Control Board (GSPCB).

II. At the outset, the Member Secretary welcomed the Board members and thereafter proceeded with deliberations / discussions as per agenda items referred below -

Agenda item no. 01

(a) Follow up action on the decision taken at the 125th meeting of the Board held on 14/07/2017

Agenda item no. 01 (h) – Agenda item no. 8 – Implementation of Business Reform Action Plan (BRAP) under 'Ease of Doing Business' in the State of Goa - The members perused the application format annexed to the Water / Air Rules *required to be submitted / to the Board by the project proponent (PP) seeking Consent to Establish and/or Consent to Operate for the proposed industrial activity*, wherein it is specified that the NOC from the Village Panchayat / Municipality concerned is one of the accompaniments to be enclosed / submitted by the project proponent in case of units located outside the notified industrial estates / industrial zones.

In response to the same, Members were appraised that the State Government has constituted a new entity – Goa Investment Promotion Board (Goa-IPB) with a primary objective to set up industries in the State which are capable of providing jobs to locals, *based on their skill, knowledge and technical expertise*, and accord in-principal approval through single-window clearance. As such, the Component of Ease of Doing Business has also been factored in by the Board with regard to the IPB protocol.

The Goa Water / Air Rules were enacted in 1988 and 1989 respectively for their strict implementation. Accordingly, the industries (*as per the CPCB-categorization of industries and requiring Consent from the Board*) which located in Panchayat / Municipal / City Corporation limits as per the application format shall require to submit respective NOCs from the local authorities concerned except, those located in notified Industrial estates / industrial zones as a pre-condition.

The Goa State Pollution Control Board is a technical and scientific body and has to examine all the proposals received from that point of view during the process of its scrutiny. Thereafter, the project proponent has to mandatorily obtain necessary permission / license from the local bodies concerned as required under the Law, as applicable, as a pre-condition.

A direct precedent was brought to the notice of the Board of the departure from the above Standard Operating Procedure (SOP). In respect of applications received seeking Consent for mobile base-stations / towers, the Board grants

Consent to Establish / Operate in terms of the guidelines notified vide no. 69/2/2004/STE-DIR/Part/1091 by the Department of Science, Technology & Environment in Official Gazette (Govt. of Goa), Series 1, No. 35, dated 28th November 2013. In this context, it was informed further that during the State Level Telecom Committee (SLTC) meeting held on 29/07/2017, the Directorate of Panchayats had sought clarification whether NOC of Panchayats / local authority should be granted to a project proponent prior to issue of Consent by GSPCB. In reply, the Committee clarified that the Board has to submit technical clarifications at the first instance and thereafter, NOC from the local bodies concerned should be obtained by the project proponent.

Accordingly and in order to promote "Ease of Doing Business" in Goa with IPB-cases, the Board could examine and scrutinize the proposal from scientific and technical point of view (*i.e. site-feasibility*) in terms of Air and Water Rules / Acts. For such assessment, NoC from local authorities need not be a pre-condition.

Thus, it is imperative that the Board, while granting Consent to Establish / Operate to a project activity, could consider a submission of in-principal approval granted by Goa Investment Promotion Board (Goa-IPB) accordingly. It is understood that project proponent / the proposed industrial activity, to whom / for which the in-principal approval has been granted by the Goa-PCB, goes through a detailed scrutiny with specific reference to project location, site characteristics, etc. before granting such permissions, in addition to investment criteria and job opportunities.

In view of the above and on detailed deliberations on the same, the Board decided to amend the existing Goa Water / Air Rules with specific reference to the contents referred in the 'Application Form' as notified in the Official Gazette (Extraordinary no. 2), Scries I, No. 26 dated 24th September 1998 by adding the following sentence – "to *exclude prior permission of Panchayat / Municipality / City Corporation wherein project proponent / proposed industrial activity has been granted in-principal approval by the Goa Investment Promotion Board*". However, to this special consideration such cases will be required to pay five times the stipulated fees. Further, if they are unable to get NoC from the local

authorities concerned for that particular site – a change of site will be treated as new proposal with fresh payment. All pending cases should also be covered with the condition of meeting the extra fees payment.

(b) Follow-up action on the decision taken at the 125th Board meeting held on 23/06/2017.

Agenda item no. 09 – Applicability of the recommendations of the VIIth pay Commission to the staff of the Goa State Pollution Control Board - Members perused the statement of accounts with regard to the financial liability due to enhanced fee structure. After perusal of the same, it was decided that the proposal is required to be approved by the State Government (*i.e. Department of Environment*) and subsequently requires to be notified in the State Official Gazette. Members opined and reiterated that the amount required to be made available towards the enhanced fee structure needs to be justified by the Board so as to have long-term sustainability, prior to as to place the same before the State Government.

Thus, the Board considers granting of 'in-principle approval' for implementation of the recommendations of the VIIth Pay Commission to the staff of the Board based on the projection of income and expenditure and further on consideration of Government approval and notifying the enhanced fee structure in the State Official Gazette. Further, the Board also resolved that in the event if the aforesaid proposal w.r.t. enhancement in 'Consent Fee Structure' is not amended by the State Government, the matter be reverted back to the Board. Further, the Chairman desired to have the matter examined on file for the purpose of notifying the enhanced fee structure based on the monthly income-expenditure etc. with effect from year 2013 onwards.

Agenda item no. 02

(a) Follow up action on the decision taken at the 124th meeting (Special meeting) of the Board held on 28/04/2017

Agenda item no. 01 – Details of the applications as per EIA Notifications -

The Chairman, in response to 'Order' pronounced by the Hon'ble Supreme Court dated 2nd August 2017 in a matter of WP / 114/2014 (*i.e. Common Causes v/s Union of India*) – Orissa mining case, sought the detail as regard to categorization of mining leases operational in the State of Goa based on the applicability of Environment Impact Assessment (EIA) Notification (*i.e. 1994 and 2006*) *vis-a-vis* grant of prior environmental clearance (EC) as well as its validity period as mandated in the respective Notifications (*refer Annexure – I*). Accordingly, the mining lease are categorized under –

1. Those mining leases which have been granted environmental clearances (ECs') entirely based upon the EIA Notification, 1994.

2. Those mining operation having environmental clearances (ECs'), though not based on the EIA Notification, 1994, are part of the default in ambient air-quality parameters noted by the GSPCB.

3. Those mining operation which were granted environmental clearances (ECs') based on the EIA Notification, 1994 but were not in operation during the period of default in complying with ambient air-quality parameters noted by the Board.

4. Those mining leases which have obtained environmental clearance exclusively under the EIA Notification, 2006.

Thereafter, the Board deliberated on the above-referred list to understand the applicability of said Hon'ble Supreme Court 'Order' for mining lease in the State of Goa prior to consider the applications received from such mining lease for Consent renewal.

The legal section appraised the Board that in terms of the Hon'ble High Court 'Order' dated 9th August 2017 in a Suo Moto W.P. no.02 of 2017 the petitions of (a) M/s Goa Foundation dated 9th August 2017, (b) Representation received from the Village Panchayat, Pissurlem dated 31st August 2017 and (c) Representation submitted by Mr. Rupesh Parab and others on behalf of Truck Owners Association dated 31st August 2017 are required to be heard and dispose-off their petitions within one-month time. The Board examined the

petitions and after deliberations on the same decided to seek extension of time so as to enable the Chairman to pass appropriate orders.

III. (a) Chairman inquired with the scientific staff of the Board with regard to the status-update w.r.t. installation of the Continuous Ambient Air Quality Monitoring Stations (CAAQMS) at pre-selected location along ore-transportation routes. In response to the same, it was informed that M/s Aeroqual have come up with an portable version of the CAAQMS which is M-cert enabled with quite light-weight (*approx. 25kg.*) as compared to standard stand-alone instrument (*weighing approx. 5-tons*) being utilized since past. The firm has demonstrated the on-site functional capability of the said instrument and informed that the functionality was demonstrated to CPCB too however, the methodology adopted in the said system has not been empanelled / authorized by the CPCB.

In response to the same, it was decided that while forwarding a proposal to the State Government seeking financial approval (*presently estimated at Rs. 275 crores approx.*) as one-time assistance towards addressing the issue of the ambient-air quality monitoring vis-à-vis instrumentation / maintenance / human resources component & logistics thereof along ore-transportation route as well as selective locations within buffer zones / settlement areas within close proximity to the Core zone of the mining clusters in the State of Goa, to be made available through District Mineral Fund (DMF) constituted as per 'Directions' of the Hon'ble Supreme Court. Further, he informed the Board to seek clarification from the CPCB w.r.t. the applicability as well as standardized protocol of adapting to procurement / utilization of above-referred portable CAAQMS for robust monitoring purpose in tune with NAAQS, 2009.

In the event the CPCB agrees to the clarification, the said cost of the instrument(s) will be considered / referred while forwarding above-referred proposal towards purchase of portable CAAQMS instead of stand-alone variants, through the funds sought from DMF.

(b) As regard to inclusion of water-quality parameters and its analysis / monitoring mandatorily to be included in the Consent issued / to be issued by the Board, it was decided that only those water-parameters which

reported to have been exceeded beyond CPCB-prescribed limits (*based on the time-series analysis of such parameters compiled based on monitoring / interpretation of data from NWMP locations, if any*) could be included in the Consent for submission of compliance report at intervals to be prescribed accordingly. In response to the same, Scientific staff clarified that the Board, under the NWMP programme, analyses selective metals (including Fe, Mn, Pb, Cd, Cr, Cu, Zn, Ni) in surface-water bodies at ten locations (*situated within peripheral limits / buffer zones of mining leases in Goa*) on bi-annual basis. It was also informed that data interpretation w.r.t. metal concentrations does not show any behavioural pattern / exceedance, although there are no CPCB-prescribed limits for such surface-waters which have been classified under category-C based on its 'Best Designated Usage' (*CPCB publication, 2010*). As such, the Board has decided to defer the decision to include additional water-quality metal parameters in the Consent and opined to revisit the decision based on reported occurrence / exceedance made available to the Board through published scientific reports / research publications.

(c) Increase in fee structure – The Board was appraised that some industrial units / establishments have not yet obtained Consents of the Board as mandated under the provisions of either Water and/or Air Acts. In response to this, it was decided that the Board needs to communicate the same to the Department of Excise informing them not to consider 'license renewal applications' from Excise dept. for non renewal of their licences, besides NoC / permission from the Tourism Department, Directorate of Panchayat, Directorate of Municipal Administration (DMA), Directorate of Industries, Trade and Commerce (DITC),etc.,

The meeting ended with thanks to the Chair.

(Levinson Martins)
Member Secretary

(Dharmendra Sharma)
Chairman

Date: 12th September 2017

ANNEXURE XIII

Minutes of the Board Meeting Dated 7th December 2017

MINUTES OF THE 128TH MEETING OF THE GOA STATE POLLUTION CONTROL BOARD HELD ON 7th DECEMBER, 2017 AT 03.30 P.M. IN THE CONFERENCE HALL OF THE CHIEF SECRETARY, SECRETARIAT, PORVORIM.

1. The 128h meeting of the Goa State Pollution Control Board (GSPCB) was held 7th December, 2017 at 03.30 p.m. in the Conference hall of the Chief Secretary, Secretariat, Porvorim.

The following members / officials attended the meeting:

1.	Mr. Dharmendra Sharma, Chairman, Goa State Pollution Control Board.
2.	Director, Department of Industries, Trade and Commerce was represented by Dy. Director, Mr. Akshay Potekar
3.	Director of Tourism was represented by Assistant Director, Mr. Subhash Kavlekar
4.	Director, Department of Mines and Geology
5.	Mrs. Fatima Pereira, Village Panchayat, Velsao.
6.	Mr. Levinson J. Martins, Member Secretary, Goa State Pollution Control Board

I. At the outset, the Member Secretary welcomed the Board members for the meeting besides the Board's section heads /staff. Thereafter, agenda was taken up for deliberations, discussions and suitable decision in the matter.

Agenda item no. 01

Confirmation of the minutes of the 127th Board meeting held on 27th September 2017.

Decision– As the minutes of the 127th Board meeting held on 27/09/2017 were forwarded to the members vide the office letter no. 4/127/17-PCB/Admn/13268 dated 16/10/2017, upon discussion, the same were approved so as to enter the same in the Board's "Minutes Book".

Agenda item no. 2

a. Follow up action on the adjourned 125th meeting of the Board held on 9 August, 2017.

Agenda item no. 03 - Establishment of Continuous Ambient Air Quality Monitoring Station (CAAQMS) in Million –Plus Cities and State Capitals- regarding shifting the CAAQMS (*MoEF & CC funds*) station at Panaji to another location complying with CPCB-prescribed citing guidelines. Alternate locations have been inspected by Board officials and accordingly report is under compilation. The expenditure incurred towards construction of a platform for installation of CAAQMS at Dr. Ambedkar Park, Patto, Panaji is Rs. 5.81 lakh (wherein *Rs. 4.30 lakhs to be borne by the Board and remaining Rs. 1.52 lakhs to be borne by the CAAQMS supplier – M/s Envirotech Online Instruments Pvt. Ltd., Hyderabad*). As such, it was decided that the Board need to seek one-time grant from the State Government as an reimbursement towards financial loss already incurred while setting-up a platform at Dr. Ambedkar Park, Patto, Panaji. –

The Board officials visited the following alternate sites and Executive Engineer, Works Division I (Bldgs.) Public Works Dept., Patto, Panaji has been requested vide office letter no. 1/20/17-PCB/Tech/16879 dated 01/12/2017 to ascertain the stability of structure at these locations to enable the Board to install CAAQMS on the roof or terrace of these structures,

1. Meat and Chicken shop next to Patto colony
2. Sapana Bldg., Patto
3. Corporate Bhawan, EDC Patto
4. Bus stand shops next to Sulabh public toilet, Panaji

On receipt of communication from Public Works Dept., the office will initiate necessary action.

Decision – The Board members noted the same and it was decided to proceed as and when the Board receives suitable response from O/o PWD, Patto, Panaji. Accordingly, the status update be appraised to Members concerned during the next Board meeting.

b. Follow up action on the decision taken at the adjourned 125th Board meeting held on 28/07/2017

Agenda item no. 05 - Grant of approval in principle for in-situ scrapping of grounded vessel M.V. Qing at MPT - The Board had decided to communicate to MPT with a request to seek clarification on the technical feasibility of re-floating the said vessel and tow it away from MPT berth prior to undertaking in-situ scrapping of the grounded vessel, M.V. Qing so as to ascertain the likelihood of environmental pollution.

The Board is in the process of filing the intervention application to add the applicant as a party to pending proceedings before this Hon. Court i.e. Commercial suit no. 55 of 2017 and Commercial suit no. 63 of 2016 and to direct the Sheriff of the Mormugao Port Trust, the custodian of the vessel to consent and provide the Board with necessary security and safety measures to enter the ship to collect samples from the vessel M.V. Qing and to ensure arrangements with MPT or any other concerned authorities for collection of oil samples on board to hand over to NIO, Goa for finger printing of the spilled oil and match the same and (2) transfer of approximately 300 MT of oil continue to lie within the bunkers of the vessel M.V. Qing threatening the entire marine eco-system and environment of the State of Goa.

The Board has made several attempts to collect samples from within the vessel for submission to NIO for finger printing but could not collect the same as MPT has informed that they are not permitting any person to board M.V. Qing as the atmosphere inside the vessel may be toxic. M/s Sahara India Forum Development Corporation Ltd. was also requested to assist in entering the vessel, however, they have informed that it is risky to enter the vessel due to the following:

a. There would be hydrocarbon fumes in the vessel M.V. Qing
b. Insurance of Protection and Indemnity and Hull and Machines has expired.

Decision – Mrs. Jenica Sequiera, Sci.- C / Laboratory in-charge of the Board explained in detail the attempt of the scientific staff to collect sample of the oil on-board to ascertain its source through the technique of 'finger-printing'. However, the same could not materialize because MPT could not arrange required safety equipments for entering into the vessel. It was then proposed that the sampling be collected by outsourcing the contract to M/s Shiva Petrosynth, who on enquiry has volunteered to bear all the costs towards sampling. However, the firm – M/s Shiva Petrosynth on the day of actual sampling – 14th November 2017, visited without any safety equipments and as such sampling could not be carried out. M/s Sahara India Forum Development Corporation Ltd. representative – Mr. Prabhu was present during the inspection / sampling and

was requested to assist in the said sample collection which was scheduled on 22nd November 2017. In response to the same, it was further informed officially vide letter no. Nil dated 21st November 2017 that in case if your representatives are entering the Vessel and collect samples from inside the vessel, then the same would be at your risk and consequences and we in no manner should be held responsible / liable for any incident or risk of life or injury caused to any person or any other consequences thereof. The Board noted the same and decided that the Board need to attempt the sampling after following all safety measures while entering the vessel.

c. Follow up action on the decision taken at the 126th meeting of Board held on 31st August, 2017.

Agenda item no. 03 - Extension of contract of Dr. Joe D'Souza as Consultant Scientist for the Goa State Pollution Control Board (GSPCB) .- After deliberations, it was decided to avail the services of Dr. Joe D'Souza, for a period of two months – i.e. upto November 2017 and in the meantime, the Board to conduct an exercise of short listing a panel of Microbiologists who could assist the Board in its activities, which could be allotted project-wise on a consolidated amount to be decided based on assignment / project activity.

Advertisement has been issued in the local newspapers inviting applications for short-listing of panel of scientific experts to assist the Board in its activities, which shall be allotted project wise on a consolidated monthly remuneration of Rs. 22,000/- and if required on a per day basis of Rs. 1000/- per sitting. The last date for submission of applications is 13/12/2017. Accordingly, the Board may constitute a Committee for selection of experts.

Decision – The Board, after discussion, approved the same to proceed in the matter.

Agenda item no. 02 (c) – Agenda item no. 06 – Consent to Establish (CTE) in respect of M/s Goan Marine Impex Pvt. Ltd., for proposed setting up of a fish-meal plant in Quepem Taluka. – The project proponent M/s Goan Marine Impex Pvt. Ltd. was instructed vide letter no. 1/20/17-PCB/Tech/13219 dated 13/10/2017 to validate the proposed odour control measures in the said unit by the Indian Institute of

Science (IISc.), Bangalore and submit the report to the Board for further examination of the proposal as per the provisions of the Water and Air Acts. As no communication was received from the project proponent to this office letter dated 13/10/2017, a Reminder has been sent vide this office letter no. 1/20/PCB/Tech/16322 dated 23/11/2017 with directions to submit the compliance report within seven days of the receipt of the letter. Reply is awaited for initiating further course of action.

Decision – The Board members noted the same for its subsequent appraisal during the next Board meeting.

d. Follow up action on the decision taken at the 127th meeting of the Board held on 27th September, 2017

Agenda item no. 2(b) - The issue with regard to guidelines for units located outside industrial estate/area was discussed and it was desired that the said guidelines be discussed among all sections of the Board and thereafter for further consideration.

It is now proposed that till the time the Department of Environment notifies the site-specific guidelines as per the decision taken during the 127th Board meeting, as well as to facilitate in processing the applications received by the Board which are at different stages of scrutiny as well as in view of the social implications and job employment opportunities for semi skilled workers. In additional as opined by the Goa Small Scale Industries Associations during the 106th Board meeting held on 11th February, 2013 that issuing closure directions to such units which are located in residential area will lead to socio economic crisis. The Board may consider grant of Consent after incorporating the following guidelines as placed in the 127th Board meeting and seek bank guarantee as approved in the 125th Board meeting.

1.	All activities to be carried out in an enclosed shed with suitable acoustic material to arrest noise.
2.	No activities to be carried outside the shop or unit.
3.	The working hours to be restricted between 8.00 am to 1.00 pm and 3.00 pm to 6.00 pm.
4.	The unit shall remain closed on Sundays and festival holidays.
5.	All noise generating equipments and machines should not be operated at the same time.
6.	The number of workers should not be more than four.
7.	No waste scrap should be accumulated near the premises and should be disposed off on a weekly basis.
8.	Aesthetics and cleanliness of the place to be maintained.

9.	Washing Centres should provide oil and grease trap to the wash water disposal line prior to disposal in soak pit.
10.	Glass cutting units with etching facilities shall provide an exhaust atleast one metre above the roof / terrace with due permission from the Society / residences if it is in a residential building / complex.
11.	Glass cutting units shall provide suitable facility for capture of fumes and dust.

It is proposed to include the 'Nomenclature' as under:

1. '*Activities*' which defined as the processes involved right from the usage of raw material till the final desired result / output being carried out at small scale industrial units such as fabrication / servicing and washing centres / glass cuttings / carpentry.

2. '*Enclosed shed*' which defined as an effective work area (*limited to the location as specified in the Consent application*) covered by appropriate acoustic measures so as not to cause any noise or dust pollution within immediate periphery limited to the nearest residential house.

3. '*Noise generating equipments and machines*' which defined as any tool and or accessories configured to a mechanical device which when made operations have delirious effects on human health and the psychological well being of the people whether hand operated or otherwise.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda item no. 3 - Revised Notification of Goa Water (*Prevention and Control of Pollution*) Rules, 1988 and Air (*Prevention and Control of Pollution*) Rules, 1982 - The Revised Notification as approved by the Board has been forwarded to the Department of Environment for issue of notification.

The following contents of the Notifications - Rule 17 of the original Goa Water and Air Rules (notified in 1989 and 2011) is placed before the Board for amendments to read as follows:

".....(2) The appointment of staff in the Board to the posts created with approval of the State Government will be governed by the rules applicable

to Government servants of Goa in matters of confirmation, promotion, transfer, termination and abolition of posts, unless specifically provided. In all other matters the staff of the Board will be governed by the decision as taken by the Board in such matters, from time to time, especially in relation to matters which have financial implications, leaves, conduct rules, entitlements, benefits etc....'

Or

The Board may adopt its own exhaustive service rules.

If agreed to:

(1) The amendments to the draft rules as proposed above are required to be placed before the Board for its approval prior to forwarding the same to the Government.

(2) Further, the Board is an autonomous organization, but for creation of posts, prior approval of the State Government is required in terms of the Water Rues. In the past the creation of posts as approved by the government subject to two conditions; i.e. the staff of the Board could be requisitioned by the Government at any time and that no expenses towards the staff will be borne out of government funds.

Generally such Rules are prospective unless specifically stated to be otherwise.

Decision – The Members deliberated on the proposed 'amendments' in the Goa Water (*Prevention and Control of Pollution*) Rules, 1988 and Air (*Prevention and Control of Pollution*) Rules, 1982. Chairman desired to ascertain the purpose of such 'amendment' and accordingly suggested to make the same either clarificative or normative, so as to safeguard its implementation prospective / retrospective, as applicable without compromising on the existing scenario. It was also suggested to get these proposed 'amendments' comparative with similar Rules as made applicable in respect of Karnataka or Tamilnadu Pollution Control Boards. After due discussion / interaction with Board staff concerned, the Board decided to seek relevant comments and process the proposed 'Revised Notification' through the Personnel Department.

Agenda item no. 4- Draft Notification on Environmental Audit Scheme (EAS) – The draft notification was discussed and decided that all the section of the Board incorporate relevant comments and nominate a representative from the scientific section to be a member of the Committee to be constituted under the said scheme.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda item no. 3

Application forms for obtaining Consent to Establish / Consent to Operate under the Water and Air Act for Small Scale of Green and Orange Category Industries. under Online Consent Management and Monitoring System (OCMMS)

The Board in its adjourned 125th meeting held on 28th July, 2017 vide Agenda item no. 4 had decided for shifting of XGN to the OCMMS system. Accordingly the Consent forms of the Board notified in 1988 were modified based on industry category wise in the year 2010, to incorporate XGN software, for processing of online application for Consent and the modified forms were notified in the Goa Water Rules, 2011.

On implementation of the online application processing software (XGN) the Board was in receipt of Representations from Green and Orange Category Industries such as hotels, restaurants, lodging / residential complexes, shacks, multipurpose halls, fabrications and other small scale industries etc. for simplification of forms as most of the details sought in the form are not relevant to them. These issues were discussed in the Sub-committee of the Board wherein the representative of Goa Small-scale Industries Association (GSIA) requested for simplification of the forms for small scale Green and Orange category industry.

Since the Board is now in the process of implementing a simpler version of Online Consent Management and Monitoring System (OCMMS). it is proposed to implement the simplified forms for Small Scale of Green and Orange Category Industries. The draft forms have been compiled and it is proposed to

forward the same to the Department of Environment to carry out the required amendments in 'Goa Water and Air Rules' for inclusion of the simplified forms in addition to the existing forms.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda Item no. 4

Expenditure for conducting Environmental Public Hearing

As per the Environment Impact Assessment Notification (EIA) dated 14/09/2006, as amended on 01/12/2009 issued by the Ministry of Environment, Forests and Climate Change, Government of India, the State Pollution Control Board has to arrange for conducting the public hearing within the prescribed period. Accordingly the Board has to give vide publicity and make available the copies to various department/offices, for which the Board has to publish a Notice of the public hearing to publish/advertise in one major national newspaper and local dailies., videographer, translation of proceedings in Konkani, scroll messages on TV channels.

Accordingly the Board has to incur the expenditure for the following :-

1.	Issue of notice in one national and local newspapers
2.	Appointment of videographer for recording the proceedings
3.	Appointment of translator to make power point presentation in English and Konkani and to read out the minutes in English and Konkani after the finalisation of the proceedings
4.	Scroll messages to be displayed on TV channels
5.	Miscellaneous expenditure

Recently the Board has conducted Environmental Public hearing. The expenditure incurred by the Board is as follows:

		Bill no & date	*Amount in (Rs.)*
1.	Advertising Associates, Dempo Trade Centre, Patto, Panaji Goa (Public notice for conduct of EPH)Issue of notice in one national and local	AA/17-18/058 dated 14/10/2017	10,95,413

	newspaper		
2.	HCN - News and entertainment channel (scroll message on TV channels)	HCN/10/Nov/17 dated 11/11/2017	3,540
3.	RDX Goa (scroll message on TV channels)	Bill no. 531 dated 27/11/2017	2,124
4.	Goa 365 (Audio Visual Media Goa) scroll message on TV channels)	Bill no. 68 dated 17/11/2017	7,080
5.	Prudent Media Goa Pvt. Ltd. (scroll messages on TV channels)	5/571 dated 11/11/2017	8,850
6.	Bhushan Bhave (translation of minutes	Nil	5,175
7.	Sun Vision (videographer)	000860 dated 16/11/2017	10,000
8.	Avinash Naik (Announcement of public hearing)	Nil dated 16/11/17	15,660
9.	M/s Bhise Decorator, Curchorem Goa (arrangements made for conduct of public hearing)	Nil	4,98,300
10	M/s Bhise Decorator, Curchorem Goa (Providing LED screens etc.)	Nil	1,63,700
11.	Miscellaneous expenditure (honorarium, vehicle, stationery and photocopies)	-	20,000
	Total:		18,29,842

Further, if the Environmental Public hearing is postponed, the Board has to issue notices informing the general public of postponement of the date, subsequently another notice informing the general public the date of the postponement of hearing in the National and local newspaper, for which additional cost is involved. Further, expenditure over and above the amount deposited with the Board. The project proponent has to deposit such excess amount.

Presently the Board charges the project proponent Rs. 5.00 lakhs for conducting Environmental Public hearing, which is proposed for increase to Rs. 20 lakhs.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda item no. 5

Status of water quality monitoring under NWMP programme of Central Pollution Control Board

The water quality analysis reports under the NWMP for the two seasons – (i) Pre-monsoon (*February – May 2017*) and (ii) Monsoon (*June – September* 2017) at fifty locations represented as Water Quality Index(WQI) as a tool to understand the water quality has been presented for appraisal of the Board members.

Decision – The Board members noted the same. Further, it was decided that in the next Board meeting, implications of the data, its concern with specific reference to water-quality of well-waters, located within the buffer zones of the operational mines, be put up for suitable decision. Further, the Board may clarify if any of the 'Consent to Operate' conditions is violated based on the general data.

Agenda item no. 6

Salmona Spring at Saligao

The Board had collected water samples of Salmona spring located at Saligao on 13/3/20009, 16/09/2009, 27/11/2009, 18/02/2010, 10/10/2011 and 02/04/2012 with respect to the complaints received on the contamination of the said spring. The Board further decided to collect the Salmona spring sample on a monthly basis from August, 2017 onwards to understand the water quality and to verify any impacts of the Solid Waste management Plant installed at Saligao plateau and the said spring samples were collected on 01/08/2017, 06/09/2017 and 03/10/2017.

The pH samples indicates acidic in nature at most of the occasions probably due nickel, cadmium and lead analysed shows exceedance in the permissible limits at only 2 occasions out of 6 samples collected in the year 2009 to 2010. Besides pH parameter, the other parameters analysed for the samples collected since August, 2017 are well within the permissible limits.

Decision – The Board members noted the same. It was also decided that the complainant be suitably informed about the same.

Agenda item no. 7

Status on the water quality at River Mandovi

The Hon. Green Tribunal (NGT) in the matter of application no. 83/2014 (WZ) passed an order dated 21/07/2017 stating that the grievances made in the application can be addressed by putting in place a time bound action plan based on the data base available with the GSPCB. For the said purpose, the Hon' ble NGT constituted a Committee of officials of Goa State Pollution Control Board, Goa Coastal Zone management Authority, Captain of Ports, Commissioner of Corporation of City of Panaji and Director of Health Services for formulating time bound action plan and presenting the same before the Tribunal within 06 weeks. The Hon. NGT further stated that the Committee shall also reveal the monetary source for putting the action plan in action.

In terms of the order of the NGT, the Committee was constituted by the Board vide order no. 11/2/16-PCB/Vol.XII/Leg/8562 dated 08/08/2017. The Committee met on several occasions and come out with a plan of action addressing the realistic timelines for achieving the targets as well as the funding requirement for the completion of the proposed projects. The status report on the same is forwarded to the Government for approval for placing before the Hon'ble NGT.

Decision – The Board members noted the same.

Agenda item no. 8

Source Apportionment Study (SAS)

The Board desired to conduct SAS, Accordingly, as per request of MPT, Science and Engineering, IIT, Bombay was asked to conduct Source apportionment study for MPT, the following activities were included in the study:

a. Selection of appropriate air quality monitoring sites and data collection
b. Chemical characterisation of the particulate samples
c. Identification of emission sources of the study area
d. Assessment of contribution of the sources of ambient air concentration using appropriate receptor model(s)

Further, the study is required to be carried out as per CPCB guidelines to ensure the quality required to achieve the mentioned objectives.

The same was initiated in early February, 2016 and IIT Mumbai was approached to carry out the same.

MPT has made part payment to IIT, Mumbai to initiate the said study. Based on which IIT, Mumbai had deputed its officials to MPT for preliminary assessment on 15th to 17th November, 2017. IIT Mumbai has provided the time schedule for the 16 months, where the monitoring for the studies shall commence in March, 2018. Further, the Board has requested IIT, Mumbai to initiate the study in December, 2018, by expediting the purchase of required equipment / instruments as indicated in their time schedule for the study, and to consider the following in the study:

1. Impact of coal on public health, environment and ecology due to loading and unloading and transportation.

2. The mitigation measures to be considered in the study to which the IIT representatives further informed that action based on the results will be submitted.

3. Ensure that the proposed monitoring be conducted during regular activities of the Port.

4. Preparation on the inventory of all activities be logged for correlation of the data.

5. Detailed methodologies / equipments that will be used for the said study as per prescribed standards should be provided.

6. MPT to ensure that no unauthorised activities are conducted during monitoring.

7. Background stations should be up-wind of the Port activities. Proper checks and control to be maintained.

The Board officials along with IIT and MPT officials visited the monitoring and site selection for $PM_{2.5}$. Accordingly, the reply from IIT, Mumbai is awaited.

Decision – The Board members noted the same and desired that its status update be appraised during the next Board meeting.

Agenda item no. 9

Inspection charges other than Consent inspections

The Board on several occasions conducts inspection with respect to complaints and monitoring of units which are issued Consent. This asserts additional financial burden on the Board. As such it is proposed to charge the industries / occupier for additional inspections etc. a fee of Rs. 5000/-.

Since the area of mines is exhaustive, the fee for such additional inspections of mines may be four times i.e. Rs. 20,000/-.

Further, the Board is also charging the shacks a consent fee of Rs. 7500/-. The staff of the Board conducts inspections for demarcation, erection and for processing Consent application, therefore the Board may accordingly increase the shack fees to Rs. 15,000/-.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda item no. 10

Ambient Air Quality Monitoring status of all the stations

The Board has outsourced 14 ambient air quality monitoring locations under NAMP sponsored by Central Pollution Control Board to MoEF&CC approved laboratories.

The summary of the AAQM data along the mining routes from October, 2016 to February, 2017 indicates that PM10 parameter concentration levels are exceeding at some of the locations where as SO_2, NO_2, PM2.5, CO, O_3 and Pb parameters are within the prescribed permissible limits at all the locations. The PM10 parameter are exceeding at most of the locations due to iron ore

transportation in the mining belt where the NAMP locations are monitored and whereas in other location the exceeding because of vehicle transportation, construction activities and other anthropogenic activities which may lead to air pollution by exceeding of PM10 parameter.

The summary of AAQM data along the mining routes for the months of March, April, May, 2017 indicates that PM10 parameter concentration levels are exceeding at some of the locations whereas SO_2, NO_2, $PM_{2.5}$, CO, O_3 and Pb parameters are within the prescribed permissible limits at all the locations.

The summary of the AAQM data along the mining routes for the months of June, July, August, September, October, 2017 indicates that all the parameter concentration levels of PM10, SO_2, NO_2, $PM_{2.5}$, CO, O_3 and Pb parameters are within the prescribed permissible limits at all the locations.

The mining transportation routes data which has been initiated in the month of November shows 33% exceedance at Velguem for PM_{10}, whereas Paliem was within limits and 50% exceedance of PM_{10} was noticed at Sanvordem Tisk and Ambe Udogk at Santona Village, Sanguem. $PM_{2.5}$ showed 66% exceedance in Velguem and 75% exceedance at Pale.

Decision – The Board took a serious note of the exceedance. It was decided that as per the decision taken during the 124th Board meeting (Special) held on 28th April 2017 , all the mining units who are reflecting a cumulative exceedance in ambient air-quality parameters with specific reference to PM_{10} and / or $PM_{2.5}$ should be informed and a cluster-wise consultative meeting taken. In case the remedial measures (*short – medium – long term*) are reported to be breached / inadequate as per the approved Plan of Action (PoA) submitted by the mining firms concerned and as approved by the Board thereafter, then a SCNs' to be issued forthwith. The next round of data to be put up in the next Board meeting. If the exceedance is repeated an action for violating the conditions referred in the CTO i.e. revocation / withdrawal /closure to be initiated.

Agenda item no. 11

M/s Goa Carbon Ltd., St. Jose de Areal – status report of the unit

M/s Goa Carbon Ltd. is engaged in production of calcinated petroleum coke. Ambient air quality monitoring was conducted in the village during the period 02/02/1017 to 16/03/2017 at three locations. The monitoring reports indicated exceedance of PM10 six times out of 11 measurements at the residence of Tony and 5 times out of 11 measurements at the residence of Alcina Fernandes and 11 times out of 11 measurements at Village Panchayat premises. $PM_{2.5}$ was found to be

The Board also conducted stack monitoring on 18/05/16, 31/1/17 and 07/02/17. The stack emission reports of the rotary kiln and cooler stack indicate exceeding values of PM for all three measurements.

Consent was issued to the unit on 19/09/2017, subject to the specific conditions and with a condition to submit a bank guarantee of Rs. 10 lakhs. The unit has submitted the Bank guarantee. The unit was given ninety-days for compliance with effect from 19/09/2017 (i.e. upto 18/12/2017). The unit was inspected on 06/11/2017 and thereafter, the Board conducted stack emission of the rotary kiln on 08/11/2017. The analysis reports of the rotary kiln indicates exceeding values of $PM_{2.5}$/mg/Nm^3 and SO_2 – 23.3 kg/hr. against the standard value of 150 mg/Nm^3 and 12.96 kg/hr. respectively.

Board may direct the unit to stop production until compliance of all consent conditions.

Decision – As proposed. Further, it was also decided that the Board need to conduct inspection after 18/12/2017 – i.e. completion of time given to the unit concerned for compliance to the 'specific conditions' to ascertain its on-site status and action to be taken accordingly thereafter.

Agenda item no. 12

Status of Ambient Air Quality at Mormugao Port Trust

The status of the ambient air quality monitoring at Mormugao Port Trust may be perused.

Decision – The agenda item was deferred in view of the high court matter as it requires detailed assessment to arrive at a suitable decision.

Agenda item no. 13

Application for conduct of Environmental Public hearing as received from Mormugao Port Trust

The EIA Notification, 2006 (*as amended in 2009*) mandates as follows:

a.	The Member Secretary of the concerned SPCB or UTPCC shall finalize the date, time and exact venue for the conduct of public hearing within 7(seven) days of the date of receipt of the draft Environmental Impact Assessment report from the project proponent, and advertise the same in one major National Daily and one Regional vernacular Daily/Official State Language. A minimum notice period of 30 (thirty) days shall be provided to the public for furnishing their responses
b.	The District Magistrate/District Collector/Deputy Commissioner or his or her representative not below the rank of an Additional District Magistrate assisted by a representative of SPCB or UTPCC, shall supervise and preside over the entire public hearing process.
c.	The Public hearing shall be completed within a period of 45 (forty five) days from date of receipt of the request letter from the Applicant. Thereafter the SPCB or UTPCC concerned shall send the public hearing proceedings to the concerned regulatory authority within 8(eight) days of the completion of the public hearing. Simultaneously, a copy will also be provided to the project proponent.
d.	If the SPCB or UTPCC fails to hold the public hearing within the stipulated 45(forty five) days, the Central Government in Ministry of Environment and Forests for Category 'A' project or activity and the State Government or Union Territory Administration for Category 'B' project or activity at the request of the SEIAA, shall engage any other agency or authority to complete the process, as per procedure laid down in this notification.

The Board is in receipt of letter dated 30/10/2017 from Mormugao Port Trust (MPT) requesting the Board to conduct an Environmental public hearing for the following project;

"Proposed modernization and expansion of Port Infrastructure for Fishing, Coastal & Multipurpose Cargo Berth and Liquid /General Cargo at Mormugao Port - Goa".

MPT has also enclosed copy of Terms of Reference (ToR) for the subject work.

Vide the said letter the MPT has requested the Board to conduct the public hearing for the project at a date as per the convenience of the District Collector (South Goa).

Vide letter dated 02/11/2017, the MPT has also submitted the following documents for initiating the process of Environmental Public hearing:

i.	Form – I
ii.	Feasibility Report
iii.	TOR issued by Expert Appraisal Committee of MoEF dated 08/05/2017
iv.	Executive Summary of EIA Report in English
v.	MPT Jurisdiction notification
vi.	Layout Plan of project including location plan

In this regard, the Board vide letter dated 16/11/2017 informed the MPT that it was required to cover one hard and one soft copy of the EIA report along with the summary of EIA to the following authorities within whose jurisdiction the project falls:

i.	District Magistrate/District Collector/Deputy Commissioners.
ii.	Zilla Parishad or Municipal Corporation or Panchayat Union.
iii.	District Industries office
iv	Urban Local Bodies (ULBs/PRI's concerned / Development Authorities
v.	Concerned Regional office of the MOEF

MPT was directed to deposit an amount of 15 lakhs rupees to the Board towards expenditure for conduct of Public hearing including expenditure for:

i.	Advertisement to be published in local newspapers and national
ii.	Videographer
iii.	Wide publicity on TV channels etc
iv.	Translator
v.	Miscellaneous

MPT was directed to submit 20 additional hard and soft copies of draft EIA report including summary EIA report in English and Konkani and 20 copies of Form I as submitted by them to the MoEF for grant of EC for the proposed project. MPT was further informed that the process of public hearing would be initiated only upon receipt of the above documents and amount and the tentative venue for the hearing would also be communicated.

Vide the said letter MPT was further directed to clarify whether the proposed modernization and expansion of Port infrastructure for fishing, coastal and multipurpose cargo berth and liquid/general cargo is a single project of MPT as it appears that there are multiple projects/expansion proposed within the Port area.

The Board is now in receipt of letter from MPT enclosing two demand drafts for an amount of 15 lakhs towards fees for organising the said public hearing. Further vide the said letter MPT has submitted that the Mormugao Port has obtained one combined TOR for the subject work issued by MoEF vide letter ref. No. 10-8/2017/IA/III dated 08/05/2017 and EIA studies also conducted taking into consideration combined effect of all the works as per the ToR issued. Hence, it may be considered as one work.

MPT has now requested the District Collector South Goa to propose a suitable date for conducting Environmental Public hearing.

The Board is yet to receive 20 additional hard and soft copies of draft EIA report including summary EIA report in English and Konkani and 20 copies of Form I as submitted by them to the MoEF for grant of EC for the proposed project as well as intimation of service of copies of the aforesaid reports to the authorities mentioned in the EIA notification. The same are proposed to be sought from MPT prior to fixing of a date and venue for the hearing after concurrence/approval of the District Collector.

Decision – The Board noted that the word 'Multi Purpose Cargo' is too generic term and will create public confusion during the public consultation process. As such, the Board decided that the MPT needs to clarify the said nomenclature with specific reference to characterization of cargo proposed to be handled.

Agenda item no. 14

Excess handling of Coal by M/s South West Port Ltd. (Berth no. 5A and 6A)

The Goa State Pollution Control Board vide Order dated 21/07/2017, granted M/s South West Port Ltd. (Berth no. 5A and 6A) located at Mormugao harbour, Mormugao, Goa, Renewal of Consent to Operate in respect of handling of 4.125 MMT/annum of Coaking coal/coke, 1 MMT/annum of Limestone and 1 MMT/annum of Steel Slab at Berth no. 5A and 6A.

The Board is in receipt of an email message from Mormugao Port Trust (MPT) dated 25/7/2017 wherein they have submitted the details regarding the 'Berth/Position wise traffic handled from April 2016 to March 2017' in respect of all the operational berths at MPT, including Berth no. 5A and 6A operated by the M/s South West Port Ltd.(SWPL).

Condition number 6(xvii) of the Consent order dated 21/7/2017 states as follows;

6 (xvii). *The unit shall submit a bank guarantee of Rs.5 Lac with a validity period of one year, within 15 days from the date of issue of this Consent as an assurance for shifting CAAQMS station installed at canteen building to a new location as suggested by GSPCB within 45 days from the date of issue of this consent, failing which the Bank guarantee shall be forfeited and further action taken.*

Subsequent to the issue of the consent order dated 21/7/2017, the Board was in receipt of letter dated 8/8/2017 from the unit requesting the Board to reconsider the decision of the Board (*as contained in the consent order*) on the location/siting of the Continuous Ambient Air Quality Monitoring System (CAAQMS).

Upon considering the aforesaid letter, the Board is of the opinion that the unit was consistently delaying and disobeying the Boards directions to install the CAAQMS.

On account of excess handling of Coaking coal/Coke and failure to install the CAAQMS, the Board has issued the unit a Show Cause Notice (SCN) dated 30/11/2017 under section 31(A) of the Air (*Prevention and Control of Pollution*) Act, 1981 and under section 33(A) of the Water(*Prevention and Control of*

Pollution) Act, 1974, directing them to Show Cause by 6/12/2017 as to why the Renewed Consent to Operate order bearing no. 5/2580/04-PCB/C1-3090 dated 21/07/2017, granted by this Board should not be revoked.

The unit was further directed to Show Cause by 06/12/2017 as to why the Bank Guarantee of 5 lakhs as submitted by them to the Board as an assurance for shifting the CAAQMS station installed by them in terms of the condition contained in the Consent order dated 21/07/2017 should not be forfeited by the Board.

The unit was further put to notice that failure to satisfactorily reply to the aforesaid SCN would compel the Board to initiate stringent legal action against them that would include revocation of the Renewed Consent to operate dated 21/07/2017 issued by the Board, forfeiting of 5 lakhs Bank Guarantee as submitted to the Board and further issue of directions for suspension/closure of all operations including all cargo handling operations at Berth nos. 5A and 6A without any further notice.

The Board was then in receipt of a letter dated 05/12/2017 from Mulla & Mulla, Advocates, Solicitors & Notaries (Mumbai) wherein they refer to the show cause notice addressed to their clients M/s. South West Port Limited, dated 30/11/2017.

Vide the said letter, it is stated that the Show Cause Notice dated 30/11/2017 was received by the unit on 01/12/2017 and as such, they are still in the process of receiving instructions from their clients. Further, it is stated that the time to reply to the show cause notice is too short and as such they have requested for;

a) Four weeks time to file a reply to the SCN
b) Grant of a personal hearing.

It is further requested that the Board refrain from taking any legal action as stated in the SCN without granting reasonable time to file their reply and granting of a reasonable opportunity of being heard.

The Board was also served with a Notice dated 6/12/2017 from Advocate Abhijit Gosavi informing the Board that his client i.e. M/s South West Port Ltd. has now preferred a Writ Petition (W.P.) before the Hon'ble High Court of Bombay at Goa. The copy of this W.P. bearing Stamp no.3973/2017 was

enclosed along with the notice. It was further stated that the matter is scheduled for hearing before the Hon'ble High Court today i.e. 6/12/2017 at the end of the Admission Board.

The Petitioner, vide the said writ petition, has stated that there has been no reply to its request for time to file a reply to the show cause notice, dated 5/12/207 from the Board, and has as such prayed that the Hon'ble High Court direct the Board to grant 4- weeks time to the petitioner to file a detailed reply to the show cause notice dated 30/11/2017 issued by the Board, further to grant a personal hearing and pending the hearing to restrain the Board from taking legal action as contemplated in the notice.

The matter has come up for hearing before the Hon'ble High Court on 6/12/2017 in the afternoon session. The Hon'ble High Court was pleased to direct the Board to ensure that in the event it takes a decision to initiate the stringent action as stated in the SCN it should not give effect to the same up to the next date of hearing. Authenticated copy of the said order is applied for and is yet to be received.

Decision - The Board members deliberated on the said 'Order' pronounced by the Hon'ble High Court on 6th December 2017. Accordingly, the Board members were informed by the Member Secretary as follows:-

1. At the outset a table indicating the details regarding the date of issue of Consent to operate under the Water and Air Acts by the Board to M/s. South West Port Limited (SWPL), validity of the Consents, Consented/Permitted quantity of Coaking coal and coke handling, actual handling of Coaking coal and coke by M/s SWPL as submitted by MPT, and details regarding Form V as submitted by M/s SWPL was placed before the Board. A copy of the table is enclosed at 'A'.

2. It was informed that the table indicates that in terms of the data submitted by the MPT vide letter dated 25/05/2016 to the Board compared with the consented / permitted handling capacity mandated by the consents issued by the Board from 2011 to 2017; M/s SWPL has handled excess coaking coal and coke for the years 2011-12, 2012-13, 2013-14, 2014-15, and 2015-16. The table further indicates that in terms of the data submitted by

the MPT vide e-mail dated 25/7/2017 to the Board, compared with the consented/permitted handling capacity mandated by the consents issued by the Board for 2016-17; M/s. SWPL has handled excess coaking coal and coke for the year 2016-2017; in terms of the data submitted by the MPT vide e mail dated 21/11/2017 to the Board compared with the consented/permitted handling capacity mandated by the consents issued by the Board for 2017-18; M/s. SWPL has handled excess coaking coal and coke for the year 2017-2018, i.e. beyond the consented/permitted handling capacity mandated by the consents issued by the Board for the respective years.

3. The Board has initiated Criminal Prosecution under relevant provisions of Air Act against M/s SWPL and its concerned officials in respect of violation of Consent conditions due to the excess handling of coaking coal and coke by SWP, for the years 2012-13, 2014-15, and 2015-16. These prosecutions have been filed in November, 2017 and are currently before the Judicial Magistrate First Class (JMFC) at Vasco.

4. It was further informed that in respect of the excess handling of coaking coal and coke in the year 2013-14 by SWPL in respect of data given by MPT, the Board would initiate further Criminal Prosecution.

5. It was informed that the Board had renewed the Consent to operate under the Water Act and the Air Act in respect of handling of coaking Coal and Coke along with Limestone and Steel Slabs by M/s SWPL on 21/07/2017. The earlier consent dated 10/04/2015 had expired on 07/12/2016. The Consent dated 21/7/2017 permitted a quantity of 4.125 MMT/annum of coaking coal and coke to be handled by M/s SWPL while the earlier consent dated 10/04/2015 had expired on 07/12/2016 permitted M/s SWPL to handle 5.5 MMT/ annum upto 09/02/2016 (upon which time the Board vide directions dated 9/2/2016 issued under section 31(A) of the Air Act directed SWPL to reduce its handling to 4.125 MMT/annum or should be reduced by 25% of the last 12 months load handled of coaking coal/coke whichever is lower on a pro rata basis for the period from 1/2/2016 upto 30/4/2016.).

6. It was informed that subsequent to the grant of the consent dated 21/7/2107, the Board was in receipt of an email message from the MPT

dated 25/07/2017; wherein they have submitted the details regarding 'Berth / Position wise traffic handled from April 2016 to March 2017' in respect of all the operational Berths at MPT including Berth No. 5A & 6A operated by SWPL.

7. It was informed that perusal of the data submitted by the MPT as aforesaid indicates that M/s SWPL has handled a total quantity 10.112 MMT/annum of coaking Coal /Coke for the year 2016-17, though;

   (a) The Consent dated 10/04/2015 which subsequently expired on 07/12/2016 permitted the unit to handle 5.5 MMT/ annum upto 09/02/2016 (upon which time the Board vide directions issued under section 31(A) of the Air Act directed SWP to reduce its handling to 4.125 MMT/annum or should be reduced by 25% of the last 12 months load handled of coaking coal/coke whichever is lower on a pro rata basis for the period from 1/2/2016 upto 30/4/2016.).

   (b) Subsequent renewed Consent to operate dated 21/07/2017 (*that was issued to supersession of the earlier consent*) permitted the unit to handle 4.125 MMT/annum of coaking coal /coke.

8. It was informed that prima facie the data submitted by the MPT to the Board on 25/7/2017 indicates that M/s SWPL has handled 10.112 MMTA during 2016-2017 in violation of the consents and the consented/permitted quantity of handling as mandated by the Board.

9. It was informed that Form V (Environmental Statement), as submitted by M/s SWPL in terms of the conditions of the Consent order dated 21/7/2017; contained a statement that M/s SWPL had handled as accumulative total of 6.01MMT/annum of coaking coal / coke, limestone and steel slag during the year 2016-17 that runs contrary to the data submitted by the MPT vide their email dated 25/07/2017, wherein MPT has stated that M/s SWPL has handled 10.112 MMT/annum of coaking coal/coke during the year 2016-2017.

10. It was also informed that the Consent dated 21/7/2017 mandated that SWPL shift the existing Continuous Ambient Air Quality Monitoring Station (CAAQMS) at its unit to a location as specified in the consent order within a period of 45 days and that a bank guarantee in this regard

be furnished to the Board. It was informed that though the bank guarantee was submitted the unit has not shifted the CAAQMS till date and has represented against the shifting which has been found to be unsatisfactory, leading the Board to infer that SWPL was intentionally delaying the shifting of the CAAQMS in violation of the consent conditions.

11. It was informed that in this context, the Board has issued M/s SWPL a Show Cause Notice dated 30/11/2017, directing it to show cause as to why the Consent to operate dated 21/07/2017 should not be revoked for,

(i) Handling of excess coaking coal and coke by M/s SWPL during the year 2016-17, over and above, the consented / permitted quantity,

(ii) Failing to shift / install the CAAQMS station at its unit in terms of the conditions as stipulated in the said consent order.

(iii) Submitting false data in Form V.

12. It was further informed that vide the said Notice that was issued on 30/11/2017, M/s SWPL was directed to show cause by 6/12/2017 as to why the Consent to operate dated 21/7/2017 should not be revoked and further the unit was put to notice that if it did not satisfactorily reply to the said notice in the stipulated time the consent in question would be revoked by the Board and cargo handling operations at the unit would be stopped. It was further informed that only 6 days to reply to the SCN was granted to M/s SWPL, as it was consistently exceeding the consented handling limits and there was a prima facie correlation between the high AAQM values at Vasco as a part of precautionary principle and the handling of excess coaking coal/coke by SWPL.

13. It was informed that the Board was then in receipt of a letter dated 05/12/2017 from Mulla & Mulla, Advocates, Solicitors & Notaries (Mumbai) wherein they referred to the show cause notice addressed to their clients M/s. South West Port Limited, dated 30/11/2017. Vide the said letter it was stated that the Show Cause Notice dated 30/11/2017 was received by them on 01/12/2017 and as such, they were still in the process of receiving instructions from their clients. Further, it was stated that the time to reply to the show cause notice was too short and as such they requested for;

(a) Four weeks time to file a reply to the SCN.
(b) Grant of a personal hearing.

It was further requested that the Board refrain from taking any legal action as stated in the SCN without granting reasonable time to file their reply and granting of a reasonable opportunity of being heard.

A copy of the notice dated 5/5/2017 was placed before the Board along with the relevant file.

14. The Board was then on the next day i.e. 6/12/2017 at 11:30 am, served with a Notice dated 6/12/2017 from Advocate Abhijit Gosavi informing the Board that his clients i.e. M/s South West Port Ltd. had preferred a Writ Petition (W.P.) before the Hon High Court of Bombay at Goa. The copy of this W.P. bearing Stamp no.3973/2017 subsequently numbered as WP/1092/2017 was enclosed along with the notice. It was further stated that the matter was scheduled for hearing before the Hon'ble High Court on 6/12/2017 itself at the end of the Admission Board. The petition in question was filed in respect of the SCN dated 30/11/2017 issued by the Board.

The petitioner, vide the said writ petition, has stated that there has been no reply to its request for time to file a reply to the show cause notice, dated 5/12/207, from the Board, and had as such prayed that the Hon'ble High Court direct the GSPCB to grant 4-weeks time to the petitioner to file a detailed reply to the Show cause notice dated 30/11/2017 issued by the Board, further to grant a personal hearing and pending the hearing to restrain the Board from taking legal action as contemplated in the notice.

15. The matter came up for hearing before the Hon'ble High Court on 6/12/2017 in the afternoon session. Vide order dated 6/12/2017 passed after hearing the parties; the Hon'ble High Court was pleased to note that a meeting of the Board was scheduled for 7/12/2017 wherein the issue relating to SWPL along with others would be discussed and that the Board was opposed to the grant of any kind of relief being granted by the Court to SWPL. The Hon High Court was further pleased to note that there was no specific statement that, no decision re: suspension of

(i) The Board had received data from the MPT revealing excess handling of coal and coke by SWPL vide letter dated 25/5//2016 with regard to previous years. This was processed by the Board. The criminal complaints before the JMFC at Vasco were filed in November 2017, for excess handling by SWPL for the years 2012-13,14-15 and 15-16.

(ii) With regard to the excess handling for the year 2013-14; the Board is in the process of filing another criminal complaint.

(iii) The Board then renewed the Consent of M/s SWPL on 21/7/2017 and valid upto 7/12/2018 in supersession of the earlier consent granted on 10/04/2015 that expired on 07/12/2016. This was done taking into account the decision to prosecute and also by reducing the present throughput from 5.5 MMT/annum to 4.125 MMT/Annum. As on 21/7/2017 with effect from 1/4/2017, M/s SWPL has handled upto 2.533 MMT. Further, further upto 21/11/2017, M/s SWPL has handled 2.8 MMT approximately thus, totalling it to 5.33 MMT (*i.e. from 01/04/2017 till 21/11/2017*). Thus, as on date it exceeded even the consent to operate granted on 21/7/2017.

(iv) Thereafter, on 25/7/2017 the Board received an email message from MPT submitting data that indicated that SWPL had handled excess coal and coke for the year 2016-2017 as well.

(v) This was compared thereafter with the Form V submitted by SWPL on 21/9/2017 to the Board which also indicated excess handing of coal and coke by the unit during the said period.

(vi) It was now noted that in previous Form V Declarations SWPL has submitted a compliance of capacity granted under the CTO by clubbing all the 3 categories of the cargo handled i.e. Coaking coal/coke, limestone and steel slabs.

(vii) The extant consents mandated that SWPL handle 4.125 MMT/annum / 5.5 MMT/annum for the year 2016-2017. However, MPT's data indicated that SWPL has handled 10.112 MMT/annum for the said period.

(viii) From this sequence it is clear that as the Hon High Court has observed, there has been a delay in processing the information of previous years. It appears that this was due to the criminal prosecution that was being filed for excess handling of the previous

years. However, the time given to reply to the SCN which is subjudice now.

(ix) Further, vide letter dated 26/10/2017, the Board has sought details of handling as per Consent dated 21/7/2017 from MPT, M/s Adani and M/s JSW.

(x) The Board noted that as SWPL appeared to be consistently violating the handling capacity and also was providing incomplete or misdirected disclosures as noted at para (vi) above. Thus, the balance of convenience was assessed in the form action on emergent basis. Accordingly a time period of 6 days show cause was granted to SWPL.

(xi) It was also in this context that the Board opposed the grant of any relief to SWPL before the Hon High Court.

(xii) The Board is now in receipt of fresh data from the MPT on 21/11/2017(*as put up by Technical section*) stating that MPT has handled excess coal and coke for the year 2017-18 as well. This data from the MPT is being processed by the Board office now i.e. subsequent to the issue of the SCN dated 30/11/2017. Ideally SWPL will also need to Show cause as why the consent to operate dated 21/7/2107 should not be revoked on this ground as well i.e. though the Board vide consent dated 27/07/2017 has permitted the unit to handle 4.125 MMTA, the unit has already handled 5.05MMTA upto 21/11/2017.

(xiii)In any event SWPL has exposed itself to criminal prosecution for excess handling in light of MPTs data as submitted for the year 2016-2017 and 2017-2018.

(xiv)In light of the observations of the Hon'ble High Court as contained in order dated 06/12/2017 in W.P. No. 1092/2017, the Board decided to grant SWPL a further period of 2 weeks time to submit its reply to the SCN dated 30/11/2017 (*i.e.by 28/12/2017*) issued to it by the Board.

(xv) The Board further noted the Order dated 2/8/2017 passed by the Hon Supreme Court of India in WP(C) 114/2014 (Common Causes v/s Union of India and others) wherein the Hon Supreme Court has held that;

"if *any mining operations is conducted in violation of any of the provisions of the Water and Air Acts, then that mining operation is illegal or unlawful. And any extraction of mineral through an illegal and unlawful mining operation would become illegally or unlawfully extracted mineral.* " (para 128).

"*Illegal mining takes within its fold excess extraction of mineral over the permissible limit even within the mining lease area which is held under lawful authority if that excess extraction is contrary to a statutory requirement.* " (para 129).

(xvi) Though this observation of the Apex Court was in relation to mining, the principle of gravity to be associated with illegality of exceeding operations beyond those stipulated in the consent to operate, as has been indulged in by SWPL, is a point under the Boards active consideration. The Apex court's observation also contains the consequence of such defaults.

(xvii) The Board also considered the *exfacie* assessment that excess handling by SWPL as indicated by the data submitted by the MPT would prima facie have a direct bearing on the high/exceeding levels of AAQ at Vasco as observed by the Board over a period of time.

(xviii) Thus in order to balance the competing Public interest equity of controlling air ambient quality with commercial aspect of an ongoing operation, it would be appropriate if SWPL takes the responsibility of continued operations during the extension of period of SCN and bears the likely costs. Thus, a Bank Guarantee of 1 Crore Rupees may be obtained from SWPL as a guarantee towards cost of special pollution suppression measures required to contain fall out of such exceeded evaluation and output beyond the permitted capacity of 4.125 MMT/A.

(xix) As the Hon High Court will hear the matter on 13/12/2017 the time for giving the Bank Guarantee will commence from 14/12/2017 and up to 21/12/2017. This will enable the Hon. High Court to also consider the need to hold SWPL accountable in the interim.

(xx) The Board further decided that this decision will be communicated to SWPL and could be effected / implemented only after placing the same before the Hon'ble High Court of Bombay at Goa in WP/1092/2017 on the next date of hearing of the matter i.e. on 13/12/2017 and after obtaining the leave of the Hon Court.

After detailed deliberation and discussion, the Board decided that in this case a fresh show cause notice (SCN) be issued to the unit for revocation of the consent order dated 21/7/2017 based on the data received from MPT on 21/1/2017 and further, that the Board should initiate criminal prosecution for this exceedance in the competent court of law.

Agenda item no. 15

Operation of Mooring Dolphins at MPT without Consent to Operate of the Board

The Board vide Show Cause Notice dated 21/07/2017 had directed the management of Mormugao Port Trust (MPT) to Show Cause as to why stringent legal action under the relevant provisions of the Water Act and Air Act, that include initiation of criminal prosecution and suspension of all operation of coal and dusty cargo handling activities at the Port area, should not be directed to be suspended till such time as MPT obtains the Consent to Operate of the Board for the operation of Mooring Dolphins, trans shippers or / and any other activity carried out by the Port up to the territorial limits off shore. Further, MPT was directed to submit details of the cargo handling activity that is being carried out at the Mooring Dolphin, transhippers etc. by the Port upto the territorial limits off shore, to the Board.

In this regard the Board is in receipt of a reply bearing no. CE/WKS-404/2017/2968 dated 28/07/2017 from the MPT stating that;

(a) The Goa State Pollution Control Board status report the status report on the Ambient Air Quality of the Mormugao Port Trust (MPT Port Are) at Vasco Headland Sada, Goa for a study period from February 2016 to May 2016 and from November 2016 to December 2016, compares the source monitoring data with the Ambient Air Quality Standards which is not reflecting the actual position and therefore the Show Cause Notice for not obtaining Consent to Operate at Mooring Dolphins / anchorage points therefore cannot be related to the said report.

(b) The anchorage (Transhippers) and Mooring Dolphin operations were going on at MPT since the year 2003 and no advice was given till date for obtaining Consent to operate for the same.

(c) As per the advice of the Goa State Pollution Control Board contained in the Show Cause Notice, the MPT would be submitting applications for Consent to operate for Mooring Dolphins as well as anchorage operations (Transhippers) would be submitted to the Board.

Board was in receipt of an application dated 16/11/2017 for grant of Consent to operate under the Water Act and the Air Act from the MPT in respect of 8 nos. of Mooring Dolphins located at Mormugao Port.

After considering the application as received above and after conducting the site inspection, the Board has issued Directions dated 30/11/2017 to the MPT, directing it to submit the following information in order to enable the Board to take a final decision in the matter of permitting operation of the Mooring Dolphins located at MPT:-

(a) Details regarding any Pollution Control Measures that are either in place or are proposed to be put in place at the Mooring Dolphins during the handling activities.

(b) Details regarding the Impact Assessment on the Environment that was undertaken by the MPT before commencing operation at the Mooring Dolphin.

Vide the said directions, MPT was further informed that in case it failed to satisfactorily reply to the said Directions, the Board would be compelled to reject the application for grant of Consent to operate dated 16/11/2017 as submitted by MPT for operation of the Mooring Dolphins at MPT and to direct suspension of all coal and dusty cargo handling activity at the Mooring Dolphins at the Port area and further legal action as required under the law without further any notice.

In this regard, the Board is now in receipt of Reply dated 05/12/2017 from the MPT to the Directions dated 30/11/2017.

Decision – The Board after detailed deliberation on the matter approved to engage the services of any Institutes of Center of Excellence (*i.e. NEERI / IIT / MoEF & CC empanelled environmental consultant*) to conduct air-pollution modelling to ascertain likelihood impact of dusty-cargo at the mooring dolphin as well as prescribe remedial pollution control measures / technological

interventions for such types of cargo-handling within a period of three months. In addition, the Board also approved to seek Rs. 1 crore in the form of 'Bank Guarantee' and defer the consent application accordingly. The Bank Guarantee to be forfeited for failure to submit within three months. It was also noted that till that time, source apportionment studies through Indian Institute of Technology (IIT), Powai - Mumbai will also be commenced from first-week of March 2018.

Agenda item no. 16

Criminal Prosecution of MPT and M/s Mormugao Port Trust (*Berth no. 10 and 11*) for handling of coal in excess of the consented capacity

The Board has filed a Criminal Complaint before the Court of the Judicial Magistrate First Class at Vasco da Gama against M/s Mormugao Port Trust and its concerned officials under section 200 Cr. PC read with section 43 of the Air Act for violating the provisions of section 21(5) (v) and 31 (A)(i) punishable under section 37(i) read with section 39 of the Air Act.

This complaint has been filed as M/s Mormugao Port Trust has handled excess material i.e. general cargo at Berth no. 10 and 11 at Mormugao Port Harbour for the year 2014-2015 and 2015-2016 in violation of the Consent orders issued by the Board. This assessment by the Board has been done on the basis of data received from the MPT.

The Board vide the complaint has prayed that the Mormugao Port Trust and its Officers be tried and punished for violating the conditions of Consent issued to it by the Board.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda item no. 17

Criminal prosecution of MPT and M/s South West Port Limited (*Berth no. 5A and 6A*) for handling of coal in excess of the consented capacity

Board has filed a Criminal Complaint before the Court of the Judicial Magistrate First Class at Vasco da Gama against M/s South West Port Limited and its concerned officials under section 200 Cr. PC read with section 43 of the Air Act for violating the provisions of section 21(5) (v) and 31 (A)(i) punishable under section 37(i) read with section 39 of the Air Act.

This complaint has been filed as M/s South West Port Limited has handled excess material i.e. Coal/Coke at Berth no. 5A and 6A at Mormugao Port Harbour for the year 2012-13, 2014-2015 and 2015-2016 in violation of the consent orders issued by the Board. This assessment by the Board has been done on the basis of data received from the MPT.

The Board vide the complaint has prayed that the South West Port Limited and its officers be tried and punished for violating the conditions of Consent issued to it by the Board.

Decision – The Board noted the same.

Agenda item no. 18

Status of the construction of the office cum Board laboratory at Saligao
The State Government had allotted Goa State Pollution Control Board land (*on lease for a period of 99 years*) admeasuring 4803 sq mts. bearing Survey no. 115 (Part) at Saligao which was in the possession of Department of Science, Technology and Environment for the construction of Board laboratory cum office building with approval of Council of Ministers.

The Goa State Pollution Control Board then entered in to a Lease Deed with Government of Goa on 9th June 2014.

The Board at its 112th meeting held on 25th March 2014 approved appointment of Architectural Consultant M/s. Architecture Autonomous for comprehensive architectural services including site development, Interior architecture/Graphic design, Landscape Architecture. Thereafter, Board

obtained all the requisite permissions from the competent authorities for construction of proposed laboratory cum office building. The tender was floated for Civil and Plumbing Works on 09/12/2014 and re-tendered on 10/07/2015. The foundation stone for the proposed building at Saligao was laid on 07/01/2016. As per the office records, the Board has released upto date amount of Rs. 60,44,507.00 to the consultant M/s. Architecture Autonomous towards consultancy fees.

At present flooring work on third floor, fixing of railings on second & third floor, fixing of doors, laying & fixing of stoneware pipes and electrical works are under progress.

The Board in principle decided to tender the work independently. As decided by the Board e-tenders were floated separately for each type of work.

I.	**Civil & Plumbing Work** - The Board issued letter of commencement of work/work order to lowest bidder M/s. Kalyani Global Engineering Pvt. Ltd. bearing order no. 1/27/01-PCB/7189 dated 19/11/2015 for an amount of Rs. 18,31,37,330.00 (Eighteen Crores Thirty One lakhs thirty seven thousand three hundred and thirty only). The quote of M/s. Kalyani Global Eng. Pvt. Ltd was 19.19 % above the estimated cost of Rs. 15,36,48,544.00. The Board has granted extension for completion of civil and plumbing works upto 31st January 2017. As per the office records the Board has released total amount of Rs. 10,78,23,326.00 to the contractor.
II.	**Electrical Work** - The Board has appointed Electrical contractor M/s. Goa Friends Eng. Pvt. Ltd. to carry out electrical works of Board laboratory cum office building. The Board issued letter of acceptance of tender for electrical works vide order bearing no. 1/27/01-PCB/Tech/4775 dated 02/06/2017 for an amount of Rs. 2,50,85,594.00. The Contractor has applied for extension of completion of electrical works and is under process. The Board has released 75% of RA bill no. 01 amount that is Rs. 18,82,013.00.
III	**Fire Fighting Works** - The Board issued letter of commencement of work/Work order vide order bearing no. 1/27/01-PCB/3334 dated 23/05/2017 to the lowest bidder M/s. National Construction for an amount of Rs. 61,11,000.00. The fire fighting works are in progress at the site. The Contractor has applied for extension of completion of electrical works and is under process.
IV.	**Elevator Works (Lift)** - The Board had e-tendered for elevator works four time and due to poor response for the tender the Board had decided to take

	quotations from reputed companies as suggested by the Board. After scrutinizing the quotations the lowest quote of M/s. Johnson lifts were accepted by the Board for an amount of Rs. 36,30,000.00 which was 33.46% lower than the estimated cost of Rs. 54,55,000.00. The Board has issued letter of commencement of work/work order bearing order no. 1/27/01-PCB/Tech/14835 dated 06/11/2017. The Board has released an amount of Rs. 9,07,500.00 to the elevator works contractor
V.	**HVAC Works** - The Board has issued letter of acceptance of tender to the lowest bidder M/s. Aparant Motors for HVAC works for an amount of Rs. 1,39,99,999.00
VI.	**Interior and allied Works** - Financial bids of interior and allied works tender is opened and the negotiation meeting with lowest bidder M/s. Twenty First Century was already held. The lowest bidder M/s. Twenty First Century has quoted Rs. 3,01,19,440.00. The file is under process for issue of Letter of acceptance of tender.
VII	**Access control and Audio Visual works** – Technical Bid of Access control and Surveillance system works tender have been opened and is under scrutiny stage. Upon scrutiny Financial bids of qualified bidders will be opened.
VIII	**Audio Visual works** - Tender for Audio Visual works was floated in newspapers and there is no response for said tender. The Board has decided to issue corrigendum for extension of date for online submission of tender.
IX	**Soft landscaping works tender** - Letters issued to a) Principle Chief conservator of Forests to provide grass for lawn, plants, Herbs Garden species, Shrubs & Fruit garden species. b) Managing Director, Waste Management Corporation to provide inert & compost.

Additional items such as Sewage Treatment Plant (STP) RO for Bore well and water pipeline connection for proposed building and partly substituted item such as flooring work for atrium area, are to be approved by the Board.

RENT ASSESSMENT OF GOA STATE POLLUTION CONTROL BOARD PREMISES AT DEMPO TOWERS, PATTO

The Board office and laboratory is presently occupied/located in Dempo towers building at Patto on first floor (603.74 sqm) and fourth floor (327 sqm).

The Board is in process of shifting the laboratory and office to new Saligao premises.

The Board requested General Administration Department to assess the rent for furnished premises at Patto. Through initial assessment the PWD

estimated a monthly rent of Rs 1,21,298/- monthly for first floor and approximately Rs 65,400/- monthly for the fourth floor. The rent assessment was carried out without calculating the furniture's available in the premises.

Whereas the rent paid by SEAC (Goa State Expert Appraisal Committee) on third floor Dempo Towers, Patto during the year 2013-14, for 110 sqm area was Rs 80000/- monthly exclusive of tax.

As informed by GSIDC official, the rent paid for 2016-17 to Spaces premises, Patto, for approx. 600 sqm area was Rs. 300000/- monthly

Also the quotation sought during the year 2015 by Dept of Science & Technology for the space of 255 sqm at ground floor Dempo towers, Patto was Rs 350000/- monthly

Summary

Sr. no.	Premises	Area (sq.m)	Monthly rent (Rs.)	Per sq. mtr.
1.	PWD Rent Assessment for Dempo Towers first floor	603.74	1,21,298	200.9 Rs / sqm
2.	PWD Rent Assessment for Dempo Towers fourth floor	327	65400	200 Rs/sqm
3.	SEAC Rent paid for third floor of Dempo towers	~110	~80000	727.2 Rs /sqm
4.	GSIDC Rent paid for spaces premises at Patto.	~600	~300000	500 Rs/sqm
5.	Quotation for ground floor Dempo towers for DST	255	350000	1372 Rs / sqm

As the Government has decided to allot the Boards premises first floor to Department of Municipal Administration (DMA) on rental basis, we may write to PWD to reassess the rent since the rent assessment was carried out without taking stock of presence of furniture such as tables, chairs, shelf's, air conditioning, lights , fans, cabinets, cabins and cubicles.

Decision – The Board members noted the same. However, due to the priority of the Court matter, the decision was deferred for the next meeting so that proper deliberations can take place.

Agenda item no. 19

Renewal of contract appointment of Mr. Devesh Gholkar, Junior Environmental Engineer.

The State Government vide letter no. 5/20/87/STE-DIR/Part –VII/11314 dated 01/01/2014 had approved creation of 09 posts of Junior Environmental Engineers (Civil) on contact basis for a period of one year. The posts were accordingly filled after following due procedures. The State Govt. further extended the contract by one year vide letter dated 24/02/2015, 23/02/2016 and 30/12/2016.

Shri Devesh Gholkar was appointed against the vacancy created due to resignation of the staff appointed in 2014. He was recruited in October, 2014. Further his contract was renewed on extension of term by the State Government vide letter 30/12/2016 which is valid upto February/March, 2018. His renewal of contract was due on 30th November, 2017. The same has been extended for a period from 30th November, 2017 to 3rd March, 2018.

Decision – The matter was noted and approved.

The meeting ended with thanks to the Chair.

(Levinson Martins)
Member Secretary

(Dharmendra Sharma)
Chairman

Place : Patto, Panaji.

ANNEXURE XIV

Minutes of the Board Meeting dated 20th December 2017

GOA STATE POLLUTION CONTROL BOARD
गोंय राज्य प्रदुशण नियंत्रण मंडळ
(An ISO 9001-2008 Certified Board)

Phone Nos : 91-832-2438567, 2438528
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Asst. Law Officer, GSPCB - alo-gspcb.goa@nic.in

No. 4/129/17-PCB/ Admn /18847

04/01/2018

To,

1.	The Principal Chief Conservator, Dept. of Forests, Old Passport Office Bldg., Panaji Goa.,
2.	The Director, Dte. of Industries, Trade & Commerce, Udyog Bhawan, Panaji Goa.
3.	The Chief Engineer, Water Resource Dept., Govt. of Goa, Near Sanjay School, Porvorim Goa
4.	The Director, Dte. of Mines and Geology, Govt. of Goa, Menezes Braganza Bldg., Panaji Goa.
5.	The Director, Department of Tourism, Govt. of Goa, Patto, Panaji Goa.
6.	Shri Narayan Naik, Village Panchayat of Sancoale, Zuarinagar, Goa. Kamakshi Gruha', House no. 355/6-B, Upasnagar Housing Board, Sancoale 403726
7.	Shri Tony Rodrigues, Ex-Councillor, Corporation of the City of Panaji, C/o T.R. Constructions, F-1, Fatima Chambers, Dr. A.B. Road, Panaji Goa.
8.	Dr. Vasudev Deshprabhu, Ex-Chairperson, Pernem Municipal Council, B-501, Saldanha Business Towers, Nr. Civil Court Junction, Mapusa, Bardez Goa 403507.
9.	Ms. Fatima Pereira, Ex-Sarpanch Village Panchayat of Velsao, Premeiro Vaddo, Velsao, Salcete Goa.
10.	Shri Shrirang Jamble, Agriculturist, Savoi – Verem, Ponda Goa
11.	Mrs. Neelam Naik, Manager, Shantadurga Higher Secondary School, Sancoale, C/o M.N. Naik, House no. 68, Chicalim, Dabolim, Goa 403711

Sub: Minutes of the 129th meeting (Special meeting) of the Goa State Pollution Control Board held on 20/12/2017

Sir/Madam,

Please find enclosed herewith the minutes of the . 129th meeting (Special meeting) of the Goa State Pollution Control Board held on 20/12/2017 in the Conference hall of the Secretary (Environment) Secretariat, Porvorim, approved by the Chairman.

Yours faithfully,

(Levinson Martins)
Member Secretary

Encl: as above.

c.c. for information to: P.A to the Secretary (Environment) Govt. of Goa, Secretariat, Porvorim.

MINUTES OF THE 129TH MEETING (SPECIAL MEETING) OF THE GOA STATE POLLUTION CONTROL BOARD HELD ON 20th DECEMBER, 2017 AT 03.30 P.M. IN THE CONFERENCE HALL OF THE SECRETARY (ENVIRONMENT), SECRETARIAT, PORVORIM.

1. The 129th meeting of the Goa State Pollution Control Board was held on 20th December, 2017 at 03.30 p.m. in the Conference hall of the Secretary (Environment), Secretariat, Porvorim.

The following members / officials attended the meeting:

1.	Mr. D.A. Hawaldar , Chairman, Goa State Pollution Control Board.
2.	Mr. Prasanna Acharya, Director, Department of Mines and Geology.
3.	Director of Tourism was represented by Mr. Ganesh Teli, Asst. Director.
4.	Dr. Vasudev Deshprabhu, Ex- Chairperson, Pernem Municipal Council
5.	Mrs. Fatima Pereira, Village Panchayat, Velsao.
6.	Mr. Shrirang Jamble, Agriculturist, Savoi Verem
7.	Mr. Levinson J. Martins, Member Secretary, Goa State Pollution Control Board

II. At the outset, the Chairman welcomed the Board members for the meeting. Thereafter, agenda items which were deferred during the last meeting (*i.e. 128th*) held on 7th December 2017 were taken up for deliberations, discussions and suitable decision in the matter.

Agenda item no. 01

Confirmation of the minutes of the 128th Board meeting held on 07/12/2017

Member Secretary informed the members that the minutes of the meeting held on 07/12/2017 are being circulated on the table, as such the same be confirmed during the next Board meeting. Similarly, due to paucity of time, the follow-up action on the said minutes could not be initiated and the same is proposed to be placed during the next Board meeting.

Agenda item no. 2

(a) Follow up action on the adjourned 125th meeting of the Board held on 9th August, 2017.

Agenda item no. 03 – Members noted that the exercise is being undertaken by the Board for locating a base-structure for installation of the Continuous Ambient Air Quality Monitoring Station (CAAQMS). It was decided to first identify / locate a suitable place with requisite space, NoC, etc., and thereafter invite fresh quotations for procuring of the instruments/ equipment as the present work order will have to be cancelled being issued considerable time back and the present cost of such CAAQMS could have been dropped / reduced.

(b) Follow-up action on the decision taken at the 127th meetings of the Board.

Agenda item no. 02(a) - Applications seeking Renewal of Consent to Operate from the mining leases located within 'Sonshi cluster' wherein environmental clearance (EC) has been granted as mandated under the provision of the EIA Notification, 2006 (listed at Annexure – 2);

(a) The Board at its 127th meeting held on 27th September 2017 has decided as follows –

"***The Board was informed that there are 06 mining units in the Sonshi cluster (Annexure – 2) which have been granted environmental clearances as per provisions under the EIA Notification, 2006. It was also informed that this cluster has reported exceedance in ambient air-quality parameter with specific reference to particulate matter (PM_{10}) prior to June 2017.***

The Board after discussion / deliberations, approved to consider grant of renewal of Consent to the mining units referred at Annexure – 2 subject to submission of Bank Guarantee (B.G.) as well as compliance to Plan of Action (PoA) submitted to the Board in consultation with the ISM-IIT, Dhanbad which are to be incorporated as "Specific Conditions" in the Consent to be issued. In addition, establishing vis-a-vis monitoring of ambient air-quality monitoring mechanism along the ore-transportation route at location(s) where settlement(s) are located. Further, the Board agreed that till such time, the Board sets up such monitoring stations, the mining firms concerned have to set-up the same at the locations determined by the Board.

In addition, the Board considered the imposition of punitive action for causing exceedance in the ambient air-quality parameters along the ore-transportation route during their operation in 2016-17. Accordingly, legal section of the Board was instructed to propose possible interventions namely (i) closure directions, (ii) punitive action which may be imposed on the defaulting units as per the

applicable clause(s) / provision of Air / Water Acts. It was also deliberated regarding the possibility of imposing a proportionate reduction in the annual ore-extraction capacity (lease-wise) of these mining units located in Sonshi cluster and accordingly, Department of Mines and Geology (DMG) was instructed to come out with / suggest probable plan of action to be deliberated during the next Board meeting, to be scheduled accordingly".

Presently it is seen that in terms of the decision taken by the Board at its 127th meeting, the Board has already approved grant of "Renewal of Consent to Operate" to the mines referred at Annexure – 1, subject to submission of Bank Guarantee (B.G.) and compliance to Plan of Action (PoA) submitted to the Board in consultation with ISM-IIT, Dhanbad. Accordingly, this was to be incorporated as "Specific Condition" in consent to be issued and further, AAQM mechanism was to be established by mining companies along the ore-transportation routes at locations where settlements are located till such time as the Board sets up such stations. These stations were to be set-up at the same locations determined by the Board. In addition, the Board also decided to impose proportionate reduction on annual ore-extraction capacity in these mining units and DMG was required to submit a Plan of Action (PoA) in this regard. This PoA was required to be discussed at today's meeting.

(b) In this regard, the Director, Directorate of Mines and Geology (DMG), Govt. of Goa, *vide a letter no. 03 / 108 / 2017 / Major / Mines / 2875 dated 6th December 2017*, has submitted as follows –

Unless a threshold limit per season is not arrived at by daily monitoring and analysis of data and modulating the number of trips by trial and error basis, it would not be prudent to cap the extraction limit. To arrive at the number of vehicular trips per day to be allowed in a particular season would therefore be right approach to be taken under constant monitoring by technical team of Goa State Pollution Control Board.

As such pollution control board may consider grant of consent to operate under Air and Water Act to all the leases situated in Sonshi Cluster unless there

are specific reasons other than transportation concerning leases in the board meeting as deemed fit.

(c) Further, during the course of the meeting, the Director, DMG, has submitted as follows –

(i) The Board may consider imposing a 25% reduction of ore-transportation along the Sonshi and mandate ore-transportation along the alternate route as per the Plan of Action (PoA) submitted by the mining firms concerned as one of the mandatory specific conditions in the 'renewal of consent' to be issued.

(d) The Board has accepted the submission of the Director, Directorate of Mines and Geology (DMG) made vide letter dated 6th December 2017 referred above as well as the submission of the DMG as aforestated. Accordingly, the Board has decided that while granting the renewal of CTO (*as approved during 127th Board meeting held on 27th September 2017*) to these mining units (Annexure - 1.) the reduction of 25% as suggested by the DMG should be incorporated in the 'Renewal orders' in addition to the conditions as decided by the Board at its 127th meeting.

(e) The Board has also noted that the issue pertaining to pollution caused due to mining operations and ore-transportation along the roads / transportation routes within Sonshi village was considered by the Hon'ble High Court of Bombay at Goa in Suo Moto PIL Writ Petition (W.P.) No. 02/2017. Accordingly, vide 'Order' dated 27th April 2017, the Hon'ble High Court has recorded as follows –

"*Mr. D. Lawande, learned Advocate General states that the respondent no.3- Goa State Pollution Control Board has also carried out an inspection and prepared a report and has produced a copy thereof. It is pointed out that based on such inspection report, show cause notices have already been issued to the concerned mining companies and directions issued to the Director of Mines and Geology to reduce the transportation of ore on the subject village road by 25%. The learned Advocate General pints out, upon instructions of the Director of Mines and Geology, who is present in the Court, that the directions so issued will be implemented during the course of the day. The learned*

Advocate General also points out that the respondent No.3 intends to install 9 more Monitoring stations in the subject area and necessary steps in that directions have been initiated".

Further, vide the said Order, the Hon'ble High Court has directed that transportation of ore would have to be undertaken only after GSPCB take a decision on the SCNs' issued to the mining companies.

Subsequently, while 'Order' dated 27th August 2017 passed in the said matter, the Hon'ble High Court has disposed-off the petition by continuing the 'interim order' passed by it earlier dated 27th April 2017 and further directed the State Government to ensure that all measures recommended by ISM-IIT, Dhanbad are complied with in accordance with law.

The Board noted that the Show Cause Notices (SCNs') as mentioned in the "Order' of the Hon'ble High Court and as issued to the mining companies at Sonshi including the units at Annexure 1 have not been discharged / disposed-off even though the Board at its 127th meeting has approved grant of "Renewal of Consent to Operate" to these mining units. The Board observed that prior to giving effect to the decision of grant of renewal of consent to operate (CTO), the SCNs' would have to be decided / disposed-off / discharged by the Board.

The Board also took note of the "Order" dated 18th September 2017, passed by the Chairman of the GSPCB disposing-off the representation from the Goa Foundation dated 10th August 2017. Vide the said representation, Goa Foundation had submitted that the renewal of CTO to mining units located in Sonshi region be denied

on account of violation of Consent orders due to exceedance of monitored air-quality parameters by them. Vide the said order, the Chairman of the GSPCB has not accepted the contention of the Goa Foundation as the Board was in the process of initiating and finalizing a comprehensive plan of action to ensure that commencement and continuation of mining operations in the Sonshi area will be carried out strictly in a manner that ensures that Ambient Air Quality Monitoring (AAQM) parameters are not violated. Further, it was decided that the Board would continue - It is also decided that the Board will continue with the processing of remaining applications as elaborated above, within the confines of the Hon'ble High Court Order, indicating specific conditions in the Consent to Operate orders, including conditions for incorporating the specific measures recommended by the ISM and approved by the Board.

This order will be implemented by the Board in so far as the processing and grant of Consent to Operate under the Water Act and Air Act to specified mines are concerned; after strictly following the due process in deciding such applications. In any event, all such decisions on the said grant of Consent to Operate to Mine units shall be processed and completed at the earliest by the office of the GSPCB. Any decision to this end required at the Board level should be put up in the next Board meeting to be scheduled for 27/9/2017.

) **In this regard, the Board has decided and approved that;**

1. The SCNs' issued to the mining units at Annexure 1 be dropped / discharged / disposed-off prior to grant of "Renewal of CTO" as approved by the Board during its 127th meeting held on 27th September 2017 and 'Order' to that effect to be issued accordingly.

2. The submission of the DMG made at today's meeting (*refer item nos. 2(b) & (c)* above) should be incorporated in the renewed consent to operate orders along with the other conditions as stipulated by the Board and as approved during its 127th meeting held on 27th September 2017.

(c) Follow up action on the decision taken at the 127th meeting of the Board held on 27th September, 2017

Agenda item no. 2(b) - The issue with regard to guidelines for units located outside industrial estate/area was discussed and it was desired that the said guidelines be incorporated while issuing Consent to Establish

1.	All activities to be carried out in an enclosed shed with suitable acoustic material to arrest noise.
2.	No activities to be carried outside the shop or unit.
3.	The working hours to be restricted between 8.00 am to 1.00 pm and 3.00 pm to 6.00 pm.
4.	The unit shall remain closed on Sundays and festival holidays.
5.	All noise generating equipments and machines should not be operated at the same time.
6.	No waste scrap should be accumulated near the premises and should be disposed off on a weekly basis.
7.	Aesthetics and cleanliness of the place to be maintained.
8.	Washing Centres should provide oil and grease trap to the wash water disposal line prior to disposal in soak pit.
9.	Glass cutting units with etching facilities shall provide an exhaust at least one metre above the roof / terrace with due permission from the Society / residences if it is in a residential building / complex.
10.	Glass cutting units shall provide suitable facility for capture of fumes and dust.

The 'Nomenclature' shall be as under:

1. '*Activities*' which defined as the processes involved right from the usage of raw material till the final desired result / output being carried out at small scale industrial units such as fabrication / servicing and washing centres / glass cuttings / carpentry.

2. '*Enclosed shed*' which defined as an effective work area (*limited to the location as specified in the Consent application*) covered by appropriate acoustic measures so as not to cause any noise or dust

pollution within immediate periphery limited to the nearest residential house.

3. '*Noise generating equipments and machines*' which defined as any tool and or accessories configured to a mechanical device which when made operations have delirious effects on human health and the psychological well being of the people whether hand operated or otherwise.

Decision – The Board approved the above-referred site-specific guidelines while considering the applications seeking Consent for small-scale units which are located outside notified industrial estates.

Agenda item no. 4- Draft Notification on Environmental Audit Scheme (EAS) – The draft notification after discussions with the scientific section of the Board incorporating relevant comments was prepared and placed during the meeting. The members approved the draft notification as placed during the meeting, so as to forward the same to the Director of Environment for issue of a suitable notification.

Decision – The Board approved the same for getting it Notified through the Department of Environment.

Agenda item no. 3

Initiatives of the Board towards 'Ease of Doing Business'

Decision – The Board approved the same for getting it Notified accordingly through the Department of Environment prior to its implementation / execution.

Agenda item no. 4

Application forms for obtaining Consent to Establish (CTO / NOC) / Consent to Operate (CTO) under the Water and Air Acts for Small Scale of Green and Orange Category Industries under Online Consent Management and Monitoring System (OCMMS)

Decision – The Board deferred the same and sought detailed deliberations of the matter referred therein during the next Board meeting.

Agenda Item no. 5

Expenditure for conducting Environmental Public Hearing

Member Secretary informed the members that as per the Environment Impact Assessment Notification (EIA) dated 14/09/2006, as amended on 01/12/2009 issued by the Ministry of Environment, Forests and Climate Change (MoEF & CC), Government of India, the State Pollution Control Board has to arrange for conducting the public hearing within the prescribed period. Accordingly the Board has to give vide publicity and make available the copies to various department/offices, for which the Board has to publish a Notice of the public hearing to publish/advertise in one major national newspaper and local dailies., videographer, translation of proceedings in Konkani, scroll messages on TV channels, for which the Board has to incur the expenditure for the following:-

1.	Issue of notice in one national and local newspapers
2.	Appointment of videographer for recording the proceedings
3.	Appointment of translator to make power point presentation in English and Konkani and to read out the minutes in English and Konkani after the finalisation of the proceedings
4.	Scroll messages to be displayed on TV channels
5.	Miscellaneous expenditure

He further informed that if the Environmental Public hearing i postponed, the Board has to issue notices informing the general public c

postponement of the date, subsequently another notice informing the general public the date of the postponement of hearing in the National and local newspaper, for which additional cost is involved. Presently the Board charges the project proponent Rs. 5.00 lakhs for conducting Environmental Public hearing

After deliberations and working out the expenditure incurred for conducting the Environmental Public hearing, it was decided to increase the fee to Rs. 20 lakhs.

Decision – The Board approved the same for getting it Notified through the Department of Environment.

Agenda item no. 6

Inspection charges other than Consent inspections

Member Secretary informed the members that the Board on several occasions conducts inspection with respect to complaints and monitoring of units which have been issued Consent, which asserts additional financial burden on the Board and the Board is required to levy charges on the industries / occupier for additional inspections. Similarly, while conducting inspection of mining areas (i.e. core-zone / buffer-zone), the effective area is quite exhaustive and accordingly, higher charges be levied in such cases during re-inspection / complaint-based inspection and alike.

Member Secretary further informed that the Board is also charging the shacks as consent fee of Rs. 7500/-, the staff of the Board is required to conduct inspections for demarcation, erection and for processing Consent application while processing the same.

Decision - After deliberations and working on the expenses incurred, the Board has approved to levy charges / fees @ fee of Rs. 5,000/- per inspection

conducted in response complaints and monitoring of units which have been issued Consent. Similarly, a fee is levied @ Rs. 20,000/- per mine for additional inspection and Rs. 15,000/- per shack / huts / guest-house (*i.e. temporary structures erected as per provision of CRZ Notification, 2011*) for inspection for demarcation, erection and for processing Consent applications.

Agenda item no. 7

Status of Ambient Air Quality at Mormugao Port Trust

Decision – The Board deferred the same and sought detailed deliberations of the matter referred therein during the next Board meeting.

Agenda item no. 8

Criminal Prosecution of MPT and M/s Mormugao Port Trust (*Berth no. 10 and 11*) for handling of coal in excess of the consented capacity

Decision – The Board deferred the same and sought detailed deliberations of the matter referred therein during the next Board meeting.

Agenda item no. 09

Status of the construction of the office cum Board laboratory at Saligao

Decision – The Board deferred the same and sought detailed deliberations of the matter referred therein during the next Board meeting.

Agenda item no. 10

Issue of advertisement through Department of Information and Publicity, Govt. of Goa.

Member Secretary informed the members that the Board is required to issue advertisement / public notices/ tenders/ notices for environmental public hearing etc. in the local and national newspapers. He further informed that is

proposed that the Board issues such material for publication through the Department of Information and Publicity, Government of Goa and the dailies to be recommended by the Board.

Decision – The Board approved the same.

The meeting ended with thanks to the Chair.

(Levinson Martins)
Member Secretary

(Daulat Hawaldar)
Chairman

Date : 20th December 2017
Place : Patto, Panaji.

ANNEXURE – 1: EC granted under EIA Notification, 2006 and has shown exceedance in ambient air-quality parameter w.r.t. particulate matter. (Sonshi cluster)

Sr. No.	Mines	Cluster	Validity	Application Date	Conclusion	Decision of the Board	Present Status	Date of issue of EC by MoEF (94 notification)	Date of issue of EC by MoEF (2006 notification)
1	M/s. Vedanta Ltd. (Botvadecho Dongor Iron ore Mine) T.C. No. 28/51	Sonshi Cluster	19/05/2017	25/04/2017	1.Monitoring Station at Honda (NAMP station) indicated that the PM10 parameters were exceeding limits for last five months from October 2016 to February 2017. 2.The mining companies informed that they have diverted the route presently which is passing through two mines (i.e. Mareta Sodao Iron Ore Mien and V. G. Quenim). 3. The units submitted plan of action with short term, middle term and long term measures.	M/s. V. G. Quenim mine as it has valid consent of the board has been issued show cause notice and will be processed separately. M/s. Kashinath Talaulikar has submitted undertaking that the unit will start operations after 15/10/2017 hence application was considered. Remaining 11 Applications kept in abeyance based on monitoring data and site inspections.	Applications kept in abeyance		Issued on 24/12/2009
2	M/s. Sesa Goa Ltd. (Mareta Sodo Iron ore Mine) T. C. No. 6/55		19/05/2017	25/04/2017			Applications kept in abeyance Letter received from unit requesting to grant permission to extract ore, beneficiation and allied activities excluding transportation of ore/finished good outside the mining lease area.		Issued on 05/12/2006
3	M/s. Cosme Costa & Sons (Gaval Sonshi Iron Ore Mine) T.C. No.110/53		19/05/2017	25/04/2017			Applications kept in abeyance		Issued on 04/09/2006
4	M/s. Sociedade De Fomento Industries Pvt. Ltd. (Quelchim Tour Iron ore Mine) T.C. No. 14/53		27/04/2017	23/03/2017			Applications kept in abeyance		Issued on 20/08/2007

5	M/s. Sociedade De Fomento Industries Pvt. Ltd (Cormolem E Bog) T.C. No. 45/52		27/04/2017	03/04/2017	4. There were no stations in Sonshi area. Hence Board proposed 9 stations in the Sonshi Area. 5. The monitoring at these locations commenced from 02/05/2017. 6. The reports indicated that the PM10 parameters exceeded limits at 4 locations		Applications kept in abeyance		Issued on 22/08/2007
6	M/s. Geetabala Manohar Naik Parulekar , (Gulliem e Gaval (Pissurlem) Mine) T.C. No. 55/1951		28/04/2017	28/02/2017			Applications kept in abeyance. Complaint received from Shri Naresh Amonkar regarding issue of consent illegally to the lease on basis of invalid, infructuous and non est. EC.No. J-11015/85/2008-IA.II(M) dated. 12/12/2008. After examining the EC it is seen that the same is valid.	Issued on 17/01/2007	