

# CHAPTER 1

## INTRODUCTION

### 1.1 GENERAL INTRODUCTION

The Goa State Pollution Control Board is an autonomous statutory organization constituted on 1<sup>st</sup> 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 4<sup>th</sup> April, 1988. All the relevant records pertaining to Goa were transferred to the Goa State Pollution Control Board on 12<sup>th</sup> 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 15<sup>th</sup> August, 2002 the Board acquired new premises on the 1<sup>st</sup> 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 15<sup>th</sup> August, 2005, additional premises measuring 311.86 Sq. mt. was acquired on the 4<sup>th</sup> 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 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
<b>Scientific Section</b>		
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	Scientist 'B'
7	Mrs. Anny Dias	Scientific Assistant
8	Mrs. Livia D'silva	Scientific Assistant
9	Mr. Ganpat Naik	Scientific Assistant
10	Ms. Edma Fernandes	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. Sheetal Laad	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
<b>LEGAL SECTION</b>		
1	Mrs. Natalia Dias	Senior Law Officer
2	Mr. Constance Fernandes	Assistant Law Officer
<b>ACCOUNTS SECTION</b>		
1.	Mr. D. M. Naik	Accounts cum Administrative Officer
2.	Mr. Devendra Arlekar	Assistant Accounts Officer
3.	Mr. Vidyesh Mahmal	Accountant
4.	Ms. Mitzi D'silva	Accounts Clerk
5.	Ms. Nevies Miranda	Accounts Clerk
6.	Ms. Berlyn Fernandes	Accounts Clerk
7.	Ms. Stefanie Carvalho	Accounts Clerk
<b>ADMINISTRATION SECTION</b>		
1	Mrs. Tulita da Costa e Fernandes	Office Superintendent
2	Mrs. Elmana M D'Silva	Head Clerk
3	Mrs. Swapna Naik	Senior Stenographer
4	Mrs. Daya Usgaonkar e Godinho	Upper Division Clerk
5	Mr. Cedric De Souza	Upper Division Clerk
6	Ms. Margaret Cardozo	Junior Stenographer
7	Ms. Debra Pereira	Junior Stenographer

8	Mrs. Valanie Abranches	Data Entry Operator
9	Mrs. Abygale Vaz	Data Entry Operator
10	Mrs. Dorothy Fernandes	Data Entry Operator
11	Mr. Alleluia D'Mello	Data Entry Operator
12	Mrs. Francisca Auria Lobo	Lower Division Clerk
13	Mrs. Plancy Miranda	Lower Division Clerk
14	Ms. Shane Gracias	Lower Division Clerk
15	Mrs. Ana Maria Lourenco	Lower Division Clerk
16	Mr. Maison Fernandes	Lower Division Clerk
17	Mrs. Supriya Nageshkar	Lower Division Clerk
18	Ms. Joice Coutinho	Lower Division Clerk
19	Mrs. Ria Naik	Lower Division Clerk
20	Ms. Preeti Barreto	Lower Division Clerk
21	Mrs. Suzee Fernandes	Lower Division Clerk
22	Mrs. Alisha Colaco	Lower Division Clerk
23	Mr. Umesh Kankonkar	Record Keeper
24	Mrs. Gaudalupe Dias	Record Keeper
25	Mr. Lourenco Fernandes	Driver
26	Mr. Gopal Girodkar	Driver
27	Mr. Pravin Kavlekar	Driver
28	Mr. Mahesh Veluskar	Driver
29	Mr. Hemant Satarkar	Driver
30	Mr. Narayan Shirodkar	Driver
31	Mr. Shantadurga Pereira	Driver
32	Mr. Daniel Colaco	Driver
33	Mr. Sebastiao Dias	Driver
34	Mr. Conceicao Colaco	Driver
35	Mr. Derrick Dias	Peon
36	Mr. Salvador Rodrigues	Peon
37	Mr. Denister Dias	Peon
38	Mrs. Catarina Pereira	Peon
39	Mr. Roque Fernandes	Peon
40	Mr. Ankush Kankonkar	Peon
41	Mrs. Piedade Crasto	Peon
42	Mr. Issac Lobo	Peon
<b>TECHNICAL SECTION</b>		
1	Mr. Sanjeev Joglekar	Environmental Engineer
2	Mrs. Nandan Prabhudessai	Junior Env. Engineer (Civil)
3	Mr. Keshav Fadke	Junior Env. Engineer (Civil)
4	Mr. Abner Rodrigues	Junior Env. Engineer (Civil)
5	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	Ms. Indira Faldessai	Network Engg. (Software)
11	Mr. Sebastiao Barreto	Engg. Assistant (Civil)
12	Mr. Ashley Pereira	Engg. Assistant (Civil)
13	Mr. Vinson Quadros	Engg. Assistant (Civil)
14	Mr. Sebastiao Colaco	Engg. Assistant (Civil)
15	Mr. Liston Fernandes	Engg. Assistant (Mechanical)
16	Mr. Pratik Chari	Engg. Assistant (Computers)
17	Mr. Chetan Upadhye	Network Assistant (Hardware)
18	Mr. Rajendra Naik	Network Assistant (Hardware)
<b>CHAIRMANS PERSONAL STAFF</b>		
1.	Mr. Sarvesh Satardekar	PS to the Charman
2.	Mrs. Valencia Fernandes	PA to the Chairman
3.	Mr. Roland Moses	Chairman's Driver
4.	Mr. Narayan Chopdekar	Chairman's Peon

STAFF TAKEN ON CONTRACT BASIS		
1.	Miss. Pranali Dessai	Junior Law Officer
2.	Mr. Antonio Godinho	Legal Assistant
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.	Shri. Nilay N. Shenvi	Junior Env. Engineer (Civil)
7.	Miss. Lee Ann Antao	Junior Env. Engineer (Civil)
8.	Shri. Bento Thomas	Junior Env. Engineer (Civil)
9.	Shri. Digvijay Dessai	Junior Env. Engineer (Civil)
10.	Miss. Raveena R. Naik	Junior Env. Engineer (Civil)
11.	Shri. Devesh M. Gholkar	Junior Env. Engineer (Civil)
12.	Mrs. Deepti Jambhale	Junior Env. Engineer (Civil)
13.	Miss Pratiksha Prabhu	Network Engineer (Software)
14.	Mrs. Sudiksha N. Dessai	Network Assistant (Hardware)
15.	Mr. Vinayak Talankar	Driver
16.	Mr. Sailesh R. Mahale	Driver
17.	Shri. Immam Sheikh	Driver
18.	Shri. Ravi Kadam	Driver
19.	Shri. Hariresh Vernekar	Driver
20.	Shri. Vijay Halarnkar	Driver
21.	Shri. Narayan Haldankar	Driver

### 1.3 FUNCTIONS OF THE VARIOUS SECTIONS

#### 1.3.1 SCIENTIFIC SECTION



Fig 1.1 & 1.2 : Laboratory Official at work in the GSPCB Laboratory

The Board has a full fledged laboratory, operating on the 4<sup>th</sup> 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 16 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 16 air stations, 13 are outsourced to MoEF approved laboratories and 3 are operated by the GSPCB. The 52 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 1,375 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, 1431 consents have been granted for operation and establishment of the above facilities under the Water and Air Acts, Hazardous Waste Rules, Bio-Medical Rules, Municipal Solid 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 Chartered 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 4<sup>th</sup> 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 1<sup>st</sup> 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. Jose Manuel Noronha. This Board was constituted vide Order No. 5/20/87-STE/P-IV/635 dated 3rd September, 2012 and the composition is as given below:-

##### Chairman

1. Shri. Jose Manuel Noronha, Chief Executive Officer, Agnel Technical Education Complex, Verna and Assagao. (01/04/2015 – 04/03/2016)
2. SHri. R.K. Srivastava, Chief Secretary, Government of Goa, Secretariat, Porvorim, Bardez - Goa (w.e.f. 05/03/2016)

##### Members

3. Addl. Principal Chief Conservator of Forests.
4. Director, Directorate of Industries, Trade & Commerce, Panaji
5. Chief Engineer, Water Resource Department, Panaji
6. Director, Directorate of Mines & Geology, Panaji
7. Director, Department of Tourism
8. Shri. Narayan Naik, Sarpanch, Village Panchayat of Sancoale, Sancoale.
9. Shri. Tony Rodrigues, Dy. Mayor, Corporation of City of Panaji.
10. Dr. Vasudev Deshprabhu, Chairperson, Pernem Municipal Council
11. Mrs. Neelam A. Naik – Manager, Shantadurga Higher Secondary School, Sancoale
12. Shri. Shekhar Sardessai, President, Goa State Industries Association, Panaji
13. Shri. Shrirang Jamble, Agriculturalist, Savoi – Verem, Ponda
14. Dr. Pramod Sawant, Vice Chairperson, Goa State Infrastructure Development Corporation Ltd, Panaji

##### Member Secretary

16. Shri. Levinson Martins, Goa Civil Services.

##### Resignation of Board Members –

## 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.	118 <sup>th</sup>	10/07/2015	Board's Conference Hall	14
2.	119 <sup>th</sup>	28/01/2016	Board's Conference Hall	12

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

##### 118<sup>th</sup> Meeting of the Board

In the 118<sup>th</sup> Meeting the Board took the following decisions:

##### Agenda Item no. 01

Confirmation of the minutes of the 117<sup>th</sup> meeting of the Goa State Pollution Control Board held on 12<sup>th</sup> March, 2015.

The members perused and confirmed the minutes of the 117<sup>th</sup> meeting of the Goa State Pollution Control Board held on 12<sup>th</sup> March, 2015, so as to enter the same in the minutes book.

##### Agenda Item no. 02

Follow up action on the decision taken at the 117<sup>th</sup> meeting of the Board held on 12<sup>th</sup> March, 2015

Agenda item no. 05 – The members noted that the Revised Budget Estimate for the financial year 2014-2015 and Budget Estimates of the Goa State Pollution Control Board for the financial year 2015-16 were forwarded to the Department of Environment, Govt. of Goa.

Agenda item no. 6 – The members noted that the agreement for extension of contract of the staff of the Board has been executed by the Board.

Agenda item no. 7 – The members noted that the Deed of Variation has been signed and forwarded to Life Insurance Corporation.

Agenda item no. 10 – The matter with respect to recommendation proposed to be made for setting up of cow shed came up for discussions. Chairman requested Shri Shirang Jamble, member of the Board to make his submission on the issue since the Board at its meeting held on 12/03/2015 has decided that Shri Shirang Jamble put up suggestion and guidelines on cow sheds. Shri Jamble stated that he had discussions with persons engaged in rearing cows in cow sheds and it was their considered view that such entities would not come under the purview of Goa State Pollution Control Board, since no process was involved.

During discussion, members opined that primarily cow shed should be under the jurisdiction of Health authorities as well as of the local bodies namely Panchayats and Municipal Councils. Chairman informed the members that complaints were before the Board regarding pollution caused due to the presence of cow sheds in the vicinity of the residence of the complainants. He further stated that the complaints are mainly on account of stench, fleas, smell from cattle waste, contamination of wells due to cattle urine etc. The matter was discussed at length and it was unanimously decided that complaints regarding cattle shed before the Board are forwarded to the Directorate of Health Services, Government of Goa and also to local bodies concerned for action.

Agenda item no. 11 – The members noted that the guidelines approved by the Board for Rural Garbage Disposal sites has been forwarded to the Department of Environment, Govt. of Goa, for issue of a suitable Notification.

Agenda item no. 12 – The members noted that Consent to Operate under the Water Act and the Air Act (additional product) has been issued to M/s United Breweries, Plot no. 166, 167, Bethora, Ponda Goa

Agenda item no. 13 – The members noted Consent to Establish under the Water Act and the Air Act (expansion) has been issued to M/s Esteem Industries Pvt. Ltd., Plot no. 76, 77, 103, 108, 131, Pissurlem Industrial Estate.

Agenda item no. 14 – The members noted that Consent to Establish under the Water Act and the Air Act has been issued to M/s M.K. Aromatics (Project Goa Polymer), Survey no. 310/A, Pernem Municipal Council.

Agenda item no. 15 – The members noted that Consent to Establish under the Water Act and the Air Act (expansion) has been issued to M/s M.R.F Limited, Survey no. 258/0, 253/1, 255/1-A, 255/2, 255/3 and 256/1-A, Tisk, Usgaon, Ponda Goa.

Agenda item no. 16 – The members noted that Consent to Establish under the Water Act and the Air Act (expansion) has been issued to M/s M.R.F Limited (unit – II), Survey no 254/0, Tisk, Usgaon, Ponda Goa.

Agenda item no. 17 - The members noted that Consent to Establish under the Water Act and the Air Act (expansion) has been issued to M/s Siemens Ltd. (ETTS), Plot no. 73/74, Verna Industrial Estate, Verna, Salcete.

Agenda item no. 18 - The members noted that Consent to Establish under the Water Act and the Air Act (expansion) has been issued to M/s Bharat Petroleum Corporation Ltd., Plot no. M-19 to M-35, Phase III (B), Verna Industrial Estate.

Agenda item no. 20 - The members noted that Consent to Establish under the Water Act and the Air Act (additional product ) has been issued to M/s IFB Industries, Plot no. 62, 64 and 66, Corlim Industrial Estate, Corlim, Ilhas.

Agenda item no. 21 – The members noted that National Institute of Oceanography has been requested by the Board to conduct a study on the carrying capacity of beaches for erection of beach shacks.

Agenda item no. 22 – The members noted that the proposal for creation of posts is under process, and an advertisement has been issued to fill up the vacant posts of Junior Environmental Engineer (Civil) (02 on regular and 02 on contract basis) and one post of Junior Law officer.

Table item no. 01 – The members noted that the Department of Environment, Govt. of Goa has been requested by the Board to conduct a study on the carrying capacity of rivers in the State of Goa, for setting up of floating pontoons, marinas, jetties, houseboats etc. in various rivers in the State of Goa..

### **Agenda Item no. 3, 9 and Table item no. 01**

Grant of Consent to operate to mining units / Objections received by the Board for grant of Consent to Operate under the Air and Water Acts to the mining leases.

Chairman informed the members that with the lifting of ban on the mining activities by the Hon. Supreme Court of India vide its order dated 21/04/2014 in Writ Petition (C) no. 435/2012, the mining companies had approached the Board for issue of Consents under the Water Act and the Air Act. He further informed that applications were scrutinized by the Board officials and inspections were carried out of the individual mines, and a report was placed before the Technical Advisory Committee of the Board. He further informed that the mining companies made a presentation before the TAC of the Board listing the measures they proposed to undertake to control air and water pollution on resumption of the mining activities. Further, the Chairman informed the members that clusters of mines are proposed so as to enable the Board to monitor the mines for air and water pollution.

While discussing on the matter, the Director of Mines and Geology explained the detailed events leading to the closure of the mines. He further stated that the M.B. Shah's Commission Inquiry Report was tabled in the Parliament on 07/09/2012 and the Government of Goa temporarily suspended all the mining activity in the state of Goa, for enabling the mining companies to submit documents, so that only legal mining could be allowed. He

further stated that subsequently the Ministry of Environment and Forests, Government of India also withdrew all Environmental clearances granted to the mines in the State of Goa.

The Director of Mines and Geology explained that the Supreme Court of India had lifted the ban on mining on 21<sup>st</sup> April, 2014 and fixed the annual capping of extraction of ore at 20 million metric tons / annum. He also stated that the Government of Goa, Department of Mines and Geology renewed 89 mining leases in the State of Goa and permitted these leases to extract ore to an extent of 20 million metric tons per annum, subject to them obtaining all other permissions

Chairman of the Board intervened to state that the Board was in receipt of 56 applications from the mining units for Consent to Operate under the Air and Water Acts, out of 89 renewed leases by the Govt. of Goa. He further explained that 21 of the 89 renewed leases did not have valid Environmental Clearances and 12 mines who had relevant approvals did not apply for Consent to Operate.

Member Secretary informed the members that representations were received by the Board from Goa Foundation dated 02/05/2015 and 09/07/2015 and Mr. Sudeep Tamankar dated 09/03/2015, 15/05/2015 and 06/07/2015, objecting to the renewal of Consent to Operate under the Air and Water Acts. The Goa Foundation objected to the fact that the Government of Goa had renewed 17 mining leases on 12/01/2015 when the Government of India had issued an ordinance prohibiting renewal of leases on the same day. The members discussed the complaint in detail and decided that since the matter of renewal of leases was dealt with by the Department of Mines and Geology, Government of Goa, the complainant could be requested to prefer their grievances before the Director of Mines and Geology, Govt. of Goa. Member Secretary further informed that Shri Sudeep Tamankar has also lodged a complaint before the Board objecting to the grant of Consent under the Air and Water Acts to the mining leases. Member Secretary further informed that all the complaints namely, the Goa Foundation and Shri Sudeep Tamankar were referred to the Senior Counsel of the Board, who opined that 'unless the matter which has been raised in the complaint pertains to issues under Air Act and the Water Act, Goa State Pollution Control Board is not required to go into the same and the Board is required to deal with the application in accordance with the Law.' The members noted the advice of the Senior Counsel and accepted the same.

After detailed deliberations on the issue of renewal of Consent to operate to the mining units it was decided to grant Consent to Operate under the Water Act and the Air Act to the following 56 mining leases that applied for Consent to Operate.

Sr. no.	T.C no.	Name of the mine	E.C limit	Extraction of ore permitted by Dte. of Mines and Geology
1.	69/51	M/s Sesa Goa Ltd.	0.000	0.000
2.	126/53	M/s Sesa Goa Ltd.	0.000	0.000
3.	70/52	M/s Sesa Goa Ltd	7.000	3.233
4.	003/54	M/s Sesa Goa Ltd	0.000	0.000
5.	009/49	M/s Sesa Goa Ltd	0.000	0.000
6.	010/49	M/s Sesa Goa Ltd	0.200	0.090
7.	011/41	M/s Sesa Mining Corp. Ltd.	0.000	0.000
8.	012/41	M/s Sesa Mining Corp. Ltd.	0.000	0.000
9.	014/41	M/s Sesa Mining Corp. Ltd.	0.000	0.000
10.	014/41	M/s Sesa Mining Corp. Ltd.	0.000	0.000
11.	015/41	M/s Sesa Mining Corp. Ltd.	2.000	0.901
12.	003/51	Sesa Resources Ltd.	-	0.000
13.	40/54	Sesa Resources Ltd.	0.200	0.090
14.	005/54	M/s Sesa Resources Ltd.	-	0.000
15.	20/54	M/s Sesa Resources Ltd.	-	0.000
16.	21/54	M/s Sesa Resources Ltd.	1.100	0.496
17.	35/52	M/s Sesa Resources Ltd.	0.100	0.045
18.	76/52	M/s Sesa Goa Ltd.	0.200	0.090
19.	006/55	M/s Sesa Goa Ltd.	1.000	0.451

20.	28/51	M/s Sesa Goa Ltd.	0.500	0.225
21.	16/51	Shri V.D. Chowgule (Late)	-	0.000
22.	40/50	Shri V.D. Chowgule (Late)	1.000	0.451
23.	31/53	M/s Chowgule & Co. Ltd.	0.000	0.000
24.	41/56	M/s Chowgule & Co. Ltd.	1.450	0.654
25.	005/49	M/s Chowgule & Co. Ltd.	-	0.000
26.	13/49	M/s Chowgule & Co. Ltd.	0.800	0.361
27.	38/51	M/s Chowgule & Co. Ltd.	0.000	0.000
28.	22/50	M/s Chowgule & Co. Ltd.	0.000	0.000
29.	012/57	M/s Chowgule & Co. Ltd.	0.420	0.189
30.	98/52	M/s Chowgule & Co. Ltd.	0.300	0.135
31.	628/52	M/s V.M. Salgaocar & Bro. Pvt. Ltd.	0.000	0.000
32.	19/58	M/s V.M. Salgaocar & Bro. Pvt. Ltd.	0.000	0.000
33.	29/54	M/s V.M. Salgaocar & Bro. Pvt. Ltd.	0.000	0.000
34.	83/52	M/s V.M. Salgaocar & Bro. Pvt. Ltd.	1.692	0.763
35.	88/52	M/s Soc. Timblo Irmaos Ltda. (SF1)	0.550	0.248
36.	14/53	M/s Soc. Timblo Ltda. (SF1)	0.500	0.225
37.	45/52	M/s Soc. Timblo Ltda (SF1)	0.500	0.225
38.	008/41	Shri Gangadhar N. Agrawal	0.600	0.270
39.	006/61	Shri Gangadhar N. Agrawal	0.500	0.225
40.	89/52	M/s Lithoferro	0.300	0.135
41.	70/51	M/s R.S. Shetye & Bros.	1.200	0.541
42.	002/51	M/s M.S. Talaulikar & Sons Pvt. Ltd.	0.330	0.149
43.	61/53	M/s Soc. Timblo Irmaos Ltda. (PTI)	0.600	0.270
44.	87/53	M/s Soc. Timblo Irmaos Ltda (PTI)	0.400	0.180
45.	143/53	M/s Soc. Timblo Irmaos Ltda (PTI)	0.540	0.243
46.	34/50	M/s Soc. Timblo Irmaos Ltda (PTI)	0.200	0.090
47.	29/52	M/s Pandurang Timblo Ind. (Late)	0.100	0.045
48.	48/58	Kashinath D.S. Talaulikar (late)	0.100	0.045
49.	010/51	Haider Kassim Khan (Late)	0.250	0.113
50.	92/52	M/s Soc. Timblo Irmaos Ltda (TPL)	0.250	0.113
51.	14/58	M/s Soc. Timblo Irmaos Ltda (TPL)	0.700	0.316
52.	14/52	M/s Badruddin Hussainbhai Mavani	0.400	0.180
53.	51/52	Smt. Kunda Raghuvir Gharse	0.723	0.326
54.	84/52	M/s Bandekar Bros. Pvt. Ltd.	0.800	0.361
55.	110/53	M/s Cosme Costa & Sons	3.000	1.352
56.	63/51	Rajesh Timblo	0.100	0.045

While discussing further on the matter, it was proposed that a Committee under the Chairmanship of the Chairman, GSPCB be constituted to monitor the mines from the point of Air and Water pollution, once they begin with the mining activity, and examine the monitoring carried out by the mines, every three months.

After discussions, it was proposed that a following Committee be constituted:

1. Chairman, Goa State Pollution Control Board .....Chairman
2. Members of the Technical Advisory Committee of the Board .....Members
3. Member Secretary, Goa State Pollution Control Board .....Convenor

It was further decided that both the complainants namely that of the Goa Foundation and Shri Sudeep Tamankar be informed of this decision of the Board.

#### **Agenda Item no. 4**

Payment gate-way through HDFC

Member Secretary informed the members that the Board carries out banking transactions with Oriental Bank of Commerce, which is housed in the same building premises as that of the Board. He further informed that industries are located all over Goa and the project proponents have to come to Panaji to deposit the fees towards their applications to be processed by the Board. He further stated that it was proposed to have a payment gateway so that the project proponents can transact freely with the Board for payments and this would reduce the burden on the applicants to come all the way to Panaji. He further stated that inquiries were made with various banks for opening of payment gate-way account and HDFC Bank had made one such proposal. It was stated that the Bank would charge a transaction fee to the user @ Rs. 2.90 per transaction.

After discussions, it was agreed that payment gate-way through HDFC Bank be opened to facilitate on-line receipt of Board fees and payment dues. It was also decided that in order to make this proposal competitive, the Board could request for proposals from other Banks also and implement the same subject to approval of the Chairman.

#### **Agenda Item no. 5**

Circular issued to the staff of the Board performing after office hours duty.

Member Secretary informed the members that due to exigencies of work, he and the staff have to work after office hours. He further stated that in order to assist the staff in performing their duties, Peons/ Laboratory Attendants were required to stay back and he proposed to compensate the Peons and Laboratory Attendants for the extra hours of work. He informed that the Board presently pays Rs. 800/- per month for four days after office hours duty performed and if the fifth duty in a month happens to be holiday, then they are permitted to avail a half day off for the next day, and if the Peon / Laboratory Attendants are required to perform duties on Saturday /Sunday / Holiday, he/she is entitled for Rs. 200/-, with no compensatory off.

After discussions the members agreed for the same.

#### **Agenda Item no. 6**

Renewal of contract appointment of Dr. Joe D'Souza, Consultant

Member Secretary informed the members that the Board in its 113<sup>th</sup> meeting held on 27<sup>th</sup> May, 2014 had approved the appointment of Dr. Joe D'Souza - Retired Professor of Microbiology, Goa University, as a Consultant of the Board for the JAICA funded river Sal project. He was initially appointed on contract for a period of six months on a consolidated salary of Rs. 20,000/- per month. However, at the 115<sup>th</sup> meeting of the Board held on 24<sup>th</sup> October, 2014, his contract was further renewed for a period of one year from the date of his initial appointment i.e from 2<sup>nd</sup> June, 2014 to 1<sup>st</sup> June, 2015.

Chairman informed the members that the term of contract of Dr. Joe D' Souza expired on 1<sup>st</sup> June, 2015 and since the proposed River Sal project was yet to complete, the Board had granted him extension of one year with effect from 4<sup>th</sup> June, 2015 to 3<sup>rd</sup> June, 2015, with an increase of 6% in the consolidated salary i.e Rs. 21,200/- per month. He stated that a contract in this regard was signed by the Board.

The members noted and approved the appointment.

#### **Agenda item no. 7**

Renewal of contract appointment of Adv. S.B. Faria, Legal Retainer of the Board.

Member Secretary informed the members that at the 108<sup>th</sup> Board meeting held on 10<sup>th</sup> June, 2013, Adv. S.B. Faria, was appointed as Legal Retainer of the Board in respect of all criminal matters concerning the Board on a retainership of Rs. 15,000/- per month and Rs. 3000/- per effective hearing as per case before the Civil and Criminal Courts of Goa for a period of two years with effect from 24/07/2013, with certain terms and conditions. It was stated that in addition Adv. Faria was also paid transport allowance for attending the office.

He further informed the members that the two years tenure of Adv. S.B. Faria expires on 24/07/2015, and that Shri Faria had expressed his willingness to continue for a further period.

After deliberations the members opined that the Board could have a Panel of Advocates to deal with the Civil and Criminal cases pertaining to the Board and suggested that a Panel of Advocates be constituted for the purposes besides having Adv. S.B. Faria.

After deliberations, the members decided to extend the tenure of Adv. S.B. Faria as Legal Retainer, for a further period of two years on a consolidated retainership fee of Rs. 20,000/- per month, Rs. 3000/- per effective hearing before the Civil and Criminal Courts of Goa and transport allowance for attending. It was further decided that Member Secretary should propose a Panel of Advocates for such a purpose and place before the Board during the next Board meeting for consideration.

**Agenda item no. 8**

Adoption of the Audit Report of the Board for the financial years 2011-2012, 2012-2013 and 2013-2014.

The Accounts cum Administrative Officer of the Board presented to the members, the audited the Balance sheet, Income & Expenditure and Receipts & Payments of the Board for the financial years 2011-2012, 2012-2013 and 2013-2014,

and have also submitted the audited statement of accounts for the years 2011-2012, 2012-2013 and 2013-2014 and the Audit report along with observations for compliance, as submitted by the Statutory Auditors appointed by the Government, M/s Rege, Kunkolekar, Angle, Chartered Accountants.

Shri Shrirang Jamble stated that the independent Auditors Report noted that a serious discrepancy with regard to maintenance of Registers was recorded in the Balance Sheet for the year 2011-2012. The members were informed by the Accounts cum Administrative Officer that the shortcomings have been rectified.

The members thereafter unanimously agreed to adopt the Audited Report for the financial years 2011-2012, 2012-2013 and 2013-2014 as prepared by M/s Rege, Kunkolekar, Angle, Chartered Accountants.

**Agenda item no. 10**

Extension of adhoc appointment to the post of Scientist 'B'.

Member Secretary informed the members that as per Recruitment Rules of the Board, one post of Scientist 'B' was vacant and was required to be filled by direct recruitment. He further stated that due to exigencies of work the Departmental promotion Committee which had met on 31/07/2013 had proposed to fill the post on adhoc basis till regular recruitment process was carried out.

Member Secretary also stated that Shri Nilesh Parsekar, Scientific Assistant (Chemistry) was promoted on adhoc basis to the post of Scientist 'B' for a period of one year from 02/08/2013 and that on Chairman's approval, his adhoc appointment was further extended by one year from 02/08/2014 to 01/08/2015 and for a further period of one year i.e upto 31/07/2016, or until further orders with a condition that the promotion to the post was purely on adhoc basis and did not confer any right on the employee for a regular promotion and that he could be reverted to his lower post at any time. He also stated that, the service rendered on adhoc basis in the grade concerned would not count for the purpose of seniority in that grade and for eligibility for promotion to the next higher grade.

The members noted the adhoc appointment.

**Agenda item no. 11**

Application for Consent to Operate (expansion) under the Air Act and the Water Act of M/s Cipla Limited, located at Plot no. L-139 to L-146, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Cipla Limited, has submitted a proposal for increase in production of Respules from 100 million units/annum to 100 million units/annum and additional production of nasal sprays from 7.5 million units/annum to 12.5 million units/annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed

under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Cipla Limited, located at Plot no. L-139 to L-146, Verna Industrial Estate, Verna, Salcete Goa for Consent to Operate under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 12**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s Britacel Silicones Ltd., located at Plot no. L-125/126, Phase III-A, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Britacel Silicones Ltd, has submitted a proposal for Increase in production of Silicone Cationics from the existing 100 MT/month to 200 MT/month, Increase in production of silicone emulsions from existing 200 MT/month to 400 MT/month, Increase in production of binders and other emulsions from an existing 50 MT/month to 100 MT/month. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Britacel Silicones Ltd., located at Plot no. L-125/126, Phase III-A, Verna Industrial Estate, Verna, Salcete Goa for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge, subject to obtaining endorsement in the SSI certificate from the Dte. of Industries, Trade and Commerce, being an SSI unit.

**Agenda item no. 13**

Application for Consent to Operate (expansion) under the Air Act and the Water Act of M/s Merck Limited, located at Plot no. 11/1, Marwasodo, Usgao, Ponda Goa

The Chairman informed the members that M/s Merck Limited, has submitted a proposal for increase in production of Vitamin E Acetate Feed premixes from the existing 134.4 MT/annum to 1000 MT/annum, increase in production of injectables from existing 184 Mio/annum to 300 Mio/annum, increase in production of soft gelatin capsules from the existing 360 Mio/annum to 1000 mio/annum, Increase in built up area from existing 39732 sq.mtrs to a proposed 1012 sq. mtrs. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Merck Limited, located at Plot no. 11/1, Marwasodo, Usgao, Ponda Goa for Consent to Operate under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 14**

Application for Consent to Operate (expansion) under the Water Act and the Air Act of M/s TCPL Packaging Ltd., located at plot no. 124 to 127-A, Kundaim Industrial Estate, Ponda Goa.

The Chairman informed the members that M/s TCPL Packaging Ltd, has submitted a proposal for increase in production of corrugated fibre board containers from the existing 900 MT/annum to 7000 MT/annum, and increase in production of other boxes of paper and paper board from the existing 900 MT/annum to 5000 MT/annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s TCPL Packaging Ltd., located at plot no. 124 to 127-A, Kundaim Industrial Estate, Ponda Goa for Consent to Operate under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 15**

Application for Consent to Operate under the Air Act and the Water Act of M/s Siemens Ltd. (ETTS)., located at Plot no. N-73/74, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Siemens Ltd. (ETTS). has submitted a proposal for production of valve/converter assembly with a capacity of 40 nos/annum and manufacture / assembly of control and protection system panels with a capacity of 100 nos./annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Siemens Ltd. (ETTS)., located at Plot no. N-73/74, Verna Industrial Estate, Verna, Salcete Goa for Consent to Operate under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 16**

Application for Consent to Operate (expansion) under the Air Act and the Water Act of M/s Tevapharm India Ltd., located at Plot no. A-1, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Tevapharm India Ltd). has submitted a proposal for expansion in the manufacture of tablets / capsules from the existing 0.24 billion tablets / capsules / year to 2.847 billion/year. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Tevapharm India Ltd., located at Plot no. A-1, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa for Consent to Operate (expansion) under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 17**

Application for Consent to Establish under the Air Act and the Water Act of M/s Watson Pharma Limited, located at Plot no. U-03 and U-03A, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Watson Pharma Limited has submitted a proposal for setting up of a new warehouse for storage of raw materials and packaging materials. The finished products of the pharmaceutical company will also be stored in the same warehouse. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Watson Pharma Limited, located at Plot no. U-03 and U-03A, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 18**

Application for Consent to Operate under the Air Act and the Water Act of M/s Lupin Limited, located at Plot no. B-15, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Lupin Limited has submitted a proposal for setting up of a new plant within the premises. The manufacturing capacity of the new plant will be 4000 million tablets/annum and 600 million capsules/annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Lupin Limited, located at Plot no. B-15, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Operate under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge.

#### **Agenda item no. 19**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s Abbott India Limited, located at Plot no. L-18 and L-19, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Abbott India Limited has submitted a proposal for increase in production of liquids from 7100 kl/annum to 8500 kl/annum and also additional production of tablets from 1455 million/annum to 1795 million/annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Abbott India Limited, located at Plot no. L-18 and L-19, Verna Industrial Estate, Verna, Salcete Goa, for Consent to Establish under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge, and obtaining approval from the Goa Investment Promotion and Facilitation Board.

#### **Agenda item no. 20**

Directions issued by the Central Pollution Control Board, Delhi regarding treatment and utilization of sewage.

Chairman informed the members that during the 59<sup>th</sup> Conference of Chairmen and Member Secretaries of Pollution Control Board / Committee held on 8<sup>th</sup> April, 2015 at New Delhi, emphasis was laid to modify or annul effluent standards for the sewage and trade effluents. He further stated that Central Pollution Control Board, Delhi had issued directions under section 18 (1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment and utilization of sewage. He explained that these directions were being issued by the CPCB realizing that rivers and water bodies in Goa have been polluted and to prevent further deterioration of surface, sub-surface and coastal waters, the revised directions had been proposed by CPCB for implementation by the State Boards. Chairman further informed that this exercise was being undertaken so that the industries met with zero effluent discharge policy. He informed that as per the directions of the CPCB, 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 standards for sewage treatment. He also said that the standards were to be met within two years from the date of issuance of these directions.

The members noted the directions issued by CPCB.

#### **Agenda item no. 21**

Guidelines received from the State Government for installation of Mobile Towers

Member Secretary informed the members that the Department of Science, Technology and Environment, Government of Goa has notified vide Notification no. 69/2/2004/STE-DIR/Part/091 published in the Official Gazette Series I No. 35 dated 28<sup>th</sup> November, 2013, guidelines for installation of Mobile base station towers, Goa State.

He explained that as per the said Notification, Infrastructure developers had to apply to the Board for obtaining Consent on payment of the requisite fees for Consent to Establish / Consent to Operate of the Board to operate the MBST including D.G set. He explained that Consents were issued for a period of five years.

He further informed the members that on scrutiny of the applications, it was observed that the source of violation if any would be due to EMR radiations, permissible limits besides emissions of generator and other aspects which are in the mandate of the TERM cell and that radiations may be caused by the antennas installed by the Service providers. He further stated that in order to identify the loop holes, the Board has sought various details like number of antennas, sketch depicting location / position of antennas, details of Service providers, SEFCA form, ownership documents, approval of local body prior to installation of the tower and structural stability certificate from the Infrastructure Developer. He also informed that as regards to the applications for Consents on 'Cell on Wheels' (CoW), they have to give exact location, period of time during which CoW will be installed and permissions from land owners, since these are installations which are temporary in nature. He also stated that the Infrastructure Developer had to also obtain approval from the local body prior to installation of the tower.

Member Secretary proposed that the Board appoints an approved Agency to measure the radiation levels in the vicinity of the mobile towers. After discussions, the same was approved. It was also discussed and approved that permission for establishing mobile towers be granted only on obtaining a provisional NOC from the concerned local bodies / Municipal Councils.

### **Agenda item no. 22**

Resolution adopted at the State Environment and Forests Ministers Conference

Chairman informed the members that the Prime Minister of India had inaugurated the Conference of State Environment and Forests Ministers held from 6<sup>th</sup> to 7<sup>th</sup> April, 2015 at Vigyan Bhawan, New Delhi, during his address at the Conference he had made some specific resolutions, which were later adopted at the 59<sup>th</sup> Conference of Chairmen and Member Secretaries of Pollution Control Board / Committee held on 8<sup>th</sup> April, 2015

1.	Ensure that industrial area / zone / cluster plans mandatorily have waste re-cycling units.
2.	Share common Treatment, Storage and Disposal Facilities (TSDFs) for hazardous waste with other States.
3.	Arrange a web based platform for integration of various kinds of approvals with respect to waste management.
4.	Enforce effective plastic waste management and e-waste management by involving producers through Extended Producers Responsibility.
5.	To adopt pollution criteria for categorization of Red, Orange and Green categories of industries and that a Committee be constituted with State Representatives.
6.	To give Consent to Operate with a validity period of 5 years in respect of Red categories, 10 years for Orange categories and one time Consent for Green categories
7.	Make treatment of sewage and granting Consent to the Municipal authorities mandatory under the Water (Prevention and Control of Pollution) Act, 1974
8.	To revisit standard of treatment of sewage proposed by CPCB and secondary treated sewage be re-cycled and used for non potable purposes.
9.	All the Common Effluent Treatment plants shall to achieve zero liquid discharge by treating the effluent to the standard that can be used in the industrial process. After treatment, the treated water to be sold back for industries for use in the process. These industrial units not to be allowed to extract ground water or supplied such water.

The members noted the above resolutions.

### **Agenda item no. 23**

Discussions on the proposed Marina Project of M/s Yatch Heaven (Goa) Sancoale Bay.

Chairman informed the members that the application of M/s Yatch Heaven (Goa) Sancoale Bay, was received once again for application for Consent to Establish under the Water and the Air Acts. He informed that the proposal was rejected by the Board in its 111<sup>th</sup> meeting held on 24/01/2014 on account of objections received from the Goa State Bio-Diversity Board and also on account of fears that sewage generated from the activity would affect the bio-diversity and marine life of the area surrounding the proposed marina. The Chairman explained that the Board had on 12/03/2015 had discussed that applications were before the Board for grant of Consent to Establish under the Water and Air Act for similar activity and it was decided that Government of Goa, Department

of Environment be requested to conduct a study on the carrying capacity of the rivers and water bodies of the State.

Chairman further stated that the Board vide its letter dated 21/03/2014 had conveyed to the project proponent the decision taken by the Board rejecting the application for the proposed marina at Sancoale bay. He further informed that the project proponent had approached the Goa Investment Promotion and Facilitation Board and they have accorded in principle approval to the project and thereafter the project proponent had once again come before the Board requesting for Consent to Establish. The issue was discussed in detail and it was decided that since the Board in its meeting held on 12/03/2015 had decided to request the Government of Goa, Department of Environment to conduct a study on the carrying capacity of the rivers, the proposal could not be considered until details of the study and findings were placed before the Board. It was further decided to inform the project proponents accordingly.

#### **Agenda item no. 24**

Representations received by the Board:

a. All Goa Association of Bakers - Member Secretary informed the members that All Goa Association of Bakers had made a representation requesting for relief from payment of past fees in order to obtain Consent to Operate from the Board. The matter was discussed in detail and it was informed that similar relief was granted in the past and therefore it was proposed to permit units under this category to apply for Consent to Operate without late fee upto 31/12/2015.

b. Association of Private Nursing Homes, Goa – Member Secretary informed the members that the Association of Private Nursing Homes had made a similar representation for waiver of the past fees in order to obtain Consent to Operate from the Board. The matter was discussed in detail and it was informed that similar relief was granted in the past and therefore it was proposed to permit units under this category to apply for Consent to Operate without late fee upto 31/12/2015.

The members further approved that such waiver be extended to units like glass cutting and fabrication, with a proviso that they apply prior to 31/12/2015.

c. Casino Operators – Member Secretary informed the members that the Board at its 111<sup>th</sup> meeting held on 24<sup>th</sup> January, 2014 had approved the levy of fee of Rs. 5000/- per day when officials of the Board supervise the discharge of sewage from the casinos to night soil tankers. He further informed that this fee has been paid by the casino operators till December, 2014 and they have made a representation to the Board requesting for reduction in the fee to a suitable amount. It was further informed that presently officials of the Board are called at random times to supervise this activity. After discussions, it was proposed that the Board officials should supervise the activity of transfer of sewage from casino to night soil tankers only between 6.00 am to 9.30 am. It was further decided to levy a fee of Rs. 3000/- per trip for this purpose and inform the casino operators accordingly.

#### **Table item no. 02**

Guidelines for sanctioning Child Care Leave to the female employees of the Board

Member Secretary informed the members that a female Government employee is granted Child Care Leave of 730 days, which could be availed till the child attains 18 years. He further informed that the Circular dated 27/06/2015 of the State Government, states that the minimum period of CCL that may be granted to a female Govt. employee shall not be for less than 6 months depending upon the balance period of CCL available at the credit of women employee. Further, it was stated that in case the balance period of CCL available at the credit of women employee is less than 6 months days, the said employee shall be granted CCL upto the balance leave available to her credit although it happens to be less than 6 months. He further informed that vide Circular dated 29/06/2016, the Government had withdrawn the Circular dated 27/06/2014, and has directed the concerned Administrative Department to draw their own guidelines on CCL depending upon the need and submit to the Personnel Department for approval.

Member Secretary informed the members that in line with the Circular dated 29/06/2015 and in consultation with the female employees of the Board, the following guidelines are proposed for grant of CCL to the female staff of the Board:

1.	CCL will be sanctioned to a women employee in continuation to maternity leave, as per the request of the official.
2.	Preference for sanction of leave shall be given to the official having a 'special child' and a single parent.
3.	CCL will be sanctioned during major sickness of the child
4.	Application for grant of CCL shall be submitted to the leave sanctioning authority atleast one month in advance prior to the leave.
5.	CCL of minimum one month will be granted for attending to the personal needs of the child in education.
6.	During exigency of work, the official on CCL could be called for attending duties for few days pertaining to that particular work, which could be adjusted subsequently.
7.	At any given time, not more than 20% of the women staff in toto and 40% in particular ( incase of three or more employees in a section) will be allowed CCL where the number of such staff is one or two, the Head of the Department will decide the length of leave, however, the same may be relaxed depending on the facts and circumstances in that particular section.

The members discussed and approved for the proposed guidelines for sanction of Child care leave to the female employees of the Board..

III. The meeting ended with thanks to the Chair.

### **119<sup>th</sup> Meeting of the Board**

**In the 119<sup>th</sup> Meeting the Board took the following decisions:**

#### **Agenda Item no. 01**

Confirmation of the minutes of the 118<sup>th</sup> meeting of the Goa State Pollution Control Board held on 10<sup>th</sup> July, 2015.

The members perused and confirmed the minutes of the 118<sup>th</sup> meeting of the Goa State Pollution Control Board held on 10<sup>th</sup> July, 2015, so as to enter the same in the minutes book.

#### **Agenda Item no. 02**

Follow up action on the decision taken at the 118<sup>th</sup> meeting of the Board held on 10<sup>th</sup> July, 2015

Agenda item no.3,9 and Table Item No.1- Chairman informed that Consent to Operate under the Water Act and the Air Act had been issued to all the mining leases. He further informed that the Board was in receipt of an objection to issue Consent to Operate to mines with lease nos. T.C. No.22/15, 38/51,12/57, of Costi , Dudal, Santona Villages of Sanguem Taluka belonging to M/s. Chowgule and co. Pvt. Ltd. and 40/50,16/51 of Costi , Dudal, Santona Villages of Sanguem Taluka belonging to M/s. V.V. Chowgule under Air (Prevention and Control of Pollution) Act and Water (Prevention and Control of Pollution) Act from Advocate Dipali Gauns. He also stated that the objection was that part of the property on which the mine is operated belonged to the complainant and the mining lease holder had not taken NOC from her. It was explained that the objection was forwarded to the mining company and clarification was sought from them and the mining company has stated there was a PIL No 405/2000 before the Hon'ble High Court of Bombay at Goa and was disposed vide order dated 26/02/2001.

The Members discussed the issue in detail and concluded that since the documentation submitted by mining unit was in the name of the applicant, the Pollution Control Board had no jurisdiction over the complaint and therefore it was decided to file the complaint since no further action was required to be initiated.

Agenda Item No.04- The members noted that the agreement for payment gateway through HDFC had been signed.

Agenda item no.05- The members noted that the circular was issued to staff of the Board performing duties after office hours and the staff was paid honorarium accordingly.

Agenda item no.06- The members noted that the contract appointment of Dr. Joe D'Souza, Consultant had been renewed.

Agenda item no.07- The members noted that the contract approval of Adv S.B. Faria had been renewed.

Agenda item no. 8 – The members noted that the Audit Report had been adopted.

Agenda item no. 10 – The members noted that the Adoc appointment of Scientist 'B' had been extended.

Agenda item no. 11 – The members noted that the Consent to Operate (expansion) under the Air Act and the Water Act had been issued to M/s Cipla Limited, located at Plot no. L-139 to L-146, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 12 - The members noted that the Consent to Establish (expansion) under the Air Act and the Water Act had been issued to M/s Britacel Silicones Ltd., located at Plot no. L-125/126, Phase III-A, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 13 - The members noted that the Consent to Operate (expansion) under the Air Act and the Water Act had been issued to M/s Merck Limited, located at Plot no. 11/1, Marwasodo, Usgao, Ponda Goa

Agenda item no. 14 - The members noted that the Consent to Operate (expansion) under the Water Act and the Air Act had been issued to M/s TCPL Packaging Ltd., located at plot no. 124 to 127-A, Kundaim Industrial Estate, Ponda Goa.

Agenda item no. 15 - The members noted that the Consent to Operate under the Air Act and the Water Act had been issued to M/s Siemens Ltd. (ETTS), located at Plot no. N-73/74, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 16- The members noted that the Consent to Operate (expansion) under the Air Act and the Water Act had been issued to M/s Tevapharm India Ltd., located at Plot no. A-1, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 17- The members noted that the Consent to Establish under the Air Act and the Water Act had been issued to M/s Watson Pharma Limited, located at Plot no. U-03 and U-03A, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 18- The members noted that the Consent to Operate under the Air Act and the Water Act had been issued to M/s Lupin Limited, located at Plot no. B-15, Phase I-A, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 19- The members noted that the Consent to Establish (expansion) under the Air Act and the Water Act had been issued to M/s Abbott India Limited, located at Plot no. L-18 and L-19, Verna Industrial Estate, Verna, Salcete Goa.

Agenda item no. 20- The members noted that the Directions issued by the Central Pollution Control Board, Delhi regarding treatment and utilization of sewage had been issued to all the local bodies.

Agenda item no. 21- The matter with respect to the guidelines received from the State Government for installation of Mobile Towers, came up for discussions. The Member Secretary informed the members that the Board has received many applications for installation of 4G mobile base towers. He informed that the Board had granted consents to the towers as per the guidelines prescribed by Department of Science, Technology and Environment.

After discussions the members noted the same.

Agenda item no. 22- The members noted that the resolution adopted at the State Environment and Forests Ministers Conference was forwarded to the Department of Science, Technology and Environment for notification.

Agenda item no.23-The matter regarding proposal to establish marinas came up for discussion and Chairman informed that two applications were made earlier for Consent to Establish viz M/s. Yacht Heaven, Sancoale and M/s. Kargwal Construction Pvt. Ltd., Nauxin. He further informed that he had a preliminary meeting with officials of M/s. Kargwal Construction Pvt. Ltd. and in that meeting it was decided that BITS Pilani (Goa Campus) along with Annamalai University Chennai would conduct a joint study on impact of Environment at the locations where it was

proposed to set up the marinas. It was further decided that all cost associated with this study would be borne by Project Proponent.

Chairman also informed that the earlier meeting it was decided that the Government of Goa, Department of Environment be requested to conduct the study on the carrying capacity of rivers in Goa so that Environment impact of any commercial activity on the rivers may be ascertained. He also informed that the Government of Goa, Department of Environment vide the letter dated 19/1/2016 had informed that their office could not undertake such project specific study.

After discussion it was decided that report of study carried out by BITS Pilani (Goa Campus) and Annamalai University Chennai on Environment Impact in relation to these projects be placed before the next Board Meeting for discussion and decision.

#### Agenda item no. 24

- a. All Goa Association of Bakers:- Chairman informed that he had received a representation from All Goa Association of Bakers requesting relief from payment of past fees in order to obtain Consent of the Board. Chairman informed that earlier Board had granted relief to such units upto 31/12/2015. After discussion it was approved that the request be accepted and for the time being extended upto 31/05/2016 for granting of Consent without payment of past fees, besides to the bakers to other small scale units also. It was also decided that awareness be created for this purpose among the bakers and other small scale units by conducting camps and writing letters to various association connected with these industries.
- b. Association of Private Nursing Homes, Goa:- Chairman informed that he had received a representation from Association of Private Nursing Homes, Goa requesting for relief from payment of past fees in order to obtain Consent of the Board. Chairman informed that earlier Board had granted relief to such units upto 31/12/2015. It was also informed that the Association of Private Nursing Homes, Goa had made an representation requesting to review the fees payable by them and Chairman explained that the Committee was constituted to look into this issue. After detailed discussion it was approved that time for relief of late fees be extended upto 31/5/2016 and report of the Committee be placed for the Board's next meeting.
- c. Casino Operators:- Chairman informed that the timings approved by the Board from disposal of sewage from the holding tanks to the sewage carrying vessels was communicated to the casino vessels operators. The further informed that the vessel operators requested the Board to relax the timings so as to enable them to transport sewage from the casino vessels to the sewage carrying vessels during office hours of the Board.

After discussion it was approved that the request be accepted to relax the timings so as to enable them to transport sewage from the casino vessels to the sewage carrying vessels during office hours of the Board.

#### **Follow up action of Agenda Item No.03 of 112<sup>th</sup> Board meeting**

Chairman informed that often complaints came before the Board from individuals residing in residences stating that commercial activities such as fabrication, glass cutting, painting etc. was creating noise and dust pollution. He further informed that the Board had issued Consent to such units with the condition that they shift to an industrial area within one year.

Member Secretary explained that Goa Industrial Development Corporation had not yet allocated separate areas for such units and therefore till such time as these arrangements are made the Technical Advisory Committee had proposed the 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 out outside the shop or unit when it is in a residential complex.
3. The working hours to be restricted between 8.00am to 1.00 P.M. and 3.00 PM to 6.00PM.
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.

After discussions, the same were approved and it was also decided that these guidelines be forwarded to Panchayats and Municipal Councils for incorporating in the permissions issued by them for carrying out such activities within their jurisdiction.

#### **Follow up action of**

It was informed that the 106<sup>th</sup> Board Meeting held on 11/2/2013, the Board had approved the refund of additional fees paid by mining companies based on the amended Notification. Chairman informed that the Board was in receipt of application from Shri. A. X. Poi Palondikar, Hunantlo Dongor Manganese Mine, T.C. No 17/49 seeking refund of fees paid based on amended notification.

After discussion it was approved that refund of fees be paid based on the amended Notification.

#### **Table item no. 02**

Chairman informed that sanctioning Child Care Leave to the female employees of the Board has approved at the 118<sup>th</sup> Meeting of the Board were notified.

#### **Follow up action of Agenda No.26 of 117<sup>th</sup> Board Meeting**

Progress on proposed laboratory building at Saligao.

Member Secretary explained to the Members progress on construction work for the new premises of the Board at Saligao. It was informed that the tender was floated for Civil and Plumbing Works on 09/12/2014 and subsequently re-tender for the civil and plumbing work was published in newspapers on 11/07/2015. After approvals the Board issued Letter of Commencement of work/ work order to lowest bidder M/s. Kalyani Global Engineering Pvt. Ltd. vide letter no.1/27/01-PCB/7189 dated 19/11/2015. Subsequently the contractor submitted bank guarantee of Rs.1,83,13,733 and thereafter Mobilisation amount of Rs.1,83,13,733.00 was released to the contractor.

Chairman informed that foundation stone for the new premises was laid on 7/1/2016 by Hon'ble Chief Minister Shri. Laxmikant Parsekar in the presence of Hon'ble Minister for Tourism Shri. Dilip Parulekar and other officials. It was explained that the leveling and excavation work had already commenced at the site and the Board had floated electrical tender on 14/1/2016 amounting to Rs.2,09,32,130.00. It was further stated that the last date of submission of tender was 29/1/2016.

#### **Agenda Item No.03**

Application for Consent to Operate of mining units were placed before the Board and it was informed that following documents/ information were obtained from mining units and the same were placed before the Technical Advisory Committee which recommended for granting Consent to Operate.

After detailed discussion it was approved to grant Consent to Operate under the Water Act and Air Act to following four mining leases that applied for Consent to Operate.

Sr. no	T.C no.	Name of the mine	E.C limit	Extraction of ore permitted by Dte. of Mines and Geology
1.	55/51	M/s. Geetabala M.N. Parulekar-Gulliem e Gaval (Pissurlem) Iron Ore Mine	2.0MT/annum	0.901 MT/annum
2.	16/55	M/s. V.G.Quenim-Sonshi iron ore mine	0.437 MT/annum	0.197MT/annum
3.	12/52,40/51	M/s. N.S.Narvekar Minerals (Kalay iron Ore Mine)	0.75 MT/annum	0.338 MT/annum
4.	24/57	Dattaraj Velingkar, Corpadega Valuco Predio	0.154 MT/annum	0.069 MT/annum

		PurnaPericodil E Terrenos Adjacentes (Corpadega Iron Ore Mine),		
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It was further approved that recommendation of Technical Advisory Committee be incorporated in the Consent to Operate.

**Agenda item no. 04**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s Cipla Limited, located at Plot no. M-61, M-62, M-63, N-5, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s Cipla Limited, had submitted a proposal for increase in manufacture of product of dry powder to 30 million units/ annum, lyophilized product to 54 million units/ annum, pre-filled syringe to 12 million units/annum, and liquid injectables to 12million units/annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Cipla Limited, located at Plot no. M-61, M-62, M-63, N-5, Verna Industrial Estate, Verna, Salcete Goa for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

**Agenda item no. 05**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s IFB Industries Limited, located at Plot no. L-1, Verna Industrial Estate, Verna, Salcete Goa.

The Chairman informed the members that M/s IFB Industries Limited, had submitted a proposal for increase in production of front loading machines from 2,50,000 nos /annum to 4 lakh nos/annum and manufacture of top loading washing machines of 2 lakh nos/annum.. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s IFB Industries Limited, located at Plot no. L-1, Verna Industrial Estate, Verna, Salcete Goa for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no.06**

Application for Consent to Establish(expansion) under the Air Act and the Water Act of M/s Cipla Limited, located at Plot no. S-103 to S-105, S-107 to S-112, L-138, L-147, L-147/1 to L-147/4 & L-150, Verna Industrial Estate, Verna, Salcete Goa

The Chairman informed the members that M/s Cipla Limited, had submitted a proposal for Increase in manufacture of product injectables from 5lakh units/month to 16.8million/year(14lakh/mnth). The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s Cipla Limited, located at Plot no. S-103 to S-105, S-107 to S-112, L-138, L-147, L-147/1 to L-147/4 & L-150, Verna Industrial Estate, Verna, Salcete Goa for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

#### **Agenda item no. 07**

Application for Consent to Establish(expansion) under the Air Act and the Water Act of M/s.Glenmark Pharmaceuticals Limited, located at Plot No.S-7, Colvale Industrial Estate, Colvale Bardez Goa

The Chairman informed the members that M/s.Glenmark Pharmaceuticals Limited, had submitted a proposal for increase in production from 640 million per annum by 15 million per month. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s.Glenmark Pharmaceuticals Limited, located at Plot No.S-7, Colvale Industrial Estate, Colvale Bardez Goa for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge.

#### **Agenda item no. 08**

Application for Consent to Establish(expansion) under the Air Act and the Water Act of M/s. Oriental Containers Limited, located at Plot No.327 to 332, Kundaim Industrial Estate, Kundaim Ponda Goa.

The Chairman informed the members that M/s Oriental Containers Limited had submitted a proposal for expansion in Manufacturing capacity of plastic closures from the existing capacity of 4800MT/annum to 6300MT/annum. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s. Oriental Containers Limited, located at Plot No.327 to 332, Kundaim Industrial Estate, Kundaim Ponda Goa for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

**Agenda item no. 09**

Application for Consent to Operate (expansion) under the Air Act and the Water Act of M/s.Himachal Futuristic Communications Limited, located at Plot No.35, 36,37, Verna Industrial Estate, Verna Salcete Goa.

The Chairman informed the members that M/s.Himachal Futuristic Communications Limited had submitted a proposal for increasing the production capacity of fibre optic cables from 48000Km/annum to 80000Km/annum.. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s.Himachal Futuristic Communications Limited., located at Plot No.35, 36,37, Verna Industrial Estate, Verna Salcete Goa for Consent to Operate (expansion) under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

**Agenda item no. 10**

Application for Consent to Establish under the Air Act and the Water Act of M/s.Goan Marine Impex Pvt. Ltd., located at Plot No.23/1, Barcem Quepem Goa.

The Chairman informed the members that M/s.Goan Marine Impex Pvt. Ltd had submitted a proposal to set up a fish meal unit at Barcem, Quepem. Member Secretary explained that the Project was approved by the Investment Promotion Board of the Government of Goa and the products proposed to be manufactured were fish meal and fish oil. He further explained that the Technical Advisory Committee of the Board had approved the proposal for placing before the Board. Chairman explained that presently a fish meal plant was operating at Cuncolim Industrial Estate and there were issues concerning odour around the factory. He also explained that the unit had engaged the services of scientists of IISc Bangalore to suggest and recommend technologies to reduce odour. He also stated that there was marked improvement in reduction of odour over the last one year and the process for further improvement was still on. Chairman proposed that a similar study could be carried out by IISc Bangalore of this project which could be placed by the Board for a decision. Members approved the proposal and further approved that all cost related to project be borne by the Project Proponent.

**Agenda item no. 11**

Application for Consent to Operate under the Air Act and the Water Act of M/s. S.N.S. Marine Services Pvt. Ltd., located at River Mandovi, Panaji Goa

Chairman informed the members that an application was received from M/s. S.N.S. Marine Services Pvt. Ltd. for operating a vessel on River Mandovi. He also stated that the proposed vessel would be used for recreational purposes including parties etc. It was further informed that the vessel would consume approximately 21 KLD and waste water would be 17.5 KLD which would be collected in a holding tank and then shifted through tankers to STP, Tonca for treatment. It was further explained that the same conditions as were applicable to casinos presently operating in River Mandovi would be applicable to the present vessel.

It was further decided that the Board should periodically monitor the rivers where such commercial activities take place specially around casinos, shipbuilding activities, shacks etc. and initiate action as appropriate in case of samples collected at these sites failing to meet specified standards.

After discussion it was approved that Consent to Operate be issued to M/s. S.N.S. Marine Services Pvt. Ltd. for operating a vessel on River Mandovi.

**Agenda item no. 12**

Application for Consent to Operate under the Air Act and the Water Act of M/s. Floating Pontoon, Agnelo Fernandes, located at River Mandovi, Britona Bardez Goa.

The Chairman informed the members that M/s. Floating Pontoon has submitted a proposal for Floating Pontoon. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

After deliberation and discussion, the members approved the proposal of M/s. Floating Pontoon, Agnelo Fernandes, located at River Mandovi, Britona Bardez Goa, for Consent to Operate under the Water Act and the Air Act subject to implementation of rain water harvesting and ground water recharge.

**Agenda item no. 13**

Application for Consent to Operate (expansion) under the Air Act and the Water Act of M/s. Cadila Health Care Limited., located at Kundaim Industrial Estate, Kundaim Goa.

The Chairman informed the members that M/s. Cadila Health Care Limited has submitted a proposal for expansion in production of tablets from 104million/month to 200million/month and capsules from 10.4million/month to 20million/month. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s. Cadila Health Care Limited., located at Kundaim Industrial Estate, Kundaim Goa, for Consent to Operate under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

**Agenda item no. 14**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s. Zuari Agro Chemicals Limited, located at Plot No.157 & 163, Zuarinagar for Immobilisation and Containment of Arsenic. It was informed that about 300 cubic meters of arsenic bearing solutions containing 10% arsenic needed to be disposed off in a safe manner. It was further informed that this project would be undertaken with guidance and supervision of NEERI. Members were also informed that the Technical Advisory Committee of the Board had approved the process suggested. After discussion, it was approved that the Committee comprising,

- a) Mr. Narayan Naik, Panch, Village Panchayat Sancoale
- b) Mrs. Neelam A.Naik, Manager, Shantadurga Higher Sec. School, Sancoale
- c) Mr. Sanjeev Joglekar, Environmental Engineer, Goa State Pollution Control Board.
- d) Dr. Fraddy D'Souza, Technical Advisory Committee Member

visit site and place their report along with Technical Advisory Committee recommendations before the Board at its next meeting for discussion and decision.

**Agenda item no. 15**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s.Hindustan Coca Cola Beverages Pvt. Ltd , located at Plot No.M-2 to M-11,Verna Industrial Estate, Verna Salcete Goa

The Chairman informed the members that M/s.Hindustan Coca Cola Beverages Pvt. Ltd. Ltd., has submitted a proposal for increase the production capacity of sweetened carbonated beverages & carbonated water from existing quantity of 600 bottles/ minute to 1050 bottles/ minute. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s.Hindustan Coca Cola Beverages Pvt. Ltd , located at Plot No.M-2 to M-11,Verna Industrial Estate, Verna Salcete Goa, for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

**Agenda item no. 16**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s.Wyeth Limited, located at Plot No.L-137,Verna Industrial Estate, Verna Salcete Goa

The Chairman informed the members that M/s.Wyeth Limited, has submitted a proposal for increase the volume of pharmaceutical formulation from existing quantity of 2.6Billion tablets/year to 4Billion tablets/year. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s.Wyeth Limited, located at Plot No.L-137,Verna Industrial Estate, Verna Salcete Goa, for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge and obtaining approval from the State's HPCC on Industries and from Goa Investment Promotion and Facilitation Board.

Members were discussing and approving Consent to Operate to various proposals put up at the meeting observed that large quantities of treated water was available and decided that the details of use of such water whether for gardening or otherwise be obtained from the units periodically to verify the quantities of waste water processed and used.

**Agenda item No.17**

Re-designation of Assistant Accounts Officer.

Chairman informed members that the Board had three positions in the Accounts Department namely the Accountant, Assistant Accounts Officer and Accounts cum Administrative Officer. He further explained that these

posts were filled by officials from the Department of Accounts, Government of Goa. Chairman informed that presently the position of Accountant and Accounts cum Administrative Officer are lying vacant and as such it was proposed to upgrade the position of Assistant Accounts Officer to Accounts cum Administrative Officer in the pay of 9300-34800 +Grade Pay 4600 to 15600-39100 + Grade Pay 5400.

After discussion the proposal was approved.

#### **Agenda item no.18**

Condemnation and purchase of new vehicle – GA-01-S-6345

Chairman informed the members that the Office vehicle No. GA-01-S-6345, Toyota Qualis was purchased in August 2003 (18/08/03) and since then the vehicle had completed 2,49,000.00 km. He informed that presently the vehicle was under breakdown at the Colvale showroom of M/s. Sharayu Toyota, Authorised dealers for Toyota, since 17/11/2015 and an estimate of Rs.1,62,157.95/- excluding tax on labor & spare parts is likely to go up once the vehicle is overhauled. Since the vehicle has completed the mandatory requirement of 6 ½ years in service and 1,50,000/- km it has been proposed for condemnation.

After deliberation and discussion, the members agreed for disposal (scrap/ condemnation) of the vehicle and procurement of a new vehicle of similar specification in its place as decided by Chairman.

#### **Agenda item no.19**

Discussion on coal pollution at Vasco da Gama.

Chairman informed the members that M/s. Adani Mormugao Port Terminal Pvt. Ltd. (Berth No.7) were issued Consent to Operate for handling 5.2 million tons/ annum of coal/ coke and M/s. South West Port Ltd (Berth No.5A and 6A) to handle 5.5 million metric tons/ annum for Coaking Coal/ Coke . Chairman further informed that as per records available with the Board of Ambient Air Quality Monitoring at Fire Brigade station of Mormugao Port Trust indicated that PM10 readings exceeded the permissible limits on 14 out of 24 readings. He further informed that the Ambient Air Quality Monitoring readings for PM10 at the Fuse Call Office of Electricity Department, Vasco da Game indicated at on 3 occasions out of 24, the readings exceeded the permissible limits.

Chairman further informed that the Board issued directions to;

- a) M/s. Mormugao Port Trust (Berth No.9)
- b) M/s. South West Port Ltd (Berth No.5A and 6A)
- c) M/s. Adani Mormugao Port Terminal Pvt. Ltd. (Berth No.7)

under Section 31 (A) of the Air (Prevention and Control of Pollution) Act, 1981. He further explained that in the same direction, the Board had issued Show Cause as to why the Consent to Operate issued by the Board should not be revoked since they were operating their unit in violation of the provision of the Air (Prevention and Control of Pollution) Act, 1981. Chairman also explained that in the same notice they were issued directions to carry out the following measures;

- a) Loading of trucks should be carried out at all times through Truck loading system.
- b) The coal stack should not be more than 5 meters.
- c) Sprinkling should be continuously carried out during loading and unloading.
- d) Coal stacks should be covered with tarpaulin at all times except loading and unloading.
- e) The trucks should be covered with tarpaulin and properly fastened.
- f) Flow meters should be installed for the sprinkling system.
- g) Continuous Ambient Air Quality Monitoring data along with weather monitoring data should be submitted to Goa State Pollution Control Board on weekly basis.
- h) During the arrival of a ship, unloading, loading of trucks and rates should be submitted to Goa State Pollution Control Board on weekly basis.

Chairman further explained that

- a) M/s. Mormugao Port Trust (Berth No.9)
- b) M/s. South West Port Ltd (Berth No.5A and 6A)
- c) M/s. Adani Mormugao Port Terminal Pvt. Ltd. (Berth No.7)

had replied to the directions and that they were also given a Personal hearing before the Member Secretary. This matter was discussed at length and after detailed deliberation it was decided that in order to monitor and review the coal pollution issue at the Port, the following measures be implemented.

- a) The coal handling capacity of berth
  - (i) a. With regard to M/s. South West Port Ltd (Berth No.5A and 6A), the annual handling capacity for coaking coal/ coke should be reduced from 5.5 MMT /annum 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 30/04/2016.
  - b. With regard to M/s. Adani Mormugao Port Terminal Pvt. Ltd. (Berth No.7), the annual handling capacity for coaking coal/ coke should be reduced from 5.2 MMT /annum to 3.9 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 30/04/2016
- (ii) The Air Quality and around the operations of M/s. South West Port Ltd, M/s. Adani Mormugao Port Terminal Pvt. Ltd. and M/s. Mormugao Port Trust will be monitored by the Board and all costs associated with thus monitoring will be borne by M/s. South West Port Ltd, M/s. Adani Mormugao Port Terminal Pvt. Ltd. and M/s. Mormugao Port Trust.
- (iii) M/s. South West Port Ltd, M/s. Adani Mormugao Port Terminal Pvt. Ltd. and M/s. Mormugao Port Trust should install a Continuous Ambient Air Quality Monitoring station within a period of 60 days and should submit online real time data on the following parameters immediately thereafter;
  - a) SO<sub>x</sub> b) NO<sub>x</sub> c) PM<sub>10</sub> d) PM<sub>2.5</sub> e) CO
- (iv) M/s. South West Port Ltd, M/s. Adani Mormugao Port Terminal Pvt. Ltd. and M/s. Mormugao Port Trust will submit a Bank Guarantee for an amount of Ten Lakh Rupees valid for a period of one year, towards ensuring that the aforesated directions are complied within the stipulated time period.
- (v) M/s. South West Port Ltd, M/s. Adani Mormugao Port Terminal Pvt. Ltd. and M/s. Mormugao Port Trust will also comply with all the conditions/ directions as stipulated in the Boards earlier directions bearing no.1/25/15-PCB/7965 dated 23/12/2015.
- (vi) That the air quality be monitored from 1<sup>st</sup> February 2016 to 30<sup>th</sup> April 2016 to study the impact of reduction of coal handling in the Port Town due to reduction and coal capacity.
- (vii) That detailed report of the study be placed at the next Board Meeting for further decision in the matter.
- (viii) All costs associated with this study to be borne equally by both the units.

#### **Agenda Item No.20**

Chairman explained to the Members that Sustainable Workflow Platform (SWP) was launched by Shri Rajendra Arlekar, Hon'ble Minister for Environment and Forests at the Board on 21/1/2016.

Chairman further informed that with this initiative the Board would gradually shift to paperless mode and this system would also bring transparency and accountability in this administration of the Board. Members appreciated the initiative taken by the Board. Chairman also informed that the Board on that day re-launched its website which was now available in English and Konkani (Devnagari).

#### **Table Item No.01**

Chairman informed the members that the present term of the Board had expired on 3/9/2015. He further stated that the as Board was not re-constituted, he met with the Chief Secretary and explained that since he was on deputation to the present position of Chairman, Goa State Pollution Control Board he would have to report back to his parent Department since the term was for 3 years. The Chairman further informed the Board that subsequent to this meeting he had received a letter from the Department of Environment, Government of Goa, dated 12/11/2015, requesting him to continue in the position of Chairman in Goa State Pollution Control Board in terms of the

provision of section 5 (1) of the Water (Prevention and Control of Pollution) Act, 1974, aforesaid, till such time as the State Government reconstituted the Goa State Pollution Control Board or till further instructions in this regard, whichever was earlier.

The Chairman further informed that since the Board required to be convened once every three months in terms of the provision of the Water Act, he had sought a legal opinion from the Boards Senior Counsel Advocate Atmaram Nadkarni on whether the Board could be convened to meet given that it was yet to be reconstituted. The Chairman informed that Senior Counsel in his written submission opined that the Board could be convened and decisions could be taken in terms of the provision of section 5 (1) of the Water (Prevention and Control of Pollution) Act, 1974. The Chairman also placed before the members the fact that from 4/9/2015 till date he and his personal staff were drawing salary and allowances from the Board and sought post facto approval for the same. After discussion, it was approved that the Chairman and his personal staff may draw salary and allowances from 4/9/2015 till the Board is re-constituted.

**Table Item No.02**

The decision of the Board was that the administration section shall draw a comprehensive training module for such Group 'D' staff and train them for a period of 6 months and at the end of which there would be an evaluation and based on which the grade pay in terms of Circular will be implemented.

**Table Item No.03**

The Board decided to have a tie-up with Nationalized Banks or Banks which are otherwise approved with any other Government Banks to formulate schemes or to tie up with one or any such banks for the purpose of granting loans to Board employees for the purchase of motor car/ computer etc.

**Table Item No.04**

The Board after deliberating this issue was in agreement that whenever the Board officials/ staffs want to travel abroad on personal trips utilizing their personal funds then the Chairman of the Board shall authorize the same. It was however agreed that an opinion in this regard may be sought from the Id. Senior Counsel/ Id. Advocate General before the decision is implemented.

**Table Item No.05**

Application for Consent to Establish (expansion) under the Air Act and the Water Act of M/s A W Faber-Castell (I) Pvt. Ltd, located at Survey No.24/1, D, Corlim.

The Chairman informed the members that M/s A W Faber-Castell (I) Pvt. Ltd/L, had submitted a proposal for production of erasers-30 tons/ month. The proposal was approved by the Technical Advisory Committee of the Board, which recommended for placing the proposal before the Board.

The members noted that the unit has to make provisions for rain water harvesting and re-charging of wells, within their premises, so as to recharge the ground water aquifer, which has been depleted. The members observed that the applicant unit may be required to take permission from the Ground Water Officers appointed under the Goa Ground Water Regulation Act, 2002, for construction of bore wells or utilization of the ground water in the area.

The members suggested that the unit should submit their plans for rain water harvesting and re-charge of wells along with designs to the Water Resource Department for scrutiny and approval.

The members approved the proposal of M/s A W Faber-Castell (I) Pvt. Ltd/L, located at Survey No.24/1, D, Corlim for Consent to Establish under the Water Act and the Air Act (expansion) subject to implementation of rain water harvesting and ground water recharge.

**Table Item No.06**

The Board deliberated on this subject and agreed to grant Authorization for setting up for Treatment Facility for Municipal Solid Waste and landfill site by Margao Municipal Council with the following condition;

- 1) That no more than 15% of the residual/ inert waste shall go in the landfill site.
- 2) Segregated waste shall be collected in source from all wards of Municipal Council.

- 3) Non recyclable Non Biodegradable waste/ Plastics etc. shall be baled and disposed off through the mechanism presently put in place by Solid Waste Management Cell, Department of Science and Technology, Government of Goa.

III. 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/7150 dated 10/02/2014. The Committee comprises of the following members:-

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. Fraddy D'Souza, Fellow, The Energy and Resource Institute (TERI), Western Regional Centre, House no. 233/GH-2, Vasudha Housing Colony, Alto Santa Cruz, Bambolim Goa 493202.
3. Prof. Neeraj Bale, Prof (Mechanical Engg.), Agnel Institute of Technology & Design, Assagao, Bardez Goa.
4. Mrs. Jenica Sequeira, Scientist 'C', Goa State Pollution Control Board, Panaji.
5. Mrs. Nandan Prabhudessai, Junior Environmental Engineer, Goa State Pollution Control Board.
6. 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 cum 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 COMPLAINTS COMMITTEE

The present Board Constituted a Complaint Committee to scrutinize and take appropriate action on the complaints received by the Board. The Committee was constituted vide Order no.CH/GSPCB/JMN/12/04 dated 16/10/2012 and comprises the following members:

- |   |               |
|---|---------------|
| 1. Scientist 'C'                            | .....Member   |
| 2. Senior Law Officer/Assistant Law Officer | .....Member   |
| 3. Assistant Environmental Engineer         | .....Convenor |

The Committee meets every Monday to screen and shortlist the complaints requiring action by the Board. These complaints are monitored by inspections and action deemed fit is initiated if required. Other cases not within the purview of the Board were forwarded to the respective departments for further needful action.

#### 4.4 CONSTITUTION OF COMMITTEE ON PREVENTION OF SEXUAL HARASSMENT OF WOMEN AT WORKPLACE

The Committee re - constituted vide Order no.1/5/13-PCB/Vol.XVII/4610 dated 04/09/2013 under the Chairmanship of Mr. Jose Manuel Noronha was in force during the year under report. The Committee comprises of following members.

- |    |  |             |
|----|--|-------------|
| a. | Mrs. Jenica Sequeira<br>Scientist 'C', Goa State Pollution Control Board                 | Chairperson |
| b. | Dr. Mohan Girap,<br>Scientist 'C', Goa State Pollution Control Board                     | Member      |
| c. | Mrs Natalia Dias,<br>Senior Law Officer, Goa State Pollution Control Board               | Member      |
| d. | Mrs, Swapna Naik,<br>Senior Stenographer, Goa State Pollution Control Board              | Member      |
| e. | Miss Edma Fernandes,<br>Scientific Assistant, Goa State Pollution Control Board          | Member      |
| f. | Representative from the Department of Science, Technology &<br>Environment, Govt. of Goa | Member      |

#### 4.5 CONSTITUTION OF DEPARTMENTAL PROMOTION COMMITTEE AND DEPARTMENTAL SELECTION COMMITTEE 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 Committee |
| b. | Director, Department of Science, Technology & Environment,<br>Govt. of Goa, or his representative                   | Member                    |
| c. | Ms. Analia Mesquita, Scientist 'F', National Institute of<br>Oceanography, Dona Paula (in case of Scientific posts) | Member                    |
| d. | Prof. A.J.C Afonso, B.E (Met.) M.M.S. ( in case of Technical<br>Post)   | Member                    |
| e. | Director, Department of Industries, Trade and Commerce  | Member                    |

- f. Member Secretary, Goa State Pollution Control Board Member

#### **4.6 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.1/5/10-PCB/Vol.XVII/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. | Dr. Vassudev Dehprabhu  | Convenor |
| b. | Nominee of the Director of the National Institute of Oceanography | 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-Committee in providing the necessary information.

#### **4.7 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 17 air quality monitoring locations and 52 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)

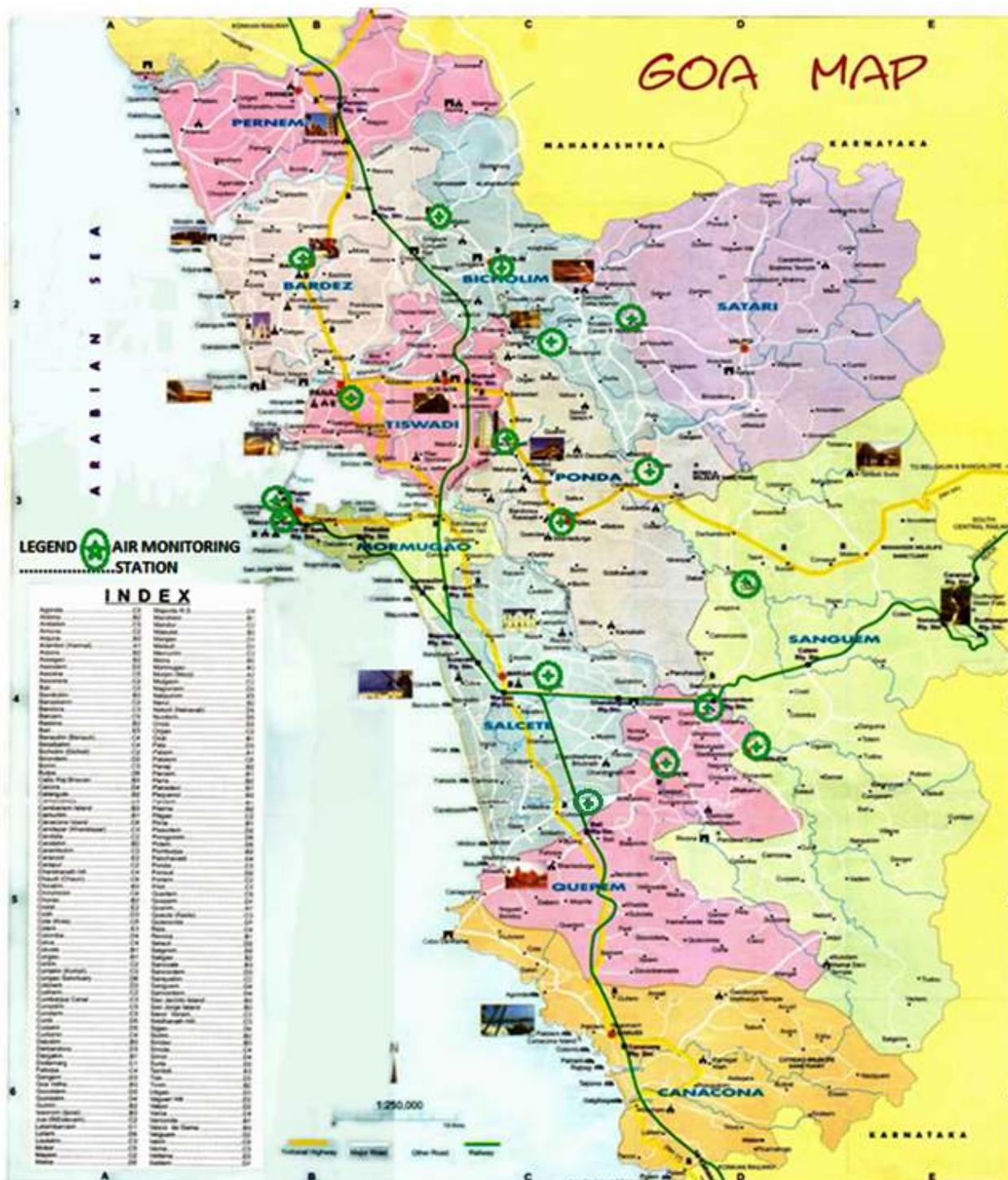
This is an ongoing activity funded by the Central Pollution Control Board, New Delhi under the National Air Monitoring Programme (NAMP). Under this programme the Board continued to monitor the ambient air quality at 17 locations within the state of Goa. The following are the 16 stations under the NAMP 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 17 air quality monitoring stations is shown in the map presented in Figure 5.1. Out of the 18 stations, the Board operates 3 stations on its own, i.e., at Vasco, MPT- Mormugao and Panaji and the remaining 14 locations are outsourced to MoEF approved laboratories. The ambient air quality data for these stations observed during the year are given in Annexure V. The analytical results show that all the above parameters are within the limits prescribed for ambient air quality for Vasco, MPT- Mormugao and Panaji.

The remaining 14 stations are operated by outsourcing to MoEF approved laboratories. The parameters monitored at these locations include NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> 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 (PM<sub>10</sub> and PM<sub>2.5</sub>) at some locations, however, the annual averages indicate that the particulate matter levels are within the limits.

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

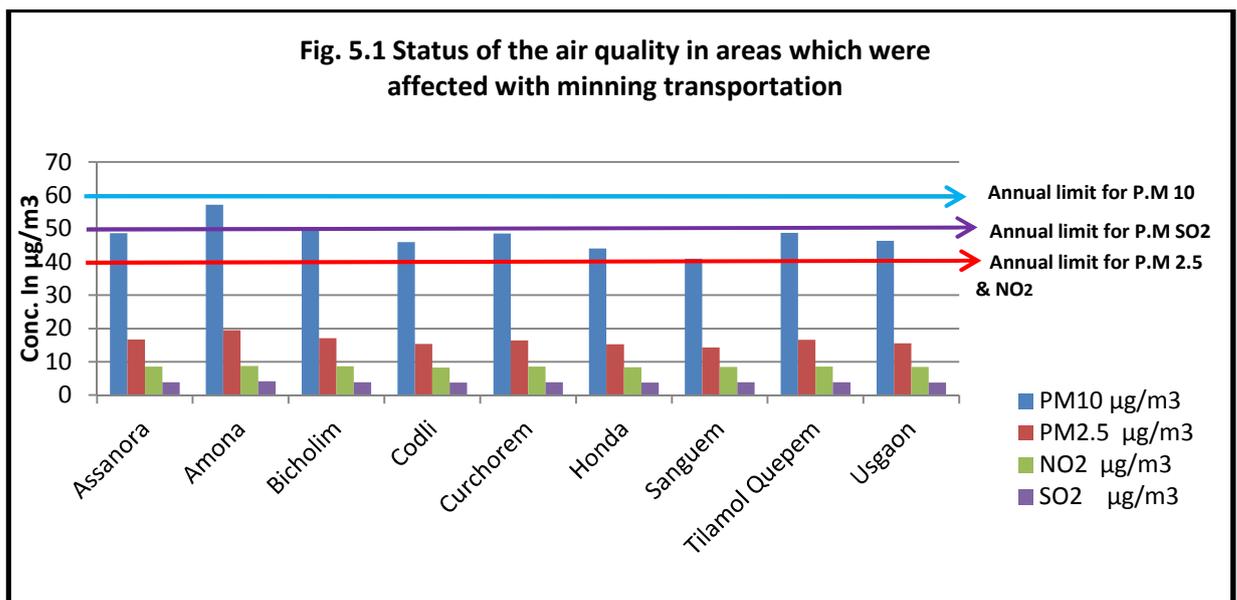
### 5.2.1 Ambient Air Quality in the Mining Areas of Goa

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 areas under the NAMP project in mining areas include Assanora, Bicholim, Honda, Codli, Amona, Usgao, Curchorem, Quepem and Sanguem.

During the year under report there were no mining and related transportation activities in the State of Goa as a result of the Supreme Court directions. However, being a continuous study, the air monitoring programme was conducted in the above areas during the year. The data and graphical representation is placed in Table 5.1 and Fig.5.2. The data indicates that the levels of SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>2.5</sub> levels are within the permissible limits; where as, PM<sub>10</sub> is exceeding the permissible limits at Amona.

**Table 5.1 :Trend status of Air Quality in areas which were affected with mining transportation during April 2014 – March 2015**

Parameter Location	PM10	PM2.5	NO <sub>2</sub>	SO <sub>2</sub>
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Assanora	48.56	16.73	8.55	3.87
Amona	57.16	19.49	8.70	4.12
Bicholim	49.39	17.10	8.60	3.83
Codli	45.94	15.39	8.26	3.73
Curcholem	48.47	16.37	8.53	3.85
Honda	44.03	15.25	8.38	3.73
Sanguem	40.98	14.28	8.48	3.82
Tilamol Quepem	48.71	16.61	8.58	3.84
Usgaon	46.28	15.53	8.43	3.74



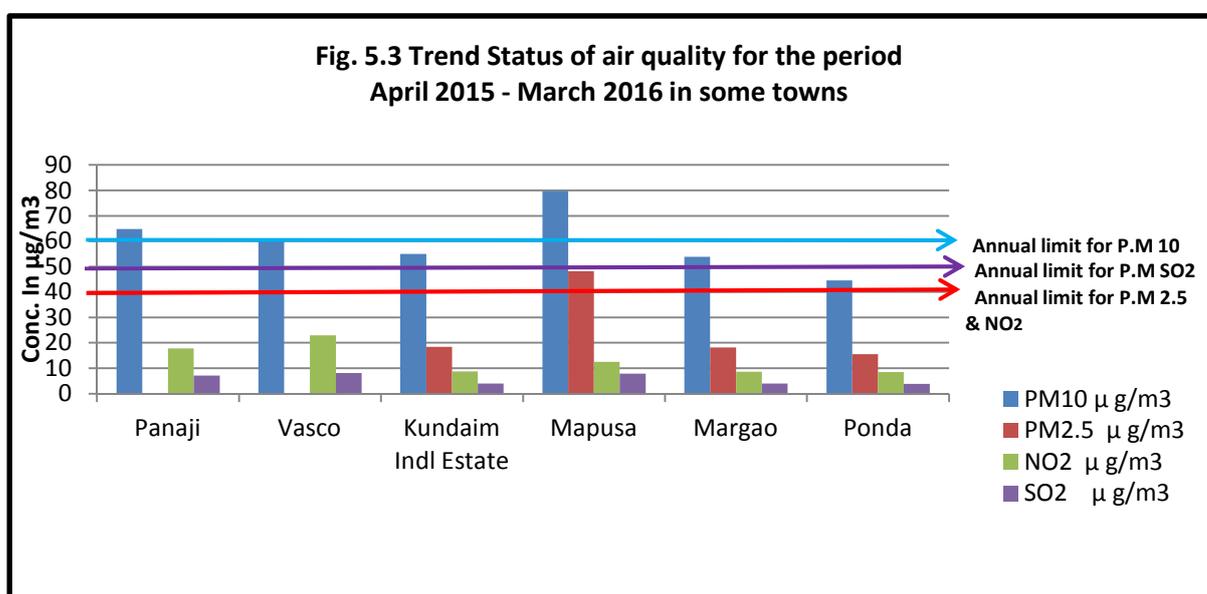
## 5.2.2 Ambient Air Quality in Other Areas of Goa

The Board is conducting ambient air quality monitoring at the following locations; viz; Panaji, Vasco, MPT area in Vasco, Mapusa, Margao, Ponda and Kundaim Industrial Estate. The Panaji and Vasco stations are being monitored by the Board staff, where as, monitoring at Mapusa, Margao, Ponda and Kundaim Industrial Estate are monitored through MoEF approved laboratories. The annual averages of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>2</sub> at some of the Towns is shown below in Table 5.2 and Fig 5.3. The data indicates that the levels of SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>2.5</sub> levels are within the permissible limits; where as, PM<sub>10</sub> is exceeding the permissible limit at Kundaim Industrial Estate.

**Table-5.2: Trend status of Air Quality for the period April 2014 – March 2015 at different locations in Goa**

Parameter Location	PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	SO <sub>2</sub> $\mu\text{g}/\text{m}^3$
Panaji	64.85	-*	17.78	7.12
Vasco	60.57	-*	22.89	8.18
Kundaim Indl Estate	54.98	18.47	8.76	3.96
Mapusa	79.70	48.26	12.46	7.84
Margao	53.88	18.17	8.61	3.94
Ponda	44.58	15.51	8.48	3.81

Note: \*At Panaji and Vasco, the process of initiation of monitoring of PM2.5 is under development. At present SPM is being monitored. SPM at Panaji and Vasco are  $74.15\mu\text{g}/\text{m}^3$  and  $84.20\mu\text{g}/\text{m}^3$  respectively.



### 5.3 National Water Quality Monitoring Programme (NWMP)

The Goa State Pollution Control Board monitors water quality at 52 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 52 locations covered under this programme are distributed throughout Goa such that 29 stations are located in the North District and 23 are located in the South District

Sr. No.	Type	Rivers/ Lake/Canal/Wells	Classification as per designated best use criteria	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	Saline Water II	1.Tonca, Marcela
13	R		Not classified	2.Amona Bridge
14	R		Saline Water II	3.Mandovi Bridge
15	R		Not classified	4.IFFI Jetty
16			Not classified	5. Ribander - Chodna Ferry Point
17	R		Not classified	6.Near Hotel Marriot
18	R	Rv. Mapusa	Saline Water II	Culvert on Mapusa-Panaji Highway
19	L	Anjunem Lake	Not classified	Anjunem
20	L	Mayem Lake	Class 'C'	Mayem, Bicholim
21	L	Carambolim Lake	Not classified	Carambolim, Old Goa
22	C	Cumbarjua Canal	Saline Water II	Corlim (Discharge Point of Syngeta Ltd.)
23	W	Well - Kudaim I.E.	Class 'A'	M/s Cadila Healthcare Ltd.
24	W	Well - Corlim I.E.	Class 'A'	Corlim Industrial Estate
25	W	Well - Pilerne I.E.	Class 'A'	M/s Unichem
26	W	Borewell - Bethora I.E.	Class 'A'	Bethora Industrial Estate
27	W	Borewell - Madkaim I.E.	Class 'A'	Madkaim Industrial Estate
28	STP	Influent Sample	Not classified	Tonca STP
29	STP	Treated Effluent Sample	Not classified	Tonca STP

Sr. No.	Type	Rivers/ Lake/Canal/Wells	Classification as per designated best use criteria	Location
1	R	Rv. Zuari	Saline Water II	1.Panchawadi
2	R		Not classified	2.Borim Bridge
3	R		Not classified	3.Marciam Jetty
4	R		Saline 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		Saline Water II	3.Pazarconi, Cuncolim (Near Culvert Margao- Cancona NH)
8	R		Not classified	4.Orlim Bridge, Orlim
9	R		Saline 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'	Cuncochim Industrial Estate

The total 52 locations are divided into two groups i.e., (i) 46 locations which are being monitored monthly and (ii) 6 locations (i.e. Bore wells) are monitored half yearly.

Five Hundred and Thirty Eight samples were collected from all these water bodies and analyzed during the year (Four Hundred and Seventy Five samples for 27 parameters and Twenty Four samples for 5 parameters during the regular monitoring and Forty Six samples for 55 parameters during annual monitoring).

The analytical results indicate that all the rivers mostly satisfy the quality requirement of the designated best uses as recommended by Central Pollution Control Board. The water quality data for the rivers observed during the year are given in Annexure III.

Figure 5.4 below is a map of Goa showing the water quality monitoring locations under National Water Monitoring Programme; MINARS. The monitoring locations are indicated as stars.

**Figure 5.4 : Map of Goa showing the Water Quality Monitoring locations under the National Water Monitoring Programme; MINARS**



## 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 PILOT SURVEY FOR DISSEMINATING SME'S TECHNOLOGIES FOR GROUNDWATER REMEDIATION BY BIOREMEDIATION OF THE SAL RIVER AND BETHORA**

**Purpose** : This survey plan was to utilize an integrated groundwater remediation unit to assess the effectiveness and advantages of using biostimulants to promote native microorganisms in the soil to remediate contaminated groundwater, and contributes in the future to restore the health of water environments in Goa State that had been possible polluted as a result of industrialization. This survey was also aimed to evaluate the feasibility of conducting environmental investigations by soil borings and bioremediation cleanup operations in Goa State

**Scope of Work/Activities**: First, two environmental investigations should be executed: (1) Site inspection (Phase I Environmental Site Assessment) and (2) soil and groundwater sampling investigation (Phase II Investigation). The objective of both investigations was to determine the extent of hexavalent chromium and other heavy metal contamination in the Sal River basin (Salcete region), including the Cuncolim Industrial Development Corporation (IDC), and in the Bethora IDC. Then, in the event that the above investigations identified hexavalent chromium and/or other heavy metal contamination at levels posing human health risks, pilot-scale bioremediation would be performed and a full-scale bioremediation plan would be developed. If no significant hexavalent chromium contamination is identified in the Salcete region and in the Bethora IDC during the above investigations, Asahi Geo Survey (AGS) will conduct a field demonstration for the Goa State Pollution Control Board using the integrated groundwater remediation unit

**Project Duration**: Survey started in February 2014 and concluded in March 2016.

**Visits**: 1<sup>st</sup> visit: 8<sup>th</sup> to 28<sup>th</sup> February 2014, for Phase I site inspection  
 2<sup>nd</sup> visit: 15<sup>th</sup> March to 12<sup>th</sup> April 2014, Phase I & II site survey  
 3<sup>rd</sup> visit: 21<sup>st</sup> May to 15<sup>th</sup> June 2014, for Phase I & II site survey  
 4<sup>th</sup> visit: 26<sup>th</sup> July to 2<sup>nd</sup> August 2014, for monsoon monitoring  
 5<sup>th</sup> visit: 14<sup>th</sup> March to 3<sup>rd</sup> April 2015, for Phase II site survey & bore-well installing/groundwater monitoring  
 6<sup>th</sup> visit: 7<sup>th</sup> to 22<sup>nd</sup> December 2015, for installing & check-up of project equipment (*ion-exchange unit etc.*)

**Result of Work/Activities in Sal River** : Goa State had been aware of potential human health risks from both organic contaminants in the Sal River and unauthorized dumping in the Sal River basin (*including Cuncolim IDC*). However, there was no enough data regarding the extent of hexavalent chromium or other heavy metal impacts for these areas, at the time of this survey was commenced. As such, survey started with Phase I and Phase II investigations to characterize the potential contamination in the target areas, and then remediation technologies were to be proposed based on the results of the Phase I and II investigations if hexavalent chromium is found in groundwater.

The Phase I and II investigations in the Sal River basin area identified: (a) organic groundwater contaminants in some area(s) which was due to municipal and hotel waste discharge, and agricultural activities; (b) heavy metal groundwater impacts including mercury and lead from unauthorized dumped wastes at a former production facility (Sunrise Zinc plant); and, (c) abnormal pH levels in irrigation channels in front of Cuncolim industrial estate after the monsoon. However, no hexavalent chromium related groundwater impacts were identified in this area.

### **Result of Work/Activities in Bethora Industrial Estate**

The Bethora Industrial Estate investigations found hexavalent chromium concentrations in excess of 10 ppm and abnormal pH levels in water collected from nullahs flowing through the industrial estate by industrial water discharge, and it was suspected that groundwater in this area may be contaminated due industrial activities. However, there were no hexavalent chromium concentrations exceeding the water standards in the subsequent soil and groundwater investigation which were carried out by soil borings.

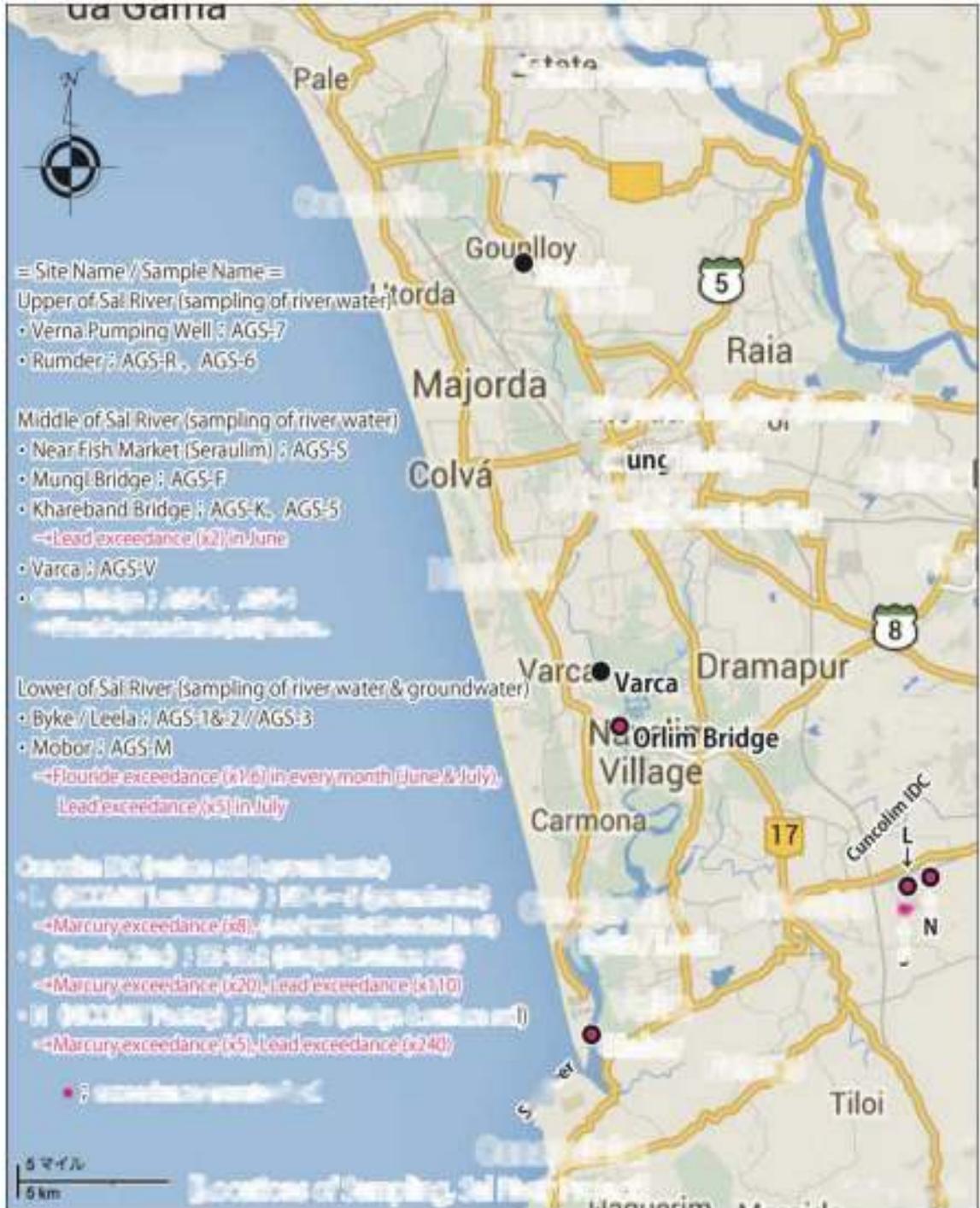
**Based on the Phase I & Phase II investigations, AGS and GSPCB have concluded that there was no evidence of significant hexavalent chromium groundwater contamination in the target areas of Bethora industrial estate and Cuncolim industrial estates and the River Sal.** In accordance with the scope of work, AGS has conducted a field demonstration using the groundwater remediation unit and associated equipment at the plating facility in Bethora industrial estate where hexavalent chromium levels were decreased to below analysis detection limits.

A bench-scale treatability study confirmed the effectiveness of the biostimulant (EDC™) in reducing hexavalent chromium levels in combination of groundwater and wastewater from a chromium plating facility in Bethora Industrial estate using hexavalent chromium from an approximate concentration 10 mg/L to below the lower analytical quantification limit in a period of four weeks. Additionally, by the laboratory study it was confirmed that ion-exchange resins were reduced hexavalent chromium in wastewater levels from as high as 80 mg/L and that the photocatalytic device reduced hexavalent chromium solution levels from 1 mg/L to below the respective lower analytical quantification limits. The groundwater model developed using Phase I data was also shown to accurately simulate the groundwater depth (5 m margin of error). The above studies confirmed the applicability of each technology in Goa State.

It should be noted that while no hexavalent chromium groundwater impacts were identified in either the Cuncolim or the Bethora Industrial Estates, the investigations revealed concentrations of the hazardous substances lead, mercury and cadmium exceeding the groundwater standards in some of the 14 test wells were installed in above both industrial estates. Therefore, we strongly recommend that GSPCB conducts periodic groundwater monitoring using our monitoring wells as part of Goa State's groundwater preservation activities.

### **Appendix I. 1 Locality map of sampling sites in Sal river basin**

Appendix I. 1 Locality map of sampling sites in Sal river basin



Appendix I.2 Locality map of installing wells in Cuncolim IDC



Appendix I.3 Locality map of installing wells in Bethora IDC



## Appendix 2.1 Analytical Results of Heavy Metals in Sal River

Sample Name	AGS-M		AGS-0		Method (water)
Sample Site	Mobor (Lower of Sal River)		Orlim Bridge (Middle of Sal River)		
Sampling Date	5.6.2014	30.7.2014	5.6.2014	30.7.2014	
Arsenic	0.003	0.0003	0.003	0.0004	APHA-3114-B-22nd Edition
Cadmium	ND	ND	0.002	ND	IS 3025: Part 41 : 1992, Reaffirmed 1998
Fluoride	1.38	0.9	0.84	0.06	APHA, 21st Edition 4500-F,B,D
Chromium (VI)	0.003	ND	0.003	0.003	IS 3025: Part 52: 2003
Chromium (III)	0.01	ND	0.007	0.05	IS 3025: Part 52: 2003
Lead	ND	0.051	ND	ND	IS 3025: Part 47: 1994, Reaffirmed 2003
Mercury	ND	0.0005	ND	ND	APHA 3112 B- 22nd Edition
Nickel	ND	ND	ND	ND	IS 3025: Part 54: 2003
Zinc	ND	ND	ND	ND	IS 3025: Part 49: 1994, Reaffirmed 2003
Iron	-	ND	-	0.74	APHA 3125 B
Manganese	ND	ND	0.19	ND	APHA 3125 B
Copper	0.004	ND	0.01	ND	APHA 3125 B
Nitrate (NO <sub>3</sub> -)	0.56	-	0.54	-	APHA-21st Edition 4500 NO <sub>3</sub> -B
COD	537.6	-	192	-	APHA-21st Edition 5220-B
unit	mg/L	mg/L	mg/L	mg/L	-

Standard of "Fluoride": 0.8 mg/L, Standard of "Lead": 0.01 mg/L, ND: Not Detected

## Appendix 2.1 Continued

Sample Name	AGS-K		AGS-R		Method (water)
Sample Site	Khareband Bridge (Middle of Sal River)		Rumder (Upper of Sal River)		
Sampling Date	5.6.2014	30.7.2014	5.6.2014	30.7.2014	
Arsenic	0.002	0.0002	0.002	0.0003	APHA-3114-B-22nd Edition
Cadmium	BDL	ND	ND	ND	IS 3025: Part 41 : 1992, Reaffirmed 1998
Fluoride	0.32	0.02	0.14	0.02	APHA, 21st Edition 4500-F,B,D
Hexavalent Cr, [Cr(VI)]	0.01	0.01	0.003	0.01	IS 3025: Part 52: 2003
Trivalent Cr [Cr(III)]	0.01	ND	0.007	ND	IS 3025: Part 52: 2003
Lead	0.02	ND	ND	ND	IS 3025: Part 47: 1994, Reaffirmed 2003
Mercury	ND	ND	ND	ND	APHA 3112 B- 22nd Edition
Nickel	-	ND	ND	ND	IS 3025: Part 54: 2003
Zinc	ND	ND	ND	ND	IS 3025: Part 49: 1994, Reaffirmed 2003
Iron		1.02	-	0.73	APHA 3125 B
Manganese	0.07	ND	0.1	ND	APHA 3125 B
Copper	0.01	ND	0.01	ND	APHA 3125 B
Nitrate (NO <sub>3</sub> -)	1.03	-	0.37	-	APHA-21st Edition 4500 NO <sub>3</sub> -B
COD	24	-	16	-	APHA-21st Edition 5220-B
unit	mg/L	mg/L	mg/L	mg/L	-

Standard of "Lead": 0.01 mg/L, ND: Not Detected

## Appendix2.2 Analytical Results of Microbiology along Sal River

## Monitoring in April

Sample Name	AGS-1	AGS-2	AGS-3	unit	Method (water)
Sample Site	Near Byke (Lower of Sal)	Dug Well in Byke (Lower of Sal)	Bore Well in Leela (Lower of Sal)		
Sampling Date	24.4.2014	24.4.2014	24.4.2014		
Plate count/ml, 37°C	TNTC	TNTC	TNTC	Number	IS: 1622: 1981 reaff 2009
MPN/100ml (coliform organisms)	1600	1600	1600	Number	IS: 1622: 1981 reaff 2009
Fecal Coliforms	Present	Absent	Present	A/P	IS: 1622: 1981 reaff 2009
E. Coli	Present	Absent	Present	A/P	IS: 1622: 1981 reaff 2009
Salmonella	Absent	Absent	Absent	A/P	IS 5887 (P-3): 1999 Reaff 2009
Shigella	Absent	Absent	Absent	A/P	IS 5887 (P-7): 1999 Reaff 2009
Vibrio parahaemolyticus	Absent	Absent	Absent	A/P	IS 5887 (P-5): 1999 Reaff 2009
Vibrio cholerae	Absent	Absent	Absent	A/P	IS 5887 (P-5): 1999 Reaff 2009
Pseudomonas aeruginosa	Absent	Absent	Absent	A/P	IS 13428 :2005 Reaff 2011 D
BOD (Biological Oxygen Demand) (3 days @ 27° C)	80	<3	<3	mg/l	IS 3025: Part 44: 1993, Reaff. 2009
COD Chemical Oxygen Demand	237.6	15.84	27.72	mg/l	APHA-21st Edition 5220-B
Sulfate (S04)	796.2	22.8	32.85	mg/l	IS 3025: Part 24: 1986, Reaff. 2009
Nitrate (N03)	0.67	3.47	0.3	mg/l	APHA-21st Edition 4500 N03-B
Organic Nitrogen	3.45	2.45	3.35	mg/l	IS 3025: Part 34: 1988, Reaff. 2009
Hexavalent Chromium	0.003	0.006	0.01	mg/l	IS 3025: Part 52: 2003
Phosphate (P04)	0.05	0.06	0.11	mg/l	IS 3025: Part 31 : 1988, Reaff. 2009

TNTC : Too Numerous To Count

## Appendix2.2 Continued

## Monitoring in April (Continued)

Sample Name	AGS-4	AGS-5	AGS-6	AGS-7	unit
Sample Site	Orlim Bridge (Middle of Sal)	Khareband Bridge (Middle of Sal)	Rumder (Upper of Sal)	Verna Spring (Upper of Sal)	
Sampling Date	24.4.2014	24.4.2014	24.4.2014	24.4.2014	
Plate count/ml, 37°C	TNTC	TNTC	TNTC	TNTC	Number
MPN/100ml (coliform organisms)	1600	1600	1600	2	Number
Fecal Coliforms	Present	Present	Present	Absent	A/P
E. Coli	Present	Present	Present	Absent	A/P
Salmonella	Absent	Absent	Absent	Absent	A/P
Shigella	Absent	Absent	Absent	Absent	A/P
Vibrio parahaemolyticus	Absent	Absent	Absent	Absent	A/P
Vibrio cholerae	Absent	Absent	Absent	Absent	A/P
Pseudomonas aeruginosa	Absent	Absent	Absent	Absent	A/P
BOD (Biological Oxygen Demand) (3 days @ 27° C)	130	24	140	<3	mg/l
COD Chemical Oxygen Demand	435.6	68.64	285.12	7.92	mg/l
Sulfate (S04)	498.6	11.79	2.9	11.79	mg/l
Nitrate (N03)	0.77	0.57	1.07	1.1	mg/l
Organic Nitrogen	6.6	7.04	6.85	4.48	mg/l
Hexavalent Chromium	0.01	0.02	0.03	0.01	mg/l
Phosphate (P04)	0.12	0.1	1.17	0.05	mg/l

TNTC : Too Numerous To Count; analytical method is referred previous table 3

## Appendix 2.2 Continued

## Monitoring in monsoon

Sample Name	AGS-M	AGS-0	AGS-V	unit	Method (water)
Sample Site	Mobor (Lower of Sal)	Orlim Bridge (Middle of Sal)	Varca (Middle of Sal)		
Sampling Date	31.7.2014	31.7.2014	31.7.2014		
Plate count/ml, 37°C	TNTC	TNTC	TNTC	Number	IS: 1622: 1981 reaff 2009
MPN/100ml (coliform organisms)	1600	1600	1600	Number	IS: 1622: 1981 reaff 2009
Fecal Coliforms	Present	Present	Present	A/P	IS: 1622: 1981 reaff 2009
E. Coli	Present	Present	Present	A/P	IS: 1622: 1981 reaff 2009
Salmonella	Absent	Absent	Absent	A/P	IS 5887 (P-3): 1999 Reaff 2009
Shigella	Absent	Absent	Absent	A/P	IS 5887 (P-7): 1999 Reaff 2009
Vibrio parahaemolyticus	Absent	Absent	Absent	A/P	IS 5887 (P-5): 1999 Reaff 2009
Vibrio cholerae	Absent	Absent	Absent	A/P	IS 5887 (P-5): 1999 Reaff 2009
Pseudomonas aeruginosa	Absent	Absent	Absent	A/P	IS 13428 :2005 Reaff 2011 D
BOD (Biological Oxygen Demand) (3 days @ 27° C)	19.5	1.5	1.75	mg/l	IS 3025: Part 44: 1993, Reaff. 2009
COD Chemical Oxygen Demand	106.67	21.33	21.33	mg/l	APHA-21st Edition 5220-B
Sulfate (S04)	193.25	6.57	6.18	mg/l	IS 3025: Part 24: 1986, Reaff. 2009
Nitrate (N03)	0.41	0.82	0.78	mg/l	APHA-21st Edition 4500 N03-B
Organic Nitrogen	3.51	0.43	0.11	mg/l	IS 3025: Part 34: 1988, Reaff. 2009
Hexavalent Chromium	0.01	0.01	0.003	mg/l	IS 3025: Part 52: 2003
Phosphate (P04)	0.02	0.07	0.13	mg/l	IS 3025: Part 31 : 1988, Reaff. 2009

TNTC : Too Numerous To Count

## Appendix 2.2 Continued

## Monitoring in Monsoon (continued)

Sample Name	AGS-M	AGS-0	AGS-V	unit	Method (water)
Sample Site	Mobor (Lower of Sal)	Orlim Bridge (Middle of Sal)	Varca (Middle of Sal)		
Sampling Date	31.7.2014	31.7.2014	31.7.2014		
Plate count/ml, 37°C	TNTC	TNTC	TNTC	Number	IS: 1622: 1981 reaff 2009
MPN/100ml (coliform organisms)	1600	1600	1600	Number	IS: 1622: 1981 reaff 2009
Fecal Coliforms	Present	Present	Present	A/P	IS: 1622: 1981 reaff 2009
E. Coli	Present	Present	Present	A/P	IS: 1622: 1981 reaff 2009
Salmonella	Absent	Absent	Absent	A/P	IS 5887 (P-3): 1999 Reaff 2009
Shigella	Absent	Absent	Absent	A/P	IS 5887 (P-7): 1999 Reaff 2009
Vibrio parahaemolyticus	Absent	Absent	Absent	A/P	IS 5887 (P-5): 1999 Reaff 2009
Vibrio cholerae	Absent	Absent	Absent	A/P	IS 5887 (P-5): 1999 Reaff 2009
Pseudomonas aeruginosa	Absent	Absent	Absent	A/P	IS 13428 :2005 Reaff 2011 D
BOD (Biological Oxygen Demand) (3 days @ 27° C)	19.5	1.5	1.75	mg/l	IS 3025: Part 44: 1993, Reaff. 2009
COD Chemical Oxygen Demand	106.67	21.33	21.33	mg/l	APHA-21st Edition 5220-B
Sulfate (S04)	193.25	6.57	6.18	mg/l	IS 3025: Part 24: 1986, Reaff. 2009
Nitrate (N03)	0.41	0.82	0.78	mg/l	APHA-21st Edition 4500 N03-B
Organic Nitrogen	3.51	0.43	0.11	mg/l	IS 3025: Part 34: 1988, Reaff. 2009
Hexavalent Chromium	0.01	0.01	0.003	mg/l	IS 3025: Part 52: 2003
Phosphate (P04)	0.02	0.07	0.13	mg/l	IS 3025: Part 31 : 1988, Reaff. 2009

TNTC : Too Numerous To Count; analytical method is referred previous table 3

**Appendix2.3 Analytical Results of Heavy Metals in Well Water, NICOMET Secured Landfill Site**

Sample Name	ND-1/MW-1			ND-2/MW-2		Method (water)
	NICOMET Landfill Site (NE site)			NICOMET Landfill Site (SE site)		
Sample Site	8.4.2014	4.6.2014	30.7.2014	8.4.2014	4.6.2014	
Sampling Date	8.4.2014	4.6.2014	30.7.2014	8.4.2014	4.6.2014	
Arsenic	ND	ND	0.002	ND	ND	APHA-3114-B-22nd Edition
Cadmium	ND	ND	ND	ND	ND	IS 3025: Part 41 : 1992, Reaffirmed 1998
Fluoride	0.01	0.01	ND	0.05	0.21	APHA, 21st Edition 4500-F,B,D
Chromium (VI)	0.006	ND	ND	0.006	ND	IS 3025: Part 52 : 2003
Chromium (III)	ND	0.01	ND	ND	ND	IS 3025: Part 52 : 2003
Lead	ND	ND	ND	ND	ND	IS 3025: Part 47 : 1994, Reaffirmed 2003
Mercury	0.002	0.002	0.0004	0.004	0.001	APHA 3112 B-22nd Edition
Nickel	ND	ND	0.011	ND	ND	IS 3025: Part 54: 2003
Zinc	0.007	ND	0.045	0.05	ND	IS 3025: Part 49 : 1994, Reaffirmed 2003
Iron	-	0.01	ND	-	ND	APHA 3125 B
Manganese	-	ND	ND	-	0.07	APHA 3125 B
Copper	-	0.02	ND	-	ND	APHA 3125 B
unit	mg/L	mg/L	mg/L	mg/L	mg/L	-

Standard of "Mercury": 0.001 mg/L, ND: Not Detected

**Appendix2.3 Continued**

Sample Name	ND-3/MW-3			Method (water)
	NICOMET Landfill Site (SW site)			
Sample Site	8.4.2014	4.6.2014	30.7.2014	
Sampling Date	8.4.2014	4.6.2014	30.7.2014	
Arsenic	ND	ND	0.0004	APHA-3114-B-22nd Edition
Cadmium	ND	ND	-	IS 3025: Part 41 : 1992, Reaffirmed 1998
Fluoride	0.04	0.11	-	APHA, 21st Edition 4500-F,B,D
Chromium (VI)	0.05	0.02	0.003	IS 3025: Part 52: 2003
Chromium (III)	ND	ND	0.024	IS 3025: Part 52: 2003
Lead	ND	ND	-	IS 3025: Part 47 : 1994, Reaffirmed 2003
Mercury	0.002		0.002	APHA 3112 B-22nd Edition
Nickel	ND	ND	0.012	IS 3025: Part 54: 2003
Zinc	0.05	ND	-	IS 3025: Part 49 : 1994, Reaffirmed 2003
Iron	-	0.01	-	APHA 3125B
Manganese	-	0.05	-	APHA 3125B
Copper	-	ND	-	APHA 3125B
unit	mg/L	mg/L	mg/L	-

Standard of "Mercury": 0.001 mg/L, ND: Not Detected

## Appendix 2.3 Continued

Sample Name	ND-4/MW-4			ND-5/MW-5		Method (water)
	NICOMET Landfill Site (West site)			NICOMET Landfill Site (NW site)		
Sample Site						
Sampling Date	8.4.2014	4.6.2014	30.7.2014	12.2.2014	8.4.2014	
Arsenic	ND	ND	0.001	ND	0.001	APHA-3114-B-2 2nd Edition
Cadmium	ND	ND	ND	ND	ND	IS 3025: Part 41 : 1992, Reaffirmed 1998
Fluoride	0.09	0.19	0.13	0.12	0.04	APHA, 21st Edition 4500-F,B,D
Chromium (VI)	ND	ND	0.003	ND	ND	IS 3025: Part 52:2003
Chromium (III)	ND	0.01	0.004	ND	ND	IS 3025: Part 52:2003
Lead	ND	ND	ND	ND	ND	IS 3025: Part 47: 1994, Reaffirmed 2003
Mercury	0.001	0.001	0.0001	ND	ND	APHA 3112 B- 22nd Edition
Nickel	ND	ND	0.006	0.002	0.007	IS 3025: Part 54:2003
Zinc	0.012	ND	0.028	ND	0.013	IS 3025: Part 49: 1994, Reaffirmed 2003
Iron	-	0.06	0.18	ND	0.038	APHA 3125 B
Manganese	-	1.3	1.18	ND	ND	APHA 3125 B
Copper	-	0.01	ND	ND	0.011	APHA 3125 B
unit	mg/L	mg/L	mg/L	mg/L	mg/L	

Standard of "Mercury": 0.001 mg/L, ND: Not Detected

## Appendix 2.5 Groundwater Monitoring Results of test wells in Cuncolim IDC

Parameter (mg/L)	CC-1			CC-2			CC-3			CC-4			CC-5			CC-6			CC-7			Drinking Water Standards
	4/2	13/9	2/9	4/2	12/18	2/9	4/2	12/18	2/9	4/2	12/9	2/9	4/2	12/18	2/9	4/2	12/9	2/9	4/2	12/9	2/9	
Copper as Cu	0.007	0.0222	0.005	0.003	0.0026	0.015	0.03	0.0048	0.002	0.29	0.318	0.356	0.68	0.291	0.14	0.09	0.02	0.006	0.242	0.214	0.2	0.05
Fluoride as F	0.25	0.1	0.04	0.18	0.1	0.05	0.28	0.23	0.14	0.21	0.12	0.08	0.21	0.07	0.02	0.25	0.11	0.18	0.21	0.23	0.26	1
Mercury as Hg	ND	0.006	0.005	ND	0.028	ND	ND	0.008	ND	ND	0.001	ND	0.005	0.004	ND	0.008	0.003	0.001	0.001	0.001	0.003	0.001
Cadmium as Cd	ND	0.0015	0.013	0.08	0.017	0.084	0.02	0.018	0.026	0.01	0.0177	0.005	ND	0.0194	0.027	0.03	0.045	0.017	ND	0.0548	0.046	0.003
Arsenic as As	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	0.01
Lead as Pb	0.07	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	ND	ND	ND	ND	ND	ND	ND	0.01
Zinc as Zn	0.17	0.048	0.039	0.2	0.04	0.089	0.07	0.093	0.779	2.48	1.96	1.004	1.08	1.89	1.798	3.11	3.21	3.218	3.26	3.19	1.942	5
Hexavalent chromium as Cr6+	ND	0.006	BDL	BDL	BDL	0.004	BDL	BDL	0.003	BDL	BDL	0.025	0.009	BDL	0.02	0.006	BDL	0.02	BDL	BDL	BDL	0.05
Sulphates as SO4	0.18	10.5	13.55	18.25	29.04	32.25	23.83	67.6	188.38	11.03	29.1	26.39	39.2	37.3	31.52	30.28	49	125.59	49.03	103.8	185.57	200
Manganese as Mn	0.14	BDL	0.26	0.24	0.02	0.25	0.24	0.03	0.28	0.19	BDL	3.43	0.14	0.05	0.01	0.07	0.19	18.93	0.6	0.38	15.41	0.1
Nickel as Ni	ND	0.0422	ND	0.38	0.013	0.005	0.023	0.028	0.041	ND	0.0495	0.009	0.05	0.062	0.041	0.02	0.007	0.18	0.17	0.191	0.13	0.02
Trivalent chromium as Cr3+	0.004	0.001	BDL	0.01	0.008	BDL	0.004	0.004	BDL	0.005	0.007	BDL	0.005	0.001	BDL	BDL	0.002	BDL	BDL	0.003	BDL	-
Iron as Fe	0.35	0.35	0.04	0.33	0.02	0.05	0.08	0.01	0.10	0.65	0.07	0.04	3.00	0.03	0.09	1.85	0.05	0.25	2.09	0.07	0.16	0.3
Total Chromium as Cr (calculated)	0.004	0.01	BDL	0.01	0.008	BDL	0.01	0.004	BDL	0.008	0.007	BDL	0.003	0.01	BDL	0.02	0.006	BDL	0.02	0.003	BDL	-
Cobalt	0.004	0.014	ND	0.08	0.003	0.028	0.08	0.012	0.019	0.04	0.0057	0.002	0.12	0.004	0.04	0.00	0.0033	0.008	0.01	0.071	0.012	-

ND: Not Detected, BDL: Below Detection Limit.

## Appendix 2.6 Groundwater Monitoring Results of Test Wells in Bethora IDC

Parameter (mg/L)	BT-1			BT-2			BT-3			BT-4			BT-5			BT-6			
	3/31	12/17	2/2	3/31	12/17	2/2	3/31	12/17	2/2	3/31	12/17	2/2	3/31	12/17	2/2	3/31	12/17	2/2	3/31
Copper as Cu	0.023	0.006	0.007	0.011	0.013	0.009	0.003	0.0026	0.01	0.2	0.013	0.045	0.12	0.002	0.003	0.01	0.007	0.024	0.00
Fluoride as F	0.32	0.16	0.1	0.16	0.5	0.04	0.16	0.16	0.26	1.04	0.46	0.04	1.00	0.53	1.20	0.8	0.65	0.47	0.70
Mercury as Hg	ND	0.007	ND	ND	0.0008	ND	ND	ND	ND	ND	0.006	0.002	ND	0.005	ND	ND	0.001	ND	ND
Cadmium as Cd	ND	0.009	0.001	ND	0.0009	0.002	ND	0.0015	0.003	ND	ND	0.008	ND	ND	0.009	0.001	0.0015	0.012	0.00
Arsenic as As	0.0037	ND	ND	0.0004	ND	ND	0.0003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead as Pb	ND	ND	ND	0.11	ND	ND	0.08	ND	ND	0.28	ND	ND	0.47	ND	ND	0.15	ND	ND	0.17
Zinc as Zn	0.66	0.356	0.44	0.079	2.054	1.061	0.16	0.052	0.437	2.008	0.48	1.289	2.88	0.018	1.703	0.47	0.087	0.100	1.07
Hexavalent chromium as Cr(VI)	0.003	BDL	0.01	BDL	BDL	BDL	BDL	0.003	BDL	0.03	BDL	0.01	ND	0.003	0.01	BDL	BDL	0.01	0.00
Sulphates as SO <sub>4</sub>	9.1	13.48	10.69	3.33	13.13	12.86	3.46	11.0	9.89	100.5	20.38	44.89	18.73	10.68	70.48	13.88	11.86	40.21	18.70
Manganese as Mn	0.17	0.69	0.98	0.12	0.07	BDL	0.19	0.05	BDL	0.34	BDL	0.4	0.03	0.03	0.15	0.05	BDL	0.15	0.19
Nickel as Ni	0.03	0.003	0.03	ND	0.39	0.334	ND	ND	0.041	0.1	0.559	0.163	0.06	ND	0.559	0.02	0.005	0.066	0.1
Trivalent chromium as Cr(III)	BDL	BDL	BDL	0.01	0.005	BDL	0.002	0.003	BDL	0.19	0.01	BDL	ND	0.001	BDL	0.003	0.02	BDL	0.00
Iron as Fe	0.13	BDL	3.23	0.39	BDL	0.25	0.1	BDL	0.04	2.99	0.19	3.04	0.01	0.01	2.25	1.26	BDL	0.03	0.00
Total Chromium as Cr (calculated)	0.003	BDL	0.01	0.01	0.005	BDL	0.002	0.006	BDL	0.22	0.01	0.01	ND	0.004	0.01	0.003	0.02	0.01	0.00

ND: Not Detected

## 6.5 STATE LEVEL MONITORING CUM WORKING COMMITTEE FOR SOLID WASTE MANAGEMENT AND HIGH LEVEL TASK FORCE TO RESOLVE THE SOLID WASTE MANAGEMENT PROBLEMS IN THE STATE OF GOA

- The Government of Goa has constituted a **Monitoring Cum Working Committee** to support, consolidate and assist in the activities of various Government Departments, Local Panchayati Raj Institutions, NGO's / VGO's; who are working in the field of Solid Waste Management and monitoring the enforcement of the Goa Non Bio-degradable Garbage (Control) Act 1996 & Rules 1997 and the Plastic Waste (Management and Handling) Rules, 2011 under the Chairmanship of Hon. Minister for Environment and the **High level Task Force (HLTF)** to provide directions and implement various measures as announced in the Budget Speech, 2012-13, towards resolving the solid waste management problems affecting the State of Goa.
- The decisions taken by the Committee as well as the HLTF are implemented through the Goa State Pollution Control Board. The records and the accounts are also maintained by the Goa State Pollution Control Board.
- The following tasks were undertaken by the Committee / HLTF
  1. The committee has signed a MoU with M/s. ACC Wadi Ltd. through Department of Science, Technology & Environment for disposal of baled non-recyclable combustible waste generated in the State in its cement kiln. Approx. 120 MT of the baled waste from Corporation of City of Panaji (CCP) has been transported and disposed at M/s. ACC Wadi Ltd. The cost of transportation was borne by the State Government.
  2. The Committee subsequently has signed a MoU with M/s. Vasavadatta Cements as M/s. ACC Wadi had stopped accepting waste due to maintenance.
  3. The Committee also had discussion with M/s. J. K. Cement and M/s. Bagalkot Cements regarding signing a MoU for disposal of the combustible waste. The waste was also sent to M/s. J. K. Cements for conducting trials. But so far no communication has been received in favor of the agreement for disposal of the waste.
  4. The Monitoring Cum Working Committee for Solid Waste Management has thereafter continued the activity of the collection of the Highway waste along the National Highway by appointing contractors for collection and transportation through the Goa State Infrastructure Development Corporation Limited.
  5. The Government through Monitoring cum Working Committee conducted awareness programme for 100 selected schools regarding segregation of the waste at source. In this training programme teachers were selected from the respective schools that were then trained regarding the segregation of waste at source. Set of four different bins were given to the 94 selected schools all over Goa for collection and segregation of the household / domestic waste. The same is already being implemented in these schools.
  6. The non biodegradable waste collected by the Schools, Village Panchayats, Municipalities, NGOs, Housing Colonies, etc. are transported to the Civil Supplies Godown at Karapur Sarvan / and GHRSSIDC shed at Kakoda by the Contractor appointed by the Committee.
  7. The collected waste at Kakoda is segregated and baled by the contractor appointed by M/s. Vasavadatta Cements. The cost of baling is borne by M/s. Vasavadatta whereas the cost of electricity and other infrastructure is borne by the Committee. The baled waste is then sent to the Cement kiln of M/s. Vasavadatta Cements, Sedam for co-incineration. The cost of the transportation is borne by the Committee.
  8. The waste collected at Karapur Sarvan is presently being segregated by the Contractor appointed by the Committee, which will be soon baled and transported to M/s. Vasavadatta Cements for co-incineration at the cost of Committee.
  9. The non biodegradable combustible waste collected by the Corporation of the City of Panaji is also transported by the Committee to M/s. Vasavadatta Cements for co incineration.
  10. Approx. 750 MT of the baled non biodegradable non recyclable combustible baled waste has been transported and disposed at M/s. Vasavadatta Cements, Sedam

11. The Committee through local TV channels is also telecasting video clip for creating awareness regarding segregation of waste at source and prevention of littering in public places.
12. Accordingly the drives for this purpose were held and further the drive was extended vigorously from 22nd April 2013 on the occasion of Earth Day all over Goa and around the beaches of Goa.
13. The decision was taken in the meeting of High Level Task Force (HLTF) to ban the sale of plastic less 40 micron thickness and impose fine on the violators. The fines collected were approximately Rs.1,20,000/-.
14. The decision was also taken to make the major producers who are selling their goods in plastic bags to pay the plastic cess. The committee decided to increase VAT or impose 2 % cess on the products. The money received would be utilized for garbage management.



Fig 6.8 (1) Baling Machine



Fig 6.8 (2) Baling of Plastic Waste in progress



Fig 6.8 (3) Bales ready for further process

#### 6..5.1 CO-PROCESSING OF PLASTIC WASTE

The collected, baled plastic waste is transported to M/s. Vasavadatta Cement for co-processing. The co-processing of waste is done in hot disc reactor. The temperature is maintained at 1050- 1150Deg C. The alternative fuel like plastic waste is used for co-processing which has a minimum calorific value of 2500Kcal/Kg. The alternative fuel will be able to attain up to 19% of total coal substitution. The use of alternative fuel will reduce use of fossil fuel.



Fig. 6.8 (4): Co-Processing of Plastic Waste

#### 6.6 ANNUAL REPORT OF STACK MONITORING FOR THE YEAR APRIL 2015 TO MARCH 2016

During the year under report, the Goa State Pollution Control Board conducted Stack Emission Monitoring programmes for 46 stacks in 27 different industries within the State of Goa. The units mostly comprise of induction furnaces, reheating furnace, boilers, Cement Mill and Thermic Fluid Heater. The details of the stack emission monitoring conducted are presented below.

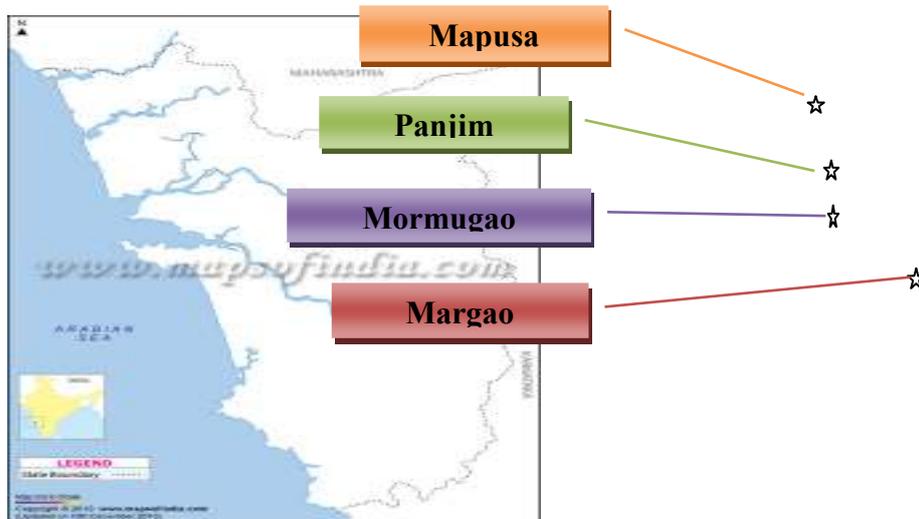
**Table 6.3: Details of Stack Emission Monitoring conducted during the year**

Sr. No.	Area	Industrial Area	Name of Unit	Type of Stack	Date of Sampling
1	Santa Monica Works, Corlim Ilhas Goa	-	M/S. Syngenta India Ltd	Pretolachor ( Oil Heating Unit)	01.04.15
2	-	Cuncolim Ind. Estate	M/S. Nicomet Industries Ltd	Thermic Fluid Heater (6 lakh Kcal/hr)	08.04.15
3	-	Cuncolim Ind. Estate -	M/S. Nicomet Industries Ltd	Boiler ( 5Mt/hr)	10.04.15
4	-	Cuncolim Ind. Estate	M/S. Shri Balaji Rollings Pvt Ltd	Induction Furnace	15.04.15
5.	-	Cuncolim Ind. Estate	M/S. John Distilleries Pvt Ltd.	Boiler ( 6 TPH )	17.04.15
6.	-	Kundaim Ind. Estate	M/S. Shivam Ispat Pvt Ltd	Induction Furnace	21.04.15
7.	-	Kundaim Ind. Estate	M/S. Kundil Alloys Pvt Ltd	Induction Furnace( Roof Suction )	28.04.15
8.	-	Kundaim Ind. Estate	M/S. Kundil Alloys Pvt Ltd	Induction Furnace( Hood Suction )	04.05.15
9.	-	Madkaim Ind. Estate	M/S. Twenty First Century Wire Rods Ltd	Induction Furnace( Roof Suction)	06.05.15
10.	-	Madkaim Ind. Estate -	M/S. Twenty First Century Wire Rods Ltd	Induction Furnace( Hood Suction)	12.05.15
11.	-	Madkaim Ind. Estate	M/S. Balaji Metals	Induction Furnace	18.05.15
12.	-	Madkaim Ind. Estate	M/S. Mangal Iron Pvt Ltd	Induction Furnace	20.05.15
13.	-	Madkaim Ind. Estate -	M/s. Goa Ispat Ltd	Reheating Furnace Rolling Mill	22.05.15
14.	-	Kundaim Ind. Estate	M/s. Cadila Healthcare Ltd.	Boiler ( 6T/hr)	14.10.15
15.	-	Colvale Ind. Estate	M/s. Glenmark Generics Ltd	Boiler ( 850 Kg/hr)	23.10.15
16	-	Tivim Ind. Estate	M/s. Geno Pharmaceuticals Ltd	Boiler ( 850 Kg/hr)	26.10.15
17.	-	Tivim Ind. Estate	M/s. Sigma Laboratories Ltd	Boiler ( 600 Kg/hr)	29.10.15
18.	-	Verna Ind. Estate	M/S. Cipla Limited	Boiler (2.8 T/hr)	02.11.15
19.	-	Verna Ind. Estate	M/S. Cipla Limited	Boiler (3.5 T/hr)	04.11.15
20.	-	Pilerne Ind. Estate	M/S. Amanta Healthcare Limited	Boiler ( 6.0T/ hr )	13.11.15
21.	-	Usgao Industrial Area	M/S. Nestle India Limited	Boiler ( 5T/ hr )	24.11.15
22.	-	Usgao Industrial Area	M/S. Nestle India Limited	Boiler ( 2.5T/ hr )	26.11.15
23.	-	Tivim Ind. Estate	M/s. Centaur Pharmaceuticals Pvt Ltd	Boiler ( 600 Kg/hr)	04.12.15
24.	-	Verna Ind. Estate	M/S. Cipla Limited	Boiler (2.8 T/hr)	08.12.15
25.	-	Verna Ind. Estate	M/S. Cipla Limited	Boiler (3.5 T/hr)	11.12.15
26	-	Verna Ind.	M/S. Sanofi India Limited	Boiler (2.0 T/hr)	14.12.15

		Estate			
27.	-	Verna Ind. Estate	M/S. Sanofi India Limited	Boiler (3.0 T/hr)	16.12.15
28.	-	Verna Ind. Estate	M/S. Cipla Limited	Boiler (2.0 T/hr)	23.12.15
29.	-	Margao Industrial Estate	M/s. Datson Engineers,	Furnace (35Kg/hr)	05.01.16
30	-	Verna Ind. Estate	M/S. Teva Pharm India Pvt Limited	Boiler (3.0 T/hr)	08.01.16
31	-	Verna Ind. Estate	M/S. Varun Beverages Limited	Boiler (2.0 T/hr)	11.01.16
32	Village Maulinguem, Bicholim Goa	-	M/S. Nestle India Limited	Boiler (10T/hr)	13.01.16
33	Village Maulinguem, Bicholim Goa	-	M/S. Nestle India Limited	Boiler (10T/hr)	20.01.16
34	Village Maulinguem, Bicholim Goa	-	M/S. Nestle India Limited	Boiler (10T/hr)	27.01.16
35	Village Maulinguem, Bicholim Goa	-	M/S. Nestle India Limited	Incinerator (100kg/hr)	29.01.16
36	-	Madkaim Ind. Estate -	M/s. Goa Ispat Ltd	Reheating Furnace Rolling Mill	01.02.16
37	-	Madkaim Ind. Estate -	M/S. Twenty First Century Wire Rods Ltd	Induction Furnace (Hood Suction)	03.02.16
38	-	Cuncolim Ind. Estate	M/S.Global Ispat Ltd	Common Induction Furnace (6MT & 8MT)	29.02.16
39	-	Cuncolim Ind. Estate	M/S. Trimurty Industry	Reheating Furnace (Rolling Mill)	02.03.16
40	-	Cuncolim Ind. Estate	M/S. Rukminirama Steel Rollings Pvt Ltd	Reheating Furnace (Rolling Mill)	09.03.16
41	Surla, Bicholim Goa	-	M/s. Alcon Cement Company Pvt Ltd	Cement Mill – I (12TPH)	11.03.16
42	Surla, Bicholim Goa	-	M/s. Alcon Cement Company Pvt Ltd	Packer – II (60TPH)	14.03.16
43	Surla, Bicholim Goa	-	M/s. Alcon Cement Company Pvt Ltd	Packer – I (30TPH)	16.03.16
44	Surla, Bicholim Goa	-	M/s. Alcon Cement Company Pvt Ltd	Cement Mill – II (17TPH)	21.03.16
45	-	Madkaim Ind. Estate -	M/s. Encube Ethicals Pvt Ltd	Boiler (600Kg/hr)	28.03.16
46	-	Madkaim Ind. Estate -	M/s. Encube Ethicals Pvt Ltd	Boiler (850Kg/hr)	30.03.16

The results of the stack emission monitoring indicate that the emissions from the flue gases are within the permissible limits except for three stacks for which the emissions exceeded the permissible limits.

## 6.7 REPORT ON AMBIENT AIR QUALITY AND NOISE LEVEL MONITORING DURING DEEPAWALI FESTIVAL, 2015



### 6.8.1 AMBIENT AIR QUALITY MONITORING DURING DIPAWALI FESTIVAL, 2015:

#### Data/Observations:

Ambient Air Quality during Dipawali Festival, 2015						
Monitoring Location	Parameters monitored					
	Normal Day (05.11.2015)			Deepawali Day (11.11.2015)		
	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
1- Mapusa	8.28	7.09	35.12	11.89	9.32	87.1
2- Panaji	BDL	18.38	38.33	BDL	24.39	55.44
3- Vasco	4.83	12.26	287.18	BDL	40.44	238.62
4- Margao	4.1	9	61.3	4.3	9.1	63.4
5- Ponda	BDL	9.1	30.2	4	9.1	57.4
NAAQ Standards	<b>80</b>	<b>80</b>	<b>100</b>	<b>80</b>	<b>80</b>	<b>100</b>
*All values (24 hourly Avg) are in µg/m <sup>3</sup>						

#### Remarks:

- Panaji Pre-Dipawali monitoring was conducted on 04.11.2015.
- Panaji - Burning Fire crackers nearby station from 19:00 to 21:00
- Vasco –05.11.2015- II shift- burning of waste paper nearby station.  
11.11.2015- I shift-Vehicular movement, II shift-Vehicular movement and Fire crackers, III shift- Fire crackers nearby station.

The pollutant concentration for Vasco city is observed to be exceeding w.r.t PM10 on both the monitoring days while for rest of the stations the values are within the concentration range which is applicable to these areas.

**Noise level limits prescribed by CBCB**

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 °N, 73.82 °E
- **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, 2015:**

Location A: Mapusa	Normal Day (05-11-2015)			Deepawali Day (11-11-2015)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr	58.3	77.4	<b>62.2</b>	-	-	-
19:00 to 20:00 Hr	*	*	<b>65.7</b>	-	-	-
20:00 to 21:00 Hr	36.6	80.3	<b>54.0</b>	-	-	-
21:00 to 22:00 Hr	35.3	82.1	<b>57.4</b>	-	-	-
22:00 to 23:00 Hr	33.2	82.9	<b>62.9</b>	-	-	-
23:00 to 24:00 Hr	38.3	81.0	<b>56.9</b>	-	-	-

**Results:** On normal day i.e on 05<sup>th</sup> November, 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 except from 20:00 to 22:00 Hrs due to vehicular movement.

On Deepawali day i.e on 11<sup>th</sup> November, the noise level monitoring could not be carried out due to instrument failure.

\* Data could not be retrieved due to software problem.

**City : Panjim**

- **Latitude & Longitude :** 15°29'56' N, 73°49'40'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, 2015:**

Location B : Panjim	Normal Day (04-11-2015)			Deepawali Day (11-11-2015)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						

18:00 to 19:00 Hr	51.4	83.4	<b>62.5</b>	56.0	79.4	<b>61.8</b>
19:00 to 20:00 Hr	47.9	81.8	<b>61.8</b>	59.5	70.5	<b>61.4</b>
20:00 to 21:00 Hr	55.8	86.1	<b>62.3</b>	60.6	77.2	<b>64.6</b>
21:00 to 22:00 Hr	55.9	76.7	<b>61.0</b>	60.5	83.7	<b>63.4</b>
22:00 to 23:00 Hr	35.4	70.8	<b>56.9</b>	55.7	78.3	<b>62.5</b>
23:00 to 24:00 Hr	34.3	67.1	<b>44.6</b>	59.5	83.5	<b>62.7</b>

**Results:** During normal day monitoring i.e on 04<sup>th</sup> November, 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 11<sup>th</sup> November, the noise levels were found to be within permissible limits.

**City : Vasco**

- **Latitude & Longitude :** 15°23'53'N, 73°48'40'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, 2015:**

Location C : Vasco	Normal Day (05-11-2015)			Deepawali Day (11-11-2015)		
Time duration	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	2.9	78.2	<b>60.6</b>	56.8	95.6	<b>71.5</b>
19:00 to 20:00 Hr	53.6	76.9	<b>62.2</b>	56.0	99.7	<b>73.6</b>
20:00 to 21:00 Hr	52.5	80.9	<b>64.2</b>	58.7	91.2	<b>69.5</b>
21:00 to 22:00 Hr	55.0	77.2	<b>62.6</b>	57.8	87.0	<b>66.5</b>
22:00 to 23:00 Hr	54.4	80.4	<b>60.0</b>	59.6	88.4	<b>66.9</b>
23:00 to 24:00 Hr	41.7	101.8	<b>68.1</b>	38.0	90.7	<b>71.9</b>

**Results:** On normal day monitoring i.e on 16<sup>th</sup> 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 within permissible limits except from 23:00 to 24:00 Hrs due to vehicular movement.

On Deepawali day i.e on 11<sup>th</sup> November, 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 :** 15°16'25'N, 73°57'29'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, 2015:**

Location D : Margao	Normal Day (05-11-2015)			Deepawali Day (11-11-2015)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
18:00 to 19:00 Hr	57.6	88.6	<b>71.1</b>	59.3	87.9	<b>68.0</b>
19:00 to 20:00 Hr	42.8	86.5	<b>66.6</b>	56.2	85.3	<b>64.7</b>
20:00 to 21:00 Hr	44.9	85.7	<b>64.2</b>	54.0	80.0	<b>61.9</b>
21:00 to 22:00 Hr	43.4	94.3	<b>68.4</b>	50.8	80.9	<b>59.8</b>
22:00 to 23:00 Hr	45.6	78.3	<b>54.5</b>	46.6	74.9	<b>58.2</b>
23:00 to 24:00 Hr	46.9	68.8	<b>49.8</b>	42.3	77.0	<b>58.0</b>

**Results:** On normal day monitoring i.e on 05<sup>th</sup> November, 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 levels were found to be within permissible limit.

On Deepawali day i.e on 11<sup>th</sup> November, the noise levels were found to be within permissible limit.

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.

## 6.10 PERFORMANCE EVALUATION OF EFFLUENT TREATMENT PLANTS OPERATING IN GOA

The Board conducted the performance evaluation study of the following 11 treatment plants.

### 1. EFFLUENT TREATMENT PLANT – SEAHATH CANNING COMPANY MARGAO INDUSTRIAL ESTATE, ST.JOSE DE AREAL, SALCETE -GOA, MONITORING CONDUCTED ON 08-09-2015 TO 09-09-2015 (24hrs)

**The following are the observation and Conclusion.**

The ETP receive 5.5 KLD waste water from the unit during the monitoring period from 08<sup>th</sup> September 2015 to 09<sup>th</sup> September 2015 for treatment. The industry has installed 30 KLD ETP for treatment of the waste water generated from the unit.

#### **SUMMARY AND CONCLUSIONS**

- The Industry has designed an Effluent Treatment Plant to treat 30 M<sup>3</sup>/D, however, only 5.5 KLD of waste water were generated during monitoring period.
- The analysis reports indicate that the final treated effluent is beyond the standards laid down in the consent order.
- The waste water generated is sent for An-Aerobic tank after 24 hrs the said overflow waste water is collected in collection tank from this tank it is pumped in to aeration tank, After aeration the overflow is sent for clarifier and from clarifier the overflow water is collected in holding tank from holding tank is it pumped & sent for Sand Filter and Carbon filter and treated water is used for tree plantation within the premises.
- The analysis reports indicate that MLSS & DO in the aeration tank is too low due to partly openings of Aeration Tank. The mixed liquor suspended solids (MLSS) value in **Aeration Tank is 2320 mg/l** and **DO is 0 mg/l** and it shows that sludge development is much below the required quantity i.e. **3000 mg/l-3500mg/l.**, and **DO 1.0 to 2.0 mg/l.** as per **(activated sludge process)** indicating that Aeration is not sufficient to develop the MLSS and DO.
- The activated sludge plant was operating at F/M ratio at 1.59 per day respectively.
- The sludge generated from the Clarifier tank is removed and disposed in the sludge drying beds. The quantum of the same was not recorded.

- g. Analysis reports of Final effluent collected from 24 hours during operation of plant indicates that the consent parameters comply with the prescribed standard limits. However the Aeration tank should be upgraded.

**RECOMMENDATIONS**

- a. The MLSS & DO in the aeration tank is too low due to lack of aeration and partially opening of aeration tank at the top. The Aeration tank should be designed properly so as to develop the MLSS and DO in the aeration tank.
- b. The sludge generation process should have a return sludge pump to send back to aeration tank in order to maintain the MLSS.
- c. The flow meters should be installed for influent and treated waste water generated and disposal.
- d. Records should be maintained of the sludge generated and disposed.
- e. Tree plantation should be continued during monsoon period within the premises in order to develop green belt in the surrounding areas.
- f. It is recommended to repeat the Effluent Treatment Plant performance study once the treatment plant is stabilized.



**Aeration Tank**



**Raw water collection tank**



**Clarifier**



**Carbon and sand filter**

## 2. EFFLUENT TREATMENT PLANT – VARAN BEVERAGES LIMITED , ARLEM P.O. RAIA, SALCETE, MONITORING CONDUCTED ON 06-10-2015 TO 07-10-2015 (24hrs)

### The following are the observation and Conclusion.

The ETP receive 25.0KLD waste water from the unit during the monitoring period from 06<sup>th</sup> October 2015 to 07<sup>th</sup> October 2015 for treatment. The industry has installed 50.0 KLD ETP for treatment of the waste water generated from the unit.

### SUMMARY AND CONCLUSIONS

- a. The Industry has designed an Effluent Treatment Plant to treat 50 M<sup>3</sup>/D, however, only 25.0 KLD of waste water were generated during monitoring period.
- b. The analysis reports indicate that the final treated effluent is meeting the standards laid down in the consent order.
- c. The waste water generated from the industry is treated in well designed effluent treatment plant. The raw effluent is collected in equalization cum neutralisation tank where pH is adjusted by adding acids. The neutralised waste water is pumped in to aeration tank for aerating. The aeration overflow is going into clarifier. From the clarifier it is collected in collection tank from collection tank same is further taken for sand filter and carbon filter. The final treated water is collected in tank and further it is used for gardening and partly disposed in to earthen pit.
- d. The analysis reports indicate that MLSS & DO in the **Aeration Tank is 1420 mg/l** and **DO is 3.3 mg/l** and it shows that sludge development is much below the required quantity ie. **3000 mg/l- 3500mg/l.**, and **DO 1.0 to 2.0 mg/l**. As per (**activated sludge process**) indicating that Aeration is not sufficient to develop the MLSS and DO.
- e. The activated sludge plant was operating at F/M ratio at 0.37 per day respectively.
- f. The quantum of the sludge generated was not recorded.
- g. Analysis reports of Final effluent collected from 24 hours during operation of plant indicates that the consent parameters comply with the prescribed standard limits. However the MLSS in the Aeration tank is low also F/M ratio is also low.

### RECOMMENDATIONS

- g. The MLSS & DO in the aeration tank is to low due of access aerations. The Aeration should be maintained properly so as to develop the MLSS and DO in the aeration tank.
- h. The sludge generation process should have return sludge pump to send back to aeration tank in order to maintain the MLSS.
- i. The flow meters should be installed for influent and treated waste water generated and disposal.
- j. Records should be maintained of the sludge generated and disposed.
- k. Tree plantation should be continued during monsoon period within the premises in order to develop green belt in the surrounding areas.



Raw water collection tank



Aeration Tank



**Carbon & Sand filter**



**Treated Water discharge Earthen Pits  
within the premises**

**3. SEWAGE TREATMENT PLANT - TONCA, PANAJI-GOA, MONITORING CONDUCTED ON 21-12-2015 TO 22-12-2015 (24hrs)**

**The following are the observation and Conclusion.**

The PWD, Div. III, Govt. of Goa augmented the existing sewage treatment plant of 5.70 MLD to 12.5MLD at Tonca, Panaji-Goa. The sewage generated from the Panaji city is collected and treated in the aforesaid treatment plant. The latest Treatment technology called Cyclic-Technology was adopted for the EUPC Phase I project.

**SUMMARY AND CONCLUSIONS**

- a. The sewage treatment plant of Public Works Department at Tonca is operational and Analysis of samples collected for a period of 24 hours during operation of plant indicates that parameters are within the prescribed limits of the consent issued by the Board.
- b. On perusal of the log sheets for the past one year it is observed that the rate of sewage received at the sewage treatment plant is well within the designed flow ie. Peak flow 28.125 MLD.
- c. The mixed liquor suspended solids (MLSS) value C-Tech basin 1 and C-tech basin 2 is 2920 mg/l and 2645 mg/l respectively.
- d. The dissolved oxygen values at C-Tech basin 1 and C-tech basin 2 is 2.0 mg/l each.
- e. The activated sludge plant was operating at F/M ratio at C-Tech basin 1 and C-tech basin 2 is 0.72 per day and 0.79 per day respectively.
- f. The excess sludge generated is centrifuged and disposed in sludge drying beds. However, no records have been maintained.
- g. Incoming flow of raw effluent at STP is around 9.5 MLD during monitoring period.
- h. The treated effluent is discharged in to St. Inez creek.
- i. The sludge generated at the STP is approximately 5.0 M<sup>3</sup> per day as per the records maintained at the site.

**RECOMMENDATIONS**

- l. Records should be maintained of the sludge generated and disposed.
- m. The Sludge drying beds should be maintained properly by cutting the shrubs and bushes around the sludge drying beds.
- n. During monsoon the sludge drying beds should be covered properly in-order to prevent intrusion of rain water and to prevent overflow of sludge from the beds into the nearby areas during monsoon period.



**Inlet well (Raw sewage)**



**Core screen for removal of grits, plastics, metals etc. from the sewage**



**C-TECH Basin (Aeration tank)**



**After Chlorination Treated water discharged in the river Mandovi**

**4. SEWAGE TREATMENT PLANT – M/S TATA CONSULTANCY SERVICES LTD, PLOT NO. LOCATED AT 17B/ 5A, 5B & 5C, THIVIM INDUSTRIAL ESTATE, KARASWADA, MAPUSA – GOA, MONITORED FROM 06.01.16 TO 07.01.16 (24hrs)**

The following are the observations, conclusions and recommendations:

**A.** The unit has re-commissioned their Sewage Treatment Plant, and for which the STP performance study was conducted to ascertain the quality of treated waste water and its compliance with the consent parameter limits under water Act. Goa State Pollution Control Board has conducted 24 hrs composite sample collection and monitored the sewage treatment plant of capacity of the 40.0 KLD from 6<sup>th</sup> January 2016 to 7<sup>th</sup> January 2016. The STP received 6.0 KLD waste water during the monitoring period. The samples which were collected and analysed indicate that the consent parameters comply with the prescribed standard limits.

**B. SUMMARY AND CONCLUSIONS:**

- a. The Industry has designed a Sewage Treatment Plant to treat 40 KLD, however, only 6 KLD of waste water were generated during monitoring period.
- b. The analysis reports indicate that the final treated effluent is meeting the standards laid down in the consent order.

- c. The waste water generated from the industry is treated in well designed sewage treatment plant. The raw effluent collected in Collection tank cum septic tank is pumped in to aeration tank for aerating. The aeration overflow is taken into Secondary Settling tank & then to the Polishing/ Holding Tank, further it is passed through sand filter and carbon filter followed by dosing of Sodium Hypochlorite for disinfection. The treated water is stored in final treated water tank and further it is used for gardening and toilet flushing.
- d. The analysis reports indicate that MLVSS & DO in the **Aeration Tank is 50 mg/l** and **2.5 mg/l** respectively.
- e. The activated sludge plant was operating at F/M ratio at 0.86 per day.
- f. As informed the sludge is disposed through night soil tanker in STP plant at Tonca. The quantum of the sludge generated is approx. 16 KL per annum.
- g. The flow meter is installed for treated waste water generated and records are maintained.
- h. Analysis reports of Final effluent collected from 24 hours during operation of plant indicates that the consent parameters comply with the prescribed standard limits.

**C. RECOMMENDATIONS:**

- o. The pH value ranges from 5.59 to 6.67 and the final treated effluent is 6.01 which is slightly at lower end due to the usage of concentrated acidic in nature cleaning solutions for toilets, hand washing and utensils. The unit should decrease/ use diluted cleaning solutions.



**The following are the observations and Conclusions.**

- a. The Sewage Treatment Plant was designed capacity to treat 350 KLD waste water generated from the premises of hotel. The STP received 250.0 KLD waste water from the resort during the monitoring period from 18<sup>th</sup> June 2014 to 19<sup>th</sup> June 2014 for treatment. The dissolved oxygen value at Aeration Tank is 1.8 mg/l. Analysis of samples collected for 24 hours during operation of plant indicates that BOD value has exceeded the consent limits ie. **52 mg/l**. All other parameters are within the consent limits.

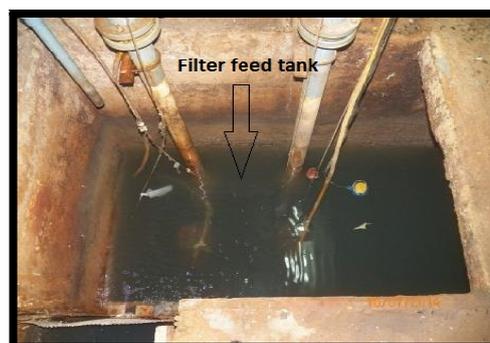
**b. SUMMARY AND CONCLUSIONS**

- i. The performance study was conducted during operation of resort ie. 47.7% occupancy.
- j. The Sewage Treatment Plant was designed for treatment of 350 M<sup>3</sup>/day; however, during 24 hrs monitoring period resort generated 250.0 KLD of waste water.
- k. The mixed liquor suspended solids (MLSS) value Aeration Tank is 2500.0 mg/l and it shows that sludge development is good for maintaining MLSS
- l. The waste water generated (Raw Sewage) is collected in collection sumps (7 Nos) at different locations within the resorts premises and the same is pumped for treatment.
- m. The bottom untreated sludge is collected in collection sumps and sent for treatment and disposal at PWD-STP, Vasco.
- n. The dissolved oxygen value at Aeration Tank is 1.8 mg/l. It indicates that DO is maintained properly as per the requirements.
- o. The Sewage Treatment plant was operating at F/M ratio of 0.57 per day.
- p. The laundry waste water ie. 40 -45 KLD is also diverted in the said treatment plant and is treated combined.
- q. Analysis of samples collected for 24 hours during operation of plant indicates that BOD value has exceeded the consent limits ie. 52 mg/l. All other parameters are within the consent limits .
- r. During the time of STP monitoring, it was observed that the raw effluent was flowing over the bar screens due to blocked bar screens on to the ground and same is collected in collection tank and further it is pumped back for the treatment.
- s. The Oil & Grease chambers were full of oil from the kitchen waste and needs immediate clearance of the waste oil accumulated in the chambers.

**C. RECOMMENDATIONS**

- p. The Sewage Treatment Plant is required to be operated and maintained at regular interval to bring down the consent parameters within the limits.
- q. The flow meters should be installed at the STP ie. Intake point, for measuring the intake quantity.
- r. Register/records should be maintained of the sludge generated and disposed.
- s. The Oil and Grease Chambers should be cleaned at regular interval so as to avoid overflow from oil & grease trap.
- t. Bar Screens should be cleaned at regular interval also the size of bar screen chamber should be increased in order to control overflow of raw sewage.





## 6.11 THE GOA STATE OIL SPILL DISASTER CONTINGENCY PLAN (SOS-DCP)

Oil spills are a major concern the world over because of its harmful nature. Oil spills pollute groundwater, on which many living things depend for drinking water. The spills seep into streams, lakes, and reservoirs, which are drinking water sources as well as habitat where fish, birds, and other wildlife can be harmed or killed. Vapours from spills enter indoor environments where people live and work. Goa is blessed to have not experienced a major oil spill till date, however, the constant appearance of tar ball, during the onset of the SW Monsoons, is a bane in itself. These tar balls could be attributed to illegal discharges by errant tankers or natural seepages from oil reservoirs. Oil spills can also have a serious economic impact on coastal activities like tourism, fisheries, and aquaculture. About 70% of the world oil demand is ferried along the Indian coastline which subjects the Indian coast to significant oil spill risk.

Goa is India's smallest [State](#) w.r.t area and the [fourth smallest based on its population](#). Located along the mid-west Indian coast known as the [Konkan](#), it is bounded by the State of [Maharashtra](#) to the north, by [Karnataka](#) to the east and south, while the [Arabian Sea](#) is towards its west.

Goa encompasses an area of 3,702 km<sup>2</sup> (1,429 sq mi). It lies between the latitudes 14°53'54" N and 15°40'00" N and longitudes 73°40'33" E and 74°20'13" E. Most of Goa is an escarpment rising up to the [Western Ghats](#) range of mountains, which separate it from the [Deccan Plateau](#), known as the konkan region. The highest point is [Sonsogor](#), with an altitude of 1,167 meters (3,827 feet) above MSL.

Goa is a well known tourist destination because of its inherent beautiful beaches.

The coast of Goa is about 105 kilometres in length. There is one main port in Goa, i.e., Marmugao Port Trust which has contributed immensely to the growth of maritime trade in India. It is a leading iron ore exporting port of India with an annual throughput of around 11.74 million tonnes of traffic for 2013-14 of which 0.52 million tonnes is POL (Petroleum Oil Lubricants).

Goa has nine minor ports and the commercial jetties in Goa include 19 in the North & 13 in the South.

Goa is also considering installing Vessel Traffic and Port Management System (VTPMS), which is mandatory for all seaports to enable safe navigation to monitor international vessels carrying hazardous cargo transiting its waters, terrorist landings and suspicious movements undersea. The VTPMS is designed to improve security and navigational safety at sea and river ports. The system has been proposed by the Captain of Ports and forwarded to the State Government for consideration.

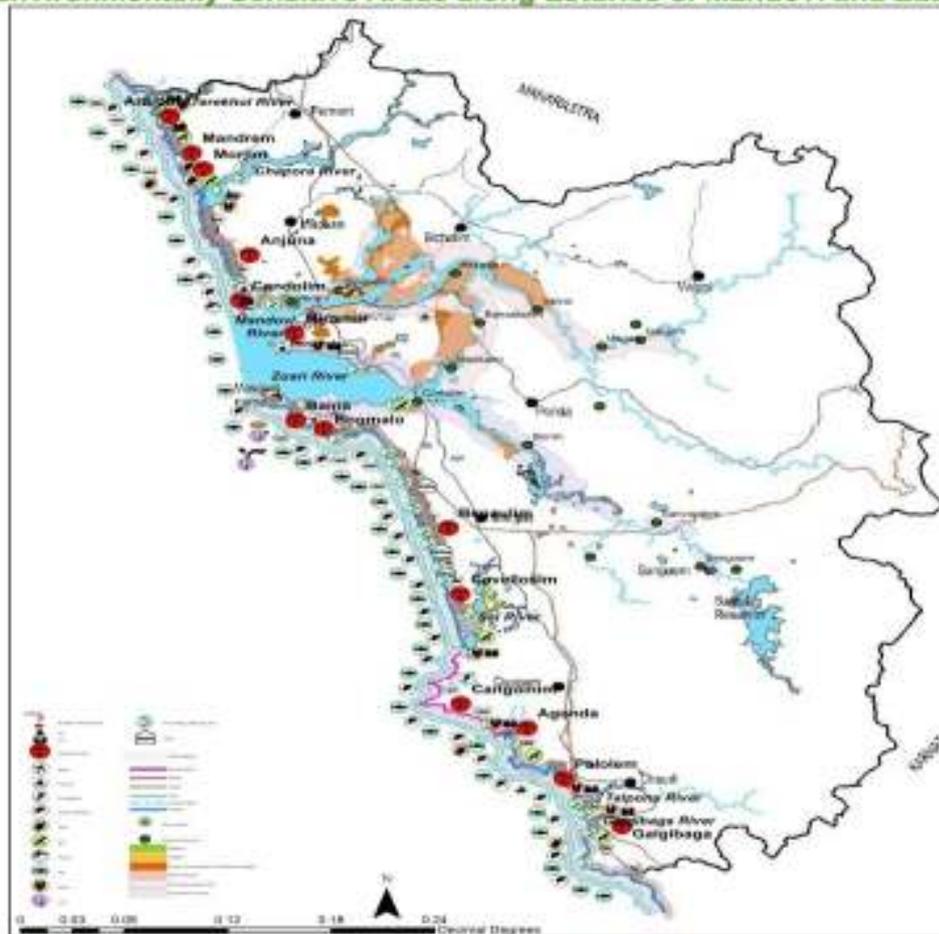
When installed, the VTPMS will advise, monitor shipping lanes and separation scheme to enforce compliance of safe navigation regulations, assistance to coast guards and other authorities, detection of oil spill and improve overall port efficiency.

The coast of Goa is rich in diverse eco-systems and accordingly, its preservation and protection is a pre-requisite for sustainable development. It comprises of bays, estuaries, rocky headlands, sandy

beaches, creeks, cliffs, saltpans, khazan lands. The estuarine ecology constitutes swamps, mangroves, mudflats, river terraces and island. These eco-systems have large varieties of flora and fauna and provides habitat for various wildlife and plants. These ecosystems shelter many species and migratory birds, which are at risk during oil spills, if it coincides with the high tides, as data (Shetye et.al 2007) suggests that during high tide sea water reaches up to 40 km upstream thereby temporally altering fresh water marshes.

GSPCB has initiated the process of carrying out a micro level study on the Ecological Sensitivity Index (ESI) mapping of Goa’s coast line as well as its riverine banks up to a distance of approx. 40 kms, through NIO, with assistance from the Director (Environment)-GCZMA. An ESI map along with the details is presented below.

**Environmentally Sensitive Areas along Estuaries of Mandovi and Zuari**



ESI 10 :	Highest vulnerable areas like Mangrove cover, Swamps, Freshwater marshes along Cumbarjua canal the Mandovi
ESI 9 :	Sheltered tidal flats, Vegetated low banks along Mandovi estuary/ in the two islands within the Mandovi estuary.
ESI 8 :	Sheltered rocky shore, Sheltered, solid man-made structures(Marmugoa port )
ESI 6 :	Gravel beaches in which oil oil has a more tendency to percolate,
ESI 5 :	Mixed sand and gravel beaches in which oil has tendency to percolate
ESI 4 :	Coarse grain sandy beaches (Miramar, Bambolim, Bogmalo, Velsao, Agonda, Palolem, Talpona, Galgibaga beach)
ESI 3 :	Fine to medium grained sandy beaches (Coastal stretch along Velsao to Canaguinim.)[This entire stretch is of almost 31 km. This shore line type is ranked low

	because of less penetration of oil into it and the accumulated oil can be driven back from shore by the action of tides and waves.]
ESI 2 :	Exposed scarps and steep hill slopes
ESI 1 :	Exposed rocky shores, and solid man-made structures. (Marmugoa head land, Cape Rama and Agonda ). [Along such rocky shores oil cannot accumulate and it will be reflected back by wave action].

**Source: National Informatics Centre**

Goa's 105 km long coastline with mostly white sandy beaches attracts nearly 20 to 22 Lakh tourists annually. About 10 to 15 per cent of them are foreign tourists. The coast of Goa faces an increased threat from oil spill from passing ships, port activities, petro chemical exploration and exploitation activities, navigational accident etc. The need of the hour is the establishment of institutional arrangement through a contingency plan to address oil spill that may affect the coastline and take necessary preventive measures to the highly sensitive areas and other shorelines of the State of Goa. The Contingency Plan provides the necessary instructions to the State Environment Ministry, District Collectors, Revenue authorities, Goa State Pollution Control Board, State Maritime Boards, Fisheries Department, Forest Department, Ports and other various stake holders regarding their involvement during an oil spill that washes ashore in the coastal areas. The document envisages that all the agencies would interact as per the plan so that the oil spill is mitigated at the earliest causing minimum disruption and damage to local population, flora, fauna, the fishermen and other economic activities in the affected coastal area.

In an effort to address all the above issues, the GSPCB played an instrumental role in the formation of the Local Contingency Plan (LCP) titled "Goa-State Oil Spill Disaster Contingency Plan or GOA-SOS-DCP" in interaction with the Stakeholders.

The Contingency planning is based on the internationally recognized tiered approach that classifies oil spills into three categories as follow:-

- (a) Tier – 1 is connected with preparedness and response to a small spill within the capabilities of individual facility or harbour authority. 700 tons is often cited as the upper limit of 'Tier – 1' however, the circumstances of the spill and the surrounding environment will determine the actual level of response.
- (b) Tier – 2 is concerned with preparedness and response to a spill that requires co-ordination of more than one source of equipment and personnel. Thus, assistance can come from a number of entities within the port area or from other sources outside the immediate geographic area. Tier – 2 describes a wide range of potential spill scenarios and deals with operational spills of upto 10,000 tons.
- (c) Tier – 3 is concerned with a major spill requiring the mobilization of all department concerned and depending upon the circumstances which way involve mobilization at regional and international level. It deals with the spills of more than 10,000 tons.

The Local Contingency Plan (LCP) titled "Goa-State Oil Spill Disaster Contingency Plan or GOA-SOS-DCP" is in the final stages of preparation and is scheduled for release in April 2015.

## **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**

<b>Name &amp; Designation of the Official</b>	<b>Title of the Seminar</b>	<b>Place</b>	<b>Duration</b>
Mr. Levinson J. Martins, Member Secretary	Workshop on closure of waste dumps and remediation of contaminated sites	Delhi	5th November 2015
Mrs. Jenica Sequeira,	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24 <sup>th</sup>

Scientist 'C'			July, 2015
Miss. Connie Fernandes, Scientist 'C'	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015
	Training Programme on air Quality Monitoring- plans using Decicson support system- UrbAirIndia	Anudh, Pune	25th -27th August, 2015
	Workshop with focal theme 'Water Conservation, Water Security and Water quality under Jal Kranti Abhiyan, 2015-16	Miramar Beach	27th November, 2015
Dr. Mohan Girap	Training Programme on Environmental Impact Assessmnet- Methods and Procedures	ESCI Hyderabad	28th to 30th September 2015
	National Workshop on Proactive Approach to Sustainable mining in India	Goa College of Engineering, Farmagudi- Ponda	9th January, 2016
Mrs. Francisca Pereira, Scientist 'B'	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015
Mr. Sanjay Kankonkar, Scientist 'B'	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015
	Training Programme on Vehicular emission and exhaust monitoring (Receptor and dispersion modelling)	TERI, Delhi	23rd to 27th November 2015
Mr. Nilesh Parsekar, Scientist 'B'	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015
	Training Programme on Vehicular emission and exhaust monitoring (Receptor and dispersion modelling)	TERI, Delhi	23rd to 27th November 2015
Mrs. Anny Dias, Scientific Assistant	Training programme on Investigation, Remediation and Management of soil and ground water contaminated sites	IIT, Madras	7th to 9th January 2016
Mrs. Livia D'Silva, Scientific Assistant	Training programme on Investigation, Remediation and Management of soil and ground water contaminated sites	IIT, Madras	7th to 9th January 2016
Mrs. Joshna Mahale, Scientific Assistant	Hands on Training on GCMs	NIO	29th June – 10th July, 2016
	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015
	Monitoring Techniques of Organic Pollutants (PAH and VOC)	NGRI Campus Hyderabad	7th to 9th October 2015
	Workshop with a focal theme 'Water Conservation, Water Security and Water quality under Jal Kranti Abhiyan, 2015-16	Miramar Beach	27th November, 2015
Mrs. Avina Pereira, Scientific Assistant	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015
	Training programme on 'Water Quality Monitoirng , Network design, sampling, analysis and quality control	Centre for Environment and Nature Conservation, Delhi	19th to 23rd September 2015
	Training Programme on Two weeks Foundation Course and one week specialization course on Compliance Monitoring and Enforcement	Tughlakabad Institutional Area, New Delhi- 110 062	1st to 19th February, 2016
Mr. Chaitanya Salgoankar, Scientific Assistant	Training programme for Environmnetal Regulators 2015-2016- Training on Compliance, Monitoring and Enforcement	New Delhi/ Indore	1st to 18th September, 2015
Mr. Ravi Naik, Scientific Assistant	Air Quality Management Plan	Tughlaqabad, New Delhi	20th July to 31st July, 2015
	Training Programme on Monitoring of PM 2.5 and other notified air pollutants as per revised NAAQS	'NEERI, Delhi	16th to 20th November 2015
Mrs. Chetna Naik, Sciientific Assiatant	Training Programme on Environmental Data Interpretation, compilation, analysis, presentation and reporting- Hands on training and case study	ISI Delhi	1st to 5th February 2016
Miss. Reshma Vaz, Scientific Assistant	Air Quality Management Plan	Tughlaqabad, New Delhi	20th July to 31st July, 2015
	Laboratory quality Management system and Internal audit as per IS/ISO/IEC 17025	NITS, Noida	19th to 23rd January, 2016
Mr. Krishnanath Pednekar, Scientific Assistant	Hands on Training on GCMs	NIO	29th June – 10th July, 2016
	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24th July, 2015

	Monitoring Techniques of Organic Pollutants (PAH and VOC)	NGRI Campus Hyderabad	7th to 9th October 2015
	Training Programme on Ambient Air and Stack Monitoring Technique- hands on Training	CSIR- Indian Institute of Technology Research Lucknow	15th to 17th February, 2016
Mr. Sajid Inamdar Senior Laboratory Assistant	Training Programme on Two weeks Foundation Course and one week specialization course on Compliance Monitoring and Enforcement	Tughlakabad Institutional Area, New Delhi- 110 062	1st to 19th February, 2016
Mr. Sanmesh Borkar, Senior Laboratory Assistant	Training programme on Water Quality Management Plan	Tughlakabad Institutional Area, New Delhi- 110 062	18th to 22nd January, 2016
	Training Programme on Environmental Data Interpretation, compilation, analysis, presentation and reporting- Hands on training and case study	ISI Delhi	1st to 5th February 2016
Mr. Nilesh Surlekar, Senior Laboratory Assistant	Programme on source Emission Monitoring for Parameters notified under source Emission-CPCB	Haridwar	2 <sup>nd</sup> to 4 <sup>th</sup> December, 2015
Mr. Samir Borkar, Senior Laboratory Assistant	Training Programme on Monitoring of PM 2.5 and other notified air pollutants as per revised NAAQS	'NEERI, Delhi	16th to 20th November 2015
Mrs. Jocelyn Coelho, Junior Laboratory Assistant	2nd phase training on GCMS - Operational and Application	Board office	21th July to 24 <sup>th</sup> July, 2015
	Training programme on 'Water Quality Monitoring , Network design, sampling, analysis and quality control	Centre for Environment and Nature Conservation, Delhi	19th to 23rd September 2015
Mr. Johnny Bosco, Junior Laboratory Assistant	Training Programme on Ambient Air and Stack Monitoring Techniques- Hands on Training	IITR, Lucknow	15th to 17th February 2016
Mrs. Sophia Dias, Junior Laboratory Assistant	Laboratory quality Management system and Internal audit as per IS/ISO/IEC 17025	NITS, Noida	19th to 23rd January, 2016
Miss. Mitzi D'Silva, Accounts Clerk	2 days intensive training programme pertaining to streamlining the service delivery to the public	GIPARD, Old Goa	5th and 6th October 2015
	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Nevies Miranda, Accounts Clerk	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Berlyn Fernandes, Accounts Clerk	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Stefanie Carvalho, Accounts Clerk	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mrs. Swapna Naik, Sr. Stenographer	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Debra Pereira, Jr. Stenographer	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mr. Cedric De Souza,UDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mrs. Abygale Vaz, DEO	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mrs. Dorothy Fernandes, DEO	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mr. Alleluia D'Mello, DEO	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016

Mrs. Francisca Auria Lobo, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mrs. Plancy Miranda, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Shane Gracias, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Ana Maria Lourenco, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mr. Maison Fernandes, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mrs. Supriya Nageshkar, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Joice Coutinho, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Miss. Preeti Barreto, LDC	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mr. Umesh Kankonkar, RK	Training Programme on Office Procedure	Board Conference hall	5 <sup>th</sup> January, 2016
Mr. Sanjeev Joglekar Environmental Engineer	Workshop on closure of waste dumps and remediation of contaminated sites	Delhi	5th November 2015
Mrs. Nandan Prabhudessai, Junior Environmental Engineer	Two days Chinttan Shivir of officers from Indian Forest Service and Scientists from Environment Field	Bengaluru	8th September, 2016
Mr. Keshav Fadke, Junior Environmental Engineer	Training programme on Sustainable Development & Management of Ground Water Resources	Conference hall Directorate of Agriculture	2 <sup>nd</sup> February to 6 <sup>th</sup> February, 2016
Mr. Rohan Nagvenkar, Junior Environmental Engineer	CII-IGBC Programme on Sustainable Living Cities, Landscaping, Garbage, Sanitation & Creating Eco Friendly Homes	Fortuen Select Regina, Candolim Goa	16th October 2015
Mr. Pravin Faldessai, Junior Environmental Engineer	2 days intensive training programme pertaining to streamlining the service delivery to the public	GIPARD, Old Goa	5th and 6th October 2015
Mr. Amit Shanbhag, Junior Environmental Engineer	Best Practices in Environmental Governance	Stockholm, Sweden and Oslo- Norway	1st to 16th October 2015
Mr. Manoj Kudalkar, Junior Environmental Engineer	2 days intensive training programme pertaining to streamlining the service delivery to the public	GIPARD, Old Goa	5th and 6th October 2015
	CII-IGBC Programme on Sustainable Living Cities, Landscaping, Garbage, Sanitation & Creating Eco Friendly Homes	Fortuen Select Regina, Candolim Goa	16th October 2015
	National Workshop on Advances in Concrete Technology & Materials	Goa Engineering College, Farmagudi, Goa	4th to 5th December 2015
Mrs. Indira Raut, Networking Engineer	Professional Development Programme on Effective System Administration Techniques	Hyderabad	24 <sup>th</sup> June to 26 <sup>th</sup> June, 2015
Mr. Sebastiao Barreto, Engineering Assistant	Training programme for Environmental Regulators 2015-2016- Training on Compliance, Monitoring and Enforcement	New Delhi/ Indore	1st to 18th September 2015
Mr. Rajendra Naik, Networking Assistant	2 days intensive training programme pertaining to streamlining the service delivery to the public	GIPARD, Old Goa	5th and 6th October 2015
Mr. Bento Thomas, Junior Environmental Engineer - Contract	25th International Training Programme on Decentralised waste water Treatment systems (DEWATS)	Kengeri Bangalore	7 <sup>th</sup> to 11 <sup>th</sup> September, 2015
Mrs. Deepti Jamble, Junior Environmental Engineer	National Workshop on Advances in Concrete Technology & Materials	Goa Engineering College, Farmagudi, Goa	4th to 5th December 2015
Miss Lee Ann Antao, Junior Environmental Engineer	National Workshop on Advances in Concrete Technology & Materials	Goa Engineering College, Farmagudi, Goa	4th to 5th December 2015
	Training Programme on Two weeks Foundation Course and	Tughlakabad	1st to 19th

one week specialization course on Compliance Monitoring and Enforcement	Institutional Area, New Delhi- 110 062	February, 2016
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## 7.2 DEPUTATIONS IN THE BOARD

1. Vide Office Order no.745 issued vide no. DA/Admn./10-20 (24)/2014-2015/TR-1826/146 dated 30/10/2014 of the Directorate of Accounts, the deputation period of Shri. Vidyesh B. Mhamal, Accountant on deputation to the Board was extended for a further period of one year from 30/11/2014 to 29/11/2015 for the 3<sup>rd</sup> year.
2. Vide Office order no.915 issued vide No. DA/Admn/45-7/2014-2015/TR-2195/88 dated 23/12/2014 of the Director of Accounts, Shri Devendra Arlekar, Assistant Accounts Officer on deputation to the Board was extended for a further period of one year from 01/01/2015 to 31/12/2015 for the 2<sup>nd</sup> year.
3. Vide Government order no.66/10-2013/STE-DIR/1506 dated 31/01/2014 of the Department of Science, Technology & Environment one post of Accounts cum Administrative Officer, on deputation from the Common Accounts cadre of the Directorate of Accounts, Govt of Goa, had been created in the Board; Shri D.M. Naik, Dy Director of Accounts/Accounts Officer was posted on deputation to the Board which is extended for a further period of one year from 13/02/2015 to 12/02/2016 for the 2<sup>nd</sup> year vide order no. DA/Admn/45-8/2014-2015/TR-2725/128 dated 03/03/2015 issued by the Directorate of Accounts.

## 7.6 RESIGNATION FROM SERVICE

1. Smt, Deepti S. Umarye, Junior Environment Engineer (Civil - Contract) resigned from the Board with effect from 02/02/2016.
2. Smt, Raveena Rajaram Naik, Junior Environment Engineer (Civil - Contract) resigned from the Board with effect from 02/02/2016.

## 7.7 APPOINTMENTS

1. M/s R.K. Pikale & Associates, Chartered Accounts have been appointed as Consultants in order to examine the proposal of raising a corpus fund for the Goa State Pollution Control Board to advise the Board in its financial matters.
2. Dr. Joe D'Souza, Retired Professor in Microbiology (Goa University) has been appointed as a Consultant on contract basis for a period one year from 2<sup>nd</sup> June, 2014 to 1<sup>st</sup> June, 2015, on a consolidated monthly remuneration of Rs. 20,000/- (Rupees Twenty thousand only). To assist and associate with the Japan International Corporation Agency project conducted on River Sal.
3. Shri. R.K. Srivasta

# 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 reports 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. And wherever non-compliance is reported, show cause notices, Directions are issued to the concerned units.

Further it is also noted that numerous small scale units are operating without obtaining consent to operate 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 1045 Show cause notices and directions to the units which are operating without consent to operate and also in violation of consent conditions. The Board has issued directions for closure and suspension of the units to 514 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 IMPORTANT WRIT PETITIONS/APPLICATIONS/APPEALS BEFORE THE SUPREME COURT/NATIONAL GREEN TRIBUNAL/HIGH COURT OF BOMBAY AT GOA**

### **(I) WRIT PETITION (CIVIL) No.435 OF 2012 (GOA FOUNDATION V/S. UNION OF INDIA AND ORS.), BEFORE THE HON'BLE SUPREME COURT OF INDIA.**

Vide this Writ Petition the Goa Foundation had alleged that large scale illegal mining was being carried out in the State of Goa in contravention of various laws including MMDR Act, Forest Act, Environment (Protection) Act, Water Act and Air Act.

The Goa Foundation relied upon the Report of Inquiry submitted by Justice Shah in this regard.

Vide Judgment dated 21/4/2014, Hon'ble Supreme Court of India has allowed the said Writ Petition while passing various directions to the State Government and Central Government and also to State Pollution Control Board. These directions have been issued in order to ensure that mining activities in the State of Goa are regulated.

Vide the said Judgment, the Goa State Pollution Control Board has been directed to strictly monitor the Air and Water Pollution in the mining areas and to exercise powers available with it under the Water Act and Air Act including powers vested in it under section 31 (A) and 33 (A) of the said Acts and to furnish relevant data to the Expert Committee.

**II) WRIT PETITION NO.123/1999 (JOHN PEREIRA AND OTHERS V/S. CURCHOREM CACORA MUNICIPAL COUNCIL AND OTHERS) BEFORE THE HON'BLE HIGH COURT OF BOMBAY AT GOA.**

This Writ Petition was filed before the Hon'ble High Court on the ground that there is pollution in the railway yard at Cacora Curcholem Railway Station in view of transportation of mineral ore from different mining companies which were availing of the facilities of transport of ore by railways.

The Judgment dated 5/1/2015, the Hon'ble High Court disposed off the Writ Petition by observing that the recommendation of the Pollution Control Board submitted to the Hon'ble High Court with regard to implementation of measures for controlling pollution at Cacora Curcholem yard, meet the grievances of the Petitioners to minimise the dust pollution at the site. The Hon'ble High Court has held that the Petition could be disposed off by accepting the recommendations of the Goa State Pollution Control Board.

The Hon'ble High Court has further held that in case the Petitioner / Respondents submitted any further representatives to the Goa State Pollution Control Board, the Board shall examine and modify its directions after hearing the parties.

**(III) STATE BANK OF INDIA AND OTHERS V/S. GOA STATE POLLUTION CONTROL BOARD AND OTHERS (APPEAL NO.23/2014) BEFORE THE NATIONAL GREEN TRIBUNAL (WZ) BENCH AT PUNE.**

This Appeal was filed by the State Bank of India against the Directions issued by Goa State Pollution Control Board directing the State Bank India to deposit certain payment towards expenses incurred by the Goa State Pollution Control Board for the covering/ containment of Hazardous Wastes located at Cuncolim Industrial Estate that was generated by Sunrise Zinc Limited.

After hearing the arguments and submissions submitted by the parties, the NGT has directed that the order of the Board to the extent directing the Appellant to bear the expenses, which already has been paid, is maintained.

However the Board was directed to take immediate steps to dispose of the hazardous waste. The NGT has also highlighted the evolving role of financial institutes like State Bank of India in emerging global environmental governance, particularly, based on principles responsible financing and also incorporation of environment and social governance principles in functioning of financial institution. The Chairman and the Managing Director of State Bank of India were directed to consider these aspects for integrating the same in the protocol and due diligence procedures to avoid such instances in the future.

**8.3 CRIMINAL COMPLAINTS / FIR'S FILED BY GOA STATE POLLUTION CONTROL BOARD**

Sr. No.	In Court of	Cri. Cases nos.	Party Name	Remark
1	Judicial Magistrate First Class Court Margao	876/OA/PCP/E	GSPCB V/s Sagar Feed Foods Industries & Ors.	For violating the provision of sec. 24 r/w Water(Prevention and Control of Pollution)Act, 1974 which is punishable under sec 43 of the Water(Prevention and Control of Pollution)Act
2	Judicial Magistrate First Class at Mapusa, Badez-Goa.	623/WA.A Act 2015/A	GSPCB V/s M/s. Darisa Resort & Ors(Mela Rosa)	For violating provision of sec 25/26 of Water(Prevention and Control of Pollution)Act, 1974 r/w sec 44 and sec 33 (A) r/w sec 41(2) of the said Act and under sec 31(A) r/w sec 21 (A) of Air (Prevention and Control of Pollution)Act, 1981.
3	Judicial Magistrate Criminal Court Building, Panaji-Goa.	AOA 314/14/C	GSPCB V/s Shri. Richardo A Vaz (Rich Builders)	For violating the provision of sec 25 & 26 of the Water(Prevention and Control of Pollution)Act, 1974 .
4	The Police Inspector, Vasco Police Station, Vasco-Goa.		Complaint against Chief Officer, Chairperson and other official of Mormugao Municipal Council.	For violating the directions issued under section 5 of the Environment (Protection) Act, 1984.

#### 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 and the Environmental Engineer. 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 2014/2015 the Board has received 300 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 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 3 and 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)	<b>Chairman</b>	<b>First Appellate Authority</b>
2)	<b>Assistant Account Officer</b>	<b>Public Information Officer.</b>
3)	<b>Senior Law Officer</b>	<b>Asst. Public Information Officer</b>

During the year 2014-2015 the Board has received 229 applications, which are disposed in time bound manner.

## **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).

CAG Office have appointed M/s Rege Kunkolienkar & Angle, Chartered Accountants Margao Goa as Statutory Auditors of Accounts of the Board for the year 2011 – 2012, 2012 – 2013, 2013 - 2014. Auditing of the Board accounts is in process and has reached the final stage.

## 9.2 INCOME, EXPENDITURE AND FUNDING

The income and expenditure account of the Board for the year ended 31<sup>st</sup> March, 2015 is as per table below:

Goa State Pollution Control Board 2014-15		Goa State Pollution Control Board 2014-15	
1-Apr-2014 to 31-Mar-2015		1-Apr-2014 to 31-Mar-2015	
Particulars		Particulars	
<b>Direct Expenses</b>	<b>56009165.00</b>	<b>Direct Incomes</b>	<b>49515560.00</b>
Salaries	55801880.00	Air Consent Fees	20604861.00
Leave Salary & Pension Contb.	207285.00	Ambient Monitoring Fees	3415279.00
<b>Indirect Expenses</b>	<b>48618794.00</b>	Bio Medical Fees	73600.00
Advertisement & Publicity	889397.00	E-Tendering Application	50200.00
Chairman Expenses	327805.00	NOC Fees	2652230.00
Office Expenses	13456117.00	Other Receipts	3591050.00
Professional & Other Special Charges	10937649.00	RTI Fees	12254.00
Travel Expenses	2562894.00	Water Consent Fees	19116086.00
Honorarium	158000.00	<b>Indirect Incomes</b>	<b>51483258.95</b>
Hospitality Expenses	187718.00	Bank Guarantee	
Office Expenses	330850.00	Grant From NAMP	7125000.00
Other Expenses - Chairman	12105.00	Grant From NWMP	262930.00
Publications	3866.00	Interest on Bank of India FD	6609375.00
Refund of Consent Fees	18249050.00	Interest on Bank of Maharashtra FD	3939720.00
Refund of Security Deposit	1000000.00	Interest on Corporation Bank FD	7030161.76
Rent, Rates & Taxes	95866.00	Interest on IndusInd Bank FD	893814.19
Wages	258006.00	Interest on Karnataka Bank FD	426632.00
Wi-Fi	57305.00	Interest on OBC FD	15212349.00
World Env Day Expenses	92166.00	Interest on State Bank of Travancore	2072688.00
		Interest on Vijaya Bank	7210589.00
		Public Hearing	500000.00
		Sale of Vehicle	200000.00
		<b>Nett Loss</b>	<b>3629140.05</b>
<b>Total</b>	<b>104627959.00</b>	<b>Total</b>	<b>104627959.00</b>

The details of the funding received by the Board for the year under report is as follows:

<b>Funds</b>	<b>Amount in Lakhs (2014 – 15)</b>
1. Central Govt. (Partial reimbursement of NWMP & NAMP expenses by CPCB)	73.87
2. State Govt.	-
3. Share of Water Cess from Central Govt.	-
4. Fees (consent, NOC, authorization and analysis charges)	463.44
5. Bank interest	-
6. Public Hearing	5.00
7. Other receipts (including grants of SEP programming & Right to Information)	38.89
<b>Total</b>	<b>581.20</b>

## **CHAPTER 10**

## ANY OTHER IMPORTANT MATTERS DEALT WITH BY THE BOARD

### 10.1 IMPLEMENTATION OF HAZARDOUS WASTE (MANAGEMENT, HANDLING & TRANSBOUNDARY MOVEMENT) RULES, 2008

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 and 2003 and subsequently, they were modified as the Hazardous Wastes (Management, Handling & Transboundary Movement) Rules in the year 2008.

The Board grants authorizations to industries generating and handling hazardous wastes. The Goa State Pollution Control Board has identified 866 industrial units generating hazardous waste in Goa upto the period of April 2014. During the year under report, 335 units have been granted authorization (new / renewals) under the Hazardous Waste (Management & Handling) Rules, 2008. The hazardous waste generated in the State of Goa for the year 2013-2014, is as follows: total recyclable waste: 1830.791 MT; total land fillable waste: 2529.299 MT; total incinerable waste: 33618.03 MT and discarded empty cans/tins: 41212 nos, Oil filters: 2181 nos.

The implementation of Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008 is dealt with by Mr. Ashley Pereira, Engineering Assistant of the Board.

### 10.2 IMPLEMENTATION OF BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES, 1998

For the purpose of implementation of the Bio-Medical Waste (Management and Handling) Rules 1998, Hospitals have been classified as per their bedded capacity.

1. Category 1: With 500 beds and above	1 No.
2. Category 2: With 200 beds and above, but less than 500	3 Nos.
3. Category 3: With 50 beds and above, but less than 200	17 Nos.
4. Category 4: With beds less than 50 including Clinics & Patho Labs.	406 Nos.
5. All other institutions generating bio-medical waste (not included above)	7 Nos.

Till 31/03/2014, 398 Health Care Units were granted authorizations under the Bio-Medical Waste (Management & Handling) Rules, 1998. The status of the Bio Medical waste generated by these units during the year is given as Table 6 in **Annexure VIII**.

There are total three hundred and ninety seven Health Care Facilities (HCF) out of which one hundred and fifty are bedded Hospitals with five thousand five hundred and fifty three beds, one hundred and thirteen are non bedded hospital and sixty three are Veterinary hospitals/ research organizations in the State. All the facilities have been granted authorization. Out of these, one facility have incinerator with air pollution control device, one hundred and seventy five have autoclave for sterilization, one have microwave and three hundred and sixteen have shredders for preliminary disposal of hospital instruments such as syringes, needle etc. The total quantity of bio-medical waste generated per day during the year 2012-13 is 4950.90 Kg out of which the total recyclable treated biomedical waste sold by HCF is 43.40 kg/ day and the total treated bio-medical waste disposed by HCF is 4907.50 kg/ day.

The implementation of Bio-medical Waste (Management & Handling) Rules, 1998 is dealt with by Mr. Vinson Quadros, Engineering Assistant & Mr. Sebastiao Baretto, Engineering Assistant of the Board.

### **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 MUNICIPAL SOLID WASTES (MANAGEMENT & HANDLING) RULES, 2000**

The Board has issued an authorization to all the Urban Local Bodies under the provisions of Municipal Solid Waste (Management & Handling) Rules 2000. The authorizations have been issued independently for specific purpose to the Municipal Bodies.

As per the Annual Report for the year 2013-2014 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 all are in operation. Two Municipal Councils are in process of installation of Garbage treatment plant. Municipal Bodies except Sanguem & Curchorem Cacora Municipal Council have complied with the provisions of Municipal Solid Waste (Management & Handling) Rules 2000 in terms of collection, segregation, storage & transportation of the waste.

The implementation of Municipal Solid Wastes (Management & Handling) Rules, 2000 is dealt with by Mr. Liston Fernandes, Engineering Assistant of the Board.

### **10.5 IMPLEMENTATION OF PLASTICS WASTE (MANAGEMENT & HANDLING) RULES, 2011**

There are twenty one units involved in manufacture of plastic bags and containers in the State. Of the 21 units 18 units have obtained consent and 08 units have obtained registration under Plastic Waste (Management & Handling) Rules 2011. Two units are not in operation. **Annexure IX** gives the details on "Implementation of Plastic Waste (Management and Handling) Rules, 2011 in States/UTS".

The Government of Goa through the High Level Task Force (HLTF) constituted to provide directions and implement various measures as announced in the Budget Speech, 2012-13, towards resolving the solid waste management problems affecting the State of Goa has taken a decision to phase out the plastic from domestic use.

Accordingly the Government has decided to strictly implement banning the manufacturing, sale and use of the plastic having thickness less than 40 microns and bags which do not have the name of manufacturer, thickness and registration number printed on them as per the provisions of the Plastic Rules 2011 and Goa Non Biodegradable Garbage (Control) Act, 1996.

A drive for this purpose has already commenced on 22<sup>nd</sup> April 2013 on the occasion of Earth Day all over Goa including in and around the beaches of Goa.

The implementation of Plastics Waste (Management & Handling) Rules, 2011 is dealt with by Mr. Sebastiao Colaco, Engineering Assistant of the Board.

## **10.6 IMPLEMENTATION OF BATTERIES (MANAGEMENT AND HANDLING) RULES, 2001**

There are 08 units who are involved in manufactures/assembling/pre-conditioners of lead acid battery within the state of Goa. 18 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 X**.

The implementation of Batteries (Management & Handling) Rules, 2001 is dealt with by Mr. Sebatiao Colaco, Engineering Assistant of the Board.

## **10.7 IMPLEMENTATION OF ELECTRONIC WASTES (MANAGEMENT & HANDLING) RULES, 2000**

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 PC's. 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.

Presently, there are two 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.

The implementation of Electronic Wastes (Management & Handling) Rules, 2000 is dealt with by Mr. Ashley Pereira, Engineering Assistant of the Board.

The details of annual returns for the year 2013-2014 is annexed as **Annexure VII**

## **10.8 OBJECTIVES & ACHIEVEMENTS**

### **10.8.1 OBJECTIVES SET BY THE BOARD**

The Board has planned to implement certain programmes for infrastructure development in specific areas. Following are some of the programmes wherein studies have been initiated and the progress of the same is given below.

The CPCB has been supporting various programmes carried out by the Board. During the financial year 2009 - 2010, the Board received financial support to the tune of Rs. 2 Lakhs for each of the following studies carried out by the Board through outsourcing.

1. Preparation of report on 'Strengthening of Goa State Pollution Control Board'.
2. Preparation of report on 'Status of Sewage Management in Goa'.
3. Preparation of report on 'Status of Municipal Solid Waste Management in Goa'.
4. Preparation of report on 'Status of Bio Medical Waste Management in Goa'.
5. Preparation of report on 'Status of Plastic Waste Management and Inventorization of Recycling Units in Goa'.

6. Preparation of report on 'Status of E-waste generation/ Management in Goa'.
7. Preparation of report on 'Status of Batteries ( Waste Handling) in Goa as per Batteries Waste Management Handling Rules'
8. Preparation of report on 'Status of SSI Inventorization'
9. Preparation of report on 'Status of Industrial Pollution Control'
10. Preparation of report on 'Status of Dessimination of State Pollution Control Boards'

The Draft Final Reports were submitted by the Consultants. All the studies have been approved and forwarded to CPCB except the study on 'Status of Sewage Management' which is presently under the scrutiny of the committee.

#### 10.8.2 ACHIEVEMENTS MADE BY THE BOARD

- **Recognition of the Goa State Pollution Control Board under ISO 9001:2008 (Quality Management System) vide certification dated 04.07.2013 and is valid upto 14.05.2015**
- **Recognition of the Goa State Pollution Control Board under BS OHSAS 18001:2007 (Occupational Health and Safety Management System) vide certification dated 13.08.2013 and is valid upto 12.08.2016.**
- **Recognition of the Goa State Pollution Control Board under ISO 14001:2004 (Environmental Management System) vide certification dated 13.01.2014 and is valid upto 12.01.2017**

#### 10.8.3 SKOCH RENAISSANCE AWARDS – ORDER OF MERIT 2014 CEREMONY

The GSPCB participated in the Awards function organised by the Skoch Renaissance Group on "Resurgent India, Competitive India" which was held in New Delhi during November 2014. Four projects were forwarded to the Skoch Renaissance Group and were presented on behalf of the Board by Mr. Sujeet Dongre, Scientist 'D', CEE during the project presentation ceremony held in Delhi in November 2014. Of the four, the project entitled "Bio-remediation of Sal River" was nominated for Skoch Order of Merit for one of the best project in the Country to be conferred at the 38<sup>th</sup> Skoch Summit on "Resurgent India, Competitive India" held on 20<sup>th</sup> and 21<sup>st</sup> of November 2014. The Skoch Order of Merit award was handed over to Mrs. Francisca Pereira, Scientist 'B' of the GSPCB who attended the award presentation ceremony.



Fig10.1: Presentation of the "Skoch Order of Merit Award" to GSPCB

#### 10.8.4 SUSTAINABLE WORKFLOW PROJECT (SWP)

Under E-governance project Board presently utilizes the XGN software for Consent management and this system has been operating satisfactorily for the last 3 years. In addition to that Board is under process of implementing Office Automation System using Enterprise Resource Planning (ERP) named as Sustainable Workflow Project (SWP) implemented by SAP. ERP is Business Management Software that allows an Organization to use a System of integrated applications to manage the Business. ERP software consists of many enterprise software modules that are provided by ERP developer. The Board floated an E-tender for implementation of SAP Enterprise Resource Planning from authorized Partner of SAP to implement the following modules:

1. **Document Management System**
2. **Human Resources Management**
3. **Payroll**
4. **Purchase and Inventory management**
5. **Fixed Asset Management**
6. **Equipment Maintenance**
7. **Vehicle Management and Maintenance**
8. **Integration of XGN Software with SAP**

M/s Highbar Technologies Ltd has been awarded with work order on 20<sup>th</sup> Nov 2014 to implement the Software for 30 licenses with an amount of price of Rs. 1,98,36,372/- (Rupees One Crores Ninty Eight Lakhs Thirty Six Thousand Three Hundred Seventy Two).

Sustainable Workflow Project (SWP) kicked off from Feb 2015 which is going to take up the various activities carried out by the Board including activities of Administrative Section and Accounts Section. The functional scopes which are taken up by this project for automation as mentioned above.

Project Implementation Methodology is build on ASAP Method (Accelerated SAP) and will be completed in five phases:

- **Phase 1 Project Preparation**
- **Phase 2 Business Blueprint**
- **Phase 3 Realization**
- **Phase 4 Final Preparation**
- **Phase 5 Go-Live and support**

At present Board is under implementation of Business Blueprint phase. By mid of October Board is planning to Go-Live with this project. In addition, to host this project Board is under the process of procuring Hardware and server.

#### **10.8.5 MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN THE GOA STATE POLLUTION CONTROL BOARD (GSPCB) AND BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI (BITS)**

Memorandum of Understanding (MoU) was signed between the Goa State Pollution Control Board (GSPCB) and Birla Institute of Technology & Science, Pilani (BITS) on 5<sup>th</sup> June 2014. The MoU between BITS and GSPCB is signed with the objective of fostering collaboration between the two organizations to promote academic interaction.

BITS would design and operate educational programmes to meet the Learning and Development needs of GSPCB leading to specific degrees of BITS through its Work-Integrated Learning Programmes.

These programmes will have same rigour and standards as these offered on-campus, and will be equivalent to the corresponding degrees offered on-campus.

The educational programmes conducted under this collaborative arrangement will offer the employees of GSPCB an opportunity to enhance their academic qualification, and synergize theory with practice on a sustained basis.

GSPCB would provide the necessary infrastructural facilities and logistical support required (such as office facilities for BITS faculty, classrooms with necessary equipment, facilities for conducting examinations, library facilities, computer and communication facilities with access to electronic mail and internet) for the smooth and effective conduct of the educational programmes.

Presently classes are being conducted by faculty members of BITS for staff of the Board from Scientific Section and Technical Section and the Classes have commenced on 31/01/2015 for the 1<sup>st</sup> semester of Master Degree Programme in Environmental Engineering which presently comprises of the following subjects:

- a) Environmental Management Systems
- b) Environmental Chemistry
- c) Environmental Statistics
- d) Physico-Chemical Treatment Principles and Design for Wastewater Systems

The course comprises assignments, mid-semester exam (closed book) and Comprehensive exam (Open book).



Lighting of the Lamp



Speech given by the Chairman



World Environment Day  
5 June

10.9  
CELEBRATION  
OF  
WORLD  
ENVIRONMENT DAY

World Environment Day (WED), 5<sup>th</sup> June, is the United Nations' principal vehicle for encouraging worldwide awareness and action for the environment. . Forty per cent of the global population lives within 150 kilometres of a coast, often in crowded low-lying cities vulnerable to storms and tidal surges. The devastating impact of extreme weather anomalies like Typhoon Haiyan, also known as Yolanda, a category 5 typhoon, killed more than 6,000 people in the Philippines alone in 2013.

The global sea level has risen by about 10 to 25 cm. (up to about 10 inches) over the last 100 years. Sea level rise is attributable to global warming. Humanity's greenhouse gas (GHG) emissions are leading to changes in climatic patterns. The most harmful GHG emitted by human activity -- carbon dioxide -- accounts for 85% of the increase in the Earth's temperature in the past ten years. The greenhouse gas concentrations in the atmosphere are at their highest for 800,000 years.

In support of the UN designation of 2014 as the International Year of Small Island Developing States (SIDS), WED this year has adopted SIDS in the broader context of climate change as its theme. UNEP WED theme was "RAISE YOUR VOICE, NOT THE SEA LEVEL" in support of Small island along with the Arctic and many coastal zones, which are on the frontline of extreme climate and sea level rise that risks lives, livelihoods and even entire countries.

The combined emissions of small islands represent less than 1 per cent of global emissions. Yet these islands are the most vulnerable to changes in climate patterns, and rising sea levels can cause loss of land along coastlines of low-lying islands, disrupting economies and livelihoods. To increase the urgency to help protect the islands in the face of growing risks and vulnerabilities, particularly as a result of climate change. WED is an excellent opportunity for countries like India with significant coast line including Goa, to raise a call for solidarity with the islands, to achieve a more sustainable future. In one way or another, the effects of climate change are being experienced by all, and these will increase as global temperatures rise. The only way out is clean energy.

When you save energy you reduce the use of fossil fuels --coal -- oil and gas-- the greatest source of human carbon dioxide output. Simple steps to reduce your carbon footprint—like turning off lights and appliances when not in use, switching to compact fluorescents, carpooling or biking -- can help. The GSPCB aims to find out more on how each one individually can take action in order to make a collective difference.

Our pathway is clear. Clean energy economies produce profits without pollution, better livelihoods in stable industries, restore health and wider wealth and preserve water and essential resources. I call upon all to raise their voices and their ambition now, on World Environment Day in June and throughout the journey to that new universal agreement in 2015.



The **WORLD ENVIRONMENT DAY** Programmes were held at the GSPCB Conference Hall and Sanskruti Bhavan, Patta.

The following programmes were held along with CEE (Centre for Environment Education):

On 03<sup>rd</sup> June 2014, a Staff children painting/Poster competition based on the UNEP theme, titled : "Reduce my Carbon Footprint" was held for all the GSPCB staff children, seeking out the childrens views on how they can contribute to reducing green house gases through simple practices. The outcome

transmitted to visually inspiring posters were greatly admired by all. More than 15 children participated in two categories Junior (Jr.)aged 5-11 yrs and Seniors(Srs.) aged 12-16



Jr.Cat: 1<sup>st</sup> : Aayush S. Naik

2<sup>nd</sup> : Bhargavi V.Prabhudessai

3<sup>rd</sup> :Chrysloy D'Mello

A special Jury recommendation was given to Divesh Dongrikar for his inspiring poster



Sr.Cat.:1<sup>st</sup> Tanisha D. Naik

2<sup>nd</sup> : Lysandra Pires

3<sup>rd</sup> Isha S.Sukhthankar

On 04<sup>th</sup> June'2015 A Quiz competition was arranged by CEE involving teams from various private Industries and Government Departments. The following teams participated

Sr. No.	Name of the participants	Organisation	Prize
1	Mr. Pravin Faldesai Mr. Amit Shanbag	Goa State Pollution Control Board (GSPCB)	1st Place
2	Mr. Madan Shanbhag Mr. Dinesh Virginkar	M/s MRF Limited	2nd Place
3	Ms Shema Varghese Thadathil Mr. Shreejith Krishnan	M/s Sesa Sterlite Ltd	3rd Place
4	Shri. Shantaram B Ghatkar Shri. Saish A Lawande	Department Of Water Resources	4th Place
5	Ms. Rachana Kankonkar Mr. Roshan Verlekar	M/s Glenmark Generics Ltd.	5th Place
6	Ms. Reshma Kerkar Ms. Rajshri Nagvekar	Goa State Biodiversity Board (GSBB)	
7	Shri. Tukaram Kharbe Shri. Mangirish Dharwadkar	Office of the Dy. Conservator of Forests, Wildlife & Eco - Tourism ( North)	
8	Mr. Vivek Rale Mr. Nilesh Usgaonkar	M/s Merck Limited	
9	Shri Kedar Naik	Mormugao Port Trust (MPT)	

	Smt. Vinda G. Lotlikar		
10	Shri. Glory Furtado Shri. Amey Parab	Captain of Ports Department	
11	Dr. Anoop K. Tiwari	National Centre for Antarctic & Ocean Research (NCAOR)	



1<sup>st</sup> Prize: GSPCB



2<sup>nd</sup> Prize: MRF Ltd



3<sup>rd</sup> Prize: Sesa Sterlite.

This was followed by the an essay cum elocution competition on Initiatives towards “**Combating Climate Change**” for staff. The Prize winners included :**1<sup>st</sup> Place: Guadalupe Dias-Administration, 2<sup>nd</sup> Place: Jocelyn Coelho-Scientific Section And 3<sup>rd</sup> Place: Deepti Jamble-Technical Section**

The competition on Best Environmental Practices –Industries/Units saw a few participants on the theme : **Reducing Green House Gases: Our commitment to society**. MRF Ltd’s Madan Shanbhag & Saeesh Prabhu Desai have taken a lot of initiatives to minize Green House Gas (GHG) emissions by engaging M/s Ernst & Young as consultants.Zuari Agro Chemicals Ltd. Also presented on their use of cleaner fuels, water harvesting etc.



1<sup>st</sup> : MRF Ltd



2<sup>nd</sup> Place:Zuari Agro Chemical Ltd

On 5<sup>th</sup> June'2015, a panel of experts provided awareness on the Climate change and its related effects. The Panel discussion was on “**Impact of climate change & Raise in sea level**”-

The Chairman of Goa State Pollution Control Board gave a welcome address, followed by the panelists , who consisted of the following

Dr. A.S. Unnikrishnan, Chief Scientist & Lead Author & Member-IPCC	National Institute of Oceanography (NIO)	Sea level rise off the Indian Coast
Prof . Mahesh Nagarajan, Operations Management	Goa Institute of Management Studies (GIMS)	Sea level rise and its impact on the Indian Economy
Shri.Anil Kher, Past Charirman & MD-Micro interconnexon Pvt.Ltd.	Confederation of Indian Industries (CII)	Global Warming : An Industrial perspective.
Prof. S.Manjre	Birla Institute of Technology & Sciences (BITS)-Pilani	

The session was followed by an Open House Discussion.



Welcome Address: Chairman-GSPCB



Dr.A.S.Unnikrishnan-NIO



Prof.M.Nagarajan-GIMS



Mr.Anil Kher-CII



Prof.S.Manjare-BITS Pilani-Goa



Audience questions  
Building at Saligao



Mr.Gerald DaCunha-



Proposed GSPCB

Architecture Autonomous



Release of GSPCB Annual Report 2013-2014



View of Audience

Mr.Gerald Dacunha Architect for the proposed GSPCB Building at Saligao gave a brief talk on the proposed building. The Non.Min.Environment also releases the GSPCB Annual Report 2013-14. The various Village Panchayats actively involved in initiating Solid Waste Management Practices i.e. Plastic

collection drive were also felicitated for their initiatives in waste management in collaboration with the solid waste Management cell-GSPCB by GSPCB . The various village panchayats included



The session continued with prize distribution and ended with an Address by Hon' ble Minister for Environment and Forests , Smt.Alina Saldhana. The Vote of Thanks was given by the Member Secretary-GSPCB.



Hon' ble Minister for Environment and Forests



Vote of Thanks-MS-GSPCB

On 08<sup>th</sup> June'2014, a cycling rally was organized with the group, Cycling Goa. Flags with environmental messages in line with the UNEP them were also distributed to the rally participants. The rally was flagged off at Kesarval Motels at 0730 am and was routed through Verna -Sancoale –Cortalim and back.. The event was flagged off by Mr.Martin Ghosh Plant Head-M/s Syngenta . This was followed by refreshments and an address by Mr.Bryan Soares-President Cycling-Goa . The certificates were distributed by the Chairman of Goa State Pollution Control Board, Mr.Jose Manuel Noronha.



Flag off by Mr.Martin Ghosh



Airport Road



Verna Road



**Certificate and prize distribution to the participants in the cycle rally**



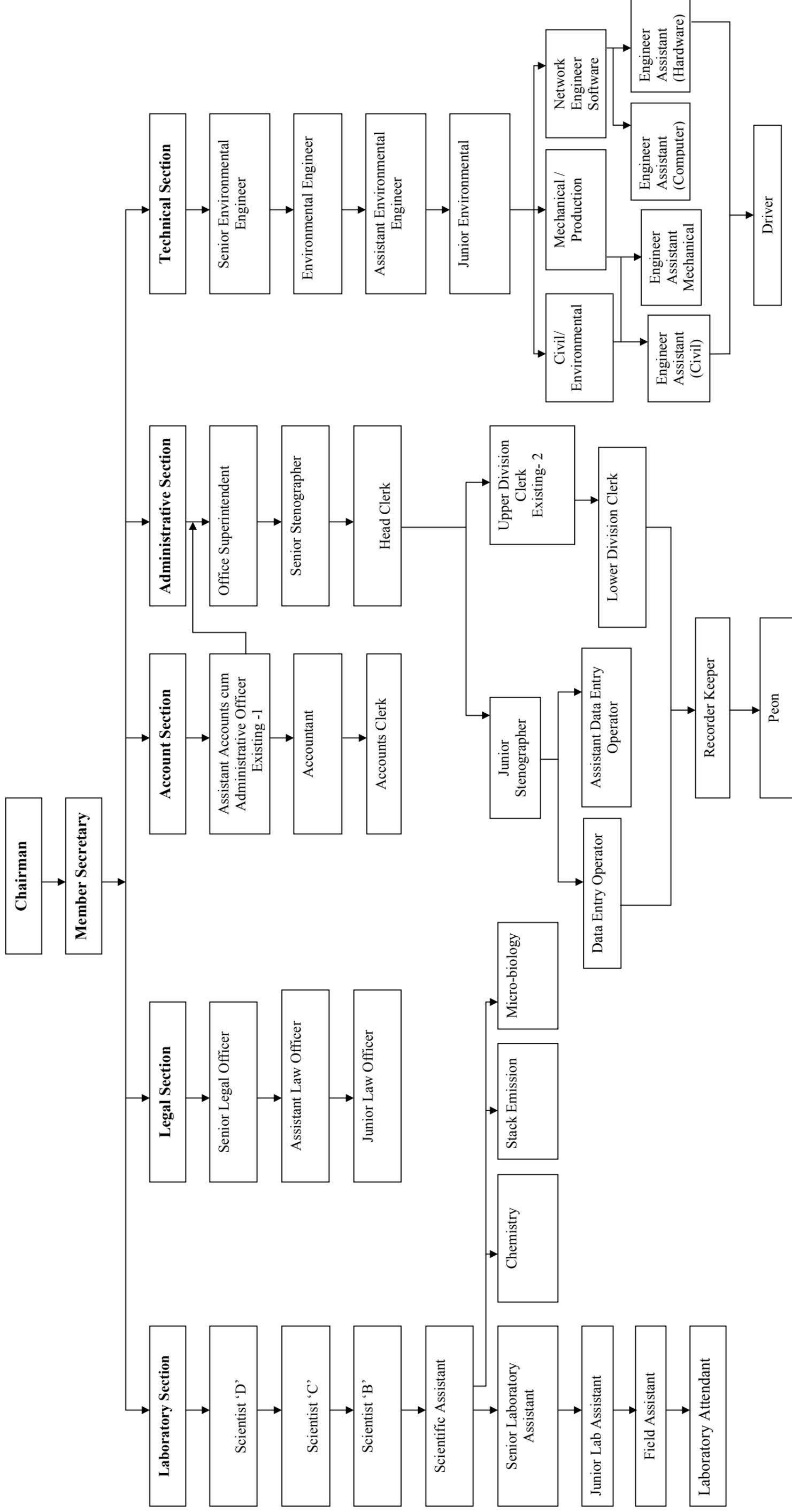
**Cycling Enthusiasts**

**“Be the change YOU wish to see in this world”-M.K.Gandhi**

#### **10.10 IMPLEMENTATION OF THE SUPREME COURT GUIDELINES ON PREVENTION OF SEXUAL HARASSMENT 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 A

**LIST OF APPLICATIONS FOR CONSENTS TO OPERATE (CCA) UNDER WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 AND AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES, 1998 AND HAZARDOUS WASTE (MANAGEMENT & HANDLING) (AMENDMENT) RULES, 2000 PROCESSED AND APPROVED BY THE BOARD DURING THE YEAR 2014-2015.**

Sr.no	District	Industry Name	Category of Industry	Status
1	NOR	M/s Bougainvillea Guest House	S	Granted - 24/04/2014
2	NOR	M/s. Fisherman's Cove Restaurant	S	Granted - 24/04/2014
3	NOR	M/s. Sunset Bar And Restaurant And Guest House	S	Granted - 24/04/2014
4	NOR	M/s. Rhythm Guest House	S	Granted - 24/04/2014
5	NOR	M/s. Rhythm Guest House (2)	S	Granted - 24/04/2014
6	NOR	M/s Manguesh Saw Mill	S	Granted - 24/04/2014
7	NOR	M/s. Tosigo's Restaurant	S	Granted - 24/04/2014
8	NOR	M/s Popular Restaurant	S	Granted - 24/04/2014
9	NOR	M/s. Kasar Cashew Industry	S	Granted - 24/04/2014
10	NOR	M/s. Halcyon Guest House	S	Granted - 24/04/2014
11	NOR	M/s Sateri Cashew Industry	S	Granted - 24/04/2014
12	NOR	M/s. Ajanta Industries	S	Granted - 24/04/2014
13	NOR	M/s. Crompton Greaves Ltd	S	Granted - 24/04/2014
14	NOR	M/s. Blue Cube Print & Pack Pvt Ltd	S	Granted - 24/04/2014
15	SOU	M/s. Diana Spa & Saloon	S	Granted - 24/04/2014
16	NOR	M/s. Priya Saloon & Spa	S	Granted - 24/04/2014
17	SOU	M/s. Fridola Bar & Restaurant	S	Granted - 24/04/2014
18	SOU	M/s. Rumors Salon And Spa	S	Granted - 24/04/2014
19	NOR	M/s. Dona Cristalina	S	Granted - 24/04/2014
20	NOR	M/s. Hotel Devdeep	S	Granted - 24/04/2014
21	SOU	M/s. Golden Bakers	S	Granted - 24/04/2014
22	NOR	M/s. Hotel La Mansion	S	Granted - 24/04/2014
23	NOR	M/s. Lizee Hairdresser Beauticians\spas	S	Granted - 24/04/2014
24	SOU	M/s. Goa Mouldcrafters Pvt. Ltd.	M	Granted - 24/04/2014
25	SOU	M/s. Hair World Beauty Saloon & Spa	S	Granted - 24/04/2014
26	SOU	M/s. Amanya Spa And Saloon	S	Granted - 24/04/2014
27	NOR	M/s. Royal Bakery	S	Granted - 24/04/2014
28	NOR	M/s. Creamchoc Ice Cream Pvt Ltd	S	Granted - 24/04/2014
29	SOU	M/s Percy's Meat Food Products	S	Granted - 24/04/2014
30	NOR	M/s Coutinho's Nest	S	Granted - 24/04/2014
31	NOR	M/s Nine Bar & Restaurant	S	Granted - 24/04/2014
32	NOR	M/s Joao Caetano Fernandes	S	Granted - 24/04/2014
33	NOR	M/s God Gift Guest House	S	Granted - 24/04/2014
34	NOR	M/s. Cristalina's Guest House	S	Granted - 24/04/2014
35	NOR	M/s Alberto's Guest House	S	Granted - 24/04/2014

36	SOU	M/s Jutex	S	Granted - 25/04/2014
37	NOR	M/s. J & J Precision Industries	S	Granted - 25/04/2014
38	NOR	M/s Enviro Green Resorts Pvt Ltd	S	Granted - 25/04/2014
39	NOR	M/s. Bisbree Bakery	S	Granted - 25/04/2014
40	NOR	M/s. Prakash Lodge	S	Granted - 25/04/2014
41	NOR	M/s. Anuradha Engineering Works	S	Granted - 25/04/2014
42	NOR	M/s Shalom Resort	S	Granted - 25/04/2014
43	SOU	M/s Akshay Bakery	S	Granted - 25/04/2014
44	NOR	M/s. Muska Wallness Centre	S	Granted - 25/04/2014
45	NOR	M/s. Dr. Anilpatil's Vedicure Pvt. Ltd.	S	Granted - 25/04/2014
46	NOR	M/s. Lizzy's Guest House	S	Granted - 25/04/2014
47	SOU	M/s. Arshi	S	Granted - 25/04/2014
48	NOR	M/s. Hotel Manvin's	S	Granted - 25/04/2014
49	NOR	M/s. Jeneeta Industries	S	Granted - 25/04/2014
50	NOR	M/s Belladona Plasters Limited	M	Granted - 25/04/2014
51	SOU	M/s Furtado's Bar And Restaurant	S	Granted - 29/04/2014
52	SOU	M/s. Furtado's Guest House	S	Granted - 29/04/2014
53	SOU	M/s Coastal Preserves	S	Granted - 29/04/2014
54	NOR	M/s. Papiillon Salon And Wellness	S	Granted - 29/04/2014
55	SOU	M/s. Vasco Repairers	S	Granted - 29/04/2014
56	NOR	M/s Ancora Beach Resort	S	Granted - 30/04/2014
57	SOU	M/s Bhaskar Metals	S	Granted - 30/04/2014
58	SOU	M/s. Hotel Blonel Beach Resort	S	Granted - 30/04/2014
59	SOU	M/s. Hotel Gladstone	S	Granted - 30/04/2014
60	NOR	M/s. Alphagam Coating Solutions Pvt. Ltd.	S	Granted - 30/04/2014
61	NOR	M/s. Asha Cement Products	S	Granted - 30/04/2014
62	SOU	M/s. Standard Transformers Pvt Ltd	S	Granted - 30/04/2014
63	NOR	M/s. Asilo (District) Hospital	L	Granted - 30/04/2014
64	NOR	M/s. Nitin Metal Works	L	Granted - 30/04/2014
65	NOR	M/s. Shivkrupa Fabrication & Vehical Repairs	S	Granted - 30/04/2014
66	NOR	M/s. Atreya Engineering Works	L	Granted - 30/04/2014
67	SOU	M/s. Gurudeva Blocks And Tiles	S	Granted - 30/04/2014
68	NOR	M/s. Capaxem Barge Loading Jetty	M	Granted - 30/04/2014
69	SOU	M/s. S. Chems & Allied Producers Pvt. Ltd.	S	Granted - 30/04/2014
70	NOR	M/s. De Nora India Limited	L	Granted - 30/04/2014
71	NOR	M/s. Mrf Ltd.	L	Granted - 30/04/2014
72	NOR	M/s. Victor Exotica Beach Resort	M	Granted - 30/04/2014
73	NOR	M/s Misquita Engineering Pvt Ltd	S	Granted - 21/05/2014
74	NOR	M/s Shree Sharvani Industries	S	Granted - 21/05/2014
75	SOU	M/s Toolcrafts	S	Granted - 21/05/2014
76	NOR	M/s. Granpa's Inn	S	Granted - 21/05/2014
77	SOU	M/s Sebfern Wood Craft	S	Granted - 21/05/2014
78	SOU	M/s. Jaiswal Traders	S	Granted - 21/05/2014
79	NOR	M/s. Flex Art Foil Ltd.	S	Granted - 21/05/2014
80	SOU	M/s. Dynamic Pinters	S	Granted - 21/05/2014

81	NOR	M/s. Ayur Saukhya Ayurvedic Treatment Centre	S	Granted - 21/05/2014
82	NOR	M/s. Gemini Motors	S	Granted - 21/05/2014
83	SOU	M/s Persistent Systems Limited	S	Granted - 21/05/2014
84	SOU	M/s Govind Poy Oxygen Ltd.	M	Granted - 21/05/2014
85	SOU	M/s Jose Holiday Homes	S	Granted - 21/05/2014
86	NOR	M/s. Infiniti Modules Pvt. Ltd.	S	Granted - 21/05/2014
87	NOR	M/s. Rututek Enterprises	S	Granted - 21/05/2014
88	NOR	M/s. Xavier Bakery	S	Granted - 21/05/2014
89	NOR	M/s Rozbal Industries	S	Granted - 21/05/2014
90	SOU	M/s. Vinaya Enterprises	S	Granted - 21/05/2014
91	NOR	M/s Halarnkar Industries	S	Granted - 21/05/2014
92	SOU	M/s. Sunshine Spray Painting Works	S	Granted - 21/05/2014
93	SOU	M/s. Vailankanni Guest House	S	Granted - 21/05/2014
94	SOU	M/s Lourenco Furniture Works	S	Granted - 21/05/2014
95	SOU	M/s Lankhorst Euronete India Pvt. Ltd.	M	Granted - 21/05/2014
96	SOU	M/s. Ferrao Ice Factory	S	Granted - 21/05/2014
97	NOR	M/s. Romaldo Guest House	S	Granted - 21/05/2014
98	NOR	M/s. Foxes Fiesta	S	Granted - 21/05/2014
99	SOU	M/s Mamta Packers	S	Granted - 21/05/2014
100	SOU	M/s. Helen Workshop	S	Granted - 21/05/2014
101	SOU	M/s. Nilesh Bakery	S	Granted - 21/05/2014
102	SOU	M/s. Busha Engineering Works	S	Granted - 21/05/2014
103	NOR	M/s. Rama's Food Products	S	Granted - 21/05/2014
104	SOU	M/s. Conny Pollution Check-Up Centre	S	Granted - 21/05/2014
105	SOU	M/s. Acme Refrigeration Company	S	Granted - 21/05/2014
106	SOU	M/s. Acme Refrigeration Pvt Ltd	S	Granted - 21/05/2014
107	SOU	M/s. Acme Sales	S	Granted - 21/05/2014
108	SOU	M/s. Vg's Glorio Bar & Restaurant	S	Granted - 21/05/2014
109	NOR	M/s. Pawar's Cement Block Industry	S	Granted - 21/05/2014
110	NOR	M/s. Sai Sneha Sweet Mart	S	Granted - 21/05/2014
111	NOR	M/s. Sandu Ayurvedic Spa & Wellness	S	Granted - 21/05/2014
112	NOR	M/s. Excel Furniture	S	Granted - 21/05/2014
113	NOR	M/s. Anisha Arts	S	Granted - 21/05/2014
114	SOU	M/s. Chodnekar Rice & Flour Mill	S	Granted - 21/05/2014
115	NOR	World Touch Spa & Saloon	S	Granted - 21/05/2014
116	SOU	M/s Prakash V.N. Karmali Flour Mill	S	Granted - 21/05/2014
117	SOU	M/s Savita Industries	S	Granted - 21/05/2014
118	SOU	M/s. Nishad Packers (Ssi Unit)	S	Granted - 21/05/2014
119	SOU	M/s Jaclis Engineers	S	Granted - 21/05/2014
120	SOU	M/s. Reliance Infrastructure Ltd,Goa Power Station	L	Granted - 21/05/2014
121	SOU	M/s. Sanofi India Limited	S	Granted - 21/05/2014
122	NOR	M/s Sushant Fabricators	S	Granted - 21/05/2014
123	SOU	M/s. Curti Hot & Cold Traders	S	Granted - 21/05/2014
124	NOR	M/s. Mrf Ltd.	L	Granted - 21/05/2014
125	NOR	M/s. Tata Consultancy Services Ltd.	M	Granted - 21/05/2014

126	NOR	M/s. Mohit Steel Industries Private Limited	S	Granted - 21/05/2014
127	SOU	M/s. Colmar Hotels Pvt. Ltd., ( Colmar Beach Resort )	S	Granted - 21/05/2014
128	NOR	M/s. Prestige Holiday Resorts Pvt. Ltd., ( Royal Goan Beach Club At Monterio )	M	Granted - 21/05/2014
129	NOR	M/s. United Spirits Ltd.	S	Granted - 21/05/2014
130	SOU	M/s. Pentair Water India Pvt. Ltd.	S	Granted - 21/05/2014
131	SOU	M/s. Sateri Rice & Flour Mill	S	Granted - 21/05/2014
132	NOR	M/s. Leoney Resort	S	Granted - 21/05/2014
133	NOR	M/s. Roshan Engineering Works	S	Granted - 21/05/2014
134	NOR	M/s. Dona Florina Beach Resort	S	Granted - 21/05/2014
135	NOR	M/s. Alcon Holiday Village	S	Granted - 21/05/2014
136	NOR	M/s Kgn Fabrication Works	S	Granted - 21/05/2014
137	NOR	M/s Kamleshwar Industries	S	Granted - 21/05/2014
138	NOR	M/s Chodankar Brothers	S	Granted - 21/05/2014
139	NOR	M/s. Ananaz Hotel	S	Granted - 21/05/2014
140	SOU	M/s. Rukminirama Steel Rollings Pvt Limited (Melting Division)	M	Granted - 22/05/2014
141	SOU	M/s Vassantram Metha And Company Private Limited	L	Granted - 22/05/2014
142	NOR	M/s. Vassudeva Tamba Metal Quarry	S	Granted - 22/05/2014
143	NOR	M/s. Vassudeva Tamba Metal Quarry	L	Granted - 22/05/2014
144	NOR	M/s. Hindustan Industries	S	Granted - 22/05/2014
145	NOR	M/s. Bajrangbali Steel Furniture & Fabrication	S	Granted - 22/05/2014
146	NOR	M/s. Vishwakarma Furniture Industry	S	Granted - 22/05/2014
147	SOU	M/s. Vincy Beach Resort	L	Granted - 22/05/2014
148	SOU	M/s. Hotel Oshin	L	Granted - 22/05/2014
149	SOU	M/s. Naik Decorators	S	Granted - 22/05/2014
150	SOU	M/s. Dusk Aerated Waters	S	Granted - 22/05/2014
151	SOU	M/s. Krishna Industries	S	Granted - 22/05/2014
152	SOU	M/s. Shaikh Yakub & Sons Tyre Works	L	Granted - 22/05/2014
153	SOU	M/s. Suni Cottages	L	Granted - 22/05/2014
154	SOU	M/s. Mandovi Shipyard Private Limited	S	Granted - 22/05/2014
155	NOR	M/s. Indi Pharma Pvt. Ltd.	M	Granted - 22/05/2014
156	SOU	M/s. Bharat Petroleum Corporation Ltd	S	Granted - 22/05/2014
157	NOR	M/s. Sinkerim Plot For Stacking/stocking Of Iron Ore, Sirigao Mines, Chowgule & Co.	S	Granted - 22/05/2014
158	SOU	M/s. Best Western Peace Valley	S	Granted - 22/05/2014
159	SOU	M/s. Anant V. Sarmalkar	L	Granted - 22/05/2014
160	SOU	M/s. Iqra Hospitality Services (Hotel Supreme)	S	Granted - 22/05/2014
161	NOR	M/s. Maina Barge Loading Jetty	M	Granted - 22/05/2014
162	NOR	M/s. Panduronga Timblo Industrias	S	Granted - 22/05/2014
163	SOU	M/s. Blue Cross Laboratories Ltd.	S	Granted - 22/05/2014
164	SOU	M/s. Abbott India Limited	M	Granted - 22/05/2014
165	SOU	M/s. Cyatron Techmation & Oilex Systems Pvt. Ltd.	S	Granted - 22/05/2014
166	NOR	M/s. Montego Bay	S	Granted - 22/05/2014

167	NOR	M/s. Kismet Hotel	S	Granted - 22/05/2014
168	NOR	M/s. The Old Mango Tree Bar & Restaurant	S	Granted - 22/05/2014
169	SOU	M/s Bomdo Vishram Naik (Rice, Flour And Oil Mill)	S	Granted - 22/05/2014
170	SOU	M/s. Pritidas P Lotlikar Rice Mill	S	Granted - 22/05/2014
171	NOR	M/s. Shrikrishna Rice & Flour Mill	S	Granted - 22/05/2014
172	SOU	M/s Bharat Saw Mill Unit No. I	S	Granted - 22/05/2014
173	NOR	M/s. Shah Solutions	S	Granted - 22/05/2014
174	SOU	M/s P. K Tiles & Industries	S	Granted - 22/05/2014
175	NOR	M/s. Mahalaxmi Industries	S	Granted - 22/05/2014
176	NOR	M/s. Devashri Real Estate Developers	S	Granted - 22/05/2014
177	SOU	M/s Lucky Traders	S	Granted - 22/05/2014
178	SOU	M/s. Ganesh Timber Depot	S	Granted - 22/05/2014
179	SOU	M/s. Goa Art Printers	M	Granted - 22/05/2014
180	NOR	M/s. Bharat Industries	S	Granted - 22/05/2014
181	NOR	M/s. Plastwell Plastics	S	Granted - 22/05/2014
182	NOR	M/s Vishwakarma Fabrication	S	Granted - 22/05/2014
183	SOU	M/s. Hotel Annapurna Lodging And Boarding	S	Granted - 22/05/2014
184	NOR	M/s. Santiago Residency (Guest House)	S	Granted - 22/05/2014
185	NOR	M/s Goa Service Centre	S	Granted - 22/05/2014
186	SOU	M/s Pradeep Furniture Industry	S	Granted - 22/05/2014
187	SOU	M/s Metalloys	S	Granted - 22/05/2014
188	NOR	M/s Saishiv Boards And Tops Pvt Ltd	M	Granted - 22/05/2014
189	NOR	M/s Dias Villa Guest House	S	Granted - 22/05/2014
190	NOR	M/s. Charles Rooms Bar N Restaurant	S	Granted - 22/05/2014
191	NOR	M/s Damodar Fabricators	S	Granted - 22/05/2014
192	SOU	M/s. Fernandes Bros. Engineering Works	S	Granted - 22/05/2014
193	NOR	M/s Devki Krishna Service Centre	S	Granted - 22/05/2014
194	SOU	M/s Kenkre Engg. Works	S	Granted - 22/05/2014
195	SOU	M/s. Narayan Vaman Bale (Rice & Flour Mill)	S	Granted - 22/05/2014
196	NOR	M/s. Galaxy Cashew Processing Unit	S	Granted - 22/05/2014
197	SOU	M/s. Damodar Rice & Flour Mill	S	Granted - 22/05/2014
198	NOR	M/s. Hotel Satyam	S	Granted - 22/05/2014
199	SOU	M/s. Purshottam V.S. Kunkolienkar (Flour Mill)	S	Granted - 22/05/2014
200	NOR	M/s. Mahalaxmi Enterprises	S	Granted - 22/05/2014
201	NOR	M/s. Laxmi Vijay Saw Mill	S	Granted - 22/05/2014
202	SOU	M/s. Roman Wood Industries	S	Granted - 22/05/2014
203	NOR	M/s. Marbella Guest House	S	Granted - 22/05/2014
204	SOU	M/s. South Goa Planning And Development Authority	M	Granted - 22/05/2014
205	NOR	M/s. Matruchhaya Lodge	S	Granted - 22/05/2014
206	SOU	M/s Sunrise Rice And Flour Mill	S	Granted - 22/05/2014
207	SOU	M/s Basil Bottling Company	S	Granted - 22/05/2014
208	SOU	Ms Pramukh Caps	S	Granted - 22/05/2014
209	SOU	M/s. Lotlikar Engineers	S	Granted - 22/05/2014
210	SOU	M/s Waingankar Engineering	S	Granted - 22/05/2014
211	NOR	M/s. Sunshine Electric Co. Pvt. Ltd.	S	Granted - 22/05/2014

212	NOR	M/s Exclusive Meals L.L.P	S	Granted - 22/05/2014
213	NOR	M/s Gajanan Wood Industries	S	Granted - 22/05/2014
214	NOR	M/s Dattaprasad Saw Mill	S	Granted - 22/05/2014
215	NOR	M/s Shunyata Arts Pvt Ltd	S	Granted - 22/05/2014
216	SOU	M/s R. K. Crushing Industries	S	Granted - 22/05/2014
217	SOU	M/s. P. K. Transport	S	Granted - 22/05/2014
218	NOR	M/s. E.Dalian Holiday Village	S	Granted - 22/05/2014
219	SOU	M/s. S. Chems & Allied Producers Pvt. Ltd.	S	Granted - 22/05/2014
220	NOR	M/s Mohit Ispat Ltd	S	Granted - 22/05/2014
221	SOU	M/s Pralshar Bio Products Pvt Ltd	S	Granted - 22/05/2014
222	SOU	M/s Polyclass Industries	M	Granted - 22/05/2014
223	NOR	M/s Kemtec India Photographic Co. Pvt Ltd.	S	Granted - 22/05/2014
224	NOR	M/s. Rasaka Engineering Company	S	Granted - 22/05/2014
225	SOU	M/s. Goa Ice & Cold Storage	S	Granted - 22/05/2014
226	NOR	M/s. Lloyd Industries	S	Granted - 22/05/2014
227	SOU	M/s. Gopika Wood Industries	S	Granted - 22/05/2014
228	SOU	M/s. Indian Saw Mill	S	Granted - 22/05/2014
229	NOR	M/s Shree Gananath Industries	S	Granted - 22/05/2014
230	SOU	Ms Alagoa Resorts	S	Granted - 22/05/2014
231	NOR	M/s Surface Coating Industries	S	Granted - 22/05/2014
232	SOU	M/s. Express Machines & Scaffolding Pvt. Ltd.	S	Granted - 22/05/2014
233	NOR	M/s Kismat Mahal Tourist Home	S	Granted - 22/05/2014
234	NOR	M/s. Mermaid Restaurant & Bar	S	Granted - 22/05/2014
235	NOR	M/s. Tosigo's	S	Granted - 22/05/2014
236	SOU	M/s Genosylvia Springs	S	Granted - 22/05/2014
237	NOR	M/s Symbiotic Resins & Coatings	S	Granted - 22/05/2014
238	NOR	M/s. Uttam Tourist Resort	S	Granted - 28/05/2014
239	NOR	M/s. Udipi Lodging & Boarding	S	Granted - 28/05/2014
240	NOR	M/s Kingstork Beach Resort	S	Granted - 28/05/2014
241	NOR	M/s. Jeena Ayurvedic Treatment Centre	S	Granted - 10/06/2014
242	NOR	M/s. Infant Jesus Bakery	S	Granted - 10/06/2014
243	NOR	M/s. Falcon Hotels Pvt. Ltd.	S	Granted - 11/06/2014
244	SOU	M/s. Shaun Filaments	L	Granted - 11/06/2014
245	NOR	M/s. Elegant Offset Printers	S	Granted - 18/06/2014
246	NOR	M/s. Dipti Alluminium Work	S	Granted - 18/06/2014
247	NOR	M/s. Hira Saw Mill	S	Granted - 18/06/2014
248	SOU	M/s. Natekar Rice & Flour Mill	S	Granted - 18/06/2014
249	NOR	M/s. Chill Out Refrigeration	S	Granted - 18/06/2014
250	NOR	M/s. Britto Amusement Pvt. Ltd.,(Vainquinim Vally Resort)	L	Granted - 18/06/2014
251	NOR	M/s Castle Royal	L	Granted - 18/06/2014
252	NOR	M/s Castle Royal	L	Granted - 18/06/2014
253	NOR	M/s Dona Julia	S	Granted - 18/06/2014
254	NOR	M/s Angels Goan Special Masala	S	Granted - 18/06/2014
255	SOU	M/s. Rafael Bar & Restaurant	S	Granted - 18/06/2014

256	SOU	M/s. Tantra Designs P) Ltd (Devasthali)	M	Granted - 18/06/2014
257	NOR	M/s. Shivam Ispat Pvt. Ltd.	S	Granted - 18/06/2014
258	NOR	M/s. Ayur Green Ayurveda Clinic	S	Granted - 18/06/2014
259	NOR	M/s Lift Controls Pvt. Ltd.	M	Granted - 18/06/2014
260	NOR	M/s. Navbharat Granite & Marbles	S	Granted - 18/06/2014
261	NOR	M/s. Anita Lodge	S	Granted - 18/06/2014
262	NOR	M/s Ferns Fabricators	S	Granted - 18/06/2014
263	NOR	M/s. Konkan Paper Products	S	Granted - 18/06/2014
264	SOU	M/s. Siddhi Vinayak Industries	S	Granted - 18/06/2014
265	NOR	M/s. Albuquerque Holiday Villas	S	Granted - 18/06/2014
266	NOR	M/s. Kelbai Rice & Flour Mill	S	Granted - 18/06/2014
267	NOR	M/s D.B. Electricals Pvt. Ltd.	S	Granted - 18/06/2014
268	NOR	M/s. Nofrills Hotels Pvt Ltd	M	Granted - 26/06/2014
269	NOR	M/s Severna Guest House	S	Granted - 26/06/2014
270	NOR	M/s Pan Asia Bowl (Bar And Restaurant And Mekong Lounge)	M	Granted - 26/06/2014
271	NOR	M/s. Vitorino Guest House	S	Granted - 26/06/2014
272	SOU	M/s Ashirwad Garage	S	Granted - 26/06/2014
273	NOR	M/s Mahalaxmi Aerated Water	S	Granted - 26/06/2014
274	NOR	M/s Laxmi Narayan Cashew	S	Granted - 26/06/2014
275	NOR	M/s Savitri Work Shop	S	Granted - 26/06/2014
276	NOR	M/s Namrata Rice And Flour Mill	S	Granted - 26/06/2014
277	NOR	M/s. Sandalwood Resorts Private Ltd.	L	Granted - 26/06/2014
278	NOR	M/s. Radharam Cashew Products	S	Granted - 26/06/2014
279	SOU	M/s. Joet Resort Pvt. Ltd.	S	Granted - 26/06/2014
280	NOR	M/s Twenty First Century Iron & Steel Ltd	L	Granted - 26/06/2014
281	NOR	Marigold Hotel	M	Granted - 26/06/2014
282	NOR	M/s. Raj Hospitality Private Limited (Varanda Do Mar)	M	Granted - 26/06/2014
283	SOU	M/s. Roiz Cottages	L	Granted - 26/06/2014
284	NOR	M/s. Shell Top Inn	S	Granted - 26/06/2014
285	NOR	M/s. Ambey Metallic Ltd	L	Granted - 26/06/2014
286	NOR	M/s. Power Engineering (India) Pvt Ltd	S	Granted - 25/06/2014
287	NOR	M/s. Aakaash Manufacturing Company Pvt.Ltd	S	Granted - 18/06/2014
288	SOU	M/s. Pg Holiday Inn Private Limited	S	Granted - 18/06/2014
289	NOR	M/s. Devashri Garden	S	Granted - 18/06/2014
290	SOU	M/s United Marine Products	S	Granted - 18/06/2014
291	NOR	M/s. Elegant Offset Printers	S	Granted - 18/06/2014
292	NOR	M/s. Cyril Yoga Ayurveda Centre	S	Granted - 26/06/2014
293	NOR	M/s. Christie's Holiday Home	S	Granted - 26/06/2014
294	SOU	M/s. Twiga Lodge	S	Granted - 26/06/2014
295	NOR	M/s. Jasper Carpentry	S	Granted - 26/06/2014
296	NOR	M/s. A W Faber-Castell (I) Pvt Ltd	S	Granted - 26/06/2014
297	NOR	M/s. Sharda Stone Industries	S	Granted - 26/06/2014
298	SOU	M/s. Nisarga Health Provider	S	Granted - 26/06/2014

299	SOU	M/s. Santhigiri Ayurveda & Siddha Healthcare Centre	S	Granted - 26/06/2014
300	NOR	M/s. St. Anthony (Rice & Flour & Oil) Mill	S	Granted - 26/06/2014
301	NOR	M/s. Sai Gaurd	S	Granted - 26/06/2014
302	NOR	M/s Deep Residency	S	Granted - 26/06/2014
303	NOR	M/s Prince Seby Guest House	S	Granted - 26/06/2014
304	NOR	M/s. Prince Dona Guest House	S	Granted - 26/06/2014
305	NOR	M/s. Khot Herbo Ayurvedic Clinic	S	Granted - 26/06/2014
306	SOU	M/s. Vikas Workshop	S	Granted - 26/06/2014
307	NOR	M/s Raiyani Steel	S	Granted - 26/06/2014
308	NOR	M/s Alan's Meat Products	S	Granted - 26/06/2014
309	SOU	M/s. Westend Hotel - 3rd wing	S	Granted - 26/06/2014
310	SOU	M/s. Jymi's Cottages	S	Granted - 26/06/2014
311	SOU	M/s Pimenta Pereira Building Materials	S	Granted - 26/06/2014
312	NOR	M/s Om Shree Ganesh Enterprises	S	Granted - 26/06/2014
313	NOR	M/s. Vintage Hospital & Medical Research Centre Pvt. Ltd.	L	Granted - 26/06/2014
314	NOR	M/s Mario Bom Villa	S	Granted - 26/06/2014
315	NOR	M/s Sunita Guest House	S	Granted - 26/06/2014
316	SOU	M/s. Preira Wheat Flour Mill	S	Granted - 26/06/2014
317	NOR	M/s Agnes Fernandes	S	Granted - 26/06/2014
318	NOR	M/s Mangesh Industries	S	Granted - 26/06/2014
319	NOR	M/s Antonatta Guest House	S	Granted - 26/06/2014
320	NOR	M/s Naresh Wood Industries & Saw Mill	S	Granted - 26/06/2014
321	NOR	M/s. Santosh India Operations Pvt Ltd "panchavatti"	M	Granted - 26/06/2014
322	NOR	M/s. Shankar L Korgaonkar (Laundry Unit)	S	Granted - 26/06/2014
323	NOR	M/s. Sharvani Plastic Industries	S	Granted - 26/06/2014
324	NOR	M/s. Shri Navdurga Tiles	S	Granted - 26/06/2014
325	SOU	M/s. Vincent's Bar & Restaurant	S	Granted - 26/06/2014
326	SOU	M/s. Rosenberger Electronic Co (I) Pvt Ltd	L	Granted - 26/06/2014
327	NOR	M/s. Divar Island Guest House Retreat	S	Granted - 26/06/2014
328	NOR	M/s. Wilsha Bar & Restaurant & Laudging	M	Granted - 01/07/2014
329	SOU	M/s. Herald Publication Pvt. Ltd.	L	Granted - 01/07/2014
330	NOR	M/s. Meditab Specialities Pvt Ltd	S	Granted - 01/07/2014
331	SOU	M/s. Dinanath V.S. Kuncolikar	S	Granted - 01/07/2014
332	SOU	M/s. 5 Elements Clinic	S	Granted - 01/07/2014
333	SOU	M/s Bharat Saw Mill	S	Granted - 01/07/2014
334	NOR	M/s. Gkb Hi-Tech Lenses Pvt.Ltd (Plot 50)	S	Granted - 03/07/2014
335	SOU	M/s. Birla Furukawa Fibre Optics Limited	L	Granted - 03/07/2014
336	NOR	M/s. Ajay Cashew Oil & Allied Products	S	Granted - 03/07/2014
337	SOU	M/s Monteiro Distillery	L	Granted - 03/07/2014
338	NOR	M/s. Alpro Metal Pvt. Ltd.	S	Granted - 03/07/2014
339	NOR	M/s. El Martino Winery Pvt Ltd	S	Granted - 03/07/2014
340	SOU	M/s. Janki Engineering Works	S	Granted - 03/07/2014
341	SOU	M/s. Ganesh Cafe	S	Granted - 03/07/2014
342	SOU	M/s. Birla Institute Of Technology And Science	S	Granted - 03/07/2014

343	NOR	M/s. M.V San Domino	L	Granted - 03/07/2014
344	SOU	M/s. Ayub Bakeries	S	Granted - 03/07/2014
345	NOR	M/s. Hotel Arcadia	S	Granted - 03/07/2014
346	NOR	M/s. K.V. Industries	S	Granted - 03/07/2014
347	SOU	M/s. Kingdom Saloon & Ayurvedic Clinic	S	Granted - 03/07/2014
348	SOU	M/s. Alcina Packers Pvt Ltd	S	Granted - 03/07/2014
349	NOR	M/s. Imperial Distillers & Vinters Pvt Ltd	S	Granted - 03/07/2014
350	SOU	M/s Prakash Corrugated Products	L	Granted - 03/07/2014
351	NOR	M/s Ashwini Flour Mill	S	Granted - 03/07/2014
352	SOU	M/s Gosalia Rubber Industries	S	Granted - 03/07/2014
353	NOR	M/s. The International Centre Goa	S	Granted - 03/07/2014
354	NOR	M/s. Crest Engineering	L	Granted - 03/07/2014
355	SOU	M/s. Casa De Cris	S	Granted - 03/07/2014
356	NOR	M/s. Trinity Plastopacks	S	Granted - 03/07/2014
357	SOU	M/s. Francisca Sweets	S	Granted - 03/07/2014
358	NOR	M/s Steelmac Industries	S	Granted - 03/07/2014
359	NOR	Ms Chowgule Industries Pvt Ltd	S	Granted - 04/07/2014
360	NOR	M/s. Sunny Guest House	S	Granted - 04/07/2014
361	NOR	M/s. Encube Ethicals Pvt Ltd	L	Granted - 04/07/2014
362	NOR	Manohar Packagings Pvt Ltd	L	Granted - 04/07/2014
363	NOR	M/s Nunes Enterprises	S	Granted - 04/07/2014
364	NOR	M/s. Oriyon Molding	S	Granted - 04/07/2014
365	NOR	M/s Club 69 Estrela Do Mar Beach Resort	S	Granted - 04/07/2014
366	NOR	M/s Raiyani Furnitures	S	Granted - 04/07/2014
367	NOR	M/s. Camp 69	S	Granted - 04/07/2014
368	NOR	M/s. Zinhos Beach Resort	S	Granted - 04/07/2014
369	NOR	M/s. Aquamarine Engineers	S	Granted - 04/07/2014
370	NOR	M/s. Le Grand Engineering Pvt. Ltd.	S	Granted - 04/07/2014
371	NOR	M/s. M/s Goa Windings	S	Granted - 04/07/2014
372	NOR	M/s. Nitya Resort	S	Granted - 04/07/2014
373	SOU	M/s. Steve P-Air Solutions	S	Granted - 04/07/2014
374	NOR	M/s Raj Industry	S	Granted - 04/07/2014
375	SOU	M/s. Sao Domingos Holiday Home	S	Granted - 07/07/2014
376	SOU	M/s St. Anthony Rice & Flour Mill	S	Granted - 07/07/2014
377	SOU	M/s Siddhivinayak Metallics	S	Granted - 07/07/2014
378	SOU	M/s. Waluscha Engineering Works	S	Granted - 07/07/2014
379	NOR	M/s. Esthetecian Salon	S	Granted - 07/07/2014
380	SOU	M/s. Naresh Industries	S	Granted - 07/07/2014
381	NOR	M/s. Sensation Beauty Salon	S	Granted - 07/07/2014
382	SOU	M/s. Surendra Balchandra Dessai (Rice And Flour Mill)	S	Granted - 07/07/2014
383	SOU	M/s. Tirupati Automotive	S	Granted - 07/07/2014
384	SOU	M/s Shivram Industries	S	Granted - 07/07/2014
385	SOU	M/s. Bandekar Speciality Valve Corporation	S	Granted - 07/07/2014
386	NOR	M/s Ambika Precast Products	S	Granted - 07/07/2014
387	SOU	M/s Kransy Marine Services Pvt Ltd	S	Granted - 07/07/2014

388	SOU	M/s. Taj Sats Air Catering Ltd	L	Granted - 07/07/2014
389	SOU	M/s. Prestige Holiday Resorts Pvt. Ltd. ( Haathi Mahal)	L	Granted - 07/07/2014
390	NOR	M/s. Garden Court Resort	S	Granted - 08/07/2014
391	NOR	M/s. Dempo Shipbuilding & Engineerig Pvt Ltd	L	Granted - 14/07/2014
392	NOR	M/s. Neena Industries	S	Granted - 14/07/2014
393	NOR	M/s. River Navigation Department (Marine Workshop)	L	Granted - 14/07/2014
394	NOR	M/s. Ice Kings	S	Granted - 14/07/2014
395	NOR	M/s. The Heritage Hotel	S	Granted - 14/07/2014
396	SOU	M/s. Hindustan Petroleum Corporation Limited, Asf	M	Granted - 14/07/2014
397	SOU	M/s. Tibna Metal Industries	S	Granted - 14/07/2014
398	NOR	M/s. Counto Metals & Mining Co. Ltd.	S	Granted - 14/07/2014
399	NOR	M/s. Manohar Packagings Pvt Ltd	L	Granted - 14/07/2014
400	NOR	M/s Kalanath Saw Mill	S	Granted - 14/07/2014
401	NOR	M/s. Sub District Hospital, Ponda	L	Granted - 14/07/2014
402	NOR	M/s. Glenmark Genercis Limited (Plant li)	L	Granted - 14/07/2014
403	NOR	M/s. Automobile Corporation Of Goa Ltd - Plant li	L	Granted - 14/07/2014
404	SOU	M/s. Goa Carbon Limited	M	Granted - 14/07/2014
405	SOU	M/s. Shraddha Ispat Pvt. Ltd. (Meelting Division)	L	Granted - 14/07/2014
406	SOU	M/s. Blue Coast Hotels & Resorts Ltd	S	Granted - 14/07/2014
407	NOR	M/s. Sesa Goa Ltd. (Amona Barge Loading Jetty)	S	Granted - 14/07/2014
408	NOR	M/s Pvp Metacoats	S	Granted - 14/07/2014
409	NOR	M/s Villa Sol Areia	S	Granted - 14/07/2014
410	SOU	M/s. Roquedal Lubricants Pvt. Ltd.	S	Granted - 14/07/2014
411	NOR	M/s. Sahanu Rolling Mills	S	Granted - 14/07/2014
412	NOR	M/s. Amacio's Guest House	S	Granted - 14/07/2014
413	NOR	M/s Harwalkar Rice Mill & Flour	S	Granted - 14/07/2014
414	NOR	M/s. Hotel Paradise Inn	S	Granted - 14/07/2014
415	NOR	M/s. Nevgi Fasterners Pvt. Ltd.	S	Granted - 15/07/2014
416	NOR	M/s. Hi-Tech Capsules Pvt Ltd	S	Granted - 15/07/2014
417	NOR	M/s. Anand Engineers	S	Granted - 15/07/2014
418	SOU	M/s. Kushal Packaging Industries	S	Granted - 15/07/2014
419	NOR	M/s. J. B. Gracias Salon & Spa	S	Granted - 15/07/2014
420	SOU	M/s Om Cashew Industries	S	Granted - 15/07/2014
421	SOU	M/s. Berth No.8 Of Mormugao Port Trust	L	Granted - 15/07/2014
422	SOU	M/s. Berth No.9 Of Mormugao Port Trust	L	Granted - 15/07/2014
423	SOU	M/s Fresh-N-Nice Foods	S	Granted - 15/07/2014
424	SOU	M/s. Plastchem Industries	S	Granted - 15/07/2014
425	NOR	M/s Ses Engineering Works	S	Granted - 15/07/2014
426	SOU	M/s Samrat Industries	S	Granted - 15/07/2014
427	NOR	M/s. Kapson Engineering Works	S	Granted - 15/07/2014
428	NOR	M/s Michael Servicing Centre	S	Granted - 15/07/2014
429	SOU	M/s Tana Engineers	S	Granted - 15/07/2014
430	SOU	M/s. Samrat Industries	S	Granted - 15/07/2014
431	SOU	M/s. Bharat Petroleum Corporation Ltd	S	Granted - 15/07/2014
432	NOR	M/s. Veronik Micronutrients Pvt.Ltd	S	Granted - 15/07/2014

433	NOR	M/s. Kundil Alloys Pvt Limited	M	Granted - 15/07/2014
434	SOU	M/s. Siemens Ltd	L	Granted - 15/07/2014
435	SOU	M/s. Baptista Crushing Industry	S	Granted - 15/07/2014
436	SOU	M/s. Rss Cement Products	S	Granted - 15/07/2014
437	NOR	M/s. Hindustan Multi Tech	S	Granted - 15/07/2014
438	SOU	M/s. Kentuckee Restaurant	S	Granted - 15/07/2014
439	NOR	M/s. Ellenabad Steels Pvt Ltd	S	Granted - 15/07/2014
440	SOU	M/s. Western Beverages Private Limited	S	Granted - 15/07/2014
441	SOU	M/s. Muktar Minerals Pvt Ltd	S	Granted - 15/07/2014
442	SOU	M/s. Sanjay Shrinivas Phadte Enterprise	S	Granted - 15/07/2014
443	NOR	M/s Padmavati Holiday Homes	S	Granted - 15/07/2014
444	NOR	M/s. Sai Service Station Limited	S	Granted - 15/07/2014
445	NOR	M/s Guruprasad Enterprises	S	Granted - 15/07/2014
446	NOR	M/s. Sinq Brewery	S	Granted - 15/07/2014
447	SOU	M/s Cajy Enterprises	S	Granted - 15/07/2014
448	NOR	M/s. Sukho Thai	S	Granted - 15/07/2014
449	NOR	M/s. Sonu Industries	S	Granted - 15/07/2014
450	SOU	M/s. Palolem Delights	S	Granted - 15/07/2014
451	SOU	M/s Cotyar Beverages	S	Granted - 15/07/2014
452	SOU	M/s. Athi Resorts	S	Granted - 15/07/2014
453	SOU	Tulip Diagnostics (P).Ltd.	S	Granted - 15/07/2014
454	NOR	Sinori Jetty	S	Granted - 15/07/2014
455	SOU	M/s. Vishwa Saraswati Society (Hotel Management Institute)	S	Granted - 15/07/2014
456	NOR	M/s. Twenty First Century Wire Rods Ltd	S	Granted - 15/07/2014
457	NOR	M/s Nizam S. Ladji	S	Granted - 17/07/2014
458	SOU	M/s. Bioveda Ayurved Centre	S	Granted - 17/07/2014
459	NOR	M/s. Jerriso Guest House Bar And Restaurant	S	Granted - 17/07/2014
460	NOR	M/s. Mandovi Pellets,	L	Granted - 17/07/2014
461	SOU	M/s Jovito Stone Crusher	S	Granted - 17/07/2014
462	NOR	M/s. Sesa Sterlite Ltd. (Met Coke Division)	L	Granted - 17/07/2014
463	SOU	M/s. Srithik Ispat Pvt. Ltd.	L	Granted - 17/07/2014
464	NOR	M/s. La Calypso Hotels Pvt. Ltd.,	L	Granted - 24/07/2014
465	NOR	M/s Lynn Wash Care	S	Granted - 24/07/2014
466	NOR	M/s. Ave Maria Beach Resort	S	Granted - 24/07/2014
467	NOR	M/s Kamat Saw Mill	S	Granted - 24/07/2014
468	SOU	M/s. Quinsan Cottages & Restaurant	S	Granted - 25/07/2014
469	SOU	M/s. Yerakani Bakery	S	Granted - 25/07/2014
470	NOR	M/s. Mahadeo Saw Mill	S	Granted - 25/07/2014
471	NOR	M/s. T-Ron Industries	S	Granted - 25/07/2014
472	SOU	M/s. Micro Labs Limited	L	Granted - 25/07/2014
473	SOU	M/s Doodsagar Ice Plant	S	Granted - 25/07/2014
474	SOU	M/s. Shikara Beach Guest House	S	Granted - 25/07/2014
475	SOU	M/s. Priya Engineering Works	S	Granted - 25/07/2014
476	NOR	M/s. Navadurga Rubbers	S	Granted - 25/07/2014

477	NOR	M/s. Rasaka Engineering Co.	S	Granted - 25/07/2014
478	NOR	M/s. Ramchandra F Tivrekar (Workshop)	S	Granted - 25/07/2014
479	NOR	M/s Marquis Hotels Ltd	M	Granted - 25/07/2014
480	NOR	M/s. Rajendra Naik Automobile Workshop	S	Granted - 31/07/2014
481	SOU	M/s. Hotel Saaj	S	Granted - 31/07/2014
482	NOR	M/s A-One Enterprises	S	Granted - 05/08/2014
483	SOU	M/s Camron Restaurant & Bar	S	Granted - 05/08/2014
484	NOR	M/s. Sangam Bakery	S	Granted - 05/08/2014
485	SOU	M/s Ganesh Packaging	S	Granted - 05/08/2014
486	NOR	M/s. Villa Costa	S	Granted - 05/08/2014
487	SOU	M/s. Park Sintech Co Pvt Ltd	S	Granted - 05/08/2014
488	NOR	M/s Dom Joao's Guest House	S	Granted - 05/08/2014
489	NOR	M/s Durga Rice And Flour Mill	S	Granted - 05/08/2014
490	NOR	M/s. Shree Bhumika Enterprises	S	Granted - 05/08/2014
491	NOR	M/s. Nazri Resort	M	Granted - 05/08/2014
492	SOU	M/s Varda Enterprises	S	Granted - 05/08/2014
493	NOR	M/s Joy Engineering Works	S	Granted - 05/08/2014
494	SOU	M/s Goa Sintered Products Pvt Ltd	S	Granted - 05/08/2014
495	NOR	M/s. Sahyadri Offset Systems	S	Granted - 07/08/2014
496	SOU	M/s. Hitech Electronics Engineering	S	Granted - 07/08/2014
497	NOR	M/s. Tiger Camp Pvt. Ltd. (Gestro Bar & Lounge)	L	Granted - 08/08/2014
498	NOR	M/s. Dada Engineering (Puc)	S	Granted - 08/08/2014
499	SOU	M/s. Novacare Drug Specialities Pvt. Ltd.	S	Granted - 09/08/2014
500	SOU	M/s. S. S Engineering Co.	S	Granted - 09/08/2014
501	SOU	M/s Matha Foods	S	Granted - 09/08/2014
502	NOR	M/s. Siddhesh Engineering	S	Granted - 09/08/2014
503	NOR	M/s. Goa Medical College & Hospital	L	Granted - 09/08/2014
504	NOR	M/s Vel-Vin Packaging Pvt. Ltd	S	Granted - 09/08/2014
505	SOU	M/s. Dazzler Confectionary Company Pvt Ltd	M	Granted - 09/08/2014
506	NOR	M/s. Navdurga Rice & Flour Mill	S	Granted - 09/08/2014
507	NOR	M/s. Vicco Laboratories (Goa)	S	Granted - 09/08/2014
508	SOU	M/s. Private Enterprises	S	Granted - 09/08/2014
509	NOR	M/s. Opa Water Works	S	Granted - 09/08/2014
510	NOR	M/s Laxmi Rice & Flour Mill	S	Granted - 11/08/2014
511	SOU	M/s Mallikarjun Printers	S	Granted - 11/08/2014
512	NOR	M/s. B.M.K. Industries	S	Granted - 11/08/2014
513	SOU	M/s. Jesboa Guest House	S	Granted - 11/08/2014
514	SOU	M/s. Om Clinic	S	Granted - 11/08/2014
515	NOR	M/s. Hindustan Tyre Works	S	Granted - 11/08/2014
516	NOR	M/s. Dalal Enterprises	S	Granted - 11/08/2014
517	SOU	M/s. Ranjanis Deft Touch Beauty Cum Massage Parlour	S	Granted - 11/08/2014
518	NOR	M/s. Marlin Guest House	S	Granted - 11/08/2014
519	NOR	M/s. Garib Nawaz Karkhana	S	Granted - 11/08/2014
520	NOR	M/s. Dhanulaxmi Cashewnuts	S	Granted - 11/08/2014

521	NOR	M/s Laxminarayan Bakery	S	Granted - 11/08/2014
522	SOU	M/s Manju Industrial Ancillaries Pvt Ltd.	S	Granted - 11/08/2014
523	NOR	M/s. Dona Alcina Resorts Pvt. Ltd	S	Granted - 11/08/2014
524	SOU	M/s. Vijay Engineers	L	Granted - 11/08/2014
525	NOR	M/s. Velina Villa	S	Granted - 14/08/2014
526	SOU	M/s Mahalaxmi Industries	S	Granted - 14/08/2014
527	NOR	M/s Stanley's Guest House	S	Granted - 14/08/2014
528	SOU	M/s Seagull Resort	S	Granted - 14/08/2014
529	SOU	M/s Seiko & Seiko	S	Granted - 14/08/2014
530	NOR	M/s Tavora Vegtures (Navtara)	S	Granted - 14/08/2014
531	NOR	M/s. Pastina	S	Granted - 14/08/2014
532	SOU	M/s. Jorina Guest House	S	Granted - 14/08/2014
533	SOU	M/s. Casa Goes Guest House	S	Granted - 14/08/2014
534	SOU	M/s. Casa De-Caji-M-Cottages	S	Granted - 14/08/2014
535	SOU	M/s. O Manguero Guest House	S	Granted - 14/08/2014
536	SOU	M/s. Elva Mansion	S	Granted - 14/08/2014
537	SOU	M/s. Karthik Alloys Limited (Rolling Division)	S	Granted - 14/08/2014
538	SOU	M/s. Goa Shipyard Limited	L	Granted - 14/08/2014
539	NOR	M/s. South India Cashew Corporation	S	Granted - 14/08/2014
540	NOR	M/s. Dempo Mining Corporation Pvt. Ltd, Barge Loading Jetty At Sarmanus	S	Granted - 14/08/2014
541	NOR	M/s. Blossom Pharmaceuticals	S	Granted - 14/08/2014
542	SOU	M/s. Abhishek Engineers	S	Granted - 14/08/2014
543	NOR	M/s Madkay Plast	S	Granted - 14/08/2014
544	SOU	M/s Airport Authority Of India	L	Granted - 14/08/2014
545	SOU	M/s Upa Auto Service	S	Granted - 14/08/2014
546	NOR	M/s. Lobo's Guest House	S	Granted - 14/08/2014
547	SOU	M/s. Premium Pavers & Stone Products	S	Granted - 14/08/2014
548	NOR	M/s. Bilss Groups	S	Granted - 14/08/2014
549	SOU	M/s. Emco Goa Pvt Ltd	S	Granted - 14/08/2014
550	SOU	M/s. Emco Goa Pvt Ltd	S	Granted - 14/08/2014
551	SOU	M/s. Dci Pharmaceuticals Pvt Ltd	S	Granted - 14/08/2014
552	NOR	M/s Sai Baba Fabricators	S	Granted - 14/08/2014
553	NOR	M/s. Palmyra Resorts Pvt Ltd	L	Granted - 14/08/2014
554	NOR	M/s. Sun Royal Resort	S	Granted - 14/08/2014
555	SOU	M/s. Dynamic Technofabs	L	Granted - 21/08/2014
556	NOR	M/s Counto Microfine Products Pvt. Ltd.	L	Granted - 21/08/2014
557	NOR	M/s. Mario Fernandes & Co.,	S	Granted - 21/08/2014
558	NOR	M/s. Surla Jetty	S	Granted - 21/08/2014
559	SOU	M/s. Rajaram N.S. Bandekar & Co. Pvt. Ltd	L	Granted - 21/08/2014
560	NOR	M/s. Kundil Rolling Mills Pvt Ltd	M	Granted - 21/08/2014
561	NOR	M/s. The Indian Hotels Co. Ltd. Unit: Vivanta By Taj-Holiday Village, Goa	S	Granted - 21/08/2014
562	NOR	M/s. Santiago Resort	S	Granted - 21/08/2014
563	NOR	M/s. Swanson Plastics (India) Private Limited	L	Granted - 21/08/2014

564	NOR	M/s. Blossom Pharmaceuticals	S	Granted - 21/08/2014
565	NOR	M/s. Srithik Rolling Pvt. Ltd.	L	Granted - 21/08/2014
566	NOR	M/s. Churi Industries,	S	Granted - 21/08/2014
567	SOU	M/s. Ready Systems	S	Granted - 21/08/2014
568	NOR	M/s. Pentagon Engineers	S	Granted - 21/08/2014
569	SOU	M/s. Chowgule & Company Private Limited	S	Granted - 21/08/2014
570	NOR	M/s. Mangal Iron Pvt. Ltd	M	Granted - 21/08/2014
571	NOR	M/s. Gkb Vision Ltd	L	Granted - 21/08/2014
572	NOR	M/s. Hindustan Industries	S	Granted - 21/08/2014
573	NOR	M/s. Fantasy Guest House	S	Granted - 21/08/2014
574	NOR	M/s. Pretty Petals Guest House	S	Granted - 21/08/2014
575	NOR	M/s. Gagan Wine Trade & Financers Limited	S	Granted - 21/08/2014
576	NOR	M/s. Hotel Palacio De Goa	M	Granted - 21/08/2014
577	NOR	M/s. Casa De Goa Boutique Resort	L	Granted - 21/08/2014
578	NOR	M/s. Sandalwood Resorts Private Ltd.	L	Granted - 21/08/2014
579	SOU	M/s. Ship Construction	L	Granted - 21/08/2014
580	NOR	M/s. Mahalsa Acoustic Pvt. Ltd. Unit li	S	Granted - 21/08/2014
581	NOR	M/s. Viva	S	Granted - 21/08/2014
582	SOU	M/s. Yogesh Metals	S	Granted - 21/08/2014
583	NOR	Ms Tiger Sheet Metal Works Unit I	S	Granted - 21/08/2014
584	NOR	M/s. Vailankanni Service Workshop	S	Granted - 21/08/2014
585	NOR	M/s Surekleen Services Pvt Ltd	M	Granted - 21/08/2014
586	SOU	M/s Vruksha Enterprises	S	Granted - 21/08/2014
587	NOR	M/s Shri Mahadeo Industries	S	Granted - 21/08/2014
588	NOR	M/s Boshan Developers Pvt Ltd (Hotel Project)	S	Granted - 21/08/2014
589	SOU	M/s Josam Contractors	S	Granted - 21/08/2014
590	NOR	M/s. Cleaners	S	Granted - 21/08/2014
591	SOU	M/s. Venus Stone Crusher (Ssi Unit)	S	Granted - 21/08/2014
592	NOR	M/s. Primo Bom Terra Verde	S	Granted - 21/08/2014
593	NOR	M/s. Francis House	S	Granted - 21/08/2014
594	NOR	M/s. Frank Rooms	S	Granted - 21/08/2014
595	NOR	M/s Madame Rosa 1933	S	Granted - 21/08/2014
596	NOR	M/s Montana Confectioners Pvt. Ltd	L	Granted - 21/08/2014
597	NOR	M/s. B.M.K Industry Unit II	S	Granted - 21/08/2014
598	NOR	M/s Peravel Beach Holiday Home	S	Granted - 21/08/2014
599	NOR	M/s Goana Foods	L	Granted - 21/08/2014
600	SOU	M/s C. M. Abdulla & Sons	S	Granted - 21/08/2014
601	SOU	M/s Star Mechanical Work	S	Granted - 21/08/2014
602	NOR	M/s. Advanced Composites Pvt Ltd	M	Granted - 21/08/2014
603	SOU	M/s. Model Mystique, Model Real Estate Developers	S	Granted - 21/08/2014
604	NOR	M/s Shine Beauty Parlour	S	Granted - 21/08/2014
605	SOU	M/s. Dona Sa Maria	S	Granted - 21/08/2014
606	SOU	M/s Tourist Nest	S	Granted - 21/08/2014
607	SOU	M/s. Silva Engineers	S	Granted - 21/08/2014
608	NOR	M/s. Cuts N Colors	S	Granted - 21/08/2014

609	NOR	M/s. Yashodatta Flour Mills	S	Granted - 21/08/2014
610	NOR	M/s. Dada Engineering Works	S	Granted - 21/08/2014
611	NOR	M/s. Sushrut Ayurved	S	Granted - 21/08/2014
612	SOU	M/s. Sanil Food Processing Pvt. Ltd.	S	Granted - 21/08/2014
613	NOR	M/s Lordes Damodar Furniture And Fabrication Workshop	S	Granted - 21/08/2014
614	SOU	M/s Jkl Stone Crushing Company	S	Granted - 21/08/2014
615	NOR	M/s. Jai Santoshi Housing Pvt. Ltd. (Opus)	S	Granted - 21/08/2014
616	NOR	M/s. Sukho Thai India Pvt Ltd	S	Granted - 21/08/2014
617	NOR	M/s. Sukho Thai	S	Granted - 21/08/2014
618	SOU	M/s. Casa Susegad	S	Granted - 21/08/2014
619	SOU	M/s. Navadurga Bakery	S	Granted - 21/08/2014
620	NOR	M/s. Abu John Guest House	S	Granted - 21/08/2014
621	SOU	M/s. A. M. Ventures	S	Granted - 21/08/2014
622	SOU	M/s Rosita Industries	S	Granted - 21/08/2014
623	NOR	M/s Hoble Raj Restaurant	S	Granted - 21/08/2014
624	SOU	M/s. Vrecycle Waste Management Services	S	Granted - 21/08/2014
625	NOR	M/s. Electroshine	S	Granted - 21/08/2014
626	SOU	M/s Coconut Grove Beach Resort Pvt Ltd (Goa)	M	Granted - 21/08/2014
627	SOU	M/s. The Village Guest House	S	Granted - 01/09/2014
628	SOU	M/s. Xavier Bakery	S	Granted - 01/09/2014
629	SOU	M/s. Simran Guest House	S	Granted - 01/09/2014
630	SOU	M/s. Libra Cottages	S	Granted - 21/08/2014
631	SOU	M/s Ellora Mansion	S	Granted - 21/08/2014
632	SOU	M/s. Emmanuel Guest House	S	Granted - 21/08/2014
633	SOU	M/s. Conelto Wood Industries	S	Granted - 21/08/2014
634	SOU	M/s. Michael Guest House	S	Granted - 21/08/2014
635	SOU	M/s. Felizio Guest House	S	Granted - 21/08/2014
636	SOU	M/s. Lloyd's Tourist Rooms	S	Granted - 21/08/2014
637	SOU	M/s. Patxa Guest House	S	Granted - 21/08/2014
638	SOU	M/s. Da Silva Casa	S	Granted - 21/08/2014
639	SOU	Ms Antonette`s Guest House	S	Granted - 21/08/2014
640	SOU	M/s. Hipolito Guest House	S	Granted - 21/08/2014
641	SOU	M/s. Bogpre Family Inn	S	Granted - 21/08/2014
642	SOU	M/s. Mallikarjun Crushing Company	S	Granted - 21/08/2014
643	NOR	M/s. Goa State Horticultural Corporation Ltd.	S	Granted - 21/08/2014
644	SOU	M/s. Lucianas Resort	S	Granted - 21/08/2014
645	SOU	M/s. Julie Guest House	S	Granted - 21/08/2014
646	NOR	M/s. Villa Oceanic Guest House	S	Granted - 21/08/2014
647	SOU	M/s. Colmar Hotels Pvt. Ltd., Colmar Beach Resort	S	Granted - 01/09/2014
648	SOU	M/s. R S S Ice Plant And Storage	S	Granted - 01/09/2014
649	SOU	M/s. Keni Enterprises	S	Granted - 01/09/2014
650	SOU	M/s. Cruzinha Guest House	S	Granted - 01/09/2014
651	SOU	M/s. R.S.S Ice Plant & Storage	S	Granted - 01/09/2014

652	NOR	M/s. Faria Products Caterers & Confectioners	S	Granted - 15/09/2014
653	NOR	M/s. Awesome Salon & Spa	S	Granted - 15/09/2014
654	NOR	M/s. Resorte Marinha Dourada	L	Granted - 15/09/2014
655	NOR	M/s. baba Hotels Pvt Ltd	S	Granted - 16/09/2014
656	NOR	M/s. Hitech Caps	S	Granted - 16/09/2014
657	NOR	M/s. E-Boshan	S	Granted - 16/09/2014
658	SOU	M/s Sandhya Enterprises	S	Granted - 16/09/2014
659	NOR	M/s. Geeta Engineering Works	S	Granted - 16/09/2014
660	SOU	M/s. Freda D'sa (Piggery Unit)	S	Granted - 16/09/2014
661	NOR	M/s. St Rita Bakery	S	Granted - 16/09/2014
662	SOU	M/s. Antonio Piedade Rodrigues Rice & Flour Mill	S	Granted - 01/10/2014
663	NOR	M/s. Carlos Tavora (Navtara)	S	Granted - 01/10/2014
664	NOR	M/s. Shantadurga Rice & Flour Mill	S	Granted - 01/10/2014
665	SOU	M/s. Baretto Furniture Works	S	Granted - 01/10/2014
666	SOU	M/s Borkar Colopacks Pvt Ltd	S	Granted - 01/10/2014
667	SOU	M/s Marine Electrical Agencies	S	Granted - 01/10/2014
668	NOR	M/s. Ayur Bhoomi Clinic	S	Granted - 01/10/2014
669	SOU	M/s. Ayurveda Vihar	S	Granted - 01/10/2014
670	SOU	M/s. Maria Industries	S	Granted - 14/10/2014
671	SOU	M/s. Sea Bird Resorts Pvt. Ltd.(Alila Diwa Goa)	L	Granted - 15/10/2014
672	SOU	M/s. Hotel Green View	L	Granted - 15/10/2014
673	NOR	M/s. Infrastructure Logistics Pvt. Ltd.	S	Granted - 15/10/2014
674	NOR	M/s. Lithoferros (Sircaim Barge Loading Facility)	S	Granted - 15/10/2014
675	NOR	M/s. Minco (India) Flow Elements Pvt. Ltd	L	Granted - 15/10/2014
676	NOR	M/s. Omni Impex Pvt. Ltd.,	S	Granted - 15/10/2014
677	SOU	M/s. Shraddha Ispat Pvt. Ltd. (Meelting Division)	L	Granted - 15/10/2014
678	SOU	M/s. Shirdi Steel Re-Rollers Pvt. Ltd	S	Granted - 15/10/2014
679	NOR	M/s. Siddharth Chemicals	S	Granted - 15/10/2014
680	NOR	M/s. Merck Limited	L	Granted - 15/10/2014
681	SOU	M/s. Ifb Industries Ltd.	S	Granted - 15/10/2014
682	SOU	M/s. Karthik Alloys Limited (Rolling Division)	S	Granted - 15/10/2014
683	SOU	M/s. South West Port Ltd. (Berth No. 5a & 6a)	L	Granted - 15/10/2014
684	NOR	M/s. Victor Exotica Beach Resort	M	Granted - 15/10/2014
685	NOR	M/s. Syngenta India Limited	L	Granted - 15/10/2014
686	SOU	M/s. Alliance Multipackagings Pvt Ltd	S	Granted - 15/10/2014
687	SOU	M/s. Varun Beverages Ltd	L	Granted - 15/10/2014
688	NOR	M/s. Srithik Rolling Pvt. Ltd.	L	Granted - 15/10/2014
689	NOR	M/s. Angels Holiday Resort	S	Granted - 15/10/2014
690	SOU	M/s. Goa Pet Products	S	Granted - 15/10/2014
691	NOR	M/s. Aparant Enterprises	S	Granted - 15/10/2014
692	SOU	M/s. Ayurveda Vihar	S	Granted - 15/10/2014
693	NOR	M/s. Resort Ritchita	S	Granted - 15/10/2014
694	NOR	M/s. Global Caps & Closers	S	Granted - 15/10/2014
695	NOR	M/s. Snip Salons & Spas	S	Granted - 15/10/2014

696	NOR	M/s. Seby Guest House	S	Granted - 15/10/2014
697	SOU	M/s Kaloshi Stone Crusher	S	Granted - 15/10/2014
698	SOU	M/s. Amicas Structural & Fibreglass Works	S	Granted - 15/10/2014
699	NOR	Alor Grande Holiday Resort	S	Granted - 15/10/2014
700	SOU	Electro Controls	S	Granted - 15/10/2014
701	NOR	M/s. Acron Hospitality Pvt Ltd.	S	Granted - 15/10/2014
702	SOU	M/s Agencia Commercial Maritima	S	Granted - 15/10/2014
703	NOR	M/s. Karthik Inductions Ltd	S	Granted - 15/10/2014
704	NOR	M/s. Shivam Combines	S	Granted - 15/10/2014
705	SOU	M/s. Sub Division 2 \ Div 21	S	Granted - 15/10/2014
706	SOU	M/s. Khr Hospitality India Limited	L	Granted - 15/10/2014
707	NOR	M/s. New Horizons Biotek	L	Granted - 15/10/2014
708	NOR	M.V.Casino Royale	S	Granted - 15/10/2014
709	NOR	M/s. Panduronga Timblo Industrias	S	Granted - 15/10/2014
710	SOU	M/s. Dalmia Resorts International Pvt. Ltd. (Unit: Old Anchor)	L	Granted - 15/10/2014
711	SOU	M/s. Khamamol Jetty, Sesa Resources Limited	S	Granted - 15/10/2014
712	SOU	M/s. Meera's Guest House	S	Granted - 15/10/2014
713	SOU	M/s. Palmira Guest House	S	Granted - 15/10/2014
714	SOU	M/s. Villa Sebel	S	Granted - 15/10/2014
715	SOU	M/s. N C Villa Guest House	S	Granted - 15/10/2014
716	NOR	M/s. Neomis Hair & Beauty Salon	S	Granted - 15/10/2014
717	SOU	M/s. Bhavesh Farm	S	Granted - 15/10/2014
718	SOU	M/s. Klassic Labels & Barcode Technologies	S	Granted - 15/10/2014
719	SOU	M/s. Anita Industry	S	Granted - 15/10/2014
720	SOU	M/s. Angela Bakery	S	Granted - 15/10/2014
721	NOR	M/s. Abdul Sattar Chowhand & Kafil Ahmed Chowhan (Hindustan Serene Hills)	S	Granted - 15/10/2014
722	NOR	M/s. Triveni Cashew Processing Enterprise	S	Granted - 15/10/2014
723	NOR	M/s Mallikarjun Sankhelo Prassan Bakery	S	Granted - 15/10/2014
724	NOR	M/s. Rabiya Flour And Chilli Powder Mill	S	Granted - 15/10/2014
725	SOU	M/s. Cajie Tourist Home	S	Granted - 15/10/2014
726	SOU	M/s. Rafaels Bar & Restaurant	S	Granted - 15/10/2014
727	NOR	M/s Sampada Flour Mill	S	Granted - 15/10/2014
728	NOR	M/s. Joshua's Guest House	S	Granted - 15/10/2014
729	NOR	M/s. Avita's Guest House	S	Granted - 15/10/2014
730	NOR	St Francis Xavier Guest House	S	Granted - 15/10/2014
731	NOR	St Augustin Guest House	S	Granted - 15/10/2014
732	NOR	Anandi Niwas	S	Granted - 15/10/2014
733	SOU	Schneider Electric India Pvt Ltd	S	Granted - 15/10/2014
734	NOR	Villa Rodrigues	S	Granted - 15/10/2014
735	NOR	M/s Marvel Industries	S	Granted - 15/10/2014
736	NOR	M/s. Bona Plus Products	S	Granted - 15/10/2014
737	NOR	M/s Classic Rubber Industry	S	Granted - 15/10/2014
738	NOR	M/s. Blue Bird Guest House Bar & Restaurant	S	Granted - 15/10/2014

739	NOR	M/s. Schematix	S	Granted - 15/10/2014
740	NOR	M/s. H.No. 600 (P.G.A) Anthony M. Dsouza	S	Granted - 15/10/2014
741	NOR	M/s. Rice & Flour Mill	S	Granted - 15/10/2014
742	SOU	M/s Amrut Mills	S	Granted - 15/10/2014
743	SOU	M/s. Kamat Metal Industries	S	Granted - 15/10/2014
744	NOR	M/s. Swastik Engineering Industries	S	Granted - 15/10/2014
745	NOR	M/s. V. T Switchgear & Transformers	S	Granted - 15/10/2014
746	NOR	M/s Lift Controls Pvt. Ltd.	M	Granted - 15/10/2014
747	SOU	M/s Durga Packers	S	Granted - 15/10/2014
748	NOR	M/s. Tin Tin Restaurant	S	Granted - 15/10/2014
749	SOU	M/s. Murdeshwar Plastics	S	Granted - 15/10/2014
750	NOR	M/s. Blue Fin Guest House	S	Granted - 15/10/2014
751	NOR	M/s. Benedict Guest House	S	Granted - 15/10/2014
752	NOR	M/s Davico Composites	S	Granted - 15/10/2014
753	NOR	M/s. Mudrank Print Studio	S	Granted - 15/10/2014
754	SOU	M/s. Villa Martha	S	Granted - 15/10/2014
755	SOU	M/s. Casmina Guest House	S	Granted - 15/10/2014
756	SOU	M/s. acinta Paying Guest House	S	Granted - 15/10/2014
757	SOU	M/s. Villa Seancy	S	Granted - 15/10/2014
758	SOU	M/s. Paulrina Tourist Home	S	Granted - 15/10/2014
759	SOU	M/s. Crismin Guest House	S	Granted - 15/10/2014
760	NOR	M/s. Marie Gold Saloon & Beauty Shop	S	Granted - 15/10/2014
760	SOU	M/s Hotel Navadeep	S	Granted - 15/10/2014
762	NOR	M/s. Jaws Bakery	S	Granted - 15/10/2014
763	NOR	M/s Mandovi Hatcheries	S	Granted - 15/10/2014
764	SOU	M/s Naveen Distillery	S	Granted - 15/10/2014
765	NOR	M/s Yash Fabrication	S	Granted - 15/10/2014
766	NOR	M/s. Savitri Niwas	S	Granted - 15/10/2014
767	SOU	M/s. Navadeep Clasic	S	Granted - 15/10/2014
768	SOU	M/s Navadeep Beverages	S	Granted - 15/10/2014
769	SOU	M/s Hotel Siesta De Goa	S	Granted - 15/10/2014
770	SOU	M/s. Lotus Suites	M	Granted - 15/10/2014
771	SOU	M/s. Ace Hotel & Resorts Pvt. Ltd	S	Granted - 15/10/2014
772	NOR	M/s Shri Dattaguru Furniture (sister concern)	S	Granted - 15/10/2014
773	NOR	M/s Shree Dattaguru Industries	S	Granted - 15/10/2014
774	NOR	M/s Manorama Rural Engineers	S	Granted - 15/10/2014
775	NOR	M/s. Durga Enterprises	S	Granted - 15/10/2014
776	NOR	M/s Omkar	S	Granted - 15/10/2014
777	SOU	M/s. Shri Santosh Chandak	S	Granted - 15/10/2014
778	SOU	M/s. Pinky Shipyard Pvt. Ltd.	S	Granted - 15/10/2014
779	SOU	M/s New Millennium Bakers	M	Granted - 15/10/2014
780	SOU	M/s. Composite Material Industries Pvt Ltd	S	Granted - 15/10/2014
781	NOR	M/s. Fernandes Guest House	S	Granted - 15/10/2014
782	NOR	M/s. Kuldip Hotels Pvt. Ltd. (Hotel Aroma)	S	Granted - 15/10/2014
783	NOR	M/s Romeo's Guest House	S	Granted - 15/10/2014

784	NOR	M/s Siddhivinayak Rcie & Flour Mill	S	Granted - 15/10/2014
785	SOU	M/s Vishwakarma Furniture Works	S	Granted - 15/10/2014
786	SOU	M/s Madanant Constructions Goa Pvt Ltd	S	Granted - 15/10/2014
787	NOR	M/s. Marine Solutions Distribution & Services Pvt. Ltd. ( Pit Stop Dumb Pontoon )	S	Granted - 15/10/2014
788	NOR	M/s. Victor Hotels And Motels Ltd (M.V. Horseshoe Casino)	L	Granted - 15/10/2014
789	NOR	M/s. So My Resorts Pvt Ltd	S	Granted - 15/10/2014
790	SOU	M/s Vijay Industries	S	Granted - 15/10/2014
791	SOU	M/s Chowgule & Co. Pvt. Ltd	L	Granted - 15/10/2014
792	NOR	M/s Hotel Nifa	S	Granted - 15/10/2014
793	SOU	M/s Lotus Inn	S	Granted - 15/10/2014
794	SOU	M/s. Shrusti Envirocare	S	Granted - 20/10/2014
795	SOU	M/s. Rukminirama Steel Rollings Pvt Limited (Melting Division)	M	Granted - 20/10/2014
796	SOU	M/s. Sociedade De Fomento Ind. Pvt. Ltd., Capxem Iron Ore Transshipment Terminal	S	Granted - 20/10/2014
797	SOU	M/s. Dimac Organics P. Ltd.	S	Granted - 20/10/2014
798	NOR	M/s. Sinquerim Plot For Stacking/stocking Of Iron Ore, Sirigao Mines, Chowgule & Co.	S	Granted - 20/10/2014
799	NOR	M/s. Sociedade De Fomento Industrial Pvt. Ltd.	S	Granted - 20/10/2014
800	SOU	M/s. John Distilleries Pvt. Ltd.	L	Granted - 20/10/2014
801	SOU	M/s. Sociedade De Fomento Industrial Pvt. Ltd.	S	Granted - 20/10/2014
802	NOR	M/s. Sociedade De Fomento Industrial Pvt. Ltd.	S	Granted - 20/10/2014
803	NOR	M/s Rameshwar Prasad Saw Mill	S	Granted - 20/10/2014
804	NOR	M/s. Hotel Incity	S	Granted - 20/10/2014
805	NOR	M/s. See Bhal Mikelin Distillery Pvt Ltd	M	Granted - 20/10/2014
806	SOU	M/s. Blue Ocean Beverages Pvt. Ltd.	L	Granted - 20/10/2014
807	NOR	M/s Hotel Trimurti	S	Granted - 20/10/2014
808	SOU	M/s Vimleshwar Industries	S	Granted - 20/10/2014
809	SOU	M/s. D Silva Metal Industries (Ssi Unit)	S	Granted - 20/10/2014
810	SOU	M/s Shree Ramnath Damodar Industries (Ssi Unit)	S	Granted - 20/10/2014
811	NOR	M/s Fish Tail Restaurant	S	Granted - 20/10/2014
812	SOU	M/s. Rohit Crushing Industries	S	Granted - 20/10/2014
813	NOR	M/s. Shri Yash Cement Arts	S	Granted - 20/10/2014
814	SOU	M/s. Gradient Chemicals Co. Pvt. Ltd.	S	Granted - 20/10/2014
815	SOU	M/s. Ultra Tech Automotive Pvt. Ltd.,	S	Granted - 20/10/2014
816	SOU	M/s Madanant Constructions Goa Pvt Ltd	S	Granted - 20/10/2014
817	NOR	M/s. Stp,Phase V	S	Granted - 20/10/2014
818	SOU	M/s Tereza Crushing Enterprises	S	Granted - 20/10/2014
819	SOU	M/s. Western India Shipyard Limited	M	Granted - 20/10/2014
820	NOR	M/s. La Grande Residencia	S	Granted - 20/10/2014
821	NOR	M/s Samarth Metal	S	Granted - 20/10/2014
822	NOR	M/s. Snip Salons & Spas	S	Granted - 20/10/2014
823	NOR	M/s. Samant Foods	S	Granted - 20/10/2014
824	NOR	M/s. Lodge Janki Shankar	S	Granted - 20/10/2014
825	NOR	M/s. Totos Foot Spa	S	Granted - 20/10/2014

826	NOR	M/s. Waterleaf Salon & Wellness	S	Granted - 20/10/2014
827	NOR	M/s. Ayurtouch Ayurvedic Massage Centre	S	Granted - 20/10/2014
828	NOR	M/s. Sonikas Paradise	S	Granted - 20/10/2014
829	NOR	M/s. S.S Industries	S	Granted - 20/10/2014
830	NOR	M/s. Chandralekha Guest House	S	Granted - 20/10/2014
831	NOR	M/s. Raj Exotica Holiday Homes	S	Granted - 20/10/2014
832	NOR	M/s. Prem Engineering	S	Granted - 20/10/2014
833	NOR	M/s. Ursula Happy Home	S	Granted - 20/10/2014
834	NOR	M/s. Villa Rosa	S	Granted - 20/10/2014
835	NOR	M/s. Manuel Villa	S	Granted - 20/10/2014
836	SOU	M/s. Desa Engineering Works	S	Granted - 20/10/2014
837	NOR	M/s. Yojana Bhavan (Directorate Of Planning, Statistics & Evaluation)	S	Granted - 20/10/2014
838	SOU	M/s Chowgule & Co. Pvt. Ltd. (Pipe Bending Unit)	L	Granted - 20/10/2014
839	NOR	M/s. Estella Guest House	S	Granted - 20/10/2014
840	NOR	M/s. Raffle Square Development Pvt Ltd.	S	Granted - 21/10/2014
841	SOU	M/s Tin Pack Cans	S	Granted - 21/10/2014
842	NOR	M/s. Sanjiv Workshop	S	Granted - 21/10/2014
843	NOR	M/s. Sundaram Industries Ltd.,	S	Granted - 21/10/2014
844	NOR	M/s. Sai Service Station Limited	S	Granted - 21/10/2014
845	SOU	M/s.K.G.K.Engineering Works	M	Granted - 21/10/2014
846	NOR	M/s. Colgate Palmolive (India) Ltd	L	Granted - 21/10/2014
847	NOR	M/s. Hotel 10 Calangute	S	Granted - 21/10/2014
848	SOU	M/s. Abbott India Limited	M	Granted - 21/10/2014
849	NOR	M/s. Highland Holiday Homes (Goa) Pvt. Ltd	S	Granted - 21/10/2014
850	SOU	M/s. Sanofi India Limited	S	Granted - 21/10/2014
851	NOR	M/s. Domingos Pickles	S	Granted - 21/10/2014
852	NOR	M/s. Larios Beach Holidays	S	Granted - 21/10/2014
853	NOR	M/s Nasnodkar Saw Mill	S	Granted - 21/10/2014
854	NOR	M/s Mandrem Beach Resort (Unit Of Sand Dunes Leisure Homes Pvt. Ltd.)	S	Granted - 21/10/2014
855	NOR	M/s Mahalaxmi Enterprises	S	Granted - 21/10/2014
856	NOR	M/s. Premier Industries	S	Granted - 21/10/2014
857	SOU	M/s. Ashokand Garage	S	Granted - 21/10/2014
858	SOU	M/s. Fragina Guest House	S	Granted - 21/10/2014
859	SOU	M/s. Serene Wellness Centre	S	Granted - 21/10/2014
860	SOU	M/s. Suyog Residency Guest House	S	Granted - 21/10/2014
861	NOR	M/s. Dental Space Cad-Cam System	S	Granted - 21/10/2014
862	NOR	M/s. Hotel Welcome Inn	S	Granted - 21/10/2014
863	NOR	M/s. Prince Santosh Guest House	S	Granted - 21/10/2014
864	NOR	M/s. Doriyasukh	S	Granted - 21/10/2014
865	SOU	M/s. Simca Aluminium Pvt Ltd	S	Granted - 21/10/2014
866	NOR	M/s. Sunshine Appartment (Guest House)	S	Granted - 21/10/2014
867	NOR	M/s. Happy Laundry	S	Granted - 21/10/2014
868	NOR	M/s. Celestial Hotel	S	Granted - 21/10/2014

869	NOR	M/s. Nilesh Auto Service And Repairs	S	Granted - 21/10/2014
870	NOR	M/s. New Washing Centre	S	Granted - 21/10/2014
871	SOU	M/s. Hotel Failaka	L	Granted - 21/10/2014
872	NOR	M/s. Jaws Restaurant	S	Granted - 21/10/2014
873	NOR	M/s Rututek Enterprises	S	Granted - 21/10/2014
874	NOR	M/s Palyekar Fiberglass	S	Granted - 21/10/2014
875	NOR	M/s Natekar Engineering Works	S	Granted - 21/10/2014
876	NOR	M/s. Navrang Steel Furniture	S	Granted - 21/10/2014
877	NOR	M/s. Goa Glacial	S	Granted - 21/10/2014
878	NOR	M/s Om Ganesh Naik Guest House	S	Granted - 21/10/2014
879	NOR	M/s Shraddha Industries	S	Granted - 21/10/2014
880	NOR	M/s. Paying Guest House No 951 (1)	S	Granted - 21/10/2014
881	NOR	M/s Trupti Engineering Works	S	Granted - 21/10/2014
882	NOR	M/s Fantasy Resort	S	Granted - 21/10/2014
883	NOR	M/s. Ayurvedic Natural Health Centre Pvt Ltd	S	Granted - 24/10/2014
884	NOR	M/s. Standard Epoxy Materials	S	Granted - 24/10/2014
885	NOR	M/s. Heritage Ayurveda Centre	S	Granted - 24/10/2014
886	NOR	M/s. Janata Timber Industries	S	Granted - 24/10/2014
887	NOR	M/s. Hotel Bernado	S	Granted - 24/10/2014
888	SOU	M/s. Yogmaya Hostels Pvt. Ltd (Ocean Residency)	S	Granted - 24/10/2014
889	NOR	M/s. Anup Holiday Homes	S	Granted - 24/10/2014
890	NOR	M/s Don Joao Resort	S	Granted - 24/10/2014
891	SOU	M/s. Cosmos Premises Pvt. Ltd.(Royal Orchid Resort Galaxy)	L	Granted - 24/10/2014
892	SOU	M/s. Ship Construction	L	Granted - 24/10/2014
893	SOU	M/s. Vailankanni Nest	S	Granted - 24/10/2014
894	NOR	M/s Godrej Agrovet Limited	M	Granted - 24/10/2014
895	SOU	M/s. Vergo Pharma Research Laboratories Pvt Ltd	S	Granted - 24/10/2014
896	NOR	M/s. Morjim Club Resort	S	Granted - 24/10/2014
897	SOU	M/s. Roshan Welding	S	Granted - 24/10/2014
898	SOU	M/s. Dinesh Alluminium Works	S	Granted - 24/10/2014
899	SOU	M/s. Octima Guest House, Bar & Restaurant	S	Granted - 24/10/2014
900	SOU	M/s. S.N Printers	S	Granted - 24/10/2014
901	NOR	M/s. Gopal Flour Mill	S	Granted - 24/10/2014
902	SOU	M/s. Bhargava Natural Healing Center	S	Granted - 24/10/2014
903	SOU	M/s. Rafael Guest House	S	Granted - 24/10/2014
904	NOR	M/s. Sonikas Heritage (Guest House)	S	Granted - 24/10/2014
905	NOR	M/s. Bay 15	S	Granted - 24/10/2014
906	NOR	M/s. Juliana Guest House	S	Granted - 24/10/2014
907	NOR	M/s. Garden Of Meals	S	Granted - 24/10/2014
908	SOU	M/s. Ocean Spa & Salon	S	Granted - 24/10/2014
909	SOU	M/s. Spectra Pavers Private Limited	S	Granted - 24/10/2014
910	NOR	M/s. Riverside Resort And Holiday Homes Pvt Ltd	L	Granted - 24/10/2014
911	NOR	M/s. Procter & Gamble Hygiene & Health Care Ltd.	L	Granted - 27/10/2014

912	NOR	M/s. Acerock Developers Pvt. Ltd. (The Baga Marina Beach Resorts)	L	Granted - 27/10/2014
913	NOR	M/s. Gulf Goan Hotels Company Ltd - Hotel Goan Heritage	S	Granted - 27/10/2014
914	NOR	M/s. Encube Ethicals Pvt Ltd	L	Granted - 27/10/2014
915	NOR	M/s. Oktoberfest (Bullseye Entertainment)	S	Granted - 29/10/2014
916	NOR	M/s. Perfect Auto Coating	S	Granted - 03/11/2014
917	NOR	M/s. Goa Beach Grind (Viola Fernandes)	S	Granted - 03/11/2014
918	SOU	M/s. Birla Furukawa Fibre Optics Limited	L	Granted - 05/11/2014
919	SOU	Ms Alcon Resort Holdings Ltd - Unit Radisson Resort Goa	M	Granted - 05/11/2014
920	NOR	M/s. Chowgule & Company Private Limited (Khazan Jetty)	S	Granted - 05/11/2014
921	SOU	M/s. Sanofi India Limited	S	Granted - 05/11/2014
922	NOR	M/s. D.B.Bandodkar And Sons Pvt.Ltd (Tixem Barge Loading Platform/facilities)	S	Granted - 05/11/2014
923	NOR	M/s Heramb Industries	S	Granted - 05/11/2014
924	SOU	M/s Schiffer & Menezes Ind. Pvt. Ltd (L-27)	L	Granted - 05/11/2014
925	NOR	M/s Sea View Cottages	S	Granted - 05/11/2014
926	SOU	M/s. Shant Nag Printing Press	S	Granted - 05/11/2014
927	NOR	M/s. Natasha Candles	S	Granted - 05/11/2014
928	SOU	M/s. Get Down Bar And Restaurant	S	Granted - 05/11/2014
929	SOU	M/s. J. N. Kamat Saw Mill	S	Granted - 05/11/2014
930	NOR	M/s. Giroba Sateri Prasad Bhavan (Hotel Manjunath)	S	Granted - 05/11/2014
931	NOR	M/s. Metal Fabrik India	S	Granted - 05/11/2014
932	NOR	M/s. Riverside Resort And Holiday Homes Pvt Ltd	L	Granted - 11/11/2014
933	NOR	M/s. Devyani Food Industries Ltd.	L	Granted - 11/11/2014
934	NOR	M/s Brittos Guest House	S	Granted - 11/11/2014
935	NOR	M/s. Marusha Barretto E Rodrigues Homeopathic Dispensary	S	Granted - 11/11/2014
936	NOR	M/s. Sephora Salon & Spa	S	Granted - 11/11/2014
937	NOR	M/s. Olegar Enterprises	S	Granted - 11/11/2014
938	SOU	M/s. Amalgamated Bean Coffee Trading Company Limited (Cafe Coffee Day)	S	Granted - 11/11/2014
939	NOR	M/s. Goan Hotels And Clubs Pvt Ltd	S	Granted - 27/10/2014
940	SOU	M/s. Jungle Cafe	S	Granted - 27/11/2014
941	NOR	M/s. V. M. Salgaocar & Bro. Pvt. Ltd. ( Dry Screening Plant & Loading Facility )	S	Granted - 27/11/2014
942	SOU	M/s Vilanova Holidays	S	Granted - 28/11/2014
943	NOR	M/s Physiotherapy (Dr. Mamta Karpe)	S	Granted - 28/11/2014
944	SOU	M/s. Hip Snip Salon & Spa	S	Granted - 28/11/2014
945	NOR	M/s. Rj's Ayuspaa	S	Granted - 02/12/2014
946	SOU	M/s. Coelho Industries	S	Granted - 02/12/2014
947	NOR	M/s. Dreamz Salon & Spa	S	Granted - 02/12/2014
948	NOR	M/s. Dreamz Salon & Spa	S	Granted - 02/12/2014
949	NOR	M/s. Deborah Rodrigues (Spa)	S	Granted - 02/12/2014
950	NOR	M/s. Marbela Resort	S	Granted - 02/12/2014
951	NOR	M/s. Vasu Paying Guest House	S	Granted - 02/12/2014

952	NOR	M/s. "sushruti" Dr. Dhulapkars Hospital	S	Granted - 02/12/2014
953	NOR	M/s. Shree Om Plastic	S	Granted - 02/12/2014
954	NOR	M/s. Moonlight Restaurant ( Guest House, Bar & Restaurant)	S	Granted - 02/12/2014
955	NOR	M/s. Chowgule & Company Private Limited	S	Granted - 02/12/2014
956	NOR	M/s. Simeshwar Garage	S	Granted - 02/12/2014
957	NOR	M/s. Sunset Guest House	S	Granted - 02/12/2014
958	NOR	M/s. Mojim Grande	S	Granted - 02/12/2014
959	SOU	M/s. Shailesh Chari (2 Wheeler Repair Station)	S	Granted - 02/12/2014
960	NOR	M/s. Paradise Guest House	S	Granted - 02/12/2014
961	NOR	M/s. Coastal Sunview Hotel Private	L	Granted - 02/12/2014
962	NOR	M/s. Paulo M. D'souza (Guest House)	S	Granted - 05/12/2014
963	SOU	M/s. Shival Candle Industry	S	Granted - 05/12/2014
964	NOR	M/s. Rudresh Guest House	S	Granted - 05/12/2014
965	NOR	M/s Super Industries	S	Granted - 05/12/2014
966	NOR	M/s Sonish Equi-Chem Industries	S	Granted - 05/12/2014
967	NOR	M/s. All Seasons Beach Classic	S	Granted - 05/12/2014
968	NOR	M/s. Ulka Seafoods Pvt Ltd( Unit-I)	L	Granted - 05/12/2014
969	NOR	M/s. Milton Lobo S Guest House	S	Granted - 05/12/2014
970	NOR	M/s. God's Gift Guest House	S	Granted - 05/12/2014
971	NOR	M/s. Joaquim House	S	Granted - 05/12/2014
972	NOR	M/s. Sebastian Minguel Dmello Guest House	S	Granted - 05/12/2014
973	NOR	M/s. Paying Guest House	S	Granted - 05/12/2014
974	NOR	M/s. Beach Way Guest House	S	Granted - 05/12/2014
975	NOR	M/s. Sailor's Inn	S	Granted - 05/12/2014
976	NOR	M/s. Piya Guest House	S	Granted - 05/12/2014
977	NOR	M/s. Ivon's Holiday Calm	S	Granted - 05/12/2014
978	NOR	M/s. Ivon's Holiday Calm	S	Granted - 05/12/2014
979	NOR	M/s. United Breweries Ltd.	M	Granted - 09/12/2014
980	SOU	M/s. Bona Steel Industries	S	Granted - 09/12/2014
981	NOR	M/s. Vep Forming & Moulding	S	Granted - 09/12/2014
982	SOU	M/s. Ayurveda Clinic	S	Granted - 09/12/2014
983	SOU	M/s. Ayurveda Clinic	S	Granted - 09/12/2014
984	SOU	M/s. Richardson Bakers & Confectioners	S	Granted - 09/12/2014
985	SOU	M/s. Ayurvedic Clinic And Treatment Centre	S	Granted - 09/12/2014
986	SOU	M/s. Saroj Rice & Flour Mill	S	Granted - 09/12/2014
987	SOU	M/s. Dr Ellen's Ayurveda Clinic	S	Granted - 09/12/2014
988	SOU	M/s. Lotus Spa & Saloon	S	Granted - 09/12/2014
989	SOU	M/s. Eden Spa Homestays Pvt. Ltd	S	Granted - 09/12/2014
990	SOU	M/s. Traditional Ayurvedic Massage	S	Granted - 09/12/2014
991	SOU	M/s. Metro Eyelets Industries	S	Granted - 10/12/2014
992	SOU	M/s. Puja Ferro Alloys Pvt. Ltd	S	Granted - 10/12/2014
993	SOU	M/s Patharvat Industries	S	Granted - 10/12/2014
994	NOR	M/s. Shree Dattakrupa Industries	S	Granted - 10/12/2014
995	SOU	M/s. Benson Bakery	S	Granted - 10/12/2014

996	NOR	M/s Sesa Sterlite Ltd. (Pig Iron Division)	L	Granted - 11/12/2014
997	NOR	M/s. Sur La Mer Resort Pvt Ltd	S	Granted - 11/12/2014
998	SOU	M/s. Janet Guest House	S	Granted - 11/12/2014
999	NOR	M/s. Shrem Resort Pvt Ltd	L	Granted - 11/12/2014
1000	NOR	M/s. Tara Massage & Beauty Centre	S	Granted - 11/12/2014
1001	SOU	M/s J.M. Metal Industries	S	Granted - 11/12/2014
1002	SOU	M/s. Choksi Laboratories Ltd.	M	Granted - 12/12/2014
1003	SOU	M/s. Shri Gaulaxmi Saw Mill	S	Granted - 12/12/2014
1004	SOU	M/s. Shree Mahalaxmi Saw Mill	S	Granted - 12/12/2014
1005	SOU	M/s. Sameer Engineering	S	Granted - 12/12/2014
1006	SOU	M/s. Ranjit Fabricators	S	Granted - 12/12/2014
1007	SOU	M/s. Freedom Workshop	S	Granted - 12/12/2014
1008	SOU	M/s. Emaben Enterprises	S	Granted - 12/12/2014
1009	SOU	M/s. Anandi Hotel	S	Granted - 12/12/2014
1010	SOU	M/s. Ayurtouch Spa Center	S	Granted - 12/12/2014
1011	NOR	M/s. Speciality Bites	S	Granted - 12/12/2014
1012	SOU	M/s. Jorges Holiday Homes	S	Granted - 12/12/2014
1013	NOR	M/s. St Anthony Guest House	S	Granted - 12/12/2014
1014	NOR	M/s. The Indian Hotels Co. Ltd. Unit : Vivanta By Taj - Fort Aguada, Goa.	S	Granted - 12/12/2014
1015	NOR	M/s. Capaxem Barge Loading Jetty	M	Granted - 12/12/2014
1016	NOR	M/s. Maina Barge Loading Jetty	M	Granted - 12/12/2014
1017	NOR	M/s. Anjuna Villa140\1	L	Granted - 12/12/2014
1018	SOU	M/s. Tiburcio Fernandes (Rice Mill)	S	Granted - 17/12/2014
1019	SOU	M/s. Adarsh Lodging	S	Granted - 17/12/2014
1020	NOR	M/s. Franria Villa Guest House	S	Granted - 17/12/2014
1021	SOU	M/s. Shri Anant Stores\flour Mill	S	Granted - 17/12/2014
1022	NOR	M/s. Resorte Marinha Dourada	L	Granted - 17/12/2014
1023	NOR	M/s. Sunset Getaways (Sunburn)	S	Granted - 26/12/2014
1024	NOR	M/s. Starlight Events And Entertainment Pvt Ltd (Supersonic)	S	Granted - 26/12/2014
1025	NOR	M/s. Ujwal Interiors	S	Granted - 30/12/2014
1026	NOR	Ms Casa Severina	L	Granted - 02/01/2015
1027	NOR	M/s. United Breweries Ltd.	M	Granted - 02/01/2015
1028	NOR	M/s. Nestle India Limited	L	Granted - 02/01/2015
1029	SOU	M/s Three Star Bakery	S	Granted - 02/01/2015
1030	SOU	M/s. Kailash Ayurvedic Treatment Center	S	Granted - 02/01/2015
1031	SOU	M/s. Rich Kerala Ayurvedic Clinic & Pharmaceutical Corp(I.M)	S	Granted - 02/01/2015
1032	SOU	M/s. Jungle Village	S	Granted - 02/01/2015
1033	NOR	M/s. Dias Auto Care Centre	S	Granted - 02/01/2015
1034	NOR	M/s. Sukho Thai The Foot Spa	S	Granted - 02/01/2015
1035	NOR	M/s. Ayurvedic Care Centre	S	Granted - 02/01/2015
1036	NOR	M/s. Awesome Salon & Thai Foot Therapy	S	Granted - 02/01/2015
1037	NOR	M/s. Cadila Healthcare Ltd.	L	Granted - 08/01/2015
1038	SOU	M/s. Andrew Telecommunications Indis Pvt Ltd	M	Granted - 08/01/2015

1039	NOR	M/s. Phoenix Park Inn (Unit Of Phoenix Township Limited)	L	Granted - 08/01/2015
1040	SOU	M/s. Parani Resort Pvt Ltd	S	Granted - 08/01/2015
1041	NOR	M/s. Alex Rodrigues	S	Granted - 08/01/2015
1042	NOR	M/s. Vailankanni Guest House	S	Granted - 08/01/2015
1043	NOR	M/s. Paying Guest House	S	Granted - 08/01/2015
1044	NOR	M/s. Avinash Guest House	S	Granted - 08/01/2015
1045	NOR	M/s. Yellow House Guest House	S	Granted - 08/01/2015
1046	NOR	M/s. Domic Guest House	S	Granted - 08/01/2015
1047	NOR	M/s. Marshall's Guest House	S	Granted - 08/01/2015
1048	NOR	M/s. Leena Guest House	S	Granted - 08/01/2015
1049	NOR	M/s. A. J. F. Villa	S	Granted - 08/01/2015
1050	NOR	M/s. Chillis Guest House	S	Granted - 08/01/2015
1051	SOU	M/s. Valankini Workshop	S	Granted - 08/01/2015
1052	NOR	M/s. Shakti Sales Corporation	S	Granted - 08/01/2015
1053	SOU	M/s. Francon Guest House	S	Granted - 08/01/2015
1054	NOR	M/s Tavora Hotels & Restaurants(Navtara)	S	Granted - 08/01/2015
1055	NOR	M/s. De Souza Leisures Pvt. Ltd. - Aldeia Santa Rita	S	Granted - 08/01/2015
1056	NOR	M/s. The Sea Side	S	Granted - 08/01/2015
1057	NOR	M/s Super Industries	S	Granted - 08/01/2015
1058	NOR	M/s. River Isle Guest House & Restaurant	S	Granted - 08/01/2015
1059	SOU	M/s Rodrickson Cottages	S	Granted - 08/01/2015
1060	SOU	M/s Rodrickson Cottages	S	Granted - 08/01/2015
1061	SOU	M/s. Kare Labs Pvt. Ltd.	L	Granted - 08/01/2015
1062	NOR	M/s. Dsouza Biotech	S	Granted - 08/01/2015
1063	SOU	M/s. Zuari Agro Chemicals Limited	L	Granted - 08/01/2015
1064	NOR	M/s. Anthony Villa	S	Granted - 08/01/2015
1065	NOR	M/s. Omkar House	S	Granted - 08/01/2015
1066	NOR	M/s. Holy Cross Guest House	S	Granted - 08/01/2015
1067	SOU	M/s. Spirit De Goa	S	Granted - 08/01/2015
1068	NOR	M/s. Time & Leisure Hotels Pvt. Ltd	S	Granted - 08/01/2015
1069	SOU	M/s. Symphony Family Restaurant & Bar	S	Granted - 08/01/2015
1070	NOR	M/s. Menino Jesus Cottage	S	Granted - 08/01/2015
1071	NOR	M/s. Paying Guest House	S	Granted - 08/01/2015
1072	SOU	M/s. Bandekar's Annapurna Masale	S	Granted - 08/01/2015
1073	NOR	M/s. Sai Guest House	S	Granted - 08/01/2015
1074	NOR	M/s. Corals	S	Granted - 08/01/2015
1075	NOR	M/s. Hotel Peace Garden	S	Granted - 08/01/2015
1076	SOU	M/s. Ayurveda Clinic	S	Granted - 08/01/2015
1077	NOR	M/s. Relax Inn Guest House(Vincent Rodrigues)	S	Granted - 08/01/2015
1078	NOR	M/s. Ayurjeevana Ayurvedic Massage Center	S	Granted - 08/01/2015
1079	NOR	M/s. Ayurclinic Goa	S	Granted - 08/01/2015
1080	NOR	M/s. Ashley Resort Pvt. Ltd. Adamo The Bellus	L	Granted - 09/01/2015
1081	SOU	M/s. Pravinkumar Shantilal Gosalia	L	Granted - 09/01/2015
1082	NOR	M/s. Heera Recreation & Entertainment	S	Granted - 09/01/2015

1083	NOR	M/s. Sky King Guest House	S	Granted - 09/01/2015
1084	NOR	M/s. Neomis Hair & Beauty Salon	S	Granted - 09/01/2015
1085	NOR	M/s. Willy Guest House	S	Granted - 09/01/2015
1086	NOR	M/s. Sharon Villa	S	Granted - 09/01/2015
1087	SOU	M/s. Veeniola Holiday Home	S	Granted - 09/01/2015
1088	SOU	M/s. Rosario Inn	S	Granted - 09/01/2015
1089	NOR	M/s Britts	L	Granted - 09/01/2015
1090	SOU	M/s. R.K Enterprises	S	Granted - 09/01/2015
1091	NOR	M/s. VLCC Slimming , Beauty & Health Centre (Orchid Health Care)	S	Granted - 09/01/2015
1092	SOU	M/s. Penguin Restaurant	S	Granted - 09/01/2015
1093	SOU	M/s. Valerys Beauty Parlour	S	Granted - 09/01/2015
1094	NOR	M/s. Hair Dressing Saloon	S	Granted - 09/01/2015
1095	SOU	M/s. Traditional Ayurvedic Centre And Spa	S	Granted - 12/01/2015
1096	NOR	M/s. Rudra Beauty Saloon And Ayurvedic Massage Center	S	Granted - 12/01/2015
1097	NOR	M/s. Yellow Foot And Fish Therapy	S	Granted - 12/01/2015
1098	NOR	M/s. Feel Good Massage Parlour	S	Granted - 12/01/2015
1099	NOR	M/s. Ayurvedic Massage Treatment	S	Granted - 12/01/2015
1100	NOR	M/s. Anavadhya Ayurvedic Panchakarma Treatment Centre	S	Granted - 12/01/2015
1101	NOR	M/s. Farid Veljee (Prop. Veljee Motors\ Veljee Automobiles)	S	Granted - 12/01/2015
1102	NOR	M/s Ranjana Ladies Beauty Parlour	S	Granted - 12/01/2015
1103	NOR	M/s. Nature Touch Massage Centre	S	Granted - 12/01/2015
1104	NOR	M/s. R. J. Industries	S	Granted - 12/01/2015
1105	SOU	M/s. K. G. N. Enterprises	S	Granted - 12/01/2015
1106	NOR	M/s. Babanov And Coutinho Resorts Pvt Ltd (Hotel Casa Blanca)	S	Granted - 12/01/2015
1107	NOR	M/s. Rachel Ladies Beauty Parlour	S	Granted - 12/01/2015
1108	SOU	M/s. Swami Ayurveda Clinic	S	Granted - 12/01/2015
1109	SOU	M/s. Vipul Shipping Engineering Works	S	Granted - 12/01/2015
1110	NOR	M/s. Alphagam Coating Solutions Pvt. Ltd.	S	Granted - 12/01/2015
1112	NOR	M/s. The Horizon	S	Granted - 12/01/2015
1113	SOU	M/s. Hotel Saaj	S	Granted - 12/01/2015
1114	NOR	M/s. Sher-E-Punjab Hotels Pvt Ltd	S	Granted - 12/01/2015
1115	NOR	M/s Savoy Retreat Pvt. Ltd.	S	Granted - 12/01/2015
1116	NOR	M/s. Surla Jetty	S	Granted - 12/01/2015
1117	NOR	M/s. Sinori Jetty	S	Granted - 12/01/2015
1118	NOR	M/s. Damodar Mangalji & Co. Ltd. (Jetty No. 2)	S	Granted - 12/01/2015
1119	NOR	M/s. Damodar Mangalji & Co. Ltd. (Jetty No. 1)	S	Granted - 12/01/2015
1120	NOR	M/s. Goa Energy Limited	L	Granted - 12/01/2015
1121	SOU	M/s. Timblo Drydocks Pvt. Ltd.	M	Granted - 12/01/2015
1122	SOU	M/s. Global Ispat Ltd.	M	Granted - 12/01/2015
1123	NOR	M/s. Dempo Mining Corporation Pvt. Ltd, Barge Loading Jetty At Sarmanus	S	Granted - 12/01/2015
1124	NOR	M/s. Vilashini Cleaning Works	S	Granted - 12/01/2015

1125	SOU	M/s. Balton's Beach Shack (Baltazar Fernandes)	S	Granted - 21/01/2015
1126	SOU	M/s. Rosary Beach Shack	S	Granted - 21/01/2015
1127	SOU	M/s. Camron Beach Shack	S	Granted - 21/01/2015
1128	SOU	M/s. Albert Place	S	Granted - 21/01/2015
1129	SOU	M/s. Blue Waves Shack (Livia D'silva)	S	Granted - 21/01/2015
1130	SOU	M/s. The Beach House (Glenn D'souza)	S	Granted - 21/01/2015
1131	SOU	M/s. Cool Place	S	Granted - 21/01/2015
1132	SOU	M/s. Lloyd's Beach Shack	S	Granted - 21/01/2015
1133	SOU	M/s. Lobster King (Christina Fernandes)	S	Granted - 21/01/2015
1134	SOU	M/s. Goa Hilton (Joanita Gonsalves)	S	Granted - 21/01/2015
1135	SOU	M/s. Wensben Shack	S	Granted - 21/01/2015
1136	NOR	M/s. Indus Cama	S	Granted - 24/01/2015
1137	NOR	M/s. Aqua Goa	S	Granted - 24/01/2015
1138	NOR	M/s Saliz & Co.	S	Granted - 24/01/2015
1139	NOR	M/s. Edryl India	S	Granted - 24/01/2015
1140	NOR	M/s Hotel Dona Terezinha Pvt. Ltd	S	Granted - 24/01/2015
1141	NOR	M/s. Ayurma	S	Granted - 24/01/2015
1142	NOR	M/s Laxmikant Saw Mill	S	Granted - 24/01/2015
1143	NOR	M/s Radha Furniture Works	S	Granted - 24/01/2015
1144	NOR	M/s. Akshaya Ayurvedic Pvt Ltd	S	Granted - 24/01/2015
1145	NOR	M/s. Krupa Polymers (India) Private Limited	M	Granted - 24/01/2015
1146	NOR	M/s. Anil Garage	S	Granted - 24/01/2015
1147	NOR	M/s Bhavani Garage	S	Granted - 24/01/2015
1148	NOR	M/s. Morjim Farm And Beach Resort	S	Granted - 24/01/2015
1149	NOR	M/s. Shree Mahalasa Saunsthan	S	Granted - 26/01/2015
1150	NOR	M/s. Model Real Estate Developers (Model Status)	S	Granted - 26/01/2015
1151	NOR	M/s. Ayurvedic Natural Health Centre Pvt Ltd	S	Granted - 26/01/2015
1152	NOR	M/s Pearl Granites & Marbles	S	Granted - 26/01/2015
1153	NOR	M/s. Metadecor Industries	M	Granted - 26/01/2015
1154	NOR	Ms Global Spirits & Foods	S	Granted - 26/01/2015
1155	NOR	M/s Shree Polymer Products	L	Granted - 26/01/2015
1156	NOR	M/s. Advanced Composites Pvt Ltd	M	Granted - 26/01/2015
1157	NOR	M/s. Okasa Pvt. Ltd.	L	Granted - 26/01/2015
1158	NOR	M/s. Berger Becker Coatings Private Limited.,	S	Granted - 26/01/2015
1159	NOR	M/s. Merck Limited	L	Granted - 26/01/2015
1160	NOR	M/s. Ambey Metallic Ltd	L	Granted - 26/01/2015
1161	NOR	M/s. Automobile Corporation Of Goa Ltd - Plant - I	L	Granted - 26/01/2015
1162	NOR	M/s. Dempo Mining Corporation Pvt. Ltd, Barge Loading Jetty At Sarmanus	S	Granted - 26/01/2015
1163	NOR	M/s. Amar Metal	S	Granted - 26/01/2015
1164	NOR	M/s Prabhu Smaran Rest House	S	Granted - 26/01/2015
1165	NOR	M/s Goan Hospitality (caravela)	S	Granted - 27/01/2015
1166	SOU	M/s Nunes Bakery	S	Granted - 30/01/2015
1167	SOU	M/s Valany Fabrication	S	Granted - 30/01/2015
1168	SOU	M/s Goa Super Eletrodes Pvt. Ltd.	S	Granted - 30/01/2015

1169	SOU	M/s Sudesh Bandodkar Rice Mill	S	Granted - 30/01/2015
1170	SOU	M/s Sagar Power Laundry	S	Granted - 30/01/2015
1171	SOU	M/s Umesh Mukund Chari (Carpentry)	S	Granted - 30/01/2015
1172	SOU	M/s Gautam Wood Industries	S	Granted - 30/01/2015
1173	SOU	M/s Prabhu Cement Products	S	Granted - 30/01/2015
1174	SOU	M/s Goa Tourism Development Corporation (Colva Residency)	S	Granted - 30/01/2015
1175	SOU	M/s St Francis Xavier Workshop	S	Granted - 30/01/2015
1176	SOU	M/s Sunshine Laundry	S	Granted - 30/01/2015
1177	SOU	M/s St. Francis Bakery	S	Granted - 30/01/2015
1178	NOR	M/s Club Cubana	S	Granted - 30/01/2015
1179	NOR	M/s G M Enterprise	S	Granted - 30/01/2015
1180	NOR	M/s Curry House	S	Granted - 30/01/2015
1181	NOR	M/s S S Electricals	S	Granted - 30/01/2015
1182	NOR	M/s Quality Windings	S	Granted - 30/01/2015
1183	NOR	M/s Delta Residency	S	Granted - 30/01/2015
1184	NOR	M/s Om Ganesh	S	Granted - 30/01/2015
1185	NOR	M/s Golden Plastocrafts	S	Granted - 30/01/2015
1186	NOR	M/s Envirowise Services	S	Granted - 30/01/2015
1187	NOR	M/s Water Parells	S	Granted - 30/01/2015
1188	NOR	M/s Om Sai Washing Centre	S	Granted - 30/01/2015
1189	NOR	M/s Ashok Fast Food Centre	S	Granted - 30/01/2015
1190	SOU	M/s Delta Engineers	S	Granted - 30/01/2015
1191	SOU	M/s Supra Industries	S	Granted - 30/01/2015
1192	NOR	M/s Shivram Optical Industry	S	Granted - 30/01/2015
1193	NOR	M/s Mahamaya Enterprises	S	Granted - 30/01/2015
1194	SOU	M/s Tak-Nik Metal Works	S	Granted - 30/01/2015
1195	SOU	M/s Joscar Rice And Flour Mill	S	Granted - 30/01/2015
1196	NOR	M/s Nitya Resort	S	Granted - 30/01/2015
1197	NOR	M/s Orchid Health Care	S	Granted - 30/01/2015
1198	SOU	M/s Pinto's Flour Mill	S	Granted - 30/01/2015
1199	NOR	M/s Standard Pack Prints Pvt. Ltd	S	Granted - 30/01/2015
1200	NOR	M/s Sfx Bakers & Confectioners	S	Granted - 30/01/2015
1201	SOU	M/s Rice And Flour Mill	S	Granted - 30/01/2015
1202	SOU	M/s Om Ice Cream Factory	S	Granted - 30/01/2015
1203	NOR	M/s Tarun Bharat Multi-Graphics Pvt Ltd	S	Granted - 30/01/2015
1204	NOR	M/s Palm Grove Cottages	S	Granted - 30/01/2015
1205	NOR	M/s Sea View Cottages	S	Granted - 30/01/2015
1206	SOU	M/s S.S Products	S	Granted - 30/01/2015
1207	NOR	M/s Alibaba Enclave	S	Granted - 30/01/2015
1208	NOR	M/s Diebold Systems Pvt. Ltd.	S	Granted - 30/01/2015
1209	NOR	M/s Polynova Industries Ltd	L	Granted - 30/01/2015
1210	SOU	M/s Tevapharm India Pvt. Ltd.	L	Granted - 30/01/2015
1211	SOU	M/s Teknic Electric (I) Pvt Ltd	S	Granted - 30/01/2015
1212	NOR	M/s Syngenta India Limited	L	Granted - 04/02/2015

1213	NOR	Ms Ajay Cashew Oil & Allied Products	S	Granted - 04/02/2015
1214	SOU	Ms Atc Industries	S	Granted - 04/02/2015
1215	NOR	Ms Vassudeva Tamba Metal Quarry	S	Granted - 04/02/2015
1216	SOU	Ms J L Baptista	L	Granted - 04/02/2015
1217	NOR	Ms Vivajay Brushes (Goa)	M	Granted - 04/02/2015
1218	NOR	Ms Power Engineering (India) Pvt Ltd	S	Granted - 04/02/2015
1219	NOR	M/s. Swift Boutique Hotels Pvt Ltd	L	Granted - 04/02/2015
1220	NOR	Ms Zaraf Cosmetics	S	Granted - 04/02/2015
1221	SOU	Ms Espee Diesel Engineers (Margao Branch)	S	Granted - 04/02/2015
1222	NOR	Ms Raman Resort	S	Granted - 04/02/2015
1223	NOR	Ms Shanti Atithi Home Pvt.Ltd	M	Granted - 04/02/2015
1224	NOR	Ms Royal Ice Cream	S	Granted - 04/02/2015
1225	SOU	Ms Baba Engineering Works	S	Granted - 04/02/2015
1226	NOR	Ms Parmaz Hospitality Pvt Ltd (Little Italy)	S	Granted - 04/02/2015
1227	NOR	Ms P.D.A Guest House	S	Granted - 04/02/2015
1228	SOU	Ms Jila Bakers & Confectioners	S	Granted - 11/02/2015
1229	SOU	Ms Power Laundry	S	Granted - 11/02/2015
1230	SOU	Neca Industries	S	Granted - 11/02/2015
1231	SOU	Namdev Narcinva Lotlikar	S	Granted - 11/02/2015
1232	SOU	Ms Narendra Atchut Shirodkar	S	Granted - 11/02/2015
1233	SOU	Ms Canara Cold Storage	S	Granted - 11/02/2015
1234	SOU	Ms Amol Rice And Flour Mill	S	Granted - 11/02/2015
1235	NOR	Ms Gbc Packaging	M	Granted - 11/02/2015
1236	NOR	Ms Healthway Hospital Pvt Ltd	S	Granted - 11/02/2015
1237	NOR	Ms Yashoda Industries	S	Granted - 11/02/2015
1238	SOU	Ms Golden Cane Industries	S	Granted - 11/02/2015
1239	NOR	Ms Ssp Polymers	S	Granted - 11/02/2015
1240	NOR	Ms Chalet Belle Rosa	S	Granted - 11/02/2015
1241	SOU	Ms Cake Palace	S	Granted - 11/02/2015
1242	SOU	Ms Mili Furniture	S	Granted - 11/02/2015
1243	NOR	Ms Mundial Guest House	S	Granted - 11/02/2015
1244	NOR	Ms Sundar S. P. Bandodkar	S	Granted - 11/02/2015
1245	NOR	Ms Hotel Park Plaza	S	Granted - 11/02/2015
1246	SOU	Ms Mach Tech Goa	S	Granted - 11/02/2015
1247	NOR	Ms Velpar Associates	S	Granted - 11/02/2015
1248	NOR	Ms Infinity Nails Pvt Ltd	S	Granted - 11/02/2015
1249	NOR	Ms Laxmi Hair Cutting Saloon	S	Granted - 11/02/2015
1250	NOR	Ms Priyanka Packaging Industries	S	Granted - 11/02/2015
1251	SOU	Ms Ranjit Electronics	S	Granted - 11/02/2015
1252	NOR	Ms Jaws Guest House	S	Granted - 11/02/2015
1253	NOR	Ms Vishal Industries	S	Granted - 11/02/2015
1254	NOR	M/s D' Interiors	S	Granted - 11/02/2015
1255	SOU	Ms Xavier Garage	S	Granted - 11/02/2015
1256	NOR	Ms Sirsat Lodge	S	Granted - 11/02/2015

1257	NOR	M/s Om Winder	S	Granted - 11/02/2015
1258	NOR	M/s Mahadev Saw Mill	S	Granted - 11/02/2015
1259	NOR	M/s Goa Karting Pvt Ltd	S	Granted - 11/02/2015
1260	NOR	M/s Javed Qureshi Exports	S	Granted - 11/02/2015
1261	NOR	M/s M/s New General Workshop	S	Granted - 11/02/2015
1262	NOR	M/s Goa Electric Company	S	Granted - 11/02/2015
1263	NOR	M/s Satpurush Industry	S	Granted - 11/02/2015
1264	SOU	M/s. Mahindra Holidays And Resorts (I) Ltd. (Club Mahindra)	L	Granted - 11/02/2015
1265	NOR	M/s Kemtec India Photographic Co. Pvt Ltd.	S	Granted - 11/02/2015
1266	NOR	M/s Gajantlaxmi Industries	S	Granted - 11/02/2015
1267	NOR	Ms Shreyash Brick And Cement Products	S	Granted - 11/02/2015
1268	SOU	M/s S. J. Enterprises	S	Granted - 11/02/2015
1269	NOR	M/s Deepra Industries	S	Granted - 11/02/2015
1270	NOR	M/s Baga Waterfront Resort & Spa (Acron Hospitality Pvt Ltd)	L	Granted - 11/02/2015
1271	NOR	M/s Mahadev Gunaji Chari	S	Granted - 11/02/2015
1272	NOR	M/s Supreme Industries	S	Granted - 11/02/2015
1273	NOR	M/s Oriental Containers Ltd	L	Granted - 11/02/2015
1274	NOR	M/s Ameya Offset Printers	S	Granted - 11/02/2015
1275	SOU	M/s Vinayak Industries	S	Granted - 11/02/2015
1276	NOR	M/s Johton Autocoat	S	Granted - 11/02/2015
1277	NOR	M/s Jonny's Hotel	S	Granted - 11/02/2015
1278	NOR	M/s Pk Composites Private Limited.,	S	Granted - 11/02/2015
1279	SOU	M/s. Emkay Elastomers	S	Granted - 11/02/2015
1280	NOR	M/s Adelphi Pharmaceuticals	S	Granted - 11/02/2015
1281	NOR	M/s Nazri Resort	M	Granted - 11/02/2015
1282	NOR	M/s Hotel Swapna	S	Granted - 11/02/2015
1283	SOU	M/s Alve Weld-O-Craft	S	Granted - 17/02/2015
1284	NOR	M/s Arti Fabulous Body Care	S	Granted - 20/02/2015
1285	NOR	M/s Dreamstone	S	Granted - 20/02/2015
1286	NOR	M/s Espynick	S	Granted - 20/02/2015
1287	NOR	M/s The River Palace	S	Granted - 23/02/2015
1288	NOR	M/s Sunrise Cashew Industry	S	Granted - 23/02/2015
1289	NOR	M/s Nana's Restaurant	S	Granted - 23/02/2015
1290	NOR	M/s Hotel Priti International	S	Granted - 23/02/2015
1291	NOR	M/s Pirates Cabin	S	Granted - 23/02/2015
1292	NOR	M/s Konkani Tyres	S	Granted - 23/02/2015
1293	SOU	M/s Damodar Timber Depot	S	Granted - 23/02/2015
1294	SOU	M/s Hotel Surya Palace	S	Granted - 23/02/2015
1295	SOU	M/s Joema Tourist Home	S	Granted - 23/02/2015
1296	NOR	M/s Casmira D'souza (Mira Cafe Guest House)	S	Granted - 23/02/2015
1297	NOR	M/s Uma Hotel	S	Granted - 23/02/2015
1298	SOU	M/s South Western Railway Holiday Home	S	Granted - 23/02/2015
1299	NOR	M/s Samatma Estates Pvt. Ltd.(Hotel Salida Del Sol)	M	Granted - 23/02/2015

1300	NOR	M/s Procter & Gamble Hygiene & Health Care Ltd.	L	Granted - 23/02/2015
1301	NOR	M/s Maruti Agro Products	S	Granted - 23/02/2015
1302	NOR	M/s Merck Specialities Private Limited	S	Granted - 23/02/2015
1303	NOR	M/s Cosme Pharma Ltd.	M	Granted - 23/02/2015
1304	SOU	M/s Lafarge Aggregates & Concrete India Pvt. Ltd.	S	Granted - 23/02/2015
1305	SOU	M/s Allywin Enterprises	S	Granted - 23/02/2015
1306	SOU	M/s Costa Cement Products	S	Granted - 23/02/2015
1307	SOU	M/s. Gate Gourmet India Pvt. Ltd.	S	Granted - 23/02/2015
1308	SOU	M/s Stanley Engineering Works	S	Granted - 23/02/2015
1309	SOU	M/s Vailankanni Fabrications	S	Granted - 23/02/2015
1310	SOU	M/s O'Cuzinero	S	Granted - 23/02/2015
1311	NOR	M/s Gaonkar Chemicals	S	Granted - 23/02/2015
1312	NOR	M/s Compact Cement Products	S	Granted - 23/02/2015
1313	SOU	M/s Angela Bar & Restaurant	S	Granted - 23/02/2015
1314	NOR	M/s Om Shack (Vasudev Calangutkar)	S	Granted - 23/02/2015
1315	NOR	M/s Zanzibar Beach Shack (Raymond Fernandes)	S	Granted - 23/02/2015
1316	NOR	M/s Sol Cables	S	Granted - 23/02/2015
1317	NOR	M/s Shri Ganesh Indian Industries	S	Granted - 23/02/2015
1318	NOR	M/s Hotel Gopika International	S	Granted - 23/02/2015
1319	NOR	M/s Raj Industries	S	Granted - 23/02/2015
1320	NOR	M/s Ondas Do Mar Resort	S	Granted - 23/02/2015
1321	SOU	M/s Bharat Conductors Pvt. Ltd.	S	Granted - 23/02/2015
1322	SOU	M/s Hindustan Coca-Cola Beverages Pvt Ltd.	L	Granted - 23/02/2015
1323	SOU	M/s Prestige Holiday Resorts Pvt Ltd (Royal Palms)	L	Granted - 23/02/2015
1324	NOR	M/s Alex Traveller Beach Shack (Severino Fernandes)	S	Granted - 23/02/2015
1325	SOU	M/s Ion Exchange (India) Ltd.	L	Granted - 04/03/2015
1326	NOR	M/s Samraat Marine Services	S	Granted - 04/03/2015
1327	SOU	M/s Brothers Bakery	S	Granted - 04/03/2015
1328	SOU	M/s Cota Industries	S	Granted - 04/03/2015
1329	SOU	M/s Matrix Cement Blocks	S	Granted - 08/03/2015
1330	SOU	M/s Fernandes Engineering Works	S	Granted - 08/03/2015
1331	NOR	M/s Lucky Star Beach Shack (Joao Xavier Fernandes)	S	Granted - 08/03/2015
1332	NOR	M/s Julma Guest House	S	Granted - 08/03/2015
1333	NOR	M/s Yovkar Mini Hotel	S	Granted - 08/03/2015
1334	SOU	M/s Cafe Riz	S	Granted - 08/03/2015
1335	SOU	M/s Supreme Industry	S	Granted - 08/03/2015
1336	SOU	M/s Fomento Resources Pvt Ltd	S	Granted - 08/03/2015
1337	SOU	M/s St Jose Wood Works	S	Granted - 08/03/2015
1338	SOU	M/s Remedios Bakery	S	Granted - 08/03/2015
1339	SOU	M/s Lezica Auto Service Centre	S	Granted - 08/03/2015
1340	SOU	M/s Nicholas & Sons Engineering Works	S	Granted - 08/03/2015
1341	SOU	M/s Suringi Rubbers	S	Granted - 08/03/2015
1342	SOU	M/s Agnelo Furniture Works	S	Granted - 08/03/2015
1343	SOU	M/s Costa & Co Pvt Ltd	S	Granted - 08/03/2015

1344	NOR	M/s Desai Earthmovers	S	Granted - 08/03/2015
1345	SOU	M/s Berth No.9 Of Mormugao Port Trust	L	Granted - 08/03/2015
1346	SOU	M/s Zuari Industries	L	Granted - 08/03/2015
1347	NOR	M/s Sesa Sterlite Ltd. (Pig Iron Division)	L	Granted - 08/03/2015
1348	NOR	M/s Cgppi Adhesive Products Ltd	L	Granted - 08/03/2015
1349	NOR	M/s Sesa Goa Limited Ship Building Division	L	Granted - 08/03/2015
1350	NOR	M/s Balaji Metals	S	Granted - 08/03/2015
1351	NOR	M/s Yash Enterprises (Unit-iii )	S	Granted - 09/03/2015
1352	NOR	M/s Highland Holiday Homes (Goa) Pvt. Ltd	S	Granted - 09/03/2015
1353	SOU	M/s Dorellis Agro Home Industries	S	Granted - 09/03/2015
1354	SOU	M/s Anto Engineering Services	S	Granted - 09/03/2015
1355	NOR	Ms Syngenta Bioscience Pvt. Ltd.	L	Granted - 09/03/2015
1356	NOR	Mystical Polycontainers Pvt Ltd.	S	Granted - 09/03/2015
1357	SOU	M/s Prabhakar R. Raut	S	Granted - 09/03/2015
1358	SOU	M/s Benjoe Drinks	S	Granted - 09/03/2015
1359	SOU	M/s Goa Guest House	S	Granted - 09/03/2015
1360	SOU	M/s Prakash Engineering Industries	S	Granted - 09/03/2015
1361	SOU	M/s Pinto Cottages	S	Granted - 09/03/2015
1362	SOU	M/s Vishwanath Saw Mill	S	Granted - 09/03/2015
1363	SOU	M/s Car Care Centre	S	Granted - 09/03/2015
1364	NOR	M/s Aranya Centre	S	Granted - 09/03/2015
1365	NOR	M/s Eme Automation	S	Granted - 09/03/2015
1366	SOU	M/s Pam Synthetics	S	Granted - 09/03/2015
1367	SOU	M/s Western Marine & Engg. Services Pvt. Ltd.	S	Granted - 09/03/2015
1368	NOR	M/s Eva's Ark Guesthouse	S	Granted - 09/03/2015
1369	NOR	M/s Joe Louie Beach Shack (Francis Fernandes)	S	Granted - 09/03/2015
1370	SOU	M/s Seagull Inn	S	Granted - 09/03/2015
1371	NOR	M/s Good Luck Beach Cafe (Mark Fernandes)	S	Granted - 09/03/2015
1372	NOR	M/s Sam's Beach Shack (Nicholas Fernandes)	S	Granted - 09/03/2015
1373	NOR	M/s Andrews Beach Cafe (Anthony Fernandes)	S	Granted - 09/03/2015
1374	SOU	M/s Kishan Auto Engineering	L	Granted - 10/03/2015
1375	SOU	M/s Goa Industrial Tapes Pvt.Ltd	S	Granted - 11/03/2015
1376	SOU	M/s Fomento Resources Pvt Ltd	S	Granted - 11/03/2015
1377	SOU	M/s Sunset Paradise	S	Granted - 11/03/2015
1378	SOU	M/s Dr. Sagar's Ayurveda Clinic	S	Granted - 11/03/2015
1379	SOU	M/s Dr. Sagar's Ayurveda Clinic	S	Granted - 11/03/2015
1380	SOU	M/s Himalaya Ice Cream Factory	S	Granted - 11/03/2015
1381	NOR	M/s Kalika Fabrication	S	Granted - 11/03/2015
1382	SOU	M/s Copse Wood Villa & Cafe	S	Granted - 11/03/2015
1383	NOR	M/s Aquarius Fibreglas Pvt Ltd	S	Granted - 11/03/2015
1384	NOR	M/s V. M. Salgaocar & Bro. Pvt. Ltd. ( Dry Screening Plant & Loading Facility )	S	Granted - 11/03/2015
1385	NOR	M/s V. M. Salgaocar & Bro. Pvt. Ltd. ( Ore Loading Facility - Vagus )	S	Granted - 11/03/2015
1386	NOR	M/s Glenmark Genercis Limited (Plant I)	L	Granted - 11/03/2015

1387	NOR	M/s Arvind Organics	S	Granted - 11/03/2015
1388	NOR	M/s Dempo Shipbuilding & Engineering Pvt. Ltd.	L	Granted - 11/03/2015
1389	NOR	M/s North Shore Hotels	S	Granted - 11/03/2015
1390	SOU	M/s Pg Holiday Inn Private Limited	S	Granted - 11/03/2015
1391	SOU	M/s Vishwa Saraswati Society (Hotel Management Institute)	S	Granted - 11/03/2015
1392	NOR	M/s Amit Capacitors Ltd	S	Granted - 11/03/2015
1393	SOU	M/s Dura-Line India Pvt. Ltd.	L	Granted - 11/03/2015
1394	NOR	M/s Golden Peace Infrastructure Pvt. Ltd. (M.V. Boa Sorte)	L	Granted - 11/03/2015
1395	SOU	M/s Braganza Auto Works	S	Granted - 11/03/2015
1396	SOU	M/s Anil Metals	S	Granted - 11/03/2015
1397	SOU	M/s Zeolites & Allied Products Pvt. Ltd.	S	Granted - 11/03/2015
1398	NOR	M/s Goa Steels Ltd.	S	Granted - 11/03/2015
1399	NOR	M/s Buddha Bar Beach Shack(Caetano Fernandes)	S	Granted - 11/03/2015
1400	NOR	M/s Cafe Delmar(Agostinho Mascarenhas)	S	Granted - 11/03/2015
1401	NOR	M/s Fawly Towers (Luis Silveira)	S	Granted - 11/03/2015
1402	NOR	M/s Jolly Jack Shack(Sabastiao D' souza)	S	Granted - 11/03/2015
1403	NOR	M/s Cafe Roma(Anthony Fernandes)	S	Granted - 11/03/2015
1404	NOR	M/s Fontana Splash Shack (Felix Lobo)	S	Granted - 11/03/2015
1405	NOR	M/s Cho-Co Marie Beach Shack(Ludgero Muclar)	S	Granted - 11/03/2015
1406	NOR	M/s Fishermen's Paradise(Anthony Fernandes)	S	Granted - 11/03/2015
1407	SOU	M/s Gen Engineering Works	S	Granted - 11/03/2015
1408	NOR	M/s Veljee Automobiles	S	Granted - 11/03/2015
1409	SOU	M/s Antonio & Luizinha Residence	S	Granted - 11/03/2015
1410	SOU	M/s Neomis Hair & Beauty Salon	S	Granted - 11/03/2015
1411	SOU	M/s Durwankur Mechanical Works Pvt. Ltd.	S	Granted - 11/03/2015
1412	NOR	M/s Casa Nunes	S	Granted - 11/03/2015
1413	NOR	M/s Goodwill Enterprises	S	Granted - 11/03/2015
1414	SOU	M/s Sociedade De Fomento Industrial Pvt. Ltd	L	Granted - 11/03/2015
1415	NOR	M/s Shivam Ispat Pvt. Ltd.	S	Granted - 11/03/2015
1416	SOU	M/s X L Stone Crusher	S	Granted - 11/03/2015
1417	NOR	M/s Sea Homes	S	Granted - 11/03/2015
1418	SOU	M/s Pegasus Prima Products (India) Pvt Ltd	S	Granted - 11/03/2015
1419	SOU	M/s Kamaxi Industries Unit II	S	Granted - 11/03/2015
1420	NOR	M/s Cavala Hotels Pvt. Ltd	S	Granted - 11/03/2015
1421	NOR	M/s Yash Resorts(Kay Jay Construction Co.Pvt. Ltd)	S	Granted - 11/03/2015
1422	NOR	M/s Sesa Sterlite Ltd. (Coke Oven Plant Unit-Expansion)	L	Granted - 11/03/2015
1423	SOU	M/s Hotel Pedro Bab	S	Granted - 11/03/2015
1424	SOU	M/s South West Port Ltd. (Berth No. 5a & 6a)	L	Granted - 11/03/2015
1425	SOU	M/s Rukminirama Steel Rollings Pvt. Limited	S	Granted - 11/03/2015
1426	SOU	M/s Wyeth Limited	L	Granted - 11/03/2015
1427	NOR	M/s Vic Industries.,	S	Granted - 11/03/2015
1428	NOR	M/s Sesa Sterlite Ltd. (Pig Iron Division)	L	Granted - 11/03/2015
1429	NOR	M/s Mandovi Casting Pvt Ltd	S	Granted - 11/03/2015

1430	SOU	M/s Manuel Da Costa (Basalt - "4\basalt\89")	S	Granted - 11/03/2015
1431	SOU	M/s Manuel Da Costa (Basalt - "5\basalt\89")	S	Granted - 11/03/2015
1432	SOU	M/s Nickytasha's Shack	S	Granted - 11/03/2015
1433	NOR	M/s Sky Lark Beach Cafe (Caciana Fernandes)	S	Granted - 11/03/2015
1434	NOR	M/s The Big Banana Beach Shack (Francisco Lobo)	S	Granted - 11/03/2015
1435	NOR	M/s Shining Star (Alex Fernandes)	S	Granted - 11/03/2015
1436	NOR	M/s T.G.I Friday (Francisco Fernandes)	S	Granted - 11/03/2015
1437	NOR	M/s Squeeze Beach Cafe (Xavier Lobo)	S	Granted - 11/03/2015
1438	NOR	M/s Safil's Beach Shack (Maria Luisa Fernandes)	S	Granted - 11/03/2015
1439	NOR	M/s The Only Place (Anthony Fernandes)	S	Granted - 11/03/2015
1440	NOR	M/s Shri Siddhivinayak Ayurveda Panchakarma Clinic	S	Granted - 11/03/2015
1441	SOU	M/s Hind Kliffen Meta Craft	S	Granted - 11/03/2015
1442	NOR	M/s Sieves Pharma	S	Granted - 11/03/2015
1443	NOR	M/s Casa Esmeralda	S	Granted - 11/03/2015
1444	NOR	M/s Ashwini Pharmaceuticals	S	Granted - 11/03/2015
1445	SOU	M/s Costa Chari	S	Granted - 11/03/2015
1446	NOR	M/s Hidden Paradise	S	Granted - 11/03/2015
1447	SOU	M/s Spectrum	S	Granted - 11/03/2015
1448	NOR	M/s Terry's Restaurant & Pub	S	Granted - 11/03/2015
1449	SOU	M/s Sagar Printing Press	S	Granted - 11/03/2015
1450	SOU	M/s Saukar Freezers	S	Granted - 11/03/2015
1451	SOU	M/s Sunway Bar & Restuarant	S	Granted - 11/03/2015
1452	NOR	M/s Sun City Resort	S	Granted - 11/03/2015
1453	SOU	M/s Prahlad Saw Mill	S	Granted - 11/03/2015
1454	SOU	M/s Greg Engineering Industries	S	Granted - 11/03/2015
1455	NOR	M/s Delboy's Cafe Beach Shack(Caitan Mascarenhas)	S	Granted - 11/03/2015
1456	NOR	M/s Johny's Sand Dune Beach Shack(John Silveira)	S	Granted - 11/03/2015
1457	NOR	M/s United Breweries Ltd.	M	Granted - 12/03/2015
1458	NOR	M/s S. K. Bakery	S	Granted - 12/03/2015
1459	NOR	M/s Prafula Beach Shack(Prafulla Mayekar)	S	Granted - 19/03/2015
1460	NOR	M/s Oceanic Blue Shack (Nicholas Lobo)	S	Granted - 19/03/2015
1461	NOR	M/s Sea Pearl Beach Shack(Rosario D'souza)	S	Granted - 19/03/2015
1462	NOR	M/s Simon's Place	S	Granted - 19/03/2015
1463	NOR	M/s Buckingham Beach Cafe (Vivek Simepurushkar)	S	Granted - 19/03/2015
1464	NOR	M/s Lario's Beach Shack (Jose Mario D'souza)	S	Granted - 19/03/2015
1465	NOR	M/s Sameer Laxmikant Kalangutkar	S	Granted - 19/03/2015
1466	NOR	M/s Sea Spray(Vin1487cent Silveira)	S	Granted - 19/03/2015
1467	NOR	M/s Sea Horse Beach S1488hack (Domnic Mascarenhas)1489	S	Granted - 19/03/2015
1468	NOR	M/s Reggies Cafe(Savio Fernandes)	S	Granted - 19/03/2015
1469	NOR	M/s Westfield Hydraulics & Pneumatics	S	Granted - 19/03/2015
1470	NOR	M/s House Of Furniture Makers	S	Granted - 19/03/2015
1471	SOU	M/s Ramesh Hotels & Resorts Private Ltd.	L	Granted - 19/03/2015
1472	NOR	M/s Desai Cashew & Allied Products	S	Granted - 19/03/2015

1473	SOU	M/s Zuari Foods & Farms Pvt. Ltd.	S	Granted - 19/03/2015
1474	NOR	M/s Summerville Beach Resort	S	Granted - 19/03/2015
1475	NOR	M/s Esperanca Rodrigues	S	Granted - 19/03/2015
1476	NOR	M/s Ameya Cashew Industries	S	Granted - 19/03/2015
1477	NOR	M/s Chandrakant Garage	S	Granted - 19/03/2015
1478	NOR	M/s Srisan Bar & Restaurant	S	Granted - 19/03/2015
1479	NOR	M/s Susheela Palace	S	Granted - 19/03/2015
1480	NOR	M/s Nerys Rose Beach Shack (Rosalina Lobo)	S	Granted - 19/03/2015
1481	NOR	M/s Marine Beach Shack (Alex Fernandes)	S	Granted - 19/03/2015
1482	NOR	M/s Le Marin Beach Shack (Sebastiana Fernandes)	S	Granted - 19/03/2015
1483	NOR	M/s Coco Joe Beach Cafe (Joaquim Lobo)	S	Granted - 19/03/2015
1484	NOR	M/s Bobby's Shack (Vinayak Calangutkar)	S	Granted - 19/03/2015
1485	NOR	M/s Star Agro Products	S	Granted - 19/03/2015
1496	NOR	M/s Sesa Goa Ltd. (Amona Barge Loading Jetty)	S	Granted - 19/03/2015
1487	SOU	M/s The Indian Hotels Co. Ltd. Unit: Taj Exotica, Goa	S	Granted - 19/03/2015
1488	SOU	M/s Bogmallo Beach Resort	M	Granted - 19/03/2015
1489	NOR	M/s Sea Wave Inn Hotel	S	Granted - 19/03/2015
1490	NOR	M/s. Santana Beach Resort,	S	Granted - 19/03/2015
1491	SOU	M/s Khamamol Jetty, Sesa Resources Limited	S	Granted - 23/03/2015
1492	NOR	M/s Sun Village	S	Granted - 23/03/2015
1493	NOR	M/s Structures India	L	Granted - 23/03/2015
1494	SOU	M/s Rukminirama Steel Rollings Pvt Ltd Bricks Division Unit Iv	S	Granted - 23/03/2015
1495	SOU	M/s Cipla Ltd	L	Granted - 23/03/2015
1496	NOR	M/s Vassudeva Tamba Metal Quarry	L	Granted - 23/03/2015
1497	NOR	M/s Themepark Design House	S	Granted - 23/03/2015
1498	NOR	M/s Kundil Alloys Pvt Limited	M	Granted - 23/03/2015
1499	SOU	M/s Shraddha Ispat Pvt. Ltd. (Meelting Division)	L	Granted - 23/03/2015
1500	NOR	M/s V.M. Salgaocar And Brother Private Limited-Hotel Division, Goa Marriott Resort	L	Granted - 23/03/2015
1501	NOR	M/s Sociedade De Fomento Industrial Pvt. Ltd.	S	Granted - 23/03/2015
1502	SOU	M/s Shantadurga Industries	S	Granted - 23/03/2015
1503	NOR	M/s Rmc Readymix (India) (A Division Of Prism Cement Limited)	S	Granted - 23/03/2015
1504	SOU	M/s Rocha Industries	S	Granted - 23/03/2015
1505	SOU	M/s Furtado's Guest House	S	Granted - 23/03/2015
1506	SOU	M/s Jomilla Guest House	S	Granted - 23/03/2015
1507	SOU	M/s Maratha Ice Factory	S	Granted - 23/03/2015
1508	SOU	M/s Goa Auto Reconditioners	S	Granted - 23/03/2015
1509	SOU	M/s Traditional Ayurvedic Massage & Spa	S	Granted - 23/03/2015
1510	SOU	M/s Physiotherapeutics	S	Granted - 23/03/2015
1511	SOU	M/s Costa Electronics	S	Granted - 23/03/2015
1512	SOU	M/s Dudhsagar Spa Resort	S	Granted - 23/03/2015
1513	SOU	M/s The Stylish Cut Salon	S	Granted - 23/03/2015
1514	NOR	M/s Timber Trail Travel Today Pvt. Ltd.	L	Granted - 23/03/2015

1515	NOR	M/s Shamsunder Garage	S	Granted - 23/03/2015
1516	SOU	M/s Lubricare Services	S	Granted - 23/03/2015
1517	NOR	M/s Tom's Place (Cruz Mascarenhas)	S	Granted - 23/03/2015
1518	NOR	M/s Twinkling Star Beach Shack(Simao Fernandes)	S	Granted - 23/03/2015
1519	NOR	M/s Tropicana Beach Shack(Rosalina D'souza)	S	Granted - 23/03/2015
1520	NOR	M/s Shapoorji Pallonji & Co. Pvt. Ltd.	S	Granted - 23/03/2015
1521	SOU	M/s Macc Fabricators	S	Granted - 25/03/2015
1522	SOU	M/s Nancy's Place	S	Granted - 25/03/2015
1523	SOU	M/s Arthur Serrao Rice Mill	S	Granted - 25/03/2015
1524	NOR	M/s Pisces Engineering Works	S	Granted - 25/03/2015
1525	SOU	M/s Cipla Ltd	L	Granted - 25/03/2015
1526	SOU	M/s Nanutel-Margao	S	Granted - 25/03/2015
1527	SOU	M/s Macc Fabricators	S	Granted - 25/03/2015
1528	SOU	M/s Nancy's Place	S	Granted - 25/03/2015
1529	SOU	M/s Arthur Serrao Rice Mill	S	Granted - 25/03/2015
1530	NOR	M/s Pisces Engineering Works	S	Granted - 25/03/2015
1531	SOU	M/s Cipla Ltd	L	Granted - 25/03/2015
1532	SOU	M/s Nanutel-Margao	S	Granted - 25/03/2015
1533	SOU	M/s Cocomar Beach Resorts Pvt.Limited	L	Granted - 26/03/2015
1534	NOR	M/s Ticlo Resorts	S	Granted - 26/03/2015
1535	NOR	M/s Lotus Mama(Luis Fernandes)	S	Granted - 26/03/2015
1536	SOU	M/s Cocomar Beach Resorts Pvt.Limited	L	Granted - 26/03/2015
1537	NOR	M/s Ticlo Resorts	S	Granted - 26/03/2015
1538	NOR	M/s. Lotus Mama(Luis Fernandes)	S	Granted - 26/03/2015

**ANNEXURE II B**

**LIST OF APPLICATIONS FOR CONSENTS TO ESTABLISH (CCE) UNDER WATER (PREVENTION & CONTROL OF POLLUTION) ACT, 1974 AND AIR (PREVENTION & CONTROL OF POLLUTION) ACT, 1981 BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES, 1998 AND HAZARDOUS WASTE (MANAGEMENT & HANDLING) (AMENDMENT) RULES, 2000 PROCESSED AND APPROVED BY THE BOARD DURING THE YEAR 2014-2015.**

Sr.no	District	Industry Name	Category of Industry	Status
1	NOR	M/s. A W Faber-Castell (I) Pvt Ltd	S	Granted - 23/04/2014
2	NOR	M/s. Palmyra Resorts Pvt Ltd	L	Granted - 24/04/2014
3	SOU	M/s Anand Chandra Bose	L	Granted - 24/04/2014
4	NOR	M/s. Power Engineering (India) Pvt Ltd	S	Granted - 24/04/2014
5	NOR	M/s. Raj Fabrications	S	Granted - 25/04/2014
6	NOR	M/s Lavande Properties	L	Granted - 25/04/2014
7	NOR	M/s. Mahadev Saw Mill	S	Granted - 25/04/2014
8	NOR	M/s Shri Shiv Samarth Motors	S	Granted - 25/04/2014
9	NOR	M/s. Velvin Paper Products	M	Granted - 25/04/2014
10	SOU	M/s. Zuari Agro Chemicals Limited	L	Granted - 25/04/2014
11	SOU	M/s. Trinitas Developers Pvt. Ltd.	S	Granted - 29/04/2014
12	NOR	M/s. Alpine Minmetals India Pvt. Ltd.	L	Granted - 29/04/2014
13	SOU	M/s. Indian Oil Corporation Limited	L	Granted - 29/04/2014
14	NOR	M/s Goa Quarry	S	Granted - 30/04/2014
15	NOR	M/s. Department Of Science, Technology & Environment (Calangute)saligao)	L	Granted - 30/04/2014
16	NOR	M/s. Leading Hotels Limited	L	Granted - 30/04/2014
17	NOR	M/s. Cosme Costa's Miramar Hotel	L	Granted - 21/05/2014
18	NOR	M/s. Pandurang Transport	S	Granted - 21/05/2014
19	NOR	M/s Sonatapes	M	Granted - 21/05/2014
20	NOR	M/s. Npd Enterprises	S	Granted - 21/05/2014
21	NOR	M/s. Pushkaraj Enterprises	S	Granted - 21/05/2014
22	NOR	M/s. Ellenabad Steels Pvt Ltd	S	Granted - 22/05/2014
23	SOU	M/s. Himachal Futuristic Communications Ltd	L	Granted - 22/05/2014
24	SOU	M/s. Cipla Ltd	L	Granted - 22/05/2014
25	NOR	M/s. Sharvet Containers & Logistics (Goa) Pvt Ltd	S	Granted - 22/05/2014
26	NOR	M/s Rainbow Plast	S	Granted - 22/05/2014
27	SOU	M/s. Riteway Packing Industries	S	Granted - 22/05/2014
28	SOU	M/s. Steve P-Air Solutions	S	Granted - 22/05/2014
29	NOR	M/s. Suraksha Packaging	S	Granted - 22/05/2014
30	NOR	M/s Mangalam Build Developers Limited	S	Granted - 22/05/2014
31	NOR	M/s. Devashri Real Estate Developers	S	Granted - 22/05/2014
32	NOR	M/s. Mountain Himalaya Beverages	S	Granted - 22/05/2014
33	NOR	M/s. Mohit Steel Industries Pvt Ltd (Unit II)	S	Granted - 22/05/2014
34	NOR	M/s. The Sea Side	S	Granted - 22/05/2014
35	SOU	M/s. Dci Pharmaceuticals Pvt Ltd	S	Granted - 22/05/2014

36	NOR	M/s. Sms Fabrication	S	Granted - 22/05/2014
37	SOU	M/s D. P. Chemicals & Aromatics Unit II	S	Granted - 22/05/2014
38	NOR	M/s. Villa De Goa	S	Granted - 28/05/2014
39	NOR	M/s. Chakki Of Spices, Chillies And Flour Mill	S	Granted - 18/06/2014
40	NOR	M/s. Casa Tropical , Guest House	M	Granted - 18/06/2014
41	NOR	M/s Bharti Block Supplier	S	Granted - 18/06/2014
42	NOR	M/s Heramb Industries	S	Granted - 18/06/2014
43	NOR	M/s. Abdul Sattar Chowhand & Kafil Ahmed Chowhan (Hindustan Serene Hills)	S	Granted - 18/06/2014
44	NOR	M/s. Monarch Enterprises	S	Granted - 18/06/2014
45	NOR	M/s. New Vision Imaging Pvt Ltd	M	Granted - 18/06/2014
46	NOR	S.T.P For Toilet At Calangute	S	Granted - 18/06/2014
47	SOU	M/s. Niclau's Dismantling, Assembling, Repairing Vehicles	S	Granted - 18/06/2014
48	NOR	M/s. M.V.Casino Royale	S	Granted - 18/06/2014
49	NOR	M/s. Parekh Recycling	S	Granted - 26/06/2014
50	SOU	M/s. Saaj Plastics	S	Granted - 26/06/2014
51	NOR	M/s. Casmiro James Vincent Albuquerque (The Grand Leoney Resort)	S	Granted - 26/06/2014
52	SOU	M/s Mbr Cement Blocks & Bricks	S	Granted - 03/07/2014
53	NOR	M/s. Shelley Gonsalves	S	Granted - 03/07/2014
54	SOU	M/s. Dunmar Formations India Pvt Ltd.	S	Granted - 03/07/2014
55	NOR	M/s. Mahalasa Technocoats	S	Granted - 04/07/2014
56	SOU	M/s Gafur Enterprises	S	Granted - 04/07/2014
57	NOR	M/s. D' Interiors	S	Granted - 14/07/2014
58	NOR	M/s. Bhumika Petroleum	S	Granted - 15/07/2014
59	SOU	M/s. Rashtriya Fabtech	S	Granted - 15/07/2014
60	SOU	M/s. Reliance Infrastructure Ltd,Goa Power Station	L	Granted - 15/07/2014
61	NOR	M/s. Civilco Engineers & Associates	M	Granted - 15/07/2014
62	NOR	M/s Marvel	M	Granted - 15/07/2014
63	SOU	M/s. Excell Devices	S	Granted - 15/07/2014
64	SOU	M/s. Kartikey Metachem	S	Granted - 17/07/2014
65	NOR	M/s. Urban Concept (Palmar Don Filipe)	S	Granted - 17/07/2014
66	NOR	M/s. Intech Pharma P Ltd	L	Granted - 17/07/2014
67	SOU	M/s Corporate Alliances	S	Granted - 25/07/2014
68	NOR	M/s. Gsidc Project No - 956 (Jetty, Kala Academy)	L	Granted - 25/07/2014
69	SOU	M/s. Universal Cables Ltd	S	Granted - 05/08/2014
70	NOR	M/s. Standard Epoxy Materials	S	Granted - 05/08/2014
71	SOU	M/s. Veneshell Industries	S	Granted - 05/08/2014
72	NOR	M/s. Aerocoach Unit V	S	Granted - 05/08/2014
73	SOU	M/s. Divyashree Packaging Industry	S	Granted - 05/08/2014
74	SOU	M/s. Reliant Packaging	S	Granted - 05/08/2014
75	NOR	M/s. Tulip Diagnostics (P) Ltd.	S	Granted - 07/08/2014
76	SOU	Department Of Tourism (Viewing Tower Near Colva Beach)	S	Granted - 08/08/2014
77	NOR	M/s D Domlo's Furniture	S	Granted - 11/08/2014

78	SOU	M/s. Goa Shipyard Limited	L	Granted - 14/08/2014
79	NOR	M/s. Blossom Pharmaceuticals	S	Granted - 14/08/2014
80	SOU	M/s Competent Automobiles Company Ltd.	L	Granted - 14/08/2014
81	NOR	M/s. V. S. Dempo Holding Pvt Ltd	S	Granted - 14/08/2014
82	NOR	M/s. Hindustan Petroleum Corporation Limited	M	Granted - 21/08/2014
83	NOR	M/s. Esteem Industries Pvt. Ltd.,	S	Granted - 21/08/2014-RCN
84	NOR	M/s. Fomento Resorts Hotels Ltd. (Cidade De Goa)	L	Granted - 21/08/2014
85	NOR	M/s Sateri Metal	S	Granted - 21/08/2014
86	SOU	M/s Ordain Health Care Global Pvt Ltd	L	Granted - 21/08/2014
87	SOU	M/s. Fertin India Pvt Ltd	L	Granted - 21/08/2014
88	SOU	M/s. Spin City Laundry	S	Granted - 21/08/2014
89	NOR	M/s. Kaanak Industries	M	Granted - 21/08/2014
90	NOR	M/s. Tulip Diagnostics (P) Ltd.	S	Granted - 21/08/2014
91	NOR	M/s Jayashree Industries	S	Granted - 21/08/2014
92	NOR	M/s. Montana Confectioners Private Limited	S	Granted - 21/08/2014
93	NOR	M/s. Navelkar Landmarks	S	Granted - 21/08/2014
94	NOR	M/s. Churi Electromech Unit li	S	Granted - 15/09/2014
95	SOU	M/s. Cipla Ltd	L	Granted - 15/09/2014
96	NOR	M/s. Asce Services	S	Granted - 16/09/2014
97	NOR	M/s. Asce Services	S	Granted - 16/09/2014
98	NOR	M/s. Goa Ispat Ltd.	L	Granted - 29/09/2014
99	NOR	M/s. Procter & Gamble Hygiene & Health Care Ltd.	L	Granted - 15/10/2014
100	NOR	M/s. Esteem Industries Pvt. Ltd.,	S	Granted - 15/10/2014
101	SOU	M/s. Cipla Ltd	L	Granted - 15/10/2014
102	NOR	M/s. Associate Florencio	S	Granted - 15/10/2014
103	SOU	M/s. Pentair Water India Pvt. Ltd.	S	Granted - 15/10/2014
104	NOR	M/s. Sai Jyoti Distributors	S	Granted - 15/10/2014
105	NOR	M/s. Sahanu Rolling Mills	S	Granted - 15/10/2014
106	SOU	M/s. Rukminirama Steel Rollings Pvt. Limited	S	Granted - 20/10/2014
107	NOR	M/s. Golden Packaging Industry	S	Granted - 20/10/2014
108	NOR	M/s. Sr Pulses	S	Granted - 20/10/2014
109	NOR	M/s Standard Packaging Industries	S	Granted - 20/10/2014
110	NOR	M/s Supreme Packaging	S	Granted - 20/10/2014
111	SOU	M/s. Mabpharm Private Limited	L	Granted - 21/10/2014
112	SOU	M/s. Lok-Beta Pharmaceuticals (I)pvt.Ltd.	L	Granted - 21/10/2014
113	NOR	M/s. Encube Ethicals Pvt Ltd	L	Granted - 21/10/2014
114	NOR	M/s. Diebold Systems Pvt. Ltd.	S	Granted - 21/10/2014
115	NOR	M/s. Shamsunder Garage	S	Granted - 21/10/2014
116	NOR	M/s. Naiks Eco Bricks	S	Granted - 21/10/2014
117	SOU	M/s. Martin Chemicals Pvt. Ltd.	S	Granted - 21/10/2014
118	SOU	M/s. Classic Enterprises	S	Granted - 21/10/2014
119	SOU	M/s. Astra Metal Systems Pvt Ltd Unit II	S	Granted - 24/10/2014
120	SOU	M/s. Gelo Cool Equipments Pvt Ltd	S	Granted - 24/10/2014

121	NOR	M/s Vaibhav Real Estate & Madanant Construction Goa (Khadpabandh Gaeden)	L	Granted - 24/10/2014
122	NOR	M/s Ecotech Project Pvt Ltd (Hotel Abhishek)	M	Granted - 24/10/2014
123	SOU	M/s Shree Mahamaya Service Station	S	Granted - 24/10/2014
124	SOU	M/s Business India	S	Granted - 24/10/2014
125	SOU	M/s. Britacel Silicones Ltd.	S	Granted - 27/10/2014
126	SOU	M/s. South West Port Ltd. (Berth No. 5a & 6a)	L	Granted - 05/11/2014
127	SOU	M/s. Sree Sai Champions Family Trust	M	Granted - 05/11/2014
128	NOR	M/s. Larsen & Toubro (Batching Plant for Mandovi River Cable Stay Project)	S	Granted - 05/11/2014
129	SOU	M/s. Ms Muktar Infrastructure (India) Pvt. Ltd.	L	Granted - 05/11/2014
130	NOR	M/s. Assis Light And Sound	S	Granted - 11/11/2014
131	SOU	M/s. Damodar Associates	S	Granted - 11/11/2014
132	NOR	M/s. Goa Steels Ltd.	S	Granted - 11/11/2014
133	NOR	M/s. Yash Mould	S	Granted - 17/11/2014
134	SOU	M/s. Jindal Eco Recycling	S	Granted - 27/11/2014
135	NOR	M/s. Shree Ram Mega Structure Pvt Ltd	S	Granted - 02/12/2014
136	SOU	M/s. Bosch Limited	S	Granted - 02/12/2014
137	NOR	M/s. Champions Yatch Club Pvt Ltd	S	Granted - 02/12/2014
138	NOR	M/s. Prime Paper Products	S	Granted - 02/12/2014
139	NOR	M/s. Chintamani Realtors & Chintamani Promoters	S	Granted - 05/12/2014
140	NOR	M/s. Chintamani Realtors & Promoters	S	Granted - 05/12/2014
141	NOR	M/s. Chintamani Realtors & Promoters	S	Granted - 05/12/2014
142	NOR	M/s. Bhovanso Guest House	S	Granted - 05/12/2014
143	NOR	M/s. Hotel Project Of Santosh B. Naik	M	Granted - 05/12/2014
144	NOR	M/s. Chintamani Promoters	S	Granted - 05/12/2014
145	NOR	M/s Twenty First Century Iron & Steel Ltd	L	Granted - 05/12/2014
146	SOU	M/s Albys Agro Private Limited	L	Granted - 11/12/2014
147	SOU	M/s. Rego Food Products	S	Granted - 11/12/2014
148	SOU	M/s. Esmeralda Metals	S	Granted - 11/12/2014
149	NOR	M/s Anjuna Greens Llp	S	Granted - 17/12/2014
150	NOR	M/s. Unichem Laboratories Limited	L	Granted - 08/01/2015
151	SOU	M/s. Cipla Ltd	L	Granted - 12/01/2015
152	NOR	M/s. Polynova Industries Ltd	L	Granted - 12/01/2015
153	SOU	M/s. Powerland Agro Tractor Vehicles Pvt Ltd	S	Granted - 12/01/2015
154	NOR	M/s. Caculo Motors Pvt Ltd	S	Granted - 12/01/2015
155	NOR	M/s. De Nora India Limited	L	Granted - 24/01/2015
156	NOR	M/s. Daril Bakery & General Stores	S	Granted - 24/01/2015
157	SOU	M/s. Fette Compacting Machinery India Pvt Ltd	M	Granted - 24/01/2015
158	SOU	M/s. Santosh Flour Mill	S	Granted - 26/01/2015
159	NOR	M/s. Larsen & Toubro (Batching Plant For Mandovi River Cable Stay Project)	S	Granted - 26/01/2015
160	SOU	M/s. Ceramtec India Innovative Ceramic Engineering Pvt Ltd	L	Granted - 26/01/2015
161	NOR	M/s. Counto Metals & Mining Co. Ltd.	S	Granted - 26/01/2015
162	NOR	M/s. Sai Jyoti Distributors	S	Granted - 30/01/2015

163	NOR	Department Of Tourism (Institute Of Hotel Management & Catering Technology)	L	Granted - 30/01/2015
164	SOU	M/s. Universal Cables Ltd	S	Granted - 30/01/2015
165	NOR	M/s. Metal Kraft	S	Granted - 30/01/2015
166	SOU	M/s. Putzmeister Concrete Machines Pvt. Ltd.,	L	Granted - 11/02/2015
167	SOU	M/s. Tevapharm India Pvt. Ltd.	L	Granted - 11/02/2015
168	NOR	M/s. Shree Naina Containers Pvt.Ltd.	M	Granted - 11/02/2015
169	NOR	M/s. Lifestyle Reality & FHL Landbase Pvt Ltd	S	Granted - 11/02/2015
170	NOR	M/s South India Cashew Corporation	S	Granted - 11/02/2015
171	SOU	M/s. Noorudheen Construction Pvt Ltd	S	Granted - 11/02/2015
172	NOR	M/s. Rural Health Center (Rhc) Mandur	L	Granted - 11/02/2015
173	SOU	M/s. Joecons Enterprises	S	Granted - 11/02/2015
174	NOR	M/s. Kenkre Estates	S	Granted - 11/02/2015
175	NOR	M/s Ashok Marble & Granite	S	Granted - 11/02/2015
176	NOR	M/s. Sharayu One (Hotel, Commercial & Residential Complex)	S	Granted - 23/02/2015
177	SOU	M/s. S N Associates & Builders Pvt. Ltd. ( Maple Grove)	M	Granted - 23/02/2015
178	NOR	M/s. Expat Properties (Proposed Residential Building,Complex,Villa At Sr 107\7)	M	Granted - 23/02/2015
179	NOR	M/s. Rainbow Infra (Proposed Building,Villas & Duplex On Sr No- 85\8 Bastora)	S	Granted - 23/02/2015
180	NOR	M/s. Parvatkar Industries	S	Granted - 23/02/2015
181	SOU	M/s. Lupin Limited	L	Granted - 04/03/2015
182	SOU	M/s. Varun Beverages Limited	L	Granted - 08/03/2015
183	SOU	M/s. Merad Construction	S	Granted - 08/03/2015
184	SOU	M/s. Mevilton Construction	L	Granted - 09/03/2015
185	SOU	M/s. Beleza By The Beach (Best Location Properties Pvt. Ltd)	M	Granted - 09/03/2015
186	NOR	M/s. Priority Constructions (Orchard Avenue)	S	Granted - 10/03/2015
187	SOU	M/s. Mobile Screening Plant At Colomba	S	Granted - 10/03/2015
188	NOR	M/s. Sudarshan Dry Docks	S	Granted - 11/03/2015
189	NOR	M/s. Bicholim Municipal Council	S	Granted - 11/03/2015
190	NOR	M/s. M. K. Aromatics (Project Goa Polymer Engineering)	L	Granted - 11/03/2015
191	NOR	M/s. Riverside Resorts & Holiday Homes Pvt. Ltd. (Rio Royale)	L	Granted - 11/03/2015
192	SOU	M/s. Kayji Real Estate Pvt. Ltd.	S	Granted - 11/03/2015
193	SOU	M/s. Siemens Ltd(E T T S)	L	Granted - 11/03/2015
194	SOU	M/s. S Kumar Industries	S	Granted - 11/03/2015
195	NOR	M/s. Mrf Ltd.	L	Granted - 12/03/2015
196	NOR	M/s. Mrf Ltd.	L	Granted - 12/03/2015
197	NOR	M/s. Mrf Ltd.	L	Granted - 12/03/2015
198	NOR	M/s. lfb Industries Ltd.	S	Granted - 12/03/2015
199	NOR	M/s. Omkar Cashew Processing Unit	S	Granted - 12/03/2015
200	NOR	M/s. Ram Cleaners & Developers Pvt Ltd	S	Granted - 12/03/2015
201	NOR	M/s. Residential Scheme For Kenkre Estates	S	Granted - 19/03/2015
202	NOR	M/s. Muktar Automobiles Pvt Ltd (Unit Iv)	S	Granted - 19/03/2015
203	NOR	M/s Foodybreaks	S	Granted - 19/03/2015

204	NOR	M/s. Kineco Kaman Composites-India Private Limited	S	Granted - 19/03/2015
205	NOR	M/s. Themepark Design House	S	Granted - 19/03/2015
206	SOU	M/s. M.D. Ice Plant	L	Granted - 19/03/2015
207	SOU	M/s. Bharat Petroleum Corporation Ltd	S	Granted - 23/03/2015
208	NOR	M/s. Shantadurga Workshop	S	Granted - 25/03/2015
209	NOR	M/s. Rututek Enterprises	S	Granted - 25/03/2015
210	NOR	M/s. Shantadurga Workshop	S	Granted - 25/03/2015
211	NOR	M/s. Rututek Enterprises	S	Granted - 25/03/2015

## ANNEXURE III

### NWMP DATA FOR THE YEAR 2014 - 2015

**Table 3 a -RIVER CHAPORA NEAR ALORNA FORT, PERNEM 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.88	7.03	6.39	6.53	6.95	6.56	6.83	7.5	7.87	6.62	6.28	7.68
2	Temperature °C	32	31.5	31.9	31.9	27	26.4	28	28.5	26.8	25.5	27	27.4
3	Conductivity µs/cm	8395	2148	653.44	551	57	52.54	1386	63	65.44	61.2	1106	46300
4	Dissolved Oxygen mg/l	5.2	6.3	6.7	6.6	7.8	7.6	6.99	7.3	7.1	7.9	7.4	7.3
5	Turbidity (NTU)	3.38	4.25	3.57	3.35	11.6	6.07	21.7	2.43	2.82	2.76	2.55	4.03
6	Nitrite Nitrogen mg/l	0.007	0.004	0.003	0.009	0.005	0.005	0.001	0.002	0.002	0.002	0.009	0.003
7	Nitrogen(Nitrate) mg/l	0.05	0.08	0.02	0.08	0.15	0.13	0.28	0.17	0.175	0.06	0.062	0.04
8	Phosphate mg/l	0.05	0.013	BDL	0.004	0.03	0.022	0.039	0.036	0.004	0.124	0.002	BDL
9	BOD mg/l	1.8	1.9		0.5	0.9	0.5	0.71	0.4	2.4	1.5	1	1.3
10	COD mg/l	17	5	2	4	10	16	65	11	12	7	2	3.0
11	Chloride mg/l	16391	1.96	162.9	121.41	3	4.89	124.9	4	1249.6	2.91	337.48	7.3
12	Fecal Coliform MPN/100 ml	3300	4900	3300	2300	4900	4900	4900	3300	1300	1300	2300	1300
13	Total Coliform MPN/100 ml	7000	11000	7000	3300	7900	7000	7900	4600	1700	1700	4600	2300
14	Ammonia mg/l	0.04	0.03	0.06	0.36	0.07	0.016	0.027	0.014	0.013	BDL	0.06	0.05
15	Total Dissolved Solids(mg/l)	13661	-	-	-	51	126	110	10	74	41	665	194
16	Total Fixed Solids (mg/l)	9191	-	-	-	92	28	32	100	24	20	531	31
17	Total Suspended Solid (mg/l)	52	-	-	-	12	4	12	28	12	2	15	78
18	Hardness(mg/l)	1800	-	-	-	20	8	20	20	46	24	120	18
19	Fluoride(mg/l)	0.72	-	-	-	0.01	0.01	0.14	0.43	0.33	0.27	0.01	0.07
20	Boron(mg/l)	2.21	-	-	-	1.7	0.05	17	6.7	6.9	2.11	0.19	5.5
21	Sulphate (mg/l)	101.43	-	-	-	4.45	20.4	2.1	2.2	1.4	2.25	32.66	3.7
22	Total Alkalinity(mg/l)	20	-	-	-	180	14	48	48	24	26	30	36
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	2487	-	-	-	6.7	4.9	8	6.4	6.4	5.3	156.7	169.9
25	Potassium(mg/l)	55.7	-	-	-	3	2.3	3.3	3.8	3.8	0.1	5	6.8
26	Calcium as CaCO3(mg/l)	320.6	-	-	-	12	4	18	18	44	14	28	10
27	Magnesium(mg/l)	243	-	-	-	1.9	0.97	0.5	0.49	0.5	2.43	22.36	1.9

**Table 3 b - RIVER KALNA AT CHANDEL, PERNEM 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.98	6.8	6.27	6.57	6.8	6.63	7.5	7.5	7.95	6.67	7.01	7.03
2	Temperature °C	30	29.5	29.6	29.7	26.2	26.1	27.5	27.5	25.8	25	27	27
3	Conductivity µs/cm	77.65	64.4	66.72	74.3	47.81	56.33	1394	74.8	78.79	72.8	77.3	78.01
4	Dissolved Oxygen mg/l	6.1	6.3	6.1	7.2	7.6	9	7.17	7.9	7.5	7.4	7.5	6.5
5	Turbidity (NTU)	3.25	3.63	2.78	2.36	17.7	9.64	18.9	2.07	2.86	3.39	2.51	14
6	Nitrite Nitrogen mg/l	0.002	0.003	0.001	0.005	0.007	0.005	0.003	0.002	0.002	0.009	0.003	0.008
7	Nitrogen(Nitrate) mg/l	0.52	0.03	0.04	0.05	0.05	0.09	0.19	0.07	0.092	0.046	0.058	0.04
8	Phosphate mg/l	0.03	0.007	0.002	0.01	0.01	0.021	0.034	0.038	0.011	0.005	BDL	0.001
9	BOD mg/l	1.5	2		1	1	2.8	0.91	1.1	1.2	2	2.4	1.2
10	COD mg/l	1	2	1	2	9	19	17	11	10	7	5	20
11	Chloride mg/l	5.5	3.42	4.0	3.4	4.5	5.87	4	5	7.5	4.37	10.12	5.4
12	Fecal Coliform MPN/100 ml	4900	7900	4900	7900	4900	4900	7900	4900	2300	1300	3300	7900
13	Total Coliform MPN/100 ml	7900	13000	7900	13000	13000	7900	13000	7900	3300	2300	7900	14000
14	Ammonia mg/l	0.072	0.01	0.01	0.167	0.04	0.064	0.018	0.014	0.028	BDL	0.08	0.07
16	Total Dissolved Solids(mg/l)	159	-	-	-	29	62	75	9	49	45	65	99
17	Total Fixed Solids (mg/l)	782	-	-	-	81	28	30	54	18	26	51	22
18	Total Suspended Solid (mg/l)	8	-	-	-	37	2	8	27	7	2	16	49
19	Hardness(mg/l)	24	-	-	-	6	8	20	20	60	56	28	34

20	Fluoride(mg/l)	0.17	-	-	-	BDL	0.01	0.1	0.45	0.64	0.16	0.01	0.1
21	Boron(mg/l)	0.14	-	-	-	2.02	0.04	17	8.3	8.4	0.9	BDL	5.1
22	Sulphate (mg/l)	2.09	-	-	-	6.66	18.7	2.6	1.9	1.4	2.13	2.53	5.3
23	Total Alkalinity(mg/l)	12	-	-	-	200	20	54	54	34	30	26	30
24	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
25	Sodium(mg/l)	22.1	-	-	-	6.2	5	11.1	10.9	6.3	5.8	6.1	6.7
26	Potassium(mg/l)	47.6	-	-	-	2.2	2.5	3.2	4.2	3.7	0	0.1	0.3
27	Calcium as CaCO <sub>3</sub> (mg/l)	7.2	-	-	-	2	4	16	16	26	12	16	18
28	Magnesium(mg/l)	1.5	-	-	-	1	0.97	0.9	0.97	8.3	10.7	2.92	3.9

**Table 3 c - RIVER MAPUSA ON CULVERT ON HIGHWAY MAPUSA-PANAJI 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.9	7.3	6.89	6.61	6.3	6.49	6.79	6.58	7.29	6.35	6.55	6.99
2	Temperature °C	31	33.6	32	31.7	28.3	27.9	28.8	29.5	26.3	25.7	28	28
3	Conductivity ms/cm	16.91	18.45	13.49	0.945	0.115	87.07	2052	549	3.076	5.51	10830	7500
4	Dissolved Oxygen mg/l	4.34	8.3	6.2	4.5	3.7	4.6	3.81	5.8	5.2	5	5.6	3.3
5	Turbidity (NTU)	1.81	2.78	3.11	10.2	12.4	5.92	2.74	3.99	2	1.26	1.39	3.75
6	Nitrite Nitrogen mg/l	0.01	0.004	0.003	0.006	0.011	0.006	BDL	0.013	0.008	0.003	0.004	0.02
7	Nitrogen(Nitrate) mg/l	1.39	0.26	0.045	0.37	0.16	0.13	0.45	0.25	0.199	0.029	0.042	0.06
8	Phosphate mg/l	0.02	0.035	0.08	0.04	0.02	0.027	0.072	0.06	0.026	0.013	0.009	0.03
9	BOD mg/l	1.67	2.9	1.3	2	1	1.7	1.2	1.6	2.6	2.8	1.3	0.7
10	COD mg/l	5	22	19	20	9	11	11	13	30	22	35	-
11	Chloride mg/l	18244	5136.7	25367	170	14.5	11.25	124.9	1399.6	1499.5	1554.1	3133.78	9297
12	Fecal Coliform MPN/100 ml	4900	13000	7900	4900	4900	3300	4900	4600	7900	3300	3300	7900
13	Total Coliform MPN/100 ml	13000	22000	13000	7000	11000	4900	11000	7000	17000	4900	4900	13000
14	Ammonia mg/l	0.08	0.01	0.09	0.72	0.07	0.033	0.011	0.013	0.11	0.014	0.14	0.009
15	Total Dissolved Solids(mg/l)	5349	-	-	-	80	160	126	26	139	2755	6388	4750
16	Total Fixed Solids (mg/l)	4327	-	-	-	105	26	28	132	39	1855	5051	3591
17	Total Suspended Solid (mg/l)	31	-	-	-	5	6	18	34	23	139	31	97
18	Hardness(mg/l)	3000	-	-	-	10	14	84	84	3600	556	1360	3200
19	Fluoride(mg/l)	0.83	-	-	-	0.01	0.01	0.1	0.41	0.5	0.32	0.09	0.13
20	Boron(mg/l)	0.14	-	-	-	0.79	0.04	16	6.6	6.7	4.37	0.49	3.3
21	Sulphate (mg/l)	235.22	-	-	-	7.6	8.93	14	12.8	86.9	127.4	329.59	184.3
22	Total Alkalinity(mg/l)	25	-	-	-	140	14	94	94	46	52	48	68
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	4621	-	-	-	14.2	8.3	129.4	85.9	4334	984.1	1639	1878
25	Potassium(mg/l)	112.4	-	-	-	3.2	3	9	6.1	16.5	28.9	61.4	79.4
26	Calcium as CaCO <sub>3</sub> (mg/l)	160.3	-	-	-	8	8	78	78	1600	126	6	1200
27	Magnesium(mg/l)	631.8	-	-	-	0.5	1.46	1.5	1.46	486	104.5	329.02	486

**Table 3 d - RIVER ASSANORA AT ASSANORA 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.58	6.4	6.88	6.6	6.35	5.69	7.2	6.28	6.9	6.65	6.48	6.64
2	Temperature °C	29	28	28	27.9	27	28.3	26	27.6	29.5	27	27.8	28
3	Conductivity µs/cm	63.4	63.41	73.6	56.6	44.97	51.7	2.64	65.7	64.3	58.11	62.16	61.0
4	Dissolved Oxygen mg/l	6.6	6.5	6.43	6.8	7.8	6.6	7.2	6	6.4	6.36	5.7	6.1
5	Turbidity (NTU)	3.25	11	17.6	6.56	5.38	5.07	6.5	5.11	6.16	3.92	2.95	3.02
6	Nitrite Nitrogen mg/l	0.004	0.003	0.0039	0.004	0.003	0.002	0.001	0.002	0.003	0.003	0.002	0.002
7	Nitrogen(Nitrate) mg/l	0.07	0.077	0.4733	0.191	0.134	0.12	0.11	0.104	0.06	0.3	0.044	0.11
8	Phosphate mg/l	0.026	0.018	0.033	0.006	0.007	0.005	BDL	0.007	0.004	0.01	0.01	0.016
9	BOD mg/l	1	2.2	1.33	0.4	1.7	0.6	1.6	1.3	0.8	0.9	0.9	0.5
10	COD mg/l	7	5	1	4	4	3	6	4	3	1	3	8
11	Chloride mg/l	3.5	6.27	7.49	3.4	4.87	5.87	2	3.37	4	6.5	7.28	13
12	Fecal Coliform	2300	2300	2400	2400	3300	2300	2300	3300	1300	3300	1300	2300

	MPN/100 ml												
13	Total Coliform MPN/100 ml	3300	4900	3500	3500	4900	3300	3300	4900	2200	4900	2300	3300
14	Ammonia mg/l	BDL	0.08	0.075	0.006	0.002	0.022	0.01	0.02	0.02	0.04	0.043	0.072
15	Total Dissolved Solids(mg/l)	32	-	-	-	30	32		39	259	150	45	38
16	Total Fixed Solids (mg/l)	181	-	-	-	8	9		15	225	48	10	21
17	Total Suspended Solid (mg/l)	3	-	-	-	29	15		2	4	6	1	5
18	Hardness(mg/l)	16	-	-	-	0	4	14	20	22	14	30	24
19	Fluoride(mg/l)	0.3	-	-	-	0.206	0.02	0.008	BDL	0.2	0.1	0.04	0.01
20	Boron(mg/l)	2.1	-	-	-	0.295	1.23	1.03	1.48	0.81	0.3	0.29	0.48
21	Sulphate (mg/l)	3.72	-	-	-	2.3	1.97	1.31	2.92	0.11	0.9	3.2	2.3
22	Total Alkalinity(mg/l)	140	-	-	-	12	20	26	40	200	70	24	24
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	19.6	-	-	-	6.1	5.3	5.7	3.6	3.7	10.2	4.8	4.1
25	Potassium(mg/l)	15	-	-	-	2.4	2.6	3	0.5	1.3	4.2	0.2	1.5
26	Calcium as CaCO3(mg/l)	12	-	-	-	0	0	12	12	4	10	16	12
27	Magnesium(mg/l)	1	-	-	-	0	0.97	0.486	1.94	4.4	0.9	3.4	2.92

**Table 3 e - RIVER VALVANTI AT SANQUELIM 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.81	6.29	6.68	6.4	6.6	5.53	7	5.65	6.88	6.6	6.78	6.96
2	Temperature °C	34	31	27	28.4	28	27.8	27	28.3	29.4	27.6	28	28
3	Conductivity µs/cm	62.5	70.19	84.6	45.9	49.39	52.83	2.652	66.1	64.8	67.18	68.65	70.25
4	Dissolved Oxygen mg/l	6.1	6.3	7.18	7.3	7.3	7.3	7.8	6.9	7.3	6.3	7.9	6.5
5	Turbidity (NTU)	2.38	4.66	11.3	9.87	4.9	3.82	4.46	2.97	2.22	2.38	2.25	2.91
6	Nitrite Nitrogen mg/l	0.003	0.002	0.0038	0.003	0.002	0.001	0.001	0.002	0.039	0.002	0.002	0.003
7	Nitrogen(Nitrate) mg/l	0.09	0.06	0.3422	0.154	0.135	0.17	0.06	0.087	0.08	0.1	0.07	0.10
8	Phosphate mg/l	0.004	0.084	0.009	0.009	0.004	0.004	BDL	0.004	0.002	0.01	0.033	0.017
9	BOD mg/l	1.1	2.9	1.41	0.3	0.6	0.3	2	1.6	0.8	1	1.2	2.1
10	COD mg/l	6	11	1	2	1	2	8	5	12	3	3	9
11	Chloride mg/l	2.5	6.75	8.49	3.89	3.89	1.46	4.86	2.89	4	4.5	7.28	12
12	Fecal Coliform MPN/100 ml	13000	7900	7900	7900	7000	7900	7000	7900	7900	7900	4900	7900
13	Total Coliform MPN/100 ml	24000	13000	11000	13000	11000	11000	14000	17000	13000	14000	7900	11000
14	Ammonia mg/l	0.02	0.083	0.023	0.04	0.017	0.016	0.006	0.02	0.02	0.04	0.01	0.055
15	Total Dissolved Solids(mg/l)	31	-	-	-	33	58	-	55	170	91	51	47
16	Total Fixed Solids (mg/l)	69	-	-	-	14	39	-	30	167	61	16	32
17	Total Suspended Solid (mg/l)	1	-	-	-	4	16	-	3	3	3	2	5
18	Hardness(mg/l)	16	-	-	-	0	8	20	18	14	24	28	28
19	Fluoride(mg/l)	0.38	-	-	-	0.137	0.12	0.03	BDL	0.19	0.1	0.03	0.02
20	Boron(mg/l)	19.1	-	-	-	0.153	1.48	1.2	1.4	0.97	0.2	0.17	0.5
21	Sulphate (mg/l)	3.3	-	-	-	2.6	2.07	1.79	2.24	0.27	3.3	2.31	2.72
22	Total Alkalinity(mg/l)	140	-	-	-	16	22	28	34	260	36	28	24
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	15.3	-	-	-	5.3	5.6	6.1	5.2	4.2	9.7	5.2	1.3
25	Potassium(mg/l)	15.2	-	-	-	2.5	2.6	3.7	0.5	1.2	4.2	0.4	1.5
26	Calcium as CaCO3(mg/l)	10	-	-	-	0	2	10	14	10	18	18	10
27	Magnesium(mg/l)	1.5	-	-	-	0	1.46	2.43	0.97	1	1.5	2.4	4.37

**Table 3 f - RIVER MADEI AT DABOSE, VALPOI 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.25	6.93	7.2	6.5	7.16	6.06	7.47	6.2	6.84	6.8	7.14	6.82
2	Temperature °C	34	31	27	25.5	27	25.8	30	26.8	28.3	28	28.5	29
3	Conductivity µs/cm	137.1	128.09	72	47.6	43.04	61.04	3.22	74.5	102.5	95.1	94.65	158.34

4	Dissolved Oxygen mg/l	6.4	6.5	7.62	7.6	8	7.7	7.8	7.3	7.8	7.2	7.4	6.5
5	Turbidity (NTU)	2.6	3.97	32.2	21	4.23	5.23	10.3	2.44	2.31	1.84	1.21	2.94
6	Nitrite Nitrogen mg/l	0.002	0.002	0.0104	0.005	0.002	0.002	0.001	0.001	0.004	0.001	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.09	BDL	0.2749	0.093	0.063	0.07	0.03	0.027	BDL	0.01	0.02	0.07
8	Phosphate mg/l	0.003	0.012	0.009	0.012	0.006	0.001	0.07	BDL	0.001	0.008	0.01	0.002
9	BOD mg/l	1.5	2.1	2.72	0.7	1.1	0.3	1.4	0.5	1.8	1.3	1.2	1.8
10	COD mg/l	8	6	14	13	4	1	9	4	11	43	4	6
11	Chloride mg/l	5.5	6.75	7.99	6.75	3.89	4.89	4.86	2.89	5.5	8	6.31	15
12	Fecal Coliform MPN/100 ml	780	780	4900	4900	4900	1300	2300	1300	230	230	230	330
13	Total Coliform MPN/100 ml	1400	1300	7900	7900	7000	2300	3300	1700	330	330	330	490
14	Ammonia mg/l	0.05	0.045	0.139	0.089	0.015	0.001	0.004	0.01	0.01	0.17	0.01	0.04
15	Total Dissolved Solids(mg/l)	72	-	-	-	29	23	-	76	9176	65	70	96
16	Total Fixed Solids (mg/l)	90	-	-	-	12	18	-	10	6716	10	21	79
17	Total Suspended Solid (mg/l)	5	-	-	-	3	16	-	3	13	3	15	11
18	Hardness(mg/l)	48	-	-	-	0	8	22	22	32	36	40	22
19	Fluoride(mg/l)	0.49	-	-	-	BDL	0.05	0.02	BDL	0.18	0.1	0.01	0.02
20	Boron(mg/l)	1.3	-	-	-	0.189	3.59	0.57	2.43	1.1	0.08	0.27	2.46
21	Sulphate (mg/l)	3.34	-	-	-	6	1.16	2.15	4.92	0.21	1	1.25	8.73
22	Total Alkalinity(mg/l)	300	-	-	-	16	26	28	46	340	58	38	40
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	14.1	-	-	-	5.2	5.6	5.8	4.6	5.8	7.6	5.5	5.4
25	Potassium(mg/l)	14.9	-	-	-	2.4	2.7	2.9	0.4	2.3	3.9	0	2.1
26	Calcium as CaCO3(mg/l)	30	-	-	-	0	2	14	14	14	20	20	8.0
27	Magnesium(mg/l)	4.4	-	-	-	0	1.46	1.944	1.94	4.4	3.9	4.9	3.40

Table 3 g - RIVER KHANDEPAR, OPA, PONDA 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.43	7.4	7.3	7.08	6.45	6.77	6.97	7.05	7.15	6.07	6.89	7.52
2	Temperature °C	34.5	32.9	32.4	28	19	27.5	28.9	29.2	27.8	28	28.4	30.6
3	Conductivity µs/cm	108.5	115.14	101.8	61.12	42.8	48.44	1398	66.1	80.35	83.4	78.75	93.11
4	Dissolved Oxygen mg/l	7.5	6.3	6.2	7	7.7	8	7.8	7.8	7	7.29	7.4	7.6
5	Turbidity (NTU)	2.41	2.85	3.08	9.55	44.2	5.85	4.21	2.01	2.33	2.79	2.15	2.81
6	Nitrite Nitrogen mg/l	0.002	0.002	0.003	0.004	0.01	0.003	0.006	0.002	0.004	0.003	0.001	0.003
7	Nitrogen(Nitrate) mg/l	0.02	0.016	0.01	0.12	0.89	0.1	0.11	0.041	0.44	0.097	0.06	0.04
8	Phosphate mg/l	0.002	0.019	0.008	0.02	0.63	0.005	ND	0.002	0.005	0.002	0.004	0.013
9	BOD mg/l	1.5	0.7	0.8	0.46	1.4	5.4	4.7	4.7	0.7	0.5	0.7	2.7
10	COD mg/l	9	80	11	2	17	7	7	6	14	5	9	6
11	Chloride mg/l	8	8.497	6.9	5.3	1.5	2.5	3.5	7	4.4	9.29	9.29	10
12	Fecal Coliform MPN/100 ml	230	2400	1300	2400	2400	790	490	490	230	230	230	230
13	Total Coliform MPN/100 ml	460	5400	2200	5400	5400	2400	790	790	490	490	330	330
14	Ammonia mg/l	0.04	0.046	0.03	0.09	0.05	0.01	0.163	6.088	0.077	0.01	0.02	0.026
15	Total Dissolved Solids(mg/l)	64	-	-	-	20	20	81	259	190	55	51	94
16	Total Fixed Solids (mg/l)	92	-	-	-	18	72	16	225	192	27	41	18
17	Total Suspended Solid (mg/l)	3	-	-	-	10	5	15	4	15	49	11	3
18	Hardness(mg/l)	36	-	-	-	8	18	18	72	42	26	28	22
19	Fluoride(mg/l)	0.42	-	-	-	0.15	0.1	BDL	0.28	0.009	0.11	0.29	0.46
20	Boron(mg/l)	145.5	-	-	-	1.4	2.46	5.51	2.99	0.176	0.54	0.2	8.62
21	Sulphate (mg/l)	3.13	-	-	-	6.9	1.64	1.19	0.66	3.33	2.77	1.87	3.6
22	Total Alkalinity(mg/l)	540	-	-	-	18	100	380	260	30	36	30	260
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	17.1	-	-	-	6.8	5	5.2	4.2	3.6	6.5	5.5	6.1
25	Potassium(mg/l)	15.1	-	-	-	2.7	2	2.6	0.3	1.4	3.7	0.1	1.7
26	Calcium as CaCO3(mg/l)	26	-	-	-	4	8	6	14	20	18	20	13
27	Magnesium(mg/l)	2.4	-	-	-	0.97	2.4	2.9	14.1	5.346	1.94	1.94	2.2

Table 3 h - RIVER KHANDEPAR AT CODLI 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.31	7.3	6.9	6.83	6.59	6.59	6.85	6.95	7.2	6.48	7.16	7.4
2	Temperature °C	34	32	32.4	29	21	26.7	28.5	29	26.3	27	29	30.8
3	Conductivity µs/cm	88.3	83.35	89.2	53.48	41.7	156.6	1403	61.7	65.93	71.12	65.43	100.1
4	Dissolved Oxygen mg/l	7	6.1	7.4	7.36	7.2	8	7.6	7.1	7.6	7.98	7.8	7.7
5	Turbidity (NTU)	2.08	2.66	1.8	5.72	21.5	19.4	2.17	1.69	1.58	1.54	1.48	2.57
6	Nitrite Nitrogen mg/l	0.002	0.002	0.003	0.002	0.006	0.005	0.006	0.002	0.001	0.001	0.001	0.003
7	Nitrogen(Nitrate) mg/l	0.01	0.13	0.12	0.13	0.08	0.341	0.162	0.025	0.42	0.082	0.07	0.05
8	Phosphate mg/l	0.002	BDL	0.006	0.003	0.003	0.028	0.002	BDL	0.001	0.001	0.002	0.006
9	BOD mg/l	0.8	1.3	1	0.58	1.1	1.1	1.7	0.7	0.8	0.8	1	1.7
10	COD mg/l	9	80	9	2	4	33	29	13	17	5	11	5
11	Chloride mg/l	25	4.998	5.4	5	1.5	26.5	4	4.5	3.91	8.81	8.81	8.5
12	Fecal Coliform MPN/100 ml	130	1300	790	3500	3500	1300	2400	330	230	330	330	490
13	Total Coliform MPN/100 ml	230	1700	1700	9200	9200	5400	5400	460	460	790	490	1300
14	Ammonia mg/l	0.05	0.028	0.03	0.003	0.02	0.05	0.046	0.015	0.305	0.01	0.01	0.046
15	Total Dissolved Solids(mg/l)	48	-	-	-	25	13	279	170	37	43	43	134
16	Total Fixed Solids (mg/l)	81	-	-	-	22	96	92	167	29	36	37	52
17	Total Suspended Solid (mg/l)	1	-	-	-	20	41	14	3	10	30	11	2
18	Hardness(mg/l)	38	-	-	-	16	30	20	28	32	16	22	30
19	Fluoride(mg/l)	0.51	-	-	-	0.5	0.11	BDL	0.15	BDL	0.04	0.54	0.53
20	Boron(mg/l)	224	-	-	-	0.5	2.53	5.37	4.62	0.79	0.54	0.61	8.59
21	Sulphate (mg/l)	6.21	-	-	-	3.98	7.86	1.21	0.05	3.89	2.46	2.21	2.84
22	Total Alkalinity(mg/l)	400	-	-	-	20	120	280	340	24	40	24	320
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	21	-	-	-	5.6	17.8	5.4	2.4	3.3	6.9	5.1	6
25	Potassium(mg/l)	15.2	-	-	-	2.5	3.6	2.5	0.2	1.1	3.7	0.3	1.9
26	Calcium as CaCO3(mg/l)	22	-	-	-	6	20	10	10	18	16	16	16
27	Magnesium(mg/l)	3.9	-	-	-	2.4	2.4	2.4	4.4	3.4	0	1.46	3.4

Table 3 I - RIVER KUSHAWATI NEAR BUND AT KEVONA, RIVONA, SANGUEM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.84	7.25	7.08	6.3	6.11	6.51	7.63	6.9	6.72	6.81	6.91	6.59
2	Temperature °C	32	31	29.8	26.8	26.9	27.6	29	27	27	25	26	27
3	Conductivity µs/cm	160.2	181.2	114.9	120.24	84.78	56.08	1405	74.64	92.1	119	135.2	148.9
4	Dissolved Oxygen mg/l	6.4	6.5	6.6	6.3	6	7.6	7.3	7.9	7.4	7	7.5	5.9
5	Turbidity (NTU)	1.32	2.82	5.82	5.58	27.3	11.7	4.03	3.3	3.43	2.39	0.96	1.45
6	Nitrite Nitrogen mg/l	0.001	0.003	0.004	0.002	0.004	0.001	0.001	0.001	0.002	0.002	0.003	0.003
7	Nitrogen(Nitrate) mg/l	0.01	0.07	0.08	2.11	0.73	0.18	0.12	0.15	0.219	0.2	0.1	0.16
8	Phosphate mg/l	0.01	0.004	0.01	0.02	0.02	0.008	0.03	0.017	0.001	0.07	0.005	BDL
9	BOD mg/l	1.8	1.1	0.6	0.6	1.3	1.1	0.7	1.8	0.5	1.5	1.8	1.8
10	COD mg/l	1	6	6	3	12	15	14	6	19	10	6	2
11	Chloride mg/l	6.3	8.997	4.89	7.83	11.4	9.9	10	9	3.37	5.5	5	9.23
12	Fecal Coliform MPN/100 ml	4900	4900	4900	7900	7000	3300	3300	790	4900	3500	1300	1300
13	Total Coliform MPN/100 ml	7900	7900	7900	13000	11000	4600	7000	1300	13000	9200	2200	1700
14	Ammonia mg/l	0.28	0.028	0.02	0.04	0.02	0.01	0.002	0.033	0.06	0.006	0.03	0.19
15	Total Dissolved Solids(mg/l)	12	-	-	-	118	105	100	24	55	93	99	100
16	Total Fixed Solids (mg/l)	57.1	-	-	-	99	82	12	18	36	85	80	-
17	Total Suspended Solid (mg/l)	4	-	-	-	6	7	75	3	32	15	20	7
18	Hardness(mg/l)	62	-	-	-	18	20	26	42	40	44	30	70
19	Fluoride(mg/l)	0.47	-	-	-	0.51	0.44	0.15	0.32	0.284	0.2	0.2	0.05
20	Boron(mg/l)	0.15	-	-	-	6.63	17.6	18	20.1	0.62	0.09	2.4	0.95

21	Sulphate (mg/l)	1.38	-	-	-	1.9	2.6	0.67	1.3	1.771	1.8	2.4	2.9
22	Total Alkalinity(mg/l)	12	-	-	-	22	82	30	156	34	72	58	62
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	17.2	-	-	-	21.1	7.4	13.4	43.5	6.1	6.5	7.38	8.5
25	Potassium(mg/l)	14.9	-	-	-	4	2.7	3	4.8	3.3	4	0.4	2.1
26	Calcium as CaCO <sub>3</sub> (mg/l)	16	-	-	-	8	18	20	40	1.1	24	18	14
27	Magnesium(mg/l)	5.3	-	-	-	2.4	0.5	1.5	0.49	5.35	4.9	2.9	9

Table 3 j - RIVER TALPONA AT CANACONA 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.51	6.45	6.53	6.67	7.3	6.15	6	7.43	7.24	6.19	6.83	6.9
2	Temperature °C	36.5	34	32.2	27.1	26.7	27.4	29.4	29.2	27	28.4	28	28.1
3	Conductivity µs/cm	76.4	75.14	69.01	51.99	45.26	45.71	2.394	52.74	53.7	54.64	58.8	74.77
4	Dissolved Oxygen mg/l	6.9	8.9	7.8	7.3	7.3	6.6	7.5	7.5	7.8	7.4	7.6	6.3
5	Turbidity (NTU)	1.51	3.91	4.93	31.2	29.5	78.1	2.72	2.38	1.29	1.75	1.81	1.93
6	Nitrite Nitrogen mg/l	0.001	0.003	0.002	0.003	0.009	0.001	0.002	0.001	0.002	0.002	BDL	0.002
7	Nitrogen(Nitrate) mg/l	0.03	0.04	0.10	0.22	0.113	0.13	0.08	0.272	0.057	0.01	0.01	0.33
8	Phosphate mg/l	0.005	0.01	BDL	0.02	0.033	0.013	0.33	0.009	0.076	0.004	0.006	0.001
9	BOD mg/l	1.6	3.3	2.4	0.9	0.2	1.3	0.6	1.4	0.9	1.2	1.7	1.8
10	COD mg/l	12	17	8	2	3	14	3	BDL	8	12	12	2
11	Chloride mg/l	4.86	8.81	3.86	5.3	3.26	4.4	4.4	3.9	3.4	6	5.8	9.29
12	Fecal Coliform MPN/100 ml	2300	4900	780	4900	7000	4900	1300	1100	170	790	230	240
13	Total Coliform MPN/100 ml	3300	7000	1300	7900	9400	7900	2300	2200	330	1100	330	920
14	Ammonia mg/l	0.02	0.02	0.07	0.02	0.03	0.054	0.01	0.053	0.048	0.02	0.01	0.09
15	Total Dissolved Solids(mg/l)	26	-	-	-	37	35	40	38	35	329	345	56
16	Total Fixed Solids (mg/l)	88.49	-	-	-	10	13	19	16	10	512	681	38
17	Total Suspended Solid (mg/l)	5	-	-	-	66	94	2	2		6	7	4
18	Hardness(mg/l)	18	-	-	-	0	0	10	14	24	18	17	24
19	Fluoride(mg/l)	0.46	-	-	-	0.039	BDL	BDL	BDL	0.35	0.07	0.2	-
20	Boron(mg/l)	0.09	-	-	-	0.24	1.94	0.873	1.51	8.51	0.56	2.2	1.58
21	Sulphate (mg/l)	1.86	-	-	-	5	6.42	2.54	1.65	3.33	6.02	1.6	2.33
22	Total Alkalinity (mg/l)	2	-	-	-	10	30	26	22	20	200	34	26
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0		0	0	0	0
24	Sodium(mg/l)	17.9	-	-	-	5.5	4.6	6	3.7	3.7	6.8	5.2	9.1
25	Potassium(mg/l)	15.1	-	-	-	2.3	2.2	2.6	0.4	1.1	3.8	0.3	2.2
26	Calcium as CaCO <sub>3</sub> (mg/l)	4.8	-	-	-	0	0	6	8	12	8	8	14
27	Magnesium(mg/l)	1.5	-	-	-	0	0	1	1.46	2.92	2.4	2.1	2.43

Table 3 k - RIVER SAL AT PAZORCONI, CUNCOLIM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.1	6.22	6.09	7.2	6.1	6.18	6.5	6.82	7.05	6.02	6.55	6.12
2	Temperature °C	32.3	31.5	30.3	27.8	28	28.1	28.5	27.9	28	27.7	27	28
3	Conductivity µs/cm	70.1	180.54	86.15	69.76	65.18	89.77	2.39	80.18	78.97	78.76	78.8	80.83
4	Dissolved Oxygen mg/l		6.6	6	6.1	7.2	7	6.5	7	6.2	5.2	4.8	5.5
5	Turbidity (NTU)	13.7	5.83	17.5	12.4	9.17	86.03	9.47	8.61	6.31	8.5	7.01	6.22
6	Nitrite Nitrogen mg/l	0.02	0.005	0.006	0.009	0.005	0.001	0.007	0.005	0.005	0.27	0.02	0.004
7	Nitrogen(Nitrate) mg/l	0.38	0.09	0.13	0.35	0.289	0.41	0.26	0.284	0.277	0.008	0.2	1.13
8	Phosphate mg/l	0.01	0.02	0.003	0.02	0.029	0.007	0.015	0.013	0.005	0.004	0.01	0.015
9	BOD mg/l		4	1.6	0.5	1.2	2	1.1	1.7	1.6	1.5	2.9	1.4
10	COD mg/l	4	16	10	7	8	2	4	4	10	11	12	8
11	Chloride mg/l	4.86	8.32	6.75	8.68	6.8	11.7	10.8	7.3	7.28	8	1500	12.23
12	Fecal Coliform MPN/100 ml	7900	4900	4900	7900	11000	4900	11000	13000	7900	4900	4900	3300
13	Total Coliform MPN/100 ml	11000	13000	7900	13000	17000	7900	22000	22000	17000	7900	7000	4900
14	Ammonia mg/l	0.3	0.05	0.16	0.05	0.083	0.013	0.032	0.05	0.146	0.04	0.1	BDL
15	Total Dissolved	55	-	-	-	44	64	60	57	60	99	111	152

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
	Solids(mg/l)												
16	Total Fixed Solids (mg/l)	95.9	-	-	-	18	22	25	23	20	92	98	31
17	Total Suspended Solid (mg/l)	14	-	-	-	20	24	14	78		5	7	4
18	Hardness(mg/l)	28	-	-	-	0	0	16	27.2	20	220	16	22
19	Fluoride(mg/l)	6.48	-	-	-	BDL	0.22	0.1	BDL	0.05	0.17	0.05	-
20	Boron(mg/l)	0.08	-	-	-	0.646	1.1	0.7	2	0.89	0.45	2.8	0.82
21	Sulphate (mg/l)	2.85	-	-	-	4.76	5.94	5.7	6.51	12.4	10.46	4.7	3.23
22	Total Alkalinity(mg/l)	0	-	-	-	14	30	20	22	16	160	28	26
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	-	0	0	0	0
24	Sodium(mg/l)	15.3	-	-	-	7.6	10	9.9	6	6.4	7.3	6.2	12.8
25	Potassium(mg/l)	15.1	-	-	-	2.6	2.8	3.7	0.9	1.7	4.1	0.6	2
26	Calcium as CaCO <sub>3</sub> (mg/l)	4.8	-	-	-	0	0	12	10	10	140	10	10
27	Magnesium(mg/l)	3.9	-	-	-	0	0	1	4	2.43	19.4	1.5	2.92

Table 3 I - RIVER SAL AT MOBOR 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.62	7.82	6.5	7.5	6.74	7.86	7.4	7.85	8.15	6.77	8.12	7.75
2	Temperature °C	32.9	30	28.3	25.7	28.5	29.5	31	29	28	27.6	28.9	29
3	Conductivity µs/cm	46000	48500	18250	3020	15.22	44700	48570	51690	52900	54820	52080	51700
4	Dissolved Oxygen mg/l	5.3	4.2	5.3	5.6	6.89	4.9	3.7	5.2	6.2	6.9	6.5	6.2
5	Turbidity (NTU)	19.1	53.6	13	27.9	8.98	3.7	3.14	6.42	4.27	2.62	3.92	3.03
6	Nitrite Nitrogen mg/l	0.009	0.04	0.0102	0.022	0.01	0.055	0.01	0.0014	0.003	0.002	0.01	0.005
7	Nitrogen(Nitrate) mg/l	0.02	0.05	0.15	0.25	0.2	0.08	0.15	0.2	0.098	0.02	0.08	0.09
8	Phosphate mg/l	0.03	0.14	0.06	0.06	0.02	0.039	0.03	0.092	0.028	0.02	0.003	0.03
9	BOD mg/l	1.3	2.4	2.2	0.3	-	1.4	1.2	0.9	1.1	0.2	2.1	1.8
10	COD mg/l	38	51	25	17	23	20		22			-	-
11	Chloride mg/l	17241	17119.7	6748	1000	5298	4124	24851.9	30526.7	22118	22618	13496	27444.7
12	Fecal Coliform MPN/100 ml	780	11000	4900	7900	4900	3300	49	2300	780	490	460	330
13	Total Coliform MPN/100 ml	1300	17000	13000	11000	9400	4900	940	4600	11000	790	700	460
14	Ammonia mg/l	0.06	0.29	0.21	0.11	0.1	0.003	0.04	0.011	0.062	0.06	0.32	0.05
15	Total Dissolved Solids(mg/l)	14164	-	-	-	350	320	76762	37520	48517	20566	21559	15324
16	Total Fixed Solids (mg/l)	28328	-	-	-	110	105		30510	281	16000	16418	6734
17	Total Suspended Solid (mg/l)	62	-	-	-	35	40	200	114	108	69	74	42
18	Hardness(mg/l)	5600	-	-	-	2400	20	6900	7000	14000	12500	3600	9200
19	Fluoride(mg/l)	BDL	-	-	-	0.76	1.45	1.54	1.378	1049	1.57	0.53	1.21
20	Boron(mg/l)	1.7	-	-	-	3.87	3.1	4.69	7.881	5.33	1.8	3.68	2.94
21	Sulphate (mg/l)	1278.7	-	-	-	1926.5	2189	2176.8	2973.6	1766.3	1610.8	659.37	101.9
22	Total Alkalinity(mg/l)	58	-	-	-	44	30	114	106	98	188	840	114
23	Phenolphthalein Alkalinity(mg/l)	2	-	-	-	0	0	0.3	0.7	0	0	0	14
24	Sodium(mg/l)	1700	-	-	-	2433	7482	8782	1495	10591	10232	4837	7184
25	Potassium(mg/l)	319.8	-	-	-	147.6	348.3	360.5	208.1	273.9	272.1	156.9	318.2
26	Calcium as CaCO <sub>3</sub> (mg/l)	400.8	-	-	-	1200	18	1000	1300	1200	3000	800	4400
27	Magnesium(mg/l)	1117.8	-	-	-	291.6	0.5	1433.7	1385	3110.4	2308.5	680.4	1166.4

Table 3 m - HARWALE WATERFALL 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.92	6.7	6.12	6.63	6.09	6.61	7.31	5.74	7.0	6.87	6.88	7.24
2	Temperature °C	33.2	31.3	29.1	27.8	28	28	29.4	27.4	28.9	27.9	27.8	28
3	Conductivity µs/cm	102.2	85.3	69.12	55.53	50.6	57.1	2.94	76	79.2	97.76	100	99.03
4	Dissolved Oxygen mg/l	7	6.8	7.8	7.8	7.56	7.4	7	7.3	7.9	7.3	7.3	7.3
5	Turbidity (NTU)	3.85	5.85	5.71	19.3	7.98	6.33	7.58	5.48	4.09	3.87	3.36	3.28
6	Nitrite Nitrogen mg/l	0.003	0.004	0.005	0.002	0.004	0.002	0.002	0.002	0.01	0.002	0.003	0.003

7	Nitrogen(Nitrate) mg/l	0.3	0.25	0.49	0.32	0.39	0.304	0.24	0.265	0.23	0.4	0.01	0.16
8	Phosphate mg/l	0.01	0.005	0.003	0.006	0.011	0.02	BDL	0.008	0.009	0.02	0.01	0.002
9	BOD mg/l	1.34		1.8	0.9	1.91	0.3	0.8	1.1	0.7	0.3	0.9	1.4
10	COD mg/l	13	6	9	7	10	11	12	4	1	3	5	13
11	Chloride mg/l	15.2	7.34	6.36	5.34	5.87	4.4	5.34	3.86	3	9	8.74	12
12	Fecal Coliform MPN/100 ml	13000	13000	13000	13000	13000	7900	7900	4900	3300	3300	3300	4900
13	Total Coliform MPN/100 ml	24000	24000	24000	24000	17000	11000	11000	7000	4900	4600	4900	7900
14	Ammonia mg/l	0.16	0.006	0.01	0.037	0.024	0.008	0.007	0.02	0.03	0.07	0.07	0.02
15	Total Dissolved Solids(mg/l)	7010	-	-	-	67	54	-	184	710	92	65	62
16	Total Fixed Solids (mg/l)	6988	-	-	-	32	23	-	159	708	79	20	43
17	Total Suspended Solid (mg/l)	6	-	-	-	5	7	-	12	BDL	10	4	4
18	Hardness(mg/l)	38	-	-	-	6	8	20	20	26	36	40	36
19	Fluoride(mg/l)	0.17	-	-	-	0.52	0.06	0.05	BDL	0.1	0.08	0.004	0.02
20	Boron(mg/l)	8.23	-	-	-	0.49	6.58	9.03	1.45	1.62	0.1	0.24	0.44
21	Sulphate (mg/l)	5.19	-	-	-	2.87	1.66	2.1	2.45	0.3	1.2	2.72	0.85
22	Total Alkalinity(mg/l)	20	-	-	-	12	20	24	38	260	66	34	40
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	10.7	-	-	-	3.4	6.7	5.4	3.7	3.36	9.6	6.1	3.9
25	Potassium(mg/l)	15	-	-	-	1.8	2.8	2.7	0.4	1.2	4.3	0.2	1.5
26	Calcium as CaCO3(mg/l)	16	-	-	-	0	0	12	14	12	26	26	20
27	Magnesium(mg/l)	34.1	-	-	-	1.46	1.9	1.94	1.4	3.4	2.4	3.4	3.89

Table 3 n - RIVER BICHOLIM, BARAZAN NAGAR, BICHOLIM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.44	6.3	6.08	6.4	6.3	6.45	7.26	6.45	7.55	7.53	6.9	7.12
2	Temperature °C	33.2	32	31.2	28	28.9	29.3	29.9	29.3	27.6	29.5	27	29
3	Conductivity µs/cm	181.3	147.43	126.85	80.7	176.81	83.6	4.64	84.2	105.18	136.67	132.38	175
4	Dissolved Oxygen mg/l	7	5.3	6	6.6	4.77	7.1	7.2	7.7	8.2	10.3	7.9	6.8
5	Turbidity (NTU)	3.76	9.1	13.6	12	5.04	4.37	8.06	3.85	3.05	6.94	8.5	15.8
6	Nitrite Nitrogen mg/l	0.007	0.009	0.011	0.002	0.096	0.004	0.004	0.003	0.008	0.04	0.007	0.013
7	Nitrogen(Nitrate) mg/l	0.23	0.34	0.73	0.3	0.96	0.45	0.33	0.162	0.226	0.11	0.13	0.15
8	Phosphate mg/l	0.008	0.01	0.012	0.005	0.016	0.028	BDL	0.009	0.018	0.035	0.01	0.02
9	BOD mg/l	2.23	1	2.1	1.2	1.5	1.3	1.1	1.4	1.5	4.2	1.8	4.0
10	COD mg/l	13	7	3	6	10	6	8	24	6	7	12	19.0
11	Chloride mg/l	15.2	12.2	11.74	8.7	17.12	9.29	9.71	8.81	9.29	13.21	15.17	14.7
12	Fecal Coliform MPN/100 ml	17000	17000	13000	11000	7900	7900	11000	7900	7900	13000	13000	17000
13	Total Coliform MPN/100 ml	35000	35000	17000	14000	11000	13000	17000	13000	13000	17000	22000	22000
14	Ammonia mg/l	0.17	0.05	0.07	0.04	0.136	0.004	0.01	0.141	0.029	0.034	0.01	0.002
15	Total Dissolved Solids(mg/l)	100	-	-	-	168	147	-	46	303	32838	435	400
16	Total Fixed Solids (mg/l)	45	-	-	-	65	54	-	10	140	20386	217	200
17	Total Suspended Solid (mg/l)	9	-	-	-	8	12	-	11	10	22	10	10
18	Hardness(mg/l)	64	-	-	-	34	14	28	28	34	44	48	56
19	Fluoride(mg/l)	0.16	-	-	-	0.56	0.03	0.02	0.03	0.03	0.133	0.01	0.58
20	Boron(mg/l)	0.36	-	-	-	0.04	8.42	6.98	18.59	3.69	35.353	3.2	5.4
21	Sulphate (mg/l)	5.96	-	-	-	5.32	1.45	1.95	2	2.02	6.8	217	5.6
22	Total Alkalinity(mg/l)	32	-	-	-	28	13	34	32	46	16	46	52
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	5.3	-	-	-	3.3	5.7	7.1	5.2	7.8	2408	8.3	13.1
25	Potassium(mg/l)	14.7	-	-	-	1.8	2.2	3.2	0.6	3.9	113	0.5	0.4

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
26	Calcium as CaCO <sub>3</sub> (mg/l)	38	-	-	-	32	6	22	14	22	24	26	54
27	Magnesium(mg/l)	54.8	-	-	-	0.49	1.9	1.46	3.4	2.92	4.86	5.3	0.5

Table 3 o - MAYEM LAKE AT MAYEM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.42	6.53	6.01	7.3	6.18	6.52	6.1	6.38	6.84	7.51	6.47	7.07
2	Temperature °C	35.3	34.1	31.1	28.5	28	29	31.6	28.5	30.4	27.5	29	28.5
3	Conductivity µs/cm	44.2	43.9	38.57	36.54	36.15	41.46	1.896	41.56	40.34	39.52	40.61	46500
4	Dissolved Oxygen mg/l	6.9	6.7	9.7	8.2	7.81	5.3	7.5	6.1	6.8	7.8	7.8	7.41
5	Turbidity (NTU)	5.34	9.2	8.67	19.3	3.93	1.58	2.08	3.42	1.84	3.31	3.83	3.65
6	Nitrite Nitrogen mg/l	0.004	0.008	0.007	0.038	0.004	0.001	0.002	0.002	0.002	0.003	0.001	0.003
7	Nitrogen(Nitrate) mg/l	0.006	0.1	0.02	0.07	0.23	0.045	0.1	0.03	0.001	0.42	0.04	0.01
8	Phosphate mg/l	0.009	0.03	0.03	0.007	0.011	0.001	0.01	0.01	0.018	0.01	0.004	0.006
9	BOD mg/l	2.34	1.9	2.9	3.8	0.31	0.5	1.5	0.6	0.9	1.3	1.6	1.8
10	COD mg/l	27	29	22	12	11	6	13	17	7	13	7	4.0
11	Chloride mg/l	8.3	6.34	4.89	3.89	5.38	6.36	5.83	6.36	6.85	5.87	9.29	6.2
12	Fecal Coliform MPN/100 ml	13000	13000	11000	4900	7000	3300	4600	4900	1300	1300	4900	3300
13	Total Coliform MPN/100 ml	22000	35000	14000	7900	9400	4900	7000	7000	2300	2300	7900	4900
14	Ammonia mg/l	0.16	0.03	0.02	0.01	0.013	0.064	0.006	0.054	0.007	0.025	0.01	0.007
15	Total Dissolved Solids(mg/l)	26	-	-	-	59	46	-	72	109	321	89	99
16	Total Fixed Solids (mg/l)	14	-	-	-	30	21	-	26	62	223	58	64
17	Total Suspended Solid (mg/l)	5	-	-	-	10	13	-	8	10	16	8	13
18	Hardness(mg/l)	12	-	-	-	6	6	12	20	14	400	10	20
19	Fluoride(mg/l)	0.14	-	-	-	0.51	0.12	0.02	0.03	0.02	0.176	0.08	0.1
20	Boron(mg/l)	0.11	-	-	-	0.03	6.87	0.63	37.31	4.01	4.066	3.48	7.0
21	Sulphate (mg/l)	7.79	-	-	-	1.73	1.26	2.03	0.91	0.9	1.66	58	1.9
22	Total Alkalinity(mg/l)	10	-	-	-	8	8	160	18	28	8	16	24
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	18.9	-	-	-	2.9	5.7	5.1	2.4	6.4	5.2	5.7	7.5
25	Potassium(mg/l)	15.2	-	-	-	1.8	2.2	2.5	0.1	3.8	1.4	0.4	1.1
26	Calcium as CaCO <sub>3</sub> (mg/l)	8	-	-	-	0	0	8	4	12	200	4	12
27	Magnesium(mg/l)	10.1	-	-	-	1.46	1.5	0.97	3.89	0.49	48.6	1.5	1.9

Table 3 p - CUMBHARJUA CANAL, CORLIM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.26	6.98	7.21	7.13	6.11	5.48	6.66	6.2	7.04	6.46	6.78	6.93
2	Temperature °C	32.2	31.9	30	29.8	29.2	28	29.8	29.1	29.6	28.4	27.7	29
3	Conductivity µs/cm	47900	43600	41600	15000	2318	296.2	10290	10860	22160	38440	34650	81080
4	Dissolved Oxygen mg/l	3.4	4.2	5	6.3	5.4	6.3	5.5	5.8	5.6	5.7	5.3	5.2
5	Turbidity (NTU)	13.4	145	11.6	9.59	4.9	3.6	7.28	16.7	6.24	10.01	8.04	13.7
6	Nitrite Nitrogen mg/l	0.03	0.019	0.013	0.021	0.003	0.003	0.007	0.006	0.006	0.01	0.02	0.004
7	Nitrogen(Nitrate) mg/l	0.6	0.085	0.03	0.07	0.1	0.15	0.1	0.061	0.053	0.45	0.03	0.002
8	Phosphate mg/l	0.02	0.03	0.01	0.03	0.006	0.016	0.016	0.028	0.034	0.02	0.02	0.002
9	BOD mg/l	2	5.7	3.4	2.3	6.6	1.4	1.3	1.2	1.7	1.5	1.4	1.7
10	COD mg/l	68	42	33	60	6	7				57	-	-
11	Chloride mg/l	17220	18294	20547	445	124.96	199.9	3913.7	4158.3	9295	16829	42987	17318
12	Fecal Coliform MPN/100 ml	450	17000	7900	7900	7900	2300	4900	4600	3300	2300	790	460
13	Total Coliform MPN/100 ml	450	35000	13000	11000	13000	3300	11000	7000	7900	4900	1400	790
14	Ammonia mg/l	0.2	0.09	0.02	0.09	0.05	0.012	0.04	0.08	0.076	0.04	0.01	0.075
15	Total Dissolved Solids(mg/l)	35979	-	-	-	80	90	6586	7347	10152	24468	27169	33443
16	Total Fixed Solids (mg/l)	27383	-	-	-	50	60	1581	2182	4595	24397	16077	22635

17	Total Suspended Solid (mg/l)	30	-	-	-	10	20	52	46	43	105	95	40
18	Hardness(mg/l)	5900	-	-	-	88	14	958	1068	3800	14	2300	6000
19	Fluoride(mg/l)	1.11	-	-	-	0.79	1.14	0.9	0.13	0.97	1.305	0.3	0.67
20	Boron(mg/l)	16.93	-	-	-	1.83	1.2	9.38	9.12	3.91	27.765	4.7	
21	Sulphate (mg/l)	1338.1	-	-	-	22.83	4	302.6	462	499.1	1549.7	715	1176.9
22	Total Alkalinity(mg/l)	120	-	-	-	16	200	42	58	82	24	90	108
23	Phenolphthalein Alkalinity(mg/l)	4	-	-	-	0	0	0	0	0	0.2	0	0
24	Sodium(mg/l)	1856	-	-	-	144.4	55.5	1429	572.7	4149	4972	7789	4742
25	Potassium(mg/l)	301.4	-	-	-	8.9	4.2	76.1	62	128.1	195.2	169.2	226.6
26	Calcium as CaCO <sub>3</sub> (mg/l)	900	-	-	-	20	8	180	190	1400	8	2750	1000
27	Magnesium(mg/l)	1215	-	-	-	16.5	1.5	189.1	213.4	583.2	1.458	4920	1215

Table 3 q - RIVER ZUARI AT PANCHAWADI 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.16	7.1	6.65	7.6	6.43	6.81	6.9	6.55	6.6	6.65	7.07	6.63
2	Temperature °C	32.5	33	31.4	28	21	28.6	29.4	30.7	28	27	28.8	28.6
3	Conductivity µs/cm	6370	21350	21790	214.1	72.6	74.32	1626	72.8	9.35	11990	14670	13310
4	Dissolved Oxygen mg/l	5.8	4	5.5	6.3	7.6	7.8	8.1	6	5.7	5.59	5.7	5.7
5	Turbidity (NTU)	8.96	6.8	14.2	10.6	13	45.7	3.96	5.37	6.6	4.85	3.59	9.09
6	Nitrite Nitrogen mg/l	0.006	0.05	0.007	0.005	0.09	0.003	0.003	0.003	0.001	0.061	0.02	0.034
7	Nitrogen(Nitrate) mg/l	0.03	0.077	0.02	0.14	0.17	0.08	0.119	BDL	0.45	0.064	0.03	0.33
8	Phosphate mg/l	0.009	0.008	0.45	0.01	0.02	0.109	0.045	0.004	0.012	0.003	0.01	0.135
9	BOD mg/l	2.2	0.7	3.6	1.4	2.6	1.4	2	0.6	1.8	1.3	1.4	2
10	COD mg/l	9		33	5	7	11	14	8	11		-	18
11	Chloride mg/l	3546.8	7748	8683.5	44	8.5	10	17745	1250	3253.2	5870.5	5870.5	5123
12	Fecal Coliform MPN/100 ml	2300	2300	2300	4900	7000	4900	7000	4900	780	1100	1700	1300
13	Total Coliform MPN/100 ml	4900	4900	3300	7900	11000	7900	11000	7900	1300	1400	3300	2300
14	Ammonia mg/l	0.04	0.042	0.09	0.03	0.03	0.12	0.149	0.112	0.038	0.032	0.12	0.147
15	Total Dissolved Solids(mg/l)	4399	-	-	-	43	62	30930	710	8725	7058	10176	8060
16	Total Fixed Solids (mg/l)	3013	-	-	-	40	184	24197	708	4597	1659	7409	5077
17	Total Suspended Solid (mg/l)	22	-	-	-	17	60	150	BDL	50	35	4	29
18	Hardness(mg/l)	900	-	-	-	16	10	400	74	1004	3600	1000	400
19	Fluoride(mg/l)	0.26	-	-	-	0.87	0.07	0.72	0.04	0.106	0.36	0.87	0.73
20	Boron(mg/l)	0.76	-	-	-	1.07	2.36	4.6	2.48	0.132	6.33	1.57	9.49
21	Sulphate (mg/l)	64.5	-	-	-	5.6	9.9	117.6	BDL	499.1	410.5	419.7	1931
22	Total Alkalinity(mg/l)	42	-	-	-	24	100	1000	340	45	50	38	400
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	435.2	-	-	-	37.6	9.3	6675	94.9	1019	1949	2758	1292
25	Potassium(mg/l)	32.1	-	-	-	4.3	2.8	282.3	5.5	53.4	70	93	62.5
26	Calcium as CaCO <sub>3</sub> (mg/l)	200	-	-	-	12	6	360	16	170	1200	400	200
27	Magnesium(mg/l)	851.4	-	-	-	0.97	1	9.7	14.1	202.6	583.2	145.8	48.6

Table 3 r - RIVER ZUARI AT CORTALIM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.44	7.81	6.4	6.57	7.1	7.30	6.96	7.42	7.76	7.88	7.63	6.94
2	Temperature °C	32.5	32	29	27.5	27.5	28.0	29	30	27	28	28	28
3	Conductivity µs/cm	45300	49700	40420	1001	768.02	11	25560	38300	46600	48370	44800	43100
4	Dissolved Oxygen mg/l	5.7	5.3	4.8	5.6	7.3	7.2	5	5.9	5.4	5.1	5	4.9
5	Turbidity (NTU)	25.5	25.8	21.1	136	49.8	23.3	9.35	10.7	5.88	6.77	7.39	43.4
6	Nitrite Nitrogen mg/l	0.039	0.043	0.071	0.052	0.028	0.01	0.01	0.018	0.02	0.04	0.03	0.01
7	Nitrogen(Nitrate) mg/l	0.028	0.105	0.24	0.57	0.18	BDL	0.06	0.15	0.02	0.13	0.05	0.05
8	Phosphate mg/l	0.037	0.057	0.04	0.02	0.028	0.06	0.07	0.03	0.03	0.07	0.05	0.02
9	BOD mg/l	2.1	1.8	1.4	0.9	3.2	2.6	2.8	0.4	2.9	1.4	0.7	1.5
10	COD mg/l	37	16	40	9	-	16.0	-	-	-	-	-	-
11	Chloride mg/l	16998	3763.9	15120	250	205	#####	10296	14472.8	18843.8	19494	18744	21126

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
12	Fecal Coliform MPN/100 ml	3300	2300	7900	13000	4900	7900	4900	4900	1300	780	780	1300
13	Total Coliform MPN/100 ml	7900	4900	13000	17000	13000	13000	7900	7900	1700	1300	1300	2300
14	Ammonia mg/l	0.063	0.15	0.13	0.07	0.25	0.01	0.05	0.25	0.27	0.008	0.05	0.07
15	Total Dissolved Solids(mg/l)	42424	-	-	-	490	420	25708	27013	30797	22076	25321	30170
16	Total Fixed Solids (mg/l)	52654	-	-	-	106	110	22685	21768	28358	15121	19788	26157
17	Total Suspended Solid (mg/l)	20	-	-	-	17	20	36	38	94	46	64	81
18	Hardness(mg/l)	3300	-	-	-	46	64	3100	64000	2400	11500	10500	6500
19	Fluoride(mg/l)	1.4	-	-	-	ND	0.67	1.05	1.64	1.96	1.4	0.5	0.75
20	Boron(mg/l)	4.1	-	-	-	1.02	2.5	22.36	61.92		2.1	3.5	3.81
21	Sulphate (mg/l)	1278.7	-	-	-	93.42	173.3	420.5	659.24	2848.7	1585.6	1395.7	2589
22	Total Alkalinity(mg/l)	54	-	-	-	140	66	76	96	98	174	106	70
23	Phenolphthalein Alkalinity(mg/l)	4	-	-	-	0	0	0	0	0	0	0	4
24	Sodium(mg/l)	1671	-	-	-	138.4	1579	4262	1280	4841	9596	9302	5906
25	Potassium(mg/l)	314.7	-	-	-	9.1	100.2	206.2	176.8	246	246	276.1	247
26	Calcium as CaCO3(mg/l)	400.8	-	-	-	20	30	600	900	1000	3500	4000	2000
27	Magnesium(mg/l)	558.9	-	-	-	6.3	8.2	607.5	15333	340.2	1944	1579.5	1093

Table 3 s - CREEK AT DANDO MOLLO, VELSAO, MORMUGAO 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	8.22	8.22	6.7	6.46	7.07	7.8	7.08	6.96	7.54	7.67	7.57	6.72
2	Temperature °C	34.3	30	27.6	28	29.7	29	31	30	28.4	27	29	29
3	Conductivity µs/cm	41.4	11060	19690	7930	580.01	2568	3276	4.62	19720	18090	9140	8300
4	Dissolved Oxygen mg/l	12.6	8.2	5.7	5.3	5.8	6.8	6.1	3.9	7.2	6.4	8.1	9.7
5	Turbidity (NTU)	6.45	2.3	15.1	24.8	6.46	4.87	3.68	5.41	4.43	1.69	1.37	1.63
6	Nitrite Nitrogen mg/l	0.28	0.236	0.115	0.06	0.03	0.011	0.07	0.007	0.08	0.11	0.2	0.58
7	Nitrogen(Nitrate) mg/l	3.56	2.52	4.84	3.68	0.86	0.09	7.68	0.39	3.03	3.7	10.4	13.37
8	Phosphate mg/l	0.51	0.138	1.6	0.45	0.033	0.108	0.58	0.019	0.21	0.8	0.2	0.15
9	BOD mg/l	7.1	4.2	2.6	0.7	0.9	2	1.6	3.5	2.6	1.9	2.1	2.8
10	COD mg/l	39	15	15	21	5	25		18		25	-	-
11	Chloride mg/l	14916	3278.24	6873	2800	125	999.6	1165.6	1408.43	6945.01	7497.7	4373.6	3521
12	Fecal Coliform MPN/100 ml	4900	7900	7900	13000	13000	13000	7900	11000	3300	7900	4600	3300
13	Total Coliform MPN/100 ml	7900	13000	11000	22000	17000	22000	14000	14000	7900	11000	7000	4900
14	Ammonia mg/l	0.31	0.523	2.49	0.33	0.23	0.2	0.63	0.97	4.2	0.003	14.3	1.98
15	Total Dissolved Solids(mg/l)	60078	-	-	-	455	450	1802	2504	12243	13592	15696	5644
16	Total Fixed Solids (mg/l)	49740	-	-	-	181	150	825	1942	13512	8582	10019	4736
17	Total Suspended Solid (mg/l)	41	-	-	-	4	5	9	14	26	18	17	20
18	Hardness(mg/l)	4700	-	-	-	74	22	400	8000	5900	7000	5000	3500
19	Fluoride(mg/l)	1.43	-	-	-	0.03	0.94	0.17	0.44	1.36	1	0.3	0.36
20	Boron(mg/l)	9.94	-	-	-	1.72	4.6	2.95	9.8	2.12	2.6	2.7	1.39
21	Sulphate (mg/l)	92.76	-	-	-	15.66	1377	51.3	69.77	288.7	235.66	303.2	79
22	Total Alkalinity(mg/l)	109	-	-	-	500	36	28	84	86	74	32	84
23	Phenolphthalein Alkalinity(mg/l)	16	-	-	-	0	0	0	0	0	0	0	8
24	Sodium(mg/l)	1657	-	-	-	97.7	394.2	327.5	343.4	2028	3256	1326	1102
25	Potassium(mg/l)	312	-	-	-	6.9	28.7	23.2	28.6	112	113	48.2	59.2
26	Calcium as CaCO3(mg/l)	900	-	-	-	48	12	68	150	600	1500	3000	1000
27	Magnesium(mg/l)	923.4	-	-	-	6.3	2.4	80.67	1907.55	1287.9	1336.5	486	607

Table 3 t - RIVER MANDOVI AT PANAJI 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.76	7.64	6.57	7.9	7.08	6.63	7.88	7.19	7.68	7	7.07	7.68
2	Temperature °C	31	32.6	31.8	31	28	29.1	29.3	31.5	28.7	27.8	29	28.2
3	Conductivity µs/cm	5051	49000	47140	42600	190.32	344	39190	36400	33320	43900	55600	46400
4	Dissolved Oxygen mg/l	4.6	4.9	4.6	6.1	7.7	7.1	4.6	5.5	4.9	5.5	5.3	5.7
5	Turbidity (NTU)	3.67	4.58	5.16	9.23	29.4	17.1	10.4	15.4	5.09	7.95	30.7	5.75
6	Nitrite Nitrogen mg/l	0.104	0.008	0.009	0.002	0.011	0.007	0.053	0.025	0.003	0.044	0.009	0.005
7	Nitrogen(Nitrate) mg/l	0.11	0.064	0.06	0.004	0.15	0.14	0.29	0.07	0.101	0.029	0.09	0.01
8	Phosphate mg/l	0.008	0.188	0.007	0.02	0.026	0.026	0.043	0.03	0.01	0.032	0.014	0.02
9	BOD mg/l	2.79	1.7	1.4	1.8	1.3	0.4	0.8	1.7	109	1.9	1.7	1.5
10	COD mg/l					11	4	45			-	-	-
11	Chloride mg/l	21734	18698.1	18712	15895	611.5	99.9	16120	17245	17994	16998	20441.9	26792
12	Fecal Coliform MPN/100 ml	450	1300	2300	1300	7900	3300	1700	3300	330	4900	3300	1700
13	Total Coliform MPN/100 ml	780	2300	3300	1700	17000	4900	2300	7000	490	7900	4600	3300
14	Ammonia mg/l	0.021	0.054	0.15	0.13	0.086	0.01	0.035	0.015	0.033	0.011	0.14	0.01
15	Total Dissolved Solids(mg/l)	46095	-	-	-	90	80	75	17	108	21950	32248	34537
16	Total Fixed Solids (mg/l)	30025	-	-	-	60	50	35	81	51	17749	20695	26905
17	Total Suspended Solid (mg/l)	154	-	-	-	12	18	15	47	20	2	215	14
18	Hardness(mg/l)	6000	-	-	-	12	20	5600	56	14800	6800	5840	13800
19	Fluoride(mg/l)	1.3	-	-	-	0.49	0.61	1.16	1	1.3	1.32	0.27	0.34
20	Boron(mg/l)	0.18	-	-	-	0.17	1.1	19	9.2	9.6	10	0.4	4.8
21	Sulphate (mg/l)	2835.6	-	-	-	8.93	7.6	337.5	544.5	910.6	1606.1	2332	1304.6
22	Total Alkalinity(mg/l)	18	-	-	-	12	40	204	102	66	88	96	94
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	1843	-	-	-	79.3	61.6	6739	11391	6265	9191	7534	8127.1
25	Potassium(mg/l)	342.4	-	-	-	3.1	5.3	286.8	276.4	180.5	278.2	214.8	265.7
26	Calcium as CaCO3(mg/l)	801.6	-	-	-	10	14	2200	52	3600	940	26	1800
27	Magnesium(mg/l)	972	-	-	-	0.49	1.5	826.2	0.97	2721.6	1424	1412	2916

Table 3 u - RIVER MANDOVI AT TONCA MARCELA 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.2	6.25	6.11	7.25	6.2	6.36	6.75	6.45	7.02	6.6	7.15	6.99
2	Temperature °C	33	32.3	29.5	27	27	27	29	28.7	27.5	27	29	27
3	Conductivity µs/cm	39100	35570	1287	91.3	105.47	150.5	1868	6470	16680	23260	27860	30500
4	Dissolved Oxygen mg/l	5.2	4.8	7	7.6	7.2	7	6.8	6.2	5.4	6.4	6.2	5.1
5	Turbidity (NTU)	4.46	5.68	13	12.5	9.61	11.6	7.04	7.85	7.35	7.44	5.12	3.38
6	Nitrite Nitrogen mg/l	0.115	0.06	0.005	0.002	0.004	0.005	0.004	0.005	0.006	0.01	0.003	0.01
7	Nitrogen(Nitrate) mg/l	0.28	1.09	0.25	0.15	0.14	0.261	0.106	0.043	0.061	0.31	1.75	0.03
8	Phosphate mg/l	0.02	0.01	0.013	0.006	0.007	0.077	0.009	0.017	0.008	0.02	0.01	0.006
9	BOD mg/l	1.16	1.2	1.9	0.5	0.9	1.1	0.9	1.2	0.5	1.7	1.1	1.3
10	COD mg/l	25	23	13	7	15	10	12			35	-	-
11	Chloride mg/l	18223	13893.6	733.8	849.91	2568.4	636	244.6	2935.3	8561	8120.9	12230.3	12484
12	Fecal Coliform MPN/100 ml	1300	2300	4900	3300	4600	7900	4900	4900	2300	2300	4600	1300
13	Total Coliform MPN/100 ml	2300	4600	7900	4900	7000	13000	11000	9400	4600	3300	7000	2200
14	Ammonia mg/l	0.09	0.05	0.118	0.048	0.03	0.035	0.021	0.152	0.068	0.06	0.003	0.008
15	Total Dissolved Solids(mg/l)	25377	-	-	-	293	274	251	4195	16657	13129	20486	20017
16	Total Fixed Solids (mg/l)	20579	-	-	-	224	212	42	1191	11520	9119	5384	5000
17	Total Suspended Solid (mg/l)	116	-	-	-	13	15	4	25	25	77	12	10
18	Hardness(mg/l)	4600	-	-	-	4	14	44	628	1800	2800	3000	5600
19	Fluoride(mg/l)	1.46	-	-	-	0.5	0.11	0.77	0.09	0.77	1.01	0.31	0.87
20	Boron(mg/l)	2.43	-	-	-	0.16	5.84	10.02	11.92	5.31	2.5	16.63	6.1
21	Sulphate (mg/l)	3638.9	-	-	-	3.44	4.23	11.38	295.9	303.6	580.8	813.93	780

22	Total Alkalinity(mg/l)	46	-	-	-	12	22	26	48	68	52	58	70
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0.2	0	0
24	Sodium(mg/l)	1497	-	-	-	83.2	4.3	88.5	422.6	3103	2836	5165	2583
25	Potassium(mg/l)	271.9	-	-	-	2.5	2.1	5.9	37	101.7	130.1	152	167.2
26	Calcium as CaCO <sub>3</sub> (mg/l)	600	-	-	-	0	8	16	106	400	600	600	2000
27	Magnesium(mg/l)	4454.2	-	-	-	0.97	1.5	6.8	126.9	340	534.6	583	878.8

Table 3 v - RIVER SELAULIM LAKE AT SELAULIM, SANGUEM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.64	7.5	6.49	6.63	6.51	6.94	7.86	7.12	6.85	7.05	7.27	7.24
2	Temperature °C	31	30	29.4	27.2	27.4	29.5	32	29.5	29	27	27.2	27.5
3	Conductivity µs/cm	48.7	53.8	50.5	49.75	44.18	44.07	1370	42.72	44.9	44.09	42.2	99.03
4	Dissolved Oxygen mg/l	7.8	6.8	6.2	7.6	7.7	8.3	7.8	7.8	7.5	6.4	7.6	7.8
5	Turbidity (NTU)	1.24	1.79	2.24	3.46	1.73	2.68	1.13	1.36	1.24	1.02	1.22	3.28
6	Nitrite Nitrogen mg/l	0.001	0.001	0.002	0.003	0.001	0.004	0.001	BDL	0.001	0.001	0.001	0.001
7	Nitrogen(Nitrate) mg/l	BDL	BDL	0.08	0.26	0.14	0.04	0.08	0.1	0.073	0.04	0.02	0.46
8	Phosphate mg/l	0.01	0.095	0.012	0.01	0.02	0.003	0.032	0.006	0.002	0.01	0.01	0.003
9	BOD mg/l	1.8	1.5	0.3	1.2	0.4	1.4	0.5	1.8	0.9	0.7	1.2	3.8
10	COD mg/l	5	13	9	5	11	7	13	1	18	1	-	-
11	Chloride mg/l	5.3	24.49	5.87	3.91	10.93	4.5	10.5	9	1.93	3	5	14.6
12	Fecal Coliform MPN/100 ml	790	130	130	130	130	78	78	23	2	2	-	4.5
13	Total Coliform MPN/100 ml	2400	210	170	240	240	130	140	79	4	4.5	4.5	7.8
14	Ammonia mg/l	0.13	0.04	0.008	0.08	0.02	0.013	0.005	0.046	0.19	0.07	0.01	0.06
15	Total Dissolved Solids(mg/l)	22	-	-	-	84	54	50	27	26	201	191	48
16	Total Fixed Solids (mg/l)	75	-	-	-	67	40	10	13	9	73	68	-
17	Total Suspended Solid (mg/l)	3	-	-	-	4	9	38	3	2	3	4	2
18	Hardness(mg/l)	12	-	-	-	10	40	8400	78	14	20	62	18
19	Fluoride(mg/l)	0.54	-	-	-	0.57	0.62	0.1	0.47	0.063	0.1	0.05	0.004
20	Boron(mg/l)	0.69	-	-	-	6.5	15.2	25	13.7	1.23	0.1	2.6	0.76
21	Sulphate (mg/l)	2.46	-	-	-	3.11	1.9	0.4	1.1	0.897	0.9	12.5	6.4
22	Total Alkalinity(mg/l)	BDL	-	-	-	18	64	30	242	38	20	28	20
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	17.8	-	-	-	4.3	5786	453	24.3	3.2	6.9	12.1	3.8
25	Potassium(mg/l)	15.8	-	-	-	2.1	4.1	12.8	4.2	1.1	4	0.6	1.5
26	Calcium as CaCO <sub>3</sub> (mg/l)	3.21	-	-	-	4	32	1800	22	10	8	6	3
27	Magnesium(mg/l)	0.97	-	-	-	1.5	2	1603.8	13.6	0.97	2.9	13.6	2.4

Table 3 w - RIVER SAL AT RUMDER, NUVEM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.5	7.08	5.9	5.9	6.13	6.5	6.94	6.45	6.4	7.71	6.76	7.49
2	Temperature °C	32.1	31	26.6	25.6	28.5	28.3	32.7	28	29	26.1	29	28.7
3	Conductivity µs/cm	150.6	156.5	74.85	62.8	78	80.5	1362	124.96	127.08	126.84	141.79	128.4
4	Dissolved Oxygen mg/l	2.9	4.7	5	5.6	5.51	6.1	5.5	0.4	4	4	3.5	4.0
5	Turbidity (NTU)	9.75	10.2	65.9	27.8	17	27.6	19.5	20.9	13.1	14.3	21	7.71
6	Nitrite Nitrogen mg/l	0.003	0.05	0.028	0.027	0.01	0.062	BDL	0.044	0.006	0.002	0.011	0.003
7	Nitrogen(Nitrate) mg/l	BDL	0.21	0.56	0.31	0.3	0.51	1.93	1.28	0.086	0.09	0.261	0.08
8	Phosphate mg/l	0.008	0.02	0.09	0.07	0.02	0.075	0.01	0.105	0.033	0.04	0.182	0.01
9	BOD mg/l	1.4	4.7	1.7	1.2	NA	2.1	0.8		3	3.2	2.4	3.1
10	COD mg/l	12	24	4	7	9	16	4	14	19	18	-	19
11	Chloride mg/l	22.3	14205	17.99	125	1199.6	99.9	13.7	14.19	18.99	20	10	23.48
12	Fecal Coliform MPN/100 ml	7900	17000	17000	7900	4900	7900	2300	4900	780	790	1700	2300
13	Total Coliform MPN/100 ml	17000	35000	35000	11000	7000	13000	4900	7900	1300	1100	3300	3300
14	Ammonia mg/l	0.03	0.58	0.12	0.85	0.06	0.026	0.06	0.368	0.34	0.001	0.488	0.16
15	Total Dissolved	84	-	-	-	38	35	155	160	28	610	707	56

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
	Solids(mg/l)												
16	Total Fixed Solids (mg/l)	168	-	-	-	25	20	-	115	16	498	533	13
17	Total Suspended Solid (mg/l)	20	-	-	-	14	12	61	84	20	6	11	11
18	Hardness(mg/l)	2500	-	-	-	24	82	20	32	1200	32	78	40
19	Fluoride(mg/l)	0.66	-	-	-	0.4	0.86	0.02	0.061	0.37	0.16	0.72	0.27
20	Boron(mg/l)	0.05	-	-	-	0.9	3.7	0.64	4.661	4.57	2.1	3.44	3.03
21	Sulphate (mg/l)	6.32	-	-	-	7.1	3.9	1.9	8.21	22.88	2	15.17	1.42
22	Total Alkalinity(mg/l)	24	-	-	-	20	96	26	40	36	56	740	38
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	10.5	-	-	-	11.2	12	9.8	9.1	18.6	17.8	42	9.5
25	Potassium(mg/l)	14.5	-	-	-	3	4.1	3.8	4	5.3	5.2	2.7	2.5
26	Calcium as CaCO <sub>3</sub> (mg/l)	481	-	-	-	14	42	14	18	800	24	36	24
27	Magnesium(mg/l)	315.9	-	-	-	2.4	9.7	1.46	3.4	97.2	1.9	10.2	3.9

Table 3 x - RIVER SAL AT ORLIM BRIDGE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.37	7.14	6.36	5.71	7.46	7	6.85	7.78	7.1	6.98	7.24	6.74
2	Temperature °C	33.3	31	27.3	25.1	29.5	30.7	32.7	30	29	27.8	28	29
3	Conductivity µs/cm	16860	15320	1244	159.1	356	397	5.448	5093	25440	29250	29430	15060
4	Dissolved Oxygen mg/l	6.8	7.1	3.6	5	3.84	5.2	4.4	3.8	5.1	5.7	4.7	5.5
5	Turbidity (NTU)	8.43	11.1	46.8	22	9.41	10.6	4.61	6.93	8.55	7.53	4.55	4.94
6	Nitrite Nitrogen mg/l	0.033	0.003	0.035	0.035	0.01	0.028	0.02	0.04	0.012	0.01	0.005	0.020
7	Nitrogen(Nitrate) mg/l	0.07	0.07	0.35	0.41	0.35	0.44	0.87	0.69	0.196	0.19	0.006	0.14
8	Phosphate mg/l	0.06	0.04	0.1	0.05	0.01	0.045	0.02	0.036	0.009	0.03	BDL	0.05
9	BOD mg/l	4.7	3.4	2.6	1.3	NA	2.6	2.2	1.6	2.4	2.5	3	3.0
10	COD mg/l	27	12	10	12	13	29	9	18			13	-
11	Chloride mg/l	6265.1	22340.6	1999	26	28	124.9	1311.08	1761.16	1.2496	11996	20744	12719.5
12	Fecal Coliform MPN/100 ml	2300	17000	7900	4900	4900	4900	2300	7000	3300	2300	2300	1300
13	Total Coliform MPN/100 ml	4900	28000	17000	7900	7900	13000	3300	11000	4900	3300	3300	3300
14	Ammonia mg/l	0.64	0.16	0.79	0.03	0.07	0.023	0.07	0.255	0.126	0.09	0.157	0.45
15	Total Dissolved Solids(mg/l)	13394	-	-	-	190	172	2624	3185	3452	47899	49500	10886
16	Total Fixed Solids (mg/l)	17828	-	-	-	80	70	-	2415	36	19000	19856	3727.0
17	Total Suspended Solid (mg/l)	26	-	-	-	25	30	33	16	19	154	166	31
18	Hardness(mg/l)	2200	-	-	-	42	22	600	2300	8000	9500	8600	1116
19	Fluoride(mg/l)	1.19	-	-	-	0.65	0.68	0.22	0.388	1.12	1.25	0.46	0.65
20	Boron(mg/l)	0.16	-	-	-	2.9	3.2	3.56	4.915	4.9	3.4	13.64	4.07
21	Sulphate (mg/l)	657.3	-	-	-	10.5	12.3	82.56	160.56	517.1	652.1	1474.72	99.1
22	Total Alkalinity(mg/l)	54	-	-	-	24	56	54	58	68	152	1060	104
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	883	-	-	-	60.5	70.6	659.8	374.8	5320	575	10811	2002
25	Potassium(mg/l)	122.5	-	-	-	6	6.3	40.9	33.2	159.4	173.4	300.5	102.6
26	Calcium as CaCO <sub>3</sub> (mg/l)	280.6	-	-	-	24	12	86	1000	2800	2500	1600	300
27	Magnesium(mg/l)	364.5	-	-	-	4.4	2.4	124.9	315.9	1263.6	1701	1701	198.3

Table 3 y - RIVER SAL AT KHAREBAND, MARGAO 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	Sam	Samp	6.06	5.8	6.2	6.45	7.04	6.56	7.01	6.8	6.75	6.9

2	Temperature °C	26.9	25.7	29.6	28.4	30.1	29	31	26.7	28.7	28.9
3	Conductivity µs/cm	114.5	89.5	107.9	116.4	1445	163.72	456.35	302.5	592.4	267.3
4	Dissolved Oxygen mg/l	2.1	4.2	3.36	5.2	2.8	1.7	1	1.4	1.4	1.1
5	Turbidity (NTU)	56.9	18.7	8.62	12.9	12	18.7	16.3	26	19.6	14
6	Nitrite Nitrogen mg/l	0.036	0.034	0.02	0.003	0.01	0.0007	0.011	0.05	0.011	0.004
7	Nitrogen(Nitrate) mg/l	0.47	0.5	3.7	0.61	3.54	2.12	0.081	2.5	0.278	0.09
8	Phosphate mg/l	0.09	0.06	0.02	0.069	0.05	0.091	0.23	0.13	BDL	0.10
9	BOD mg/l	1.1	1.3	NA	2.5	2.5		3.2	32	1.2	0.9
10	COD mg/l	8	11	12	13	21	21		81	15	11
11	Chloride mg/l	12.5	10	200	99.9	25.9	18.59	2499.2	43.5	22	42.6
12	Fecal Coliform MPN/100 ml	13000	7900	7000	3300	13000	4900	13000	24000	35000	17000
13	Total Coliform MPN/100 ml	24000	13000	11000	4900	17000	7900	17000	35000	54000	35000
14	Ammonia mg/l	0.27	0.11	0.07	0.012	0.23	0.055	0.059	0.01	0.104	0.59
15	Total Dissolved Solids(mg/l)	-	-	60	50	134	194	88	178	153	451
16	Total Fixed Solids (mg/l)	-	-	40	32	-	147	41	123	98	94
17	Total Suspended Solid (mg/l)	-	-	13	10	15	45	38	36	21	14
18	Hardness(mg/l)	-	-	30	42	34	44	2000	58	38	100
19	Fluoride(mg/l)	-	-	0.6	0.61	0.08	0.184	0.21	0.4	0.73	0.25
20	Boron(mg/l)	-	-	1	3.6	3.82	4.322	4.43	2	17.29	6.2
21	Sulphate (mg/l)	-	-	6.4	3.4	3.51	8.78	9.15	13.1	10.46	13.2
22	Total Alkalinity(mg/l)	-	-	20	90	34	42	40	80	420	58
23	Phenolphthalein Alkalinity(mg/l)	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	-	-	11.5	13.7	19	13.4	98.1	44.1	9.3	21.5
25	Potassium(mg/l)	-	-	4.3	3.8	5.3	3.9	7.8	6.2	1.9	3.2
26	Calcium as CaCO3(mg/l)	-	-	18	24	22	24	1200	36	24	40
27	Magnesium(mg/l)	-	-	2.9	4.3	2.92	4.86	194.4	5.3	3.4	14.6

Table 3 z - RIVER TIRACOL AT KERI, PERNEM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.96	7.95	7.08	7.07	6.77	6.68	7.49	7.6	7.5	8.29	7.89	7.17
2	Temperature °C	33	31.3	32	29.2	28.3	28.5	30	30.2	28.4	27	28.2	28
3	Conductivity µs/cm	53550	54200	54700	33200	2646	1850	40000	53300	45140	54770	59600	49890
4	Dissolved Oxygen mg/l	6	6.5	6.3	6.5	7.1	6.9	5.8	6.5	6.5	6.2	6.2	6.2
5	Turbidity (NTU)	6.04	8.44	7.04	5.08	10.5	7.66	2.6	7.37	3.42	29.8	7.64	8.56
6	Nitrite Nitrogen mg/l	0.004	0.005	0.0004	0.047	0.007	0.006	0.061	0.014	0.004	0.01	0.01	0.004
7	Nitrogen(Nitrate) mg/l	0.001	0.01	0.034	0.08	0.07	0.07	0.81	0.06	0.104	0.027	0.14	0.007
8	Phosphate mg/l	0.03	0.01	0.01	0.02	0.01	0.025	0.042	0.026	0.09	0.04	0.02	0.03
9	BOD mg/l	1.9	2.2	2.3	2	2.3	1.2	1.4	2.2	4	0.9	4.2	1.1
10	COD mg/l			28		8	7	36				-	-
11	Chloride mg/l	17970	19669.4	22493	12475	499.85	1200	21243	15995	16245	18091	20640	20369
12	Fecal Coliform MPN/100 ml	450	450	780	490	790	2400	790	790	230	790	490	490
13	Total Coliform MPN/100 ml	450	780	1100	700	1300	5400	1300	1100	490	1700	700	790
14	Ammonia mg/l	0.02	0.014	0.003	0.02	0.04	0.002	0.002	0.061	0.15	0.07	0.15	0.003
15	Total Dissolved Solids(mg/l)	50144	-	-	-	102	150	200	28	174	42721	37669	51340
16	Total Fixed Solids (mg/l)	33439	-	-	-	95	92	110	169	93	31751	19752	39080
17	Total Suspended Solid (mg/l)	102	-	-	-	18	20	28	83	32	178	174	203
18	Hardness(mg/l)	7000	-	-	-	254	130	7800	5600	12000	6750	6400	15400
19	Fluoride(mg/l)	BDL	-	-	-	0.54	0.49	1.36	1.2	1.4	1.57	0.27	0.9
20	Boron(mg/l)	8.6	-	-	-	3.67	0.6	16	13.1	11.3	4.08	3.09	4.9
21	Sulphate (mg/l)	2607.5	-	-	-	954.09	301.6	892.3	979.3	992.9	2873	2873	1467.6
22	Total Alkalinity(mg/l)	128	-	-	-		180	242	204	90	92	84	100
23	Phenolphthalein Alkalinity(mg/l)	8	-	-	-	0	0	0	0	0	6	8	0
24	Sodium(mg/l)	1957	-	-	-	422.9	314.3	8496	10171	8533	10486	10486	4344
25	Potassium(mg/l)	384	-	-	-	24.7	17.9	335	251.7	232.2	31.6	315.6	227.3

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
26	Calcium as CaCO <sub>3</sub> (mg/l)	480.96	-	-	-	58	24	2200	2200	2800	1000	1000	1600
27	Magnesium(mg/l)	1409.4	-	-	-	47.6	25.8	1360	826.2	2235.6	1397	1312	3353

Table 3 aa - RIVER CHAPORA NEAR SIOLIM BRIDGE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.77	7.66	7.37	7.3	6.45	6.99	6.83	7.81	7.64	7.76	6.95	6.91
2	Temperature °C	31	32.9	32.7	29.8	26.9	28.6	28	29.3	28.3	28	28.5	28
3	Conductivity µs/cm	52380	35100	34900	26430	293.7	207.7	1386	48750	25510	39770	45000	32020
4	Dissolved Oxygen mg/l	5.5	5.7	6	6.5	7.1	7.3	6.99	5.4	6.2	5.5	6.4	6.2
5	Turbidity (NTU)	4.5	14.2	4.58	8.25	10.3	9.06	21.7	3.12	2.65	5.71	2.38	7.13
6	Nitrite Nitrogen mg/l	0.007	0.007	0.001	0.025	0.005	0.006	0.001	0.011	0.005	0.01	0.01	0.004
7	Nitrogen(Nitrate) mg/l	0.01	0.03	0.03	0.1	0.1	0.07	0.28	0.06	0.14	0.15	0.15	0.01
8	Phosphate mg/l	0.03	0.008	0.02	0.028	0.01	0.028	0.039	0.031	0.02	0.04	0.021	0.03
9	BOD mg/l	0.9	2.6	2.1	1.8	0.5	0.9	0.71	2.1	2.5	1.9	1.8	-
10	COD mg/l			29	40	3	4	65				-	-
11	Chloride mg/l	18698	18940.9	17495	9589	2	699.8	124.9	13121	13121	17909	18091	13771
12	Fecal Coliform MPN/100 ml	4900	3300	4900	7900	7900	7900	4900	4900	11000	13000	7900	4900
13	Total Coliform MPN/100 ml	13000	7900	13000	17000	14000	13000	7900	7900	17000	22000	11000	7000
14	Ammonia mg/l	0.02	0.04	0.07	0.02	0.01	0.011	0.027	0.005	0.17	0.22	0.19	0.003
15	Total Dissolved Solids(mg/l)	40000	-	-	-	110	105	110	112	125	30623	34536	29926
16	Total Fixed Solids (mg/l)	31060	-	-	-	95	82	32	88	89	22151	22648	18802
17	Total Suspended Solid (mg/l)	56	-	-	-	15	15	12	22	29	30	147	99
18	Hardness(mg/l)	6500	-	-	-	18	16	20	4800	8000	5000	4800	5200
19	Fluoride(mg/l)	BDL	-	-	-	0.57	0.43	0.14	1.1	1.2	1.33	0.24	0.92
20	Boron(mg/l)	8.4	-	-	-	1.04	0.6	17	13.2	13.7	2.81	1.88	5.7
21	Sulphate (mg/l)	2650.5	-	-	-	6.79	3.9	2.1	883.2	311.2	2206	2206	957.1
22	Total Alkalinity(mg/l)	124	-	-	-	26	106	48	186	60	76	70	78
23	Phenolphthalein Alkalinity(mg/l)	6	-	-	-	0	0	0	0	0	0	4	0
24	Sodium(mg/l)	1885	-	-	-	48.3	35.3	8	9432	4841	6639	6639	3145
25	Potassium(mg/l)	389.4	-	-	-	5	4	3.3	231.2	150.1	188	187.5	177
26	Calcium as CaCO <sub>3</sub> (mg/l)	521.04	-	-	-	14	6	18	2000	2400	750	800	1600
27	Magnesium(mg/l)	1263.6	-	-	-	0.97	2.4	0.5	680.4	1360.8	1033	972	878

Table 3 ab - RIVER SINQUERIM, CANDOLIM SIDE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.6	7.6	7.26	7.89	6.87	7.46	7.49	7.55	7.44	8.33	6.88	6.59
2	Temperature °C	34	33	33.8	27	28	28.3	30.5	29.8	28.7	28	29	29
3	Conductivity µs/cm	52220	54800	53500	49340	2843	32700	40250	50630	48580	54440	58500	48140
4	Dissolved Oxygen mg/l	6	5.3	5.2	5.9	7.12	5.8	6.22	5.2	5	5.9	6.1	5.2
5	Turbidity (NTU)	3.8	17.5	12	24.2	25.1	4.87	6.29	7.11	8.44	3.3	4.09	8.68
6	Nitrite Nitrogen mg/l	0.007	0.01	0.003	0.021	0.01	0.221	0.122	0.03	0.009	0.02	0.005	0.005
7	Nitrogen(Nitrate) mg/l	BDL	0.03	0.04	0.116	0.1	BDL	0.01	0.05	0.1	0.04	0.2	0.02
8	Phosphate mg/l	0.024	0.02	0.004	0.04	0.02	0.03	0.069	0.029	0.02	0.02	0.012	0.02
9	BOD mg/l	1.6	1.7	1.3	2.2	2	1.7	2.05	1.4	2.3	1.2	1.6	1.3
10	COD mg/l					14	34	48				-	-
11	Chloride mg/l	18212	26954.4	20744	19669	1624.5	14396	16870	17495	18119	20155	24768	18557
12	Fecal Coliform MPN/100 ml	2300	4900	2300	4900	4900	4900	2300	4900	3300	2300	1300	1300
13	Total Coliform MPN/100 ml	4900	7900	4900	7900	7000	7000	3300	7900	4900	3300	2300	2300
14	Ammonia mg/l	0.02	0.03	0.03	0.006	0.05	0.009	0.026	0.007	0.08	0.09	0.14	0.007
15	Total Dissolved Solids(mg/l)	39900	-	-	-	201	180	150	156	163	40830	44038	55947
16	Total Fixed Solids	25973	-	-	-	150	90	80	76	81	36078	31519	29408

	(mg/l)												
17	Total Suspended Solid (mg/l)	86	-	-	-	38	25	20	31	34	30	145	82
18	Hardness(mg/l)	6400	-	-	-	264	88	5000	16	14000	6500	6400	6200
19	Fluoride(mg/l)	0.32	-	-	-	0.14	1.3	1.03	1.1	1.3	1.49	0.27	0.73
20	Boron(mg/l)	10.5	-	-	-	1.3	17.8	19	21.4	19.7	4.03	2.52	3.7
21	Sulphate (mg/l)	2521.5	-	-	-	1503.2	1710	388.9	832.8	379.8	3196.2	3196	957.1
22	Total Alkalinity(mg/l)	120	-	-	-	32	40	230	20	88	94	86	88
23	Phenolphthalein Alkalinity(mg/l)	4	-	-	-	0	0	0	0	0	4	6	0
24	Sodium(mg/l)	1856	-	-	-	462.2	5509	7121	11362	9609	8490	8490	3942
25	Potassium(mg/l)	352.4	-	-	-	28.3	283.5	297.9	282.5	245	328	328.3	184.4
26	Calcium as CaCO <sub>3</sub> (mg/l)	641.28	-	-	-	58	22	4000	10	5600	1250	1100	4000
27	Magnesium(mg/l)	1166.4	-	-	-	50	16	243	1.5	2041.2	1276	1287	534.6

Table 3 ac - RIVER SINGUERIM, NEAR GANPATI TEMPLE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.17	7.51	7.41	7.69	6.84	7.46	7.37	7.44	7.52	8.35	6.8	7.34
2	Temperature °C	33	33.4	33.2	28	28	28.1	30.7	29.9	29.6	28	29	29.3
3	Conductivity µs/cm	52890	54500	53700	49120	2758	35900	40420	50960	49360	54180	58820	48440
4	Dissolved Oxygen mg/l	6	5.5	5	5.5	7.1	5.3	5.16	5.85	4.8	5.3	5.7	5.1
5	Turbidity (NTU)	5.24	14.8	10.7	24.8	19.3	3.9	21	8.11	17.2	11	7.79	9.01
6	Nitrite Nitrogen mg/l	0.009	0.011	0.005	0.033	0.006	0.377	0.031	0.034	0.012	0.02	0.004	0.005
7	Nitrogen(Nitrate) mg/l	0.07	0.04	0.04	0.15	0.13	BDL	0.5	0.07	0.011	0.09	0.14	0.03
8	Phosphate mg/l	0.05	0.007	0.011	0.062	0.03	0.03	0.089	0.036	0.03	0.15	0.021	0.01
9	BOD mg/l	1.2	1.4	1.4	1.1	2.1	1.4	1.43	1.8	2	1.7	1.3	0.9
10	COD mg/l					9	20	59				-	-
11	Chloride mg/l	18941	16876.9	28866	18941	624.8	99.9	16870	19619	20993	22462	24040	22830
12	Fecal Coliform MPN/100 ml	7900	7900	7900	3200	3300	7900	7900	3300	2300	3300	2300	2300
13	Total Coliform MPN/100 ml	17000	13000	17000	4600	4900	14000	17000	4900	3300	4600	3300	3300
14	Ammonia mg/l	0.05	0.002	0.05	0.035	0.08	0.028	0.021	0.006	0.15	0.27	0.1	0.003
15	Total Dissolved Solids(mg/l)	40224	-	-	-	121	120	110	128	158	42260	40932	38452
16	Total Fixed Solids (mg/l)	33294	-	-	-	114	70	75	65	71	31602	19838	19252
17	Total Suspended Solid (mg/l)	56	-	-	-	32	20	22	24	26	71	145	165
18	Hardness(mg/l)	7200	-	-	-	270	7600	5000	28	12000	6500	6500	7800
19	Fluoride(mg/l)	BDL	-	-	-	0.68	1.3	1.03	1.3	1.2	1.51	0.28	0.78
20	Boron(mg/l)	9.8	-	-	-	1.3	3.7	19	11	11.9	4.36	2.63	5.5
21	Sulphate (mg/l)	2569.3	-	-	-	1867	2040	388.9	846.6	1400.26	3131	3131	1765.4
22	Total Alkalinity(mg/l)	122	-	-	-	36	90	230	56	98	94	84	100
23	Phenolphthalein Alkalinity(mg/l)	6	-	-	-	0	0	0	0	0	0	8	0
24	Sodium(mg/l)	1996	-	-	-	459	6131	7121	10064	10192	10114	10114	4626
25	Potassium(mg/l)	381.7	-	-	-	30	306.8	297.9	253.8	248.2	293	293.2	252.3
26	Calcium as CaCO <sub>3</sub> (mg/l)	601.2	-	-	-	52	3800	4000	26	4400	1250	900	200
27	Magnesium(mg/l)	1385.1	-	-	-	52.9	923	243	0.49	1846.8	1276	1360	1409

Table 3 ad - RIVER MANDVI AT IFFI JETTY 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	8	7.68	6.59	7.77	7.09	6.72	8.12	8.01	7.6	7.47	8.69	7.89
2	Temperature °C	31.5	32.9	31.2	31	28	28.9	29.2	29.2	29.1	28.2	29	27
3	Conductivity µs/cm	49340	51300	49860	50200	506.68	2662	46810	51500	50500	72600	52450	52300
4	Dissolved Oxygen mg/l	6.3	5.7	5.6	8.6	7.5	7.4	6	6.5	5	6.7	6.8	5.9
5	Turbidity (NTU)	13.4	12.9	19.9	13.4	34.3	11.6	5.1	7.91	3.6	30.3	1.83	10.4
6	Nitrite Nitrogen mg/l	0.003	BDL	0.009	0.14	0.014	0.008	0.057	0.016	0.018	0.022	0.005	0.008
7	Nitrogen(Nitrate) mg/l	0.13	BDL	0.05	0.02	0.16	0.14	0.28	0.06	0.057	0.035	0.07	0.02
8	Phosphate mg/l	0.03	0.15	0.03	0.03	0.048	0.024	0.041	0.018	0.001	0.001	0.016	0.05
9	BOD mg/l	3.2	1.2	1.9	4.2	1.6	1	1.2	5	3.1	1.8	0.5	1.1

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
10	COD mg/l					55	5	68				32	-
11	Chloride mg/l	17970	20397.9	19813	17595	366.9	1999	20119	20244	21892.2	10127	22601.5	29316
12	Fecal Coliform MPN/100 ml	1300	2300	2300	4900	7000	7900	2300	2300	2300	1700	790	790
13	Total Coliform MPN/100 ml	3300	3300	4900	7000	11000	13000	4900	3300	4900	3300	2400	1300
14	Ammonia mg/l	0.01	0.03	0.14	0.09	0.106	0.013	0.031	0.063	0.013	0.049	0.028	0.006
15	Total Dissolved Solids(mg/l)	46770	-	-	-	250	212	180	20	22997	46361	53483	-
16	Total Fixed Solids (mg/l)	29216	-	-	-	169	170	120	224	18306	34313	32695	-
17	Total Suspended Solid (mg/l)	187	-	-	-	18	22	21	161	24	21	143	-
18	Hardness(mg/l)	6000	-	-	-	30	234	6200	5000	7200	9400	6600	9400
19	Fluoride(mg/l)	1.4	-	-	-	0.44	0.55	1.15	1.1	1.55	0.57		0.84
20	Boron(mg/l)	0.52	-	-	-	0.21	15.2	21	14.8	15.46	3.25		7.5
21	Sulphate (mg/l)	2125.6	-	-	-	20.43	114	617.8	1002.1	330.5	1023.2	1809.37	1503.1
22	Total Alkalinity(mg/l)	18	-	-	-	18	20	226	230	130	96	112	98
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	16	0.2	0
24	Sodium(mg/l)	18.55	-	-	-	78.3	434.9	8226	11242	10324	10474	6827	4698
25	Potassium(mg/l)	344.4	-	-	-	6.1	25.5	328.4	276.1	221	267	253.9	250
26	Calcium as CaCO3(mg/l)	200.4	-	-	-	16	50	2600	4000	1800	2000	1100	1600
27	Magnesium(mg/l)	1336.5	-	-	-	3.4	44.7	874.8	243	1312.2	1798.2	1336.5	1895

Table 3 ae - RIVER MANDOVI NEAR HOTEL MARIOTT 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	8	7.76	6.77	7.62	6.93	6.56	8.07	8.39	7.63	7.7	8.88	7.93
2	Temperature °C	31.5	32.7	31	33	27.8	27.8	29	29.4	28.9	28.5	29	27.2
3	Conductivity µs/cm	50720	51.8	49260	50200	421.26	3960	45730	51100	51500	72300	52700	52800
4	Dissolved Oxygen mg/l	6.3	5.9	5.8	6	7.8	7.3	5.9	6.6	5.4	5.7	6.6	6.1
5	Turbidity (NTU)	6.16	5.89	6.77	18	34.1	12	13.9	14.5	4.63	10.1	3.55	13.4
6	Nitrite Nitrogen mg/l	0.002	0.009	0.011	0.004	0.014	0.007	0.085	0.018	0.029	0.03	0.01	0.008
7	Nitrogen(Nitrate) mg/l	0.08	0.078	0.08	0.02	0.32	0.12	0.19	0.05	0.041	0.06	0.03	0.02
8	Phosphate mg/l	0.008	0.205	0.01	0.03	0.035	0.023	0.045	0.023	0.001	0.001	0.024	0.03
9	BOD mg/l	2.8	1.8	2.3	2.4	1.9	1.7	1.8	4.4	1.9	0.5	1	1.2
10	COD mg/l					13	7	61				58	-
11	Chloride mg/l	21734	19669.4	20547	19394	733.8	2199	103.9	25992	37791.5	18317	23090.7	25155
12	Fecal Coliform MPN/100 ml	450	780	1300	7900	7900	4900	3300	1300	490	330	130	2400
13	Total Coliform MPN/100 ml	780	1300	1700	13000	13000	7900	4900	2300	700	460	230	9200
14	Ammonia mg/l	0.02	0.078	0.01	0.11	0.095	0.015	0.039	0.005	0.015	0.053	0.03	0.004
15	Total Dissolved Solids(mg/l)	46095	-	-	-	157	100	90	35	21172	76010	45875	-
16	Total Fixed Solids (mg/l)	30025	-	-	-	121	80	70	105	15667	45282	33521	-
17	Total Suspended Solid (mg/l)	154	-	-	-	17	32	30	72	16	26	142	-
18	Hardness(mg/l)	6000	-	-	-	26	360	5600	5000	1800	14000	6900	7800
19	Fluoride(mg/l)	1.3	-	-	-	0.24	0.45	1.02	1.3	1.44	0.15		0.06
20	Boron(mg/l)	0.18	-	-	-	0.21	8.3	22	10.9	13.39	3.32		7.2
21	Sulphate (mg/l)	2835.6	-	-	-	18.72	45.1	543.4	1432.3	419.8	1108.6	1383.97	1411
22	Total Alkalinity(mg/l)	18	-	-	-	20	40	224	202	134	94	102	92
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	8	0.2	0
24	Sodium(mg/l)	1843	-	-	-	63.4	614	8083	12084	10013	10679	7136	5147
25	Potassium(mg/l)	342.4	-	-	-	5.2	37.4	324.1	275.9	246	269	258	250.4
26	Calcium as CaCO3(mg/l)	801.6	-	-	-	20	74	2000	2400	1400	2800	900	2000
27	Magnesium(mg/l)	972	-	-	-	1.46	69.4	874.8	631.8	1117.8	2721	1458	1409

Table 3 af - RIVER MANDOVI AT AMONA 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.1	6.21	6.04	6.86	6.03	6.52	6.79	6.25	6.99	6.33	7.17	7.11
2	Temperature °C	33.5	32.7	29.4	27	27.2	27.5	29.2	28.1	28	28.1	29	27.5
3	Conductivity µs/cm	36200	33950	829.6	249.48	164.9	181.7	1620	1764	9211	19750	25940	28970
4	Dissolved Oxygen mg/l	5.5	5.9	6.5	7.1	7.1	6.6	6.9	6.5	6.5	6.6	6.1	6
5	Turbidity (NTU)	7.04	8.7	11.2	15	20.2	8.28	7.01	8.06	12.5	48.9	7.33	8.61
6	Nitrite Nitrogen mg/l	0.078	0.03	0.005	0.002	0.009	0.002	0.005	0.004	0.006	0.021	0.005	0.01
7	Nitrogen(Nitrate) mg/l	0.33	0.88	0.28	0.147	0.14	0.26	0.118	0.04	0.084	0.17	1.63	0.03
8	Phosphate mg/l	0.01	0.02	0.01	0.01	0.025	0.002	0.012	0.018	0.013	0.048	0.01	0.03
9	BOD mg/l	1.3	1.4	1.6	1.1	0.3	0.6	0.8	0.5	0.8	1.9	1	1.9
10	COD mg/l	25	17	5	14	13	7	7	9		32	-	-
11	Chloride mg/l	20914	13502.2	244.6	364.25	1589.9	391.4	122.3	1834.5	3180	5479.1	13697.8	11859
12	Fecal Coliform MPN/100 ml	3300	7900	7900	13000	11000	4900	7000	4600	7900	11000	4900	5200
13	Total Coliform MPN/100 ml	4900	13000	11000	17000	14000	9400	11000	9400	13000	17000	7900	9200
14	Ammonia mg/l	0.14	0.07	0.08	0.04	0.033	0.012	0.029	0.122	0.063	0.036	0.002	0.006
15	Total Dissolved Solids(mg/l)	25417	-	-	-	298	284	151	1090	7367	16274	18670	19010
16	Total Fixed Solids (mg/l)	20469	-	-	-	214	177	106	251	3202	10171	4883	5000
17	Total Suspended Solid (mg/l)	109	-	-	-	8	7	4	15	25	65	14	16
18	Hardness(mg/l)	5000	-	-	-	4	16	12	182	1800	2300	2200	4200
19	Fluoride(mg/l)	1.51	-	-	-	0.5	0.07	0.75	0.06	0.52	0.89	0.27	0.71
20	Boron(mg/l)	33.15	-	-	-	0.16	4.02	15.06	5.26	2.2	37.212	16.75	5.0
21	Sulphate (mg/l)	1191.7	-	-	-	3.44	3.87	24.38	127.5	158.7	161.04	1012.45	560
22	Total Alkalinity(mg/l)	46	-	-	-	12	26	22	36	58	14	58	64
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0.2	0	0
24	Sodium(mg/l)	1455	-	-	-	83.2	21.1	38	190.9	1440	8.9	5052	3062
25	Potassium(mg/l)	242.4	-	-	-	2.5	4	4.1	10	51.5	1.9	122.5	158.8
26	Calcium as CaCO3(mg/l)	400	-	-	-	0	6	12	34	600	600	800	1600
27	Magnesium(mg/l)	4902.8	-	-	-	0.97	2.4	0	36	291.6	413	340.2	632

Table 3 ag - RAIJA LAKE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	8.13	7.91	6.02	6.47	6.35	6.6	7.27	6.68	6.73	6.91	6.86	6.68
2	Temperature °C	34	34.9	31.1	27.4	27.3	29.3	31.9	28.3	29.1	27	28	28.9
3	Conductivity µs/cm	112.7	175.2	105.3	87.65	71.63	70.86	1406	90.47	83.9	99.68	94.69	111.2
4	Dissolved Oxygen mg/l	6.8	7.6	7.5	5.2	5.7	6	5.2	6	4	5	5.5	6.5
5	Turbidity (NTU)	21.3	108	56.2	8.83	8.19	2.71	2.45	0.49	2.21	3.06	2.43	6.47
6	Nitrite Nitrogen mg/l	0.004	0.023	0.04	0.007	0.01	0.001	0.001	0.002	0.042	0.001	0.002	0.003
7	Nitrogen(Nitrate) mg/l	0.2	BDL	0.34	0.15	0.22	0.01	0.01	0.01	0.117	0.05	0.02	0.02
8	Phosphate mg/l	0.005	0.1	0.097	0.02	0.017	0.013	0.004	0.004	0.004	0.01	0.007	0.01
9	BOD mg/l	5	7.8	2.7	1.6	1.6	1.6	3.7	1.3	1.9	2.1	1.7	2.5
10	COD mg/l	10	56	27	13	8	11	12	22	28	12	14	15
11	Chloride mg/l	17.97	40.49	14.2	8.81	12.83	1	9.5	8.5	6.27	7	10.5	18.0
12	Fecal Coliform MPN/100 ml	7900	13000	4900	1300	1300	3300	3300	1300	2400	230	230	230
13	Total Coliform MPN/100 ml	13000	24000	13000	2300	2300	4600	4600	2200	5400	330	490	490
14	Ammonia mg/l	0.52	0.13	0.13	0.08	0.029	0.006	0.015	0.032	0.03	0.16	0.04	0.29
15	Total Dissolved Solids(mg/l)	76	-	-	-	57	52	55	59	51	68	75	68
16	Total Fixed Solids (mg/l)	159.3	-	-	-	27	22	12	21	24	48	42	-
17	Total Suspended Solid (mg/l)	19.25	-	-	-	10	11	40	13	14	1	3	21
18	Hardness(mg/l)	16	-	-	-	10	84	16	44	24	24	24	26
19	Fluoride(mg/l)	0.57	-	-	-	0.49	0.57	0.22	0.42	0.163	0.2	0.06	0.03
20	Boron(mg/l)	0.44	-	-	-	6.61	11.9	19	7.1	1.09	0.06	2.1	1.72
21	Sulphate (mg/l)	15.11	-	-	-	9.69	3.1	1.3	4.1	2.231	1.6	2.8	3.8

22	Total Alkalinity(mg/l)		-	-	-	114	86	60	160	40	48	36	28
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	0.6	-	-	-	6.7	8.5	8.9	27.4	6.1	11.3	9.3	9.5
25	Potassium(mg/l)	14.3	-	-	-	2.8	3.3	3.3	4.8	3.1	5.6	2.9	4.3
26	Calcium as CaCO3(mg/l)	4.8	-	-	-	6	42	12	16	10	12	14	3
27	Magnesium(mg/l)	0.97	-	-	-	1	10.2	0.9	6.8	3.4	2.9	2.4	4.4

Table 3 ah - SAIPEM LAKE, NAVELIM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH			6.4	6.65	6.75	7	7.14	7.03				
2	Temperature °C			27.4	27.8	30.1	29	30	30.2	7.19			
3	Conductivity µs/cm			267.43	264.9	209.81	256.2	1613	329	29.3	7.6		
4	Dissolved Oxygen mg/l			3.6	4.1	2.3	2	1	2.62	400	28.3		
5	Turbidity (NTU)			40.1	10.2	14.9	19.4	92	18.2	1	388.45		
6	Nitrite Nitrogen mg/l			0.09	0.24	0.211	0.002	0.01	0.09	53.6	1		
7	Nitrogen(Nitrate) mg/l			1.38	0.81	12.5	0.65	5.16	0.11	0.03	28.5		
8	Phosphate mg/l			0.08	0.06	0.451	0.161	1.7	0.114	0.03	0.006		
9	BOD mg/l			2.3	1.4	1.5	10	83	9	0.16	2.8		
10	COD mg/l			17	12	9	23	160	30	23	0.77		
11	Chloride mg/l			22.18	350	90	199.9	31.57	32.05	40	2.5		
12	Fecal Coliform MPN/100 ml			7900	4900	4600	7900	13000	13000	45.17	6		
13	Total Coliform MPN/100 ml			11000	7900	7000	13000	22000	17000	1300	43.5		
14	Ammonia mg/l			0.79	0.53	0.81	0.27	1.58	13.5	0	13000		
15	Total Dissolved Solids(mg/l)			-	-	226	210	968	230	1700	22000		
16	Total Fixed Solids (mg/l)			-	-	69	80	460	205	0	0.004		
17	Total Suspended Solid (mg/l)			-	-	16	18	1462	12	0.17			
18	Hardness(mg/l)			-	-	40	16	72	154				
19	Fluoride(mg/l)			-	-	0.06	0.58	0.22	0.19	70	68		
20	Boron(mg/l)			-	-	0.86	5.5	4.47	6	0.15	0.26		
21	Sulphate (mg/l)			-	-	10.51	16.6	13.84	199.7	0.2	0.7		
22	Total Alkalinity(mg/l)			-	-	300	32	84	92	5.56	6.1		
23	Phenolphthalein Alkalinity(mg/l)			-	-	0	0	0	0	92	26		
24	Sodium(mg/l)			-	-	17.9	25.3	26	25	0	0		
25	Potassium(mg/l)			-	-	6.2	8	8.9	6.4	31	35.4		
26	Calcium as CaCO3(mg/l)			-	-	36	6	60	54	8	8.1		
27	Magnesium(mg/l)			-	-	1	2.4	2.916	24.3	50	46		

Table 3 ai - CURTORIM LAKE, CURTORIM 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	8.04	8.24	5.59	6.13	6.22	6.67	7.08	6.85	6.76	6.79	6.9	6.71
2	Temperature °C	34	33.8	30.9	27.6	27.5	28.5	31.7	28	29	26	28.7	28
3	Conductivity µs/cm	162.5	183.6	109.7	64.47	63.26	97.89	1480	105.25	111.6	128.25	121	132.4
4	Dissolved Oxygen mg/l	6.4	8.8	5.7	5.7	4.7	4	3.2	5	6.9	2.2	4.2	4.9
5	Turbidity (NTU)	8.85	40	39.4	26.4	8.11	5.59	20.2	4.35	8.42	6.42	5.97	5.41
6	Nitrite Nitrogen mg/l	0.002	0.02	0.02	0.015	0.04	0.002	0.623	0.002	0.536	0.002	0.003	0.002
7	Nitrogen(Nitrate) mg/l	0.15	BDL	0.07	0.06	0.14	BDL	0.13	0.01	0.167	0.12	BDL	BDL
8	Phosphate mg/l	0.01	0.18	0.05	0.05	0.03	0.009	0.012	0.007	0.002	0.04	0.04	0.02
9	BOD mg/l	3	7.6	2.4	1.9	1.7	2	2.5	2.2	4.6	4	2.5	4.6
10	COD mg/l	11	24	21	9	27	16	17	18	30	9	17	12
11	Chloride mg/l	18.94	29.49	16.6	6.36	16.63	8.5	17	15	7.71	13	14	19.4
12	Fecal Coliform MPN/100 ml	1300	2300	7900	7900	4900	3300	2300	7900	2300	2300	1300	2300
13	Total Coliform MPN/100 ml	2300	4900	21000	17000	7900	4900	4600	13000	3300	3300	2300	3300
14	Ammonia mg/l	0.4	0.06	0.03	0.06	0.016	0.005	0.018	0.057	0.006	0.01	0.1	0.31
15	Total Dissolved	89	-	-	-	75	82	80	82	110	84.2	84	105

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
	Solids(mg/l)												
16	Total Fixed Solids (mg/l)	172.71	-	-	-	57	50	13	45	57	52	49	-
17	Total Suspended Solid (mg/l)	21.35	-	-	-	15	12	50	17	65	6	8	13
18	Hardness(mg/l)	34	-	-	-	10	82	40	56	32	30	40	38
19	Fluoride(mg/l)	0.62	-	-	-	0.51	0.68	0.07	0.34	0.068	0.2	0.1	0.14
20	Boron(mg/l)	0.09	-	-	-	6.61	2.4	19	9.7	1.21	0.06	2.4	1.66
21	Sulphate (mg/l)	17.26	-	-	-	11.14	3.8	3.5	2	8.81	2.7	2.5	5.3
22	Total Alkalinity(mg/l)	10	-	-	-	9	24	98	176	46	78	40	48
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	3.9	-	-	-	5.7	10.2	20.5	31.1	7.3	13.7	16.8	10
25	Potassium(mg/l)	14.2	-	-	-	2.2	3.4	8.5	6.8	4.5	6	6.3	4.1
26	Calcium as CaCO <sub>3</sub> (mg/l)	8	-	-	-	4	22	38	18	13	14	18	8
27	Magnesium(mg/l)	3.4	-	-	-	1.5	14.6	0.5	9.2	3.4	3.9	5.3	4.4

Table 3 aj - RIVER ZUARI AT MADKAI JETTY 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.5	7.1	7.14	7.35	7	7.19	7.18	7.35	7.6	7.2	7.62	6.7
2	Temperature °C	32.1	31.5	30.4	28	23	28.8	30.7	30.9	28.9	28.1	29.8	28.8
3	Conductivity µs/cm	46800	48070	51600	34460	536	5260	39720	43200	44650	50440	48500	61390
4	Dissolved Oxygen mg/l	4.7	3	5.2	6.5	7.1	7.6	7.2	5.1	5.6	6	5.5	5.5
5	Turbidity (NTU)	14.5	15.1	16	11.6	30.6	82.8	9.92	6.61	9.63	16.2	41.5	27.9
6	Nitrite Nitrogen mg/l	0.05	0.003	0.008	0.01	0.01	0.043	0.006	0.025	0.049	0.097	0.017	0.022
7	Nitrogen(Nitrate) mg/l	0.14	BDL	0.01	0.11	0.14	4	0.078	0.016	BDL	0.055	0.037	4.23
8	Phosphate mg/l	0.05	0.06	0.21	0.04	0.02	0.15	0.007	0.058	0.066	0.014	0.071	0.096
9	BOD mg/l	1.1	0.4	3	3	1.5	1.3	0.8	2.8	1.8	1.6	1.3	1.7
10	COD mg/l	31		44		16	21	30	34	38		-	32
11	Chloride mg/l	16022	18244	7949.7	3302.5	130.5	1625	375	17995	18443.2	22626	20424.5	22243
12	Fecal Coliform MPN/100 ml	450	1300	1700	7900	7900	4900	4900	4900	1300	1300	1300	1300
13	Total Coliform MPN/100 ml	450	1700	2200	13000	13000	7900	7900	7900	2300	1700	2300	2300
14	Ammonia mg/l	0.07	0.04	0.07	0.12	0.07	0.15	0.151	0.199	0.246	0.038	0.063	0.092
15	Total Dissolved Solids(mg/l)	26085	-	-	-	280	3013	648	8512	56982	3402	31614	27650
16	Total Fixed Solids (mg/l)	17110	-	-	-	192	2600	468	281856	23716	2985	18912	15718
17	Total Suspended Solid (mg/l)	158	-	-	-	30	725	15	86	55	123	60	157
18	Hardness(mg/l)	6800	-	-	-	52	300	26	5200	5600	6800	5200	2400
19	Fluoride(mg/l)	1.1	-	-	-	0.25	ND	BDL	1.14	0.239	1.21	0.99	0.73
20	Boron(mg/l)	13.6	-	-	-	1.3	5.23	5.56	5.4	5.022	3.24	3.56	11.92
21	Sulphate (mg/l)	1983.7	-	-	-	17.8	10.5	73	7.55	1808.4	952.5	2603.5	2314.1
22	Total Alkalinity(mg/l)	122	-	-	-	24	80	280	1020	80	106	84	860
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0.2	4	0	0
24	Sodium(mg/l)	1788	-	-	-	100.3	38.5	49.6	1405	4761	10504	10070	6190
25	Potassium(mg/l)	308.9	-	-	-	7.1	53.2	4.7	193.2	243.2	252.3	247.8	277.6
26	Calcium as CaCO <sub>3</sub> (mg/l)	1000	-	-	-	20	92	22	1000	1100	1600	1600	600
27	Magnesium(mg/l)	6557	-	-	-	7.8	50.5	1	1020.6	1093.5	1263.6	874.8	437.4

Table 3 ak - RIVER ZUARI AT BORIM BRIDGE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.29	7.7	6.86	6.82	6.72	6.66	6.66	6.05	6.7	7.17	7.35	6.3
2	Temperature °C	33.4	33	32	29	20	28.1	30	29.2	29.4	27.6	29.2	29.1
3	Conductivity µs/cm	17850	33570	35200	10380	370	148.5	7100	11850	25490	31850	32300	38490
4	Dissolved Oxygen mg/l	6.3	4.4	6	5.7	6.8	7.7	7.5	5.9	5.7	5.8	5.5	5.5
5	Turbidity (NTU)	65.1	6.04	9.65	11	20.8	13.2	8.37	8.89	11.8	5.64	7.84	22
6	Nitrite Nitrogen mg/l	0.02	0.007	0.003	0.02	0.006	0.007	0.004	0.005	0.003	0.128	0.034	0.058

7	Nitrogen(Nitrate) mg/l	0.28	BDL	0.03	0.14	0.09	0.01	0.09	BDL	0.33	0.088	0.022	0.36
8	Phosphate mg/l	0.06	0.01	0.01	0.02	0.008	0.014	0.047	0.026	0.017	0.003	0.021	0.192
9	BOD mg/l	1.3	1.2	3.5	1.4	1.6	2.3	1.9	3.1	1.3	1.9	1.6	1.9
10	COD mg/l	19		30		10	8	13	34	23		-	25
11	Chloride mg/l	7460.5	12996	12964	11340	88.5	34.99	1710	4124	415.8	13576	12964.1	29741
12	Fecal Coliform MPN/100 ml	450	2300	2300	13000	13000	13000	7900	7900	1300	1700	2300	2300
13	Total Coliform MPN/100 ml	450	3300	3300	17000	17000	22000	17000	14000	2300	3300	3300	3300
14	Ammonia mg/l	0.07	0.04	0.08	0.08	0.09	0.03	0.044	0.217	0.038	0.006	0.02	0.063
15	Total Dissolved Solids(mg/l)	12648	-	-	-	180	100	3987	9176	35779	19179	19386	28913
16	Total Fixed Solids (mg/l)	9297	-	-	-	16	141	3177	6716	15281	3152	14171	14734
17	Total Suspended Solid (mg/l)	125	-	-	-	18	8	45	13	82	61	11	97
18	Hardness(mg/l)	2100	-	-	-	40	14	680	162	2700	3800	3800	1000
19	Fluoride(mg/l)	0.43	-	-	-	0.76	0.11	0.13	0.41	0.182	0.95	1.04	0.72
20	Boron(mg/l)	1.23	-	-	-	1.3	2.75	5.54	6.05	3.61	2.86	2.85	19.55
21	Sulphate (mg/l)	282	-	-	-	8.1	5.49	0.57	0.02	1313.3	793.6	1477.6	2592
22	Total Alkalinity(mg/l)	64	-	-	-	24	120	400	540	56	68	62	680
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0.1	0	0	0
24	Sodium(mg/l)	837.1	-	-	-	68.5	22.8	891.4	646	144.5	6119	5034	3802
25	Potassium(mg/l)	104.5	-	-	-	6.2	3.3	47.8	76.2	8.4	179.5	146.3	180.1
26	Calcium as CaCO3(mg/l)	300	-	-	-	16	10	80	100	500	1000	600	200
27	Magnesium(mg/l)	2027.1	-	-	-	5.8	1	146	15.1	534.6	680.4	777.6	194.4

Table 3 ai - CARAMBOLIM LAKE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH		6.48		7.37	6.7	6.37	6.46	6.36	7.32	7.48	8.1	7.29
2	Temperature °C		29		28.2	28	28	29.7	28.5	28.1	24.1	28	27
3	Conductivity µs/cm		424340		179.3	277.83	96.8	1498	129.3	170.1	157.6	176.94	169.8
4	Dissolved Oxygen mg/l		1.4		4.8	5.7	3.2	3.4	4.5	3.2	0.9	3.7	3.9
5	Turbidity (NTU)		14.3		51.6	15.6	2.61	11.09	8.48	5.15	7.96	3.78	4.2
6	Nitrite Nitrogen mg/l		0.048		0.02	0.007	0.019	0.062	0.225	0.001	0.001	0.003	0.003
7	Nitrogen(Nitrate) mg/l		BDL		BDL	0.04	0.16	0.067	BDL	0.012	0.028	0.003	0.03
8	Phosphate mg/l		0.11		0.11	0.002	0.016	0.103	0.005	0.002	0.002	0.006	0.008
9	BOD mg/l		2.4		4.2	1	2.7		2.7	2.5	2.5	0.6	1.9
10	COD mg/l		74		21	7	5	14	22	18	15	21	4.0
11	Chloride mg/l		92.97		40	7.5	6.99	13.21	5	23.48	22.5	25.93	22.6
12	Fecal Coliform MPN/100 ml		35000		7900	11000	13000	7900	1300	13000	7900	4900	1700
13	Total Coliform MPN/100 ml		92000		13000	17000	24000	13000	2200	17000	13000	7000	3500
14	Ammonia mg/l		1.76		0.12	0.07	0.002	0.042	0.018	0.012	0.045	0.01	0.009
15	Total Dissolved Solids(mg/l)		-		-	203	250	187	16	148	19422	94	-
16	Total Fixed Solids (mg/l)		-		-	110	150	124	244	83	75	21	-
17	Total Suspended Solid (mg/l)		-		-	15	15	38	137	9	15	26	-
18	Hardness(mg/l)		-		-	34	20	26	62	52	1400	54	60
19	Fluoride(mg/l)		-		-	0.54	0.42	0.77	0.21	0.23	0.51		0.92
20	Boron(mg/l)		-		-	1.27	0.9	6.56	14.8	0.46	0.52		4.6
21	Sulphate (mg/l)		-		-	6.95	3.1	3.56	96.1	55.7	64.38	4.88	4.7
22	Total Alkalinity(mg/l)		-		-	28	224	44	226	64	60	48	48
23	Phenolphthalein Alkalinity(mg/l)		-		-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)		-		-	9.3	8.3	9.1	116.9	12.4	14.3	25.5	47.4
25	Potassium(mg/l)		-		-	2.4	4.7	7.9	7.1	2.9	4.5	4	4.1
26	Calcium as CaCO3(mg/l)		-		-	24	16	18	26	36	800	34	52
27	Magnesium(mg/l)		-		-	2.43	1	1.94	8.7	3.9	145.8	4.86	1.9

Table 3 am - ANJUNEM LAKE 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	8.47	7.18	6.89	6.4	7.45	5.62	7.35	5.25	7.12	6.79	7.28	7.28
2	Temperature °C	34.6	32	28	27	27	28.7	31	28.4	29.1	26.8	28	30
3	Conductivity µs/cm	48.9	50.36	52.1	46.6	43.1	47.34	2.749	44.6	46.6	48.43	47.01	57.29
4	Dissolved Oxygen mg/l	7.9	7.2	6.8	7.3	8.5	8.3	8.8	7.3	7	6.4	7.2	7.2
5	Turbidity (NTU)	3.24	3.4	18.3	5.36	2.35	2.36	1.89	1.28	0.82	1.27	2.41	1.25
6	Nitrite Nitrogen mg/l	0.002	0.001	0.006	0.002	0.004	0.002	0.002	0.001	0.002	BDL	0.143	0.002
7	Nitrogen(Nitrate) mg/l	0.09	BDL	0.004	0.205	0.069	0.03	0.31	0.005	0.04	0.05		0.06
8	Phosphate mg/l	0.009	0.02	0.035	0.005	0.006	0.003	BDL	0.004	0.003	0.008	0.011	0.001
9	BOD mg/l	1.1	1.9	1.7	0.3	0.7	0.5	1.7	0.9	0.5	0.3	1.1	1.1
10	COD mg/l	9	14	3	3	6	4	9	11	16	5	10	9
11	Chloride mg/l	1	5.79	9.99	4.8	4.37	4.89	6.8	1.93	1	4	5.83	10
12	Fecal Coliform MPN/100 ml	230	330	330	230	230	130	130	45	13	33	79	33
13	Total Coliform MPN/100 ml	330	490	490	330	490	240	220	78	23	79	130	49
14	Ammonia mg/l	0.03	0.05	0.05	0.086	0.022	0.026	0.001	0.02	0.02	0.07	0.008	0.029
15	Total Dissolved Solids(mg/l)	26	-	-	-	30	11		103	8512	106	34	34
16	Total Fixed Solids (mg/l)	42	-	-	-	8	10		56	28856	85	12	25
17	Total Suspended Solid (mg/l)	8	-	-	-	6	15		6	86	2	2	5
18	Hardness(mg/l)	12	-	-	-	0	6	14	12	12	30	22	24
19	Fluoride(mg/l)	0.58	-	-	-	0.137	0.05	0.008	BDL	0.17	0.2	0.04	0.04
20	Boron(mg/l)	4.1	-	-	-	2.88	0.66	0.51	1.25	0.9	0.1	BDL	0.50
21	Sulphate (mg/l)	7.64	-	-	-	2.78	1.26	2.85	3.62	0.34	0.8	0.86	0.54
22	Total Alkalinity(mg/l)	100	-	-	-	14	18	14	30	180	48	16	26
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	20.2	-	-	-	5.8	5.5	6.7	3.1	3.6	7.1	5.2	3.9
25	Potassium(mg/l)	15.3	-	-	-	2.4	2.6	2.7	0.2	1.1	3.9	0.4	1.5
26	Calcium as CaCO3(mg/l)	10	-	-	-	0	0	8	8	4	14	16	8
27	Magnesium(mg/l)	0.5	-	-	-	0	1.46	1.458	0.97	1.9	3.9	1.5	3.89

Table 3 an - RIVER MANDOVI AT RIBANDAR-CHODAN FERRY, PANAJI 2014-2015

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.86	7.68	7.26	7.6	6.86	5.63	8	7.48	7.62	7.7	7.59	6.84
2	Temperature °C	31.5	32.2	32	33	28.1	27.3	29.7	28.9	28.6	26.9	27.3	30
3	Conductivity µs/cm	46300	47370	51100	25690	662.5	168.5	39.27	37200	35100	66900	66800	57660
4	Dissolved Oxygen mg/l	5.8	5.7	5.3	6.7	6.5	6.7	5.4	6.4	6.5	5.2	6.4	6.2
5	Turbidity (NTU)	8.52	6.45	9.48	4.47	27.5	12.6	11.3	10.6	4.65	11.3	10.4	7.98
6	Nitrite Nitrogen mg/l	0.02	0.005	0.006	0.001	0.01	0.005	0.118	0.017	0.05	0.07	0.003	0.003
7	Nitrogen(Nitrate) mg/l	0.02	0.05	0.04	BDL	0.23	0.16	0.06	0.06	0.068	0.103	0.01	0.41
8	Phosphate mg/l	0.02	0.01	0.04	0.01	0.036	0.021	0.037	0.027	0.002	0.001	0.03	BDL
9	BOD mg/l	2.4	2.9	0.8	0.8	1.4	0.6	1.2	2.4	1.8	0.6	1.2	3.2
10	COD mg/l	76	32	54		10	1	74	-	-	-	-	-
11	Chloride mg/l	72.2	16870	21770	9897	611.5	99.9	15995	16245	21769.9	8218.7	23493	19079
12	Fecal Coliform MPN/100 ml	780	7000	3300	1300	7900	4900	3300	3300	2300	3300	1100	780
13	Total Coliform MPN/100 ml	780	11000	4900	2300	11000	7900	7000	4900	4600	4600	1700	1700
14	Ammonia mg/l	0.14	0.07	0.08	0.19	0.109	0.005	0.025	0.009	0.01	0.057	0.005	0.098
15	Total Dissolved Solids(mg/l)	28879	-	-	-	327	350	310	27	18156	53149	41268	47026
16	Total Fixed Solids (mg/l)	22788	-	-	-	270	280	270	368	12510	26321	20965	23694
17	Total Suspended Solid (mg/l)	17	-	-	-	13	25	20	32	19	22	27	30
18	Hardness(mg/l)	5400	-	-	-	40	14	4800	5600	4800	8200	9500	8000
19	Fluoride(mg/l)	1.18	-	-	-	0.55	0.42	1.13	1.2	1.55	0.49	0.5	0.8
20	Boron(mg/l)	24.46	-	-	-	0.22	1.2	19	15.2	2.73	3.3	6.9	9.85

21	Sulphate (mg/l)	1263.9	-	-	-	14.49	3.1	594.9	636.1	252.3	1023.2	909.5	1522.9
22	Total Alkalinity(mg/l)	108	-	-	-	18	20	186	224	98	92	90	122
23	Phenolphthalein Alkalinity(mg/l)	12	-	-	-	0	0	0	0	0	6	0	0
24	Sodium(mg/l)	1667	-	-	-	27.1	27.3	6797	7828	9871	10034	8287	5386
25	Potassium(mg/l)	299.3	-	-	-	2.1	3.7	287.4	216.5	225	249.2	220.8	255.8
26	Calcium as CaCO3(mg/l)	700	-	-	-	22	12	2000	2000	600	4400	2250	2000
27	Magnesium(mg/l)	1142.1	-	-	-	4.37	0.5	680.4	874.8	1020.6	923.4	1761.8	1458

Table 3 ao - BOREWELL/TUBE WELL/ OPEN WELL IN ZUARI INDUSTRIES LTD, ZUARINAGAR 2014-2015

Sr. No	Parameters	Apr-14	Oct-14
1	pH		6.3
2	Temperature °C		30
3	Conductivity µs/cm		1542
4	Dissolved Oxygen mg/l		6.4
5	Turbidity (NTU)		0.79
6	Nitrite Nitrogen mg/l		BDL
7	Nitrogen(Nitrate) mg/l		0.09
8	Phosphate mg/l		0.04
9	BOD mg/l		1.5
10	COD mg/l		2
11	Chloride mg/l		8.26
12	Fecal Coliform MPN/100 ml	Sample not Collected since borewell was dismantled	NIL
13	Total Coliform MPN/100 ml		<1.8
14	Ammonia mg/l		0.02
15	Total Dissolved Solids(mg/l)		1018
16	Total Fixed Solids (mg/l)		63
17	Total Suspended Solid (mg/l)		2
18	Hardness(mg/l)		66
19	Fluoride(mg/l)		0.02
20	Boron(mg/l)		2.82
21	Sulphate (mg/l)		0.67
22	Total Alkalinity(mg/l)		76
23	Phenolphthalein Alkalinity(mg/l)		0
24	Sodium(mg/l)		8.3
25	Potassium(mg/l)		3.5
26	Calcium as CaCO3(mg/l)	36	
27	Magnesium(mg/l)	7.29	

Table 3 ap - BOREWELL/TUBE WELL/OPEN WELL AT SANCOALE INDUSTRIAL ESTATE 2014-2015

Sr. No	Parameters	Apr-14	Oct-14
1	pH	6.15	7.31
2	Temperature °C	31.6	29
3	Conductivity µs/cm	94.2	1439
4	Dissolved Oxygen mg/l	6.7	7.8
5	Turbidity (NTU)	171	3.92
6	Nitrite Nitrogen mg/l	0.01	0.002
7	Nitrogen(Nitrate) mg/l	0.07	1.11
8	Phosphate mg/l	0.03	0.04
9	BOD mg/l	0.6	0.7
10	COD mg/l	4	3
11	Chloride mg/l	16.15	12.6
12	Fecal Coliform MPN/100 ml	NIL	17
13	Total Coliform MPN/100 ml	<1.8	33
14	Ammonia mg/l	0.003	0.02
15	Total Dissolved Solids(mg/l)	368	978
16	Total Fixed Solids (mg/l)	234	52
17	Total Suspended Solid (mg/l)	4	3
18	Hardness(mg/l)	40	36
19	Fluoride(mg/l)	0.41	0.24
20	Boron(mg/l)	0.25	0.29
21	Sulphate (mg/l)	1.41	0.72
22	Total Alkalinity(mg/l)	31	36
23	Phenolphthalein Alkalinity(mg/l)	0	0

Sr. No	Parameters	Apr-14	Oct-14
24	Sodium(mg/l)	8.9	9.5
25	Potassium(mg/l)	15.1	3
26	Calcium as CaCO <sub>3</sub> (mg/l)	12	20
27	Magnesium(mg/l)	6.8	3.88

**Table 3 aq - BOREWELL/TUBE WELL/ OPEN WELL AT VERNA INDUSTRIAL ESTATE 2014-2015**

Sr. No	Parameters	Apr-14	Oct-14
1	pH	7.04	6.86
2	Temperature °C	31.8	32
3	Conductivity µs/cm	249.9	1486
4	Dissolved Oxygen mg/l	3.9	4.7
5	Turbidity (NTU)	0.77	1.32
6	Nitrite Nitrogen mg/l	0.001	BDL
7	Nitrogen(Nitrate) mg/l	1.31	0.02
8	Phosphate mg/l	0.02	0.01
9	BOD mg/l	0.8	0.6
10	COD mg/l	3	9
11	Chloride mg/l	19	12.2
12	Fecal Coliform MPN/100 ml	NIL	4.5
13	Total Coliform MPN/100 ml	2	11
14	Ammonia mg/l	0.001	0.01
15	Total Dissolved Solids(mg/l)	364	250
16	Total Fixed Solids (mg/l)	324	-
17	Total Suspended Solid (mg/l)	5	33
18	Hardness(mg/l)	100	90
19	Fluoride(mg/l)	0.52	0.11
20	Boron(mg/l)	0.22	0.96
21	Sulphate (mg/l)	17.95	12.33
22	Total Alkalinity(mg/l)	99	80
23	Phenolphthalein Alkalinity(mg/l)	0	0
24	Sodium(mg/l)	4	10.6
25	Potassium(mg/l)	14.1	6.1
26	Calcium as CaCO <sub>3</sub> (mg/l)	46	40
27	Magnesium(mg/l)	13.1	12.15

**Table 3 ar - BOREWELL/ TUBE WELL/ OPEN WELL KUNDAIM INDUSTRIAL ESTATE 2014-2015**

Sr. No	Parameters	Apr-14	Oct-14
1	pH	6.63	6.05
2	Temperature °C	31	29.7
3	Conductivity µs/cm	208.1	1479
4	Dissolved Oxygen mg/l	4.8	3.8
5	Turbidity (NTU)	48.4	3.37
6	Nitrite Nitrogen mg/l	0.007	0.001
7	Nitrogen(Nitrate) mg/l	3.51	1.12
8	Phosphate mg/l	0.3	0.012
9	BOD mg/l	1.6	0.1
10	COD mg/l	4	9
11	Chloride mg/l	54.9	16.5
12	Fecal Coliform MPN/100 ml	NIL	NIL
13	Total Coliform MPN/100 ml	<1.8	<1.8
14	Ammonia mg/l	0.06	0.01
15	Total Dissolved Solids(mg/l)	97	173
16	Total Fixed Solids (mg/l)	106	98
17	Total Suspended Solid (mg/l)	16	7
18	Hardness(mg/l)	70	5600
19	Fluoride(mg/l)	BDL	0.11
20	Boron(mg/l)	2.6	19
21	Sulphate (mg/l)	170.6	0.1
22	Total Alkalinity(mg/l)	700	56
23	Phenolphthalein Alkalinity(mg/l)	0	0
24	Sodium(mg/l)	9.5	30.4
25	Potassium(mg/l)	14.1	7
26	Calcium as CaCO <sub>3</sub> (mg/l)	58	5200
27	Magnesium(mg/l)	2.9	97

**Table 3 as- BORE WELL/ TUBE WELL / OPENWELL IN CORLIM INDUSTRIAL ESTATE 2014-2015**

Sr. No	Parameters	Apr-14	Oct-14
1	pH	5.4	6.1
2	Temperature °C	30	28.5
3	Conductivity µs/cm	45.4	1420
4	Dissolved Oxygen mg/l	7.8	7.3
5	Turbidity (NTU)	0.49	0.43
6	Nitrite Nitrogen mg/l	0.002	0.001
7	Nitrogen(Nitrate) mg/l	0.13	0.26
8	Phosphate mg/l	0.04	0.007
9	BOD mg/l	1.1	0.2
10	COD mg/l	3	10
11	Chloride mg/l	14.73	13.5
12	Fecal Coliform MPN/100 ml	23	49
13	Total Coliform MPN/100 ml	79	170
14	Ammonia mg/l	0.03	0.015
15	Total Dissolved Solids(mg/l)	467	400
16	Total Fixed Solids (mg/l)	289	223
17	Total Suspended Solid (mg/l)	3	3
18	Hardness(mg/l)	14	16
19	Fluoride(mg/l)	0.2	0.1
20	Boron(mg/l)	0.18	19
21	Sulphate (mg/l)	1.74	2.2
22	Total Alkalinity(mg/l)	18	20
23	Phenolphthalein Alkalinity(mg/l)	0	0
24	Sodium(mg/l)	11.2	164.6
25	Potassium(mg/l)	15.1	9
26	Calcium as CaCO3(mg/l)	8	10
27	Magnesium(mg/l)	1.5	1.5

**Table 3 at - BOREWELL/TUBE WELL/OPEN WELL IN PILERNE INDUSTRIAL ESTATE 2014-2015**

Sr. No	Parameters	Apr-14	Oct-14
1	pH	6.95	5.9
2	Temperature °C	31	31.6
3	Conductivity µs/cm	155.04	1497
4	Dissolved Oxygen mg/l	6.9	2.01
5	Turbidity (NTU)	3.09	5.66
6	Nitrite Nitrogen mg/l	0.02	BDL
7	Nitrogen(Nitrate) mg/l	1.19	0.28
8	Phosphate mg/l	0.43	0.046
9	BOD mg/l	0.3	0.15
10	COD mg/l	2	11
11	Chloride mg/l	17.48	11.9
12	Fecal Coliform MPN/100 ml	23	NIL
13	Total Coliform MPN/100 ml	79	<1.8
14	Ammonia mg/l	0.027	0.009
15	Total Dissolved Solids(mg/l)	119	120
16	Total Fixed Solids (mg/l)	99	89
17	Total Suspended Solid (mg/l)	10	7
18	Hardness(mg/l)	38	56
19	Fluoride(mg/l)	BDL	0.23
20	Boron(mg/l)	0.77	17
21	Sulphate (mg/l)	1.74	11.5
22	Total Alkalinity(mg/l)	28	102
23	Phenolphthalein Alkalinity(mg/l)	0	0
24	Sodium(mg/l)	18.9	19
25	Potassium(mg/l)	14.5	7.5
26	Calcium as CaCO3(mg/l)	8.82	52
27	Magnesium(mg/l)	3.9	0.9

**Table 3 au - BORE WELL/TUBE WELL/ OPEN WELL IN CUNCOLIM INDUSTRIAL ESTATE 2014-2015**

Sr. No	Parameters	Apr-14	Oct-14
1	pH	7.02	7
2	Temperature °C	32.2	29.2
3	Conductivity µs/cm	328	13.63

Sr. No	Parameters	Apr-14	Oct-14
4	Dissolved Oxygen mg/l	4.4	3.1
5	Turbidity (NTU)	4.1	0.37
6	Nitrite Nitrogen mg/l	0.002	0.001
7	Nitrogen(Nitrate) mg/l	0.15	BDL
8	Phosphate mg/l	0.01	0.005
9	BOD mg/l	3	0.1
10	COD mg/l	1	BDL
11	Chloride mg/l	13.1	9.8
12	Fecal Coliform MPN/100 ml	2	13
13	Total Coliform MPN/100 ml	13	33
14	Ammonia mg/l	0.05	0.027
15	Total Dissolved Solids(mg/l)	243	210
16	Total Fixed Solids (mg/l)	190	-
17	Total Suspended Solid (mg/l)	9	-
18	Hardness(mg/l)	132	132
19	Fluoride(mg/l)	0.54	0.174
20	Boron(mg/l)	0.08	0.725
21	Sulphate (mg/l)	1.4	9.2
22	Total Alkalinity(mg/l)	24	124
23	Phenolphthalein Alkalinity(mg/l)	0	-
24	Sodium(mg/l)	1.6	11.1
25	Potassium(mg/l)	14.5	4.3
26	Calcium as CaCO3(mg/l)	34.47	132
27	Magnesium(mg/l)	11.18	16

Table 3 av- BOREWELL/TUBE WELL/OPEN WELL IN BETHORA INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-13	Oct-13
1	pH	6.61	4.74
2	Temperature °C	32	31
3	Conductivity µs/cm	972.75	159.21
4	Dissolved Oxygen mg/l	6.7	5.2
5	Turbidity (NTU)	0.42	0.64
6	Nitrite Nitrogen mg/l	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.326	1.37
8	Phosphate mg/l	0.003	0.01
9	BOD mg/l	0.4	1.1
10	COD mg/l	3	10
11	Chloride mg/l	9.5	7
12	Fecal Coliform MPN/100 ml	NIL	450
13	Total Coliform MPN/100 ml	180	680
14	Ammonia mg/l	0.015	0.001
15	Total Dissolved Solids(mg/l)	54	204
16	Total Fixed Solids (mg/l)	105	68
17	Total Suspended Solid (mg/l)	2	3
18	Hardness(mg/l)	18	14
19	Fluoride(mg/l)	0.67	BDL
20	Boron(mg/l)	1.81	1.53
21	Sulphate (mg/l)	1.98	0.3
22	Total Alkalinity(mg/l)	160	240
23	Phenolphthalein Alkalinity(mg/l)	0	0
24	Sodium(mg/l)	10.8	10.1
25	Potassium(mg/l)	15.3	3.7
26	Calcium as CaCO3(mg/l)	18	6
27	Magnesium(mg/l)	0.5	1.9

Table 3 aw - BOREWELL/ TUBEWELL/OPENWELL IN MADKAI INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-14	Oct-14 <sup>1</sup>
1	pH	7.55	6.71
2	Temperature °C	31.5	31.6
3	Conductivity µs/cm	253.2	1404
4	Dissolved Oxygen mg/l	2.9	5

5	Turbidity (NTU)	0.61	0.41
6	Nitrite Nitrogen mg/l	0.001	0.001
7	Nitrogen(Nitrate) mg/l	0.06	1.515
8	Phosphate mg/l	0.02	0.009
9	BOD mg/l	0.4	1.5
10	COD mg/l	5.2	5
11	Chloride mg/l	9.8	13
12	Fecal Coliform MPN/100 ml	NIL	240
13	Total Coliform MPN/100 ml	<1.8	540
14	Ammonia mg/l	0.06	0.043
15	Total Dissolved Solids(mg/l)	179	228
16	Total Fixed Solids (mg/l)	99	174
17	Total Suspended Solid (mg/l)	4	3
18	Hardness(mg/l)	128	24
19	Fluoride(mg/l)	0.07	BDL
20	Boron(mg/l)	0.55	7.74
21	Sulphate (mg/l)	7.4	0.89
22	Total Alkalinity(mg/l)	120	200
23	Phenolphthalein Alkalinity(mg/l)	0	0
24	Sodium(mg/l)	16.7	9.7
25	Potassium(mg/l)	14.1	2.5
26	Calcium as CaCO3(mg/l)	60	10
27	Magnesium(mg/l)	113.4	3.4

Table 3 ax - AGRICULTURAL CANAL UPSTREAM OF CUNCOLIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-14	May-14	June-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.93	6.31	Canal was dry	5.56	6	6.49	6.4	Canal was dry	Canal was dry	5.88	6.72	6.84
2	Temperature °C	32.5	32		27	29.4	29.9	28.9			27.4	27	27.5
3	Conductivity µs/cm	51.1	54.36		65.27	65.9	54.55	22.45			45.92	52.9	67.03
4	Dissolved Oxygen mg/l	7.4	7.1		5.2	6.7	9.1	4.4			8.2	9.3	8.1
5	Turbidity (NTU)	1.92	1.99		0.89	3.91	18.8	1.6			2.16	1.29	1.83
6	Nitrite Nitrogen mg/l	0.0004	0.002		0.001	0.003	0.002	0.011			0.002	0.002	0.002
7	Nitrogen(Nitrate) mg/l	0.002	0.08		0.75	1.05	0.02	2.12			0.03	0.02	0.58
8	Phosphate mg/l	0.0003	0.004		0.01	0.165	0.04	0.01			0.001	0.008	0.002
9	BOD mg/l	0.5	2.8		0.3	0.7	4.1	1.6			1.3	1.8	1.2
10	COD mg/l	5	10		5	4	5	13			2	5	9
11	Chloride mg/l	3.4	5.87		9.64	8.26	7.3	78.8			4.5	5	10.76
12	Fecal Coliform MPN/100 ml	2300	3300		2400	3500	2400	130			2400	1700	2400
13	Total Coliform MPN/100 ml	3300	4900		3500	5400	5400	330			5400	3500	3500
14	Ammonia mg/l	0.01	0.02		0.002	0.005	0.06	0.049			0.02	0.002	0.04
15	Total Dissolved Solids(mg/l)	14	-		-	44	43	-			60	69	49
16	Total Fixed Solids (mg/l)	81	-		-	16	15	-			32	41	50
17	Total Suspended Solid (mg/l)	4	-		-	25	58	-			3	4	2
18	Hardness(mg/l)	10	-		-	0	0	78			30	12	62
19	Fluoride(mg/l)	0.38	-		-	BDL	BDL	BDL			0.02	0.2	-
20	Boron(mg/l)	0.07	-		-	1.63	0.84	0.995			0.51	2.6	1.28
21	Sulphate (mg/l)	0.76	-		-	1.29	5.29	61.6			3.94	1.8	2.45
22	Total Alkalinity(mg/l)	-	-		-	14	24	28			160	30	30
23	Phenolphthalein Alkalinity(mg/l)	0	-		-	0	0	0			0	0	0
24	Sodium(mg/l)	22.5	-		-	6.6	5.6	-			6.2	6.4	10.7
25	Potassium(mg/l)	15.3	-		-	2.1	3	-			3.7	1.8	1.8
26	Calcium as CaCO3(mg/l)	3.2	-		-	0	0	26			26	5	12
27	Magnesium(mg/l)	0.5	-		-	0	0	12.6			1	1.7	12.15

Table 3 ay - AGRICULTURAL CANAL DOWNSTREAM OF CUNCOLIM INDUSTRIAL ESTATE 2013-2014

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.8	6.34	6.05	6.12	5.59	5.76	6.3	6.16	Canal was	5.79	7.08	6.41
2	Temperature °C	33	32	32.7	29	29.2	29.9	29	28		27.6	27	27.3

3	Conductivity $\mu\text{s/cm}$	52.8	66.02	498.19	484.16	422.58	471.1	27.35	633.94	dry	53.71	52.3	71.66
4	Dissolved Oxygen mg/l	7.7	7.6	8.7	4.9	5.8	5.4	5	4.2		8.8	7.9	8.2
5	Turbidity (NTU)	1.7	2.05	1.32	1	12.3	2.04	0.88	0.77		1.73	1.28	1.67
6	Nitrite Nitrogen mg/l	0.0004	0.001	0.019	0.004	0.009	0.001	0.013	0.007		0.15	0.002	0.002
7	Nitrogen(Nitrate) mg/l	BDL	0.07	3.78	3.55	0.691	3.46	1.13	5.7		0.003	0.02	0.28
8	Phosphate mg/l	0.002	0.31	BDL	0.01	0.01	0.002	0.004	0.011		0.001	0.008	0.001
9	BOD mg/l	1.4	3.5	0.1	0.2	0.3	0.9	0.7	1		2.4	1.2	1.1
10	COD mg/l	14	14	6	7	4	2	6	2		4	9	11
11	Chloride mg/l	3.4	7.34	41.46	31.34	27.2	33.8	51.9	47.9		4.5	4	11.25
12	Fecal Coliform MPN/100 ml	3300	4900	3500	1300	2400	230	330	4900		3500	2400	2500
13	Total Coliform MPN/100 ml	4900	7900	9200	2400	3500	330	790	7900		9200	5400	5400
14	Ammonia mg/l	0.01	0.05	0.088	0.33	0.252	0.14	0.086	0.142		0.01	0.004	0.04
15	Total Dissolved Solids(mg/l)	30	-	-	-	283	324	410	440		65	72	21
16	Total Fixed Solids (mg/l)	87.42	-	-	-	17	245	255	265		55	58	32
17	Total Suspended Solid (mg/l)	3	-	-	-	13	2	8	16		5	6	1.0
18	Hardness(mg/l)	12	-	-	-	58	112	156	168		260	27	24
19	Fluoride(mg/l)	0.48	-	-	-	0.284	0.34	0.257	0.33		BDL	0.06	-
20	Boron(mg/l)	0.09	-	-	-	0.214	4.61	1.08	0.47		0.42	3.1	0.92
21	Sulphate (mg/l)	BDL	-	-	-	91.9	136.9	134	12.2		3.82	1.8	2.26
22	Total Alkalinity(mg/l)	2	-	-	-	16	30	42	26		180	28	22
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0			0	0	0
24	Sodium(mg/l)	22.8	-	-	-	61.2	66.9	81.4	42.3		6.3	6.8	11.7
25	Potassium(mg/l)	15.3	-	-	-	7.7	10.6	13.4	9.9		3.7	1.4	1.8
26	Calcium as CaCO <sub>3</sub> (mg/l)	4	-	-	-	13.6	46	58	80		100	14	14
27	Magnesium(mg/l)	0.5	-	-	-	5.83	16	23.8	21.4		38.9	3.1	2.43

Table 3 az - ANJUNEM LAKE 2013-2014

Sr. No	Parameters	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
1	pH	7.51	7.29	5.96	6.82	7.11	7.33	6.6	6.09	7.13	6.47	6.01	8.04
2	Temperature °C	33	33	30	26	30	28	31	30	27	28	31	33
3	Conductivity $\mu\text{s/cm}$	48.1	50.53	51.3	90.76	41.35	41.74	42.23	49.43	48.24	42.6	45.5	51.0
4	Dissolved Oxygen mg/l	7.5	7.5	7.5	7.1	8.2	7.7	7.8	7.2	6.1	7.8	8.2	8.2
5	Turbidity (NTU)	2.47	2.7	3.74	2.92	2.2	1.98	2.43	1.25	1.29	0.85	2.73	3.70
6	Nitrite Nitrogen mg/l	0.002	0.003	0.005	0.001	0.003	0.002	0.001	0.001	0.002	0.001	0.001	0.002
7	Nitrogen(Nitrate) mg/l	0.029	0.007	0.39	0.355	0.005	0.007	0.015	0.01	BDL	BDL	0.01	BDL
8	Phosphate mg/l	0.003	0.009	0.015	BDL	0.062	0.007	0.003	0.01	0.004	0.004	0.008	0.008
9	BOD mg/l	1.1	1.3	0.3	0.1	0.2	0.5	0.7	0.3	1.3	1.0	1.7	1.1
10	COD mg/l	5	2	1	7	3	14	6	5.2	7	6.0	10.0	6.0
11	Chloride mg/l	6.8	5.83	0.97	3.8	2.44	4.4	2.4	0.97	0.49	3.42	3.91	4.89
12	Fecal Coliform MPN/100 ml	NIL	NIL	NIL	200	20	40	450	78	170	790	790	130
13	Total Coliform MPN/100 ml	<1.8	400	400	400	45	68	780	130	540	1700	1300	350
15	Ammonia mg/l	0.014	0.03	0.132	0.029	0.016	0.047	0.019	0.02	0.03	0.03	0.02	0.02
	Total Dissolved Solids(mg/l)	26	-	-	-	30	11		103	8512	106	34	34
16	Total Fixed Solids (mg/l)	42	-	-	-	8	10		56	28856	85	12	25
17	Total Suspended Solid (mg/l)	8	-	-	-	6	15		6	86	2	2	5
18	Hardness(mg/l)	12	-	-	-	0	6	14	12	12	30	22	24
19	Fluoride(mg/l)	0.58	-	-	-	0.137	0.05	0.008	BDL	0.17	0.2	0.04	0.04
20	Boron(mg/l)	4.1	-	-	-	2.88	0.66	0.51	1.25	0.9	0.1	BDL	0.5
21	Sulphate (mg/l)	7.64	-	-	-	2.78	1.26	2.85	3.62	0.34	0.8	0.86	0.54
22	Total Alkalinity(mg/l)	100	-	-	-	14	18	14	30	180	48	16	26
23	Phenolphthalein Alkalinity(mg/l)	0	-	-	-	0	0	0	0	0	0	0	0
24	Sodium(mg/l)	20.2	-	-	-	5.8	5.5	6.7	3.1	3.6	7.1	5.2	3.9
25	Potassium(mg/l)	15.3	-	-	-	2.4	2.6	2.7	0.2	1.1	3.9	0.4	1.5
26	Calcium as CaCO <sub>3</sub> (mg/l)	10	-	-	-	0	0	8	8	4	14	16	8
27	Magnesium(mg/l)	0.5	-	-	-	0	1.46	1.458	0.97	1.9	3.9	1.5	3.89

**Table 3 aab - INLET SAMPLE TO STP AT TONCA, PANAJI 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	6.75	6.68	6.86	6.51	6.82	6.3	6.85	6.6	6.8	7.48	7.51	7.15
2	BOD mg/l	274.29	139	466.7	333	280	250	290	234	260	300	330	325
3	COD mg/l	360	300	840	530	490	480	640	460	470	620	650	630
4	Total Suspended Solid (mg/l)	86	310	160	234	190	220	265	99	120	72.0	121	232

**Table 3 aac - OUTLET SAMPLE TO STP AT TONCA, PANAJI 2014-2015**

Sr. No	Parameters	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
1	pH	7.35	7.2	6.41	6.92	6.9	6.94	6.95	6.78	7.24	7.68	7.62	7.06
2	BOD mg/l	5.33	2.8	16.8	18	20	18.8	13	13	6	4.3	5.6	4.22
3	COD mg/l	30	19	40	50	50	50	30	40	20	60	70	70
4	Total Suspended Solid (mg/l)	11	4	16	17	18	19	14	23	8	7.0	16	13

Table 3aad 1 - DATA FOR THE MONTH OF APRIL 2014

Sr. No.	Parameters	RIVER CHAPORA NEAR ALORNA FORT	RIVER KALNA AT CHANDEL, PERNEIM	RIVER MAPUSA ON CULVERT ON HIGHWAY MAPUSA-PANAJI	RIVER ASSANORA AT ASSANORA	RIVER VALVANTI AT SANQUELIM	RIVER MADEIAT DABOSE, VALPOI	RIVER KHANDEPAR .OPA, PONDA	RIVER KHANDEPAR AT CODLI	RIVER KUSHAWATI NEAR BUND AT KEYONA, RIVONA, SANGUEIM	RIVER TALPONA AT CANACONA	RIVER SAL AT PAZORCON I, CUNCOLIM	RIVER SAL AT MOBOR	RIVER BICHOLIM, BARAZAN NAGAR, BICHOLIM
1	Nickel(mg/l)	0.046	0.053	0.233	BDL	BDL	BDL	0.082	0.081	BDL	BDL	BDL	BDL	BDL
2	Copper(mg/l)	0.01	BDL	0.04	BDL	0.01	BDL	BDL	BDL	0.02	BDL	0.02	0.01	0.01
3	Chromium(mg/l)	0.049	BDL	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.09	BDL
4	Cadmium(mg/l)	BDL	BDL	0.036	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.14	0.02
5	Zinc(mg/l)	BDL	0.047	BDL	0.096	BDL	BDL	BDL	0.018	BDL	BDL	BDL	BDL	BDL
6	Lead(mg/l)	BDL	BDL	0.12	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.68	BDL
7	Iron(mg/l)	0.635	1.056	0.85	0.388	2.142	0.337	0.354	0.465	0.225	0.035	0.533	0.86	1.18
8	Alpha BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9	Beta BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10	Gamma BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
11	Hexachloro benzene (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
12	Heptachlor (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
13	Aldrin (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
14	Dieldrin (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
15	Endrin (mg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
16	Methoxychlor (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
17	P,P - DDE (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
18	O,P-DDD (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
19	O,P-DDT (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
20	P,P-DDT (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
21	Heptachlor endo-epoxide (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
22	Alpha endosulphate (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
23	β-endosulphar (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
24	carboryl (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
25	Anilofos (mg/l)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
26	Parathion methyl (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
27	Malathion (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
28	Chlorpylios (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table 3aad 2 - DATA FOR THE MONTH OF APRIL 2014

Sr. NO	Parameters	BOREWELL/TUBEWELL/OPEN WELL IN PILERNE INDUSTRIAL ESTATE	BOREWELL/TUBE WELL/OPEN WELL IN CUNCOLIM INDUSTRIAL ESTATE	BOREWELL/TUBEWELL/OPEN WELL IN BETHORA INDUSTRIAL ESTATE	AGRICULTURAL CANAL UPSTREAM OF CUNCOLIM INDUSTRIAL ESTATE	AGRICULTURAL CANAL DOWNSTREAM OF CUNCOLIM INDUSTRIAL ESTATE	RUMDER LAKE, NUVEM	RIVER SAL AT ORLIM BRIDGE	RIVER TIRACOL AT KERI, PERNEM	RIVER CHAPORA NEAR SIOLIM BRIDGE	RIVER SINQUERIM CANDOLIM SIDE	RIVER SINQUERIM NEAR GANPATI TEMPLE	RIVER MANDOVI AT IFFI JETTY	RIVER MANDOVI NEAR HOTEL MARIOTT
1	Nickel(mg/l)	0.11	BDL	0.08	BDL	BDL	BDL	0.92	0.61	1.31	0.85	1.985	0.84	1.498
2	Copper(mg/l)	0.12	0.02	0.01	BDL	BDL	BDL	0.01	0.08	0.12	0.1	0.14	0.18	0.18
3	Chromium(mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.21	0.22	0.11	0.32	0.32	0.25
4	Cadmium(mg/l)	0.02	BDL	BDL	BDL	BDL	BDL	0.04	0.09	0.097	0.17	0.27	0.12	0.228
5	Zinc(mg/l)	0.496	0.03	0.14	BDL	BDL	BDL	BDL	BDL	BDL	2.08	0.16	BDL	BDL
6	Lead(mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	0.16	0.9	1.004	1.32	1.93	0.44	0.927
7	Iron(mg/l)	0.98	0.3	0.93	BDL	BDL	1.26	0.36	0.46	1.64	1.17	2.28	1.35	1.016
8	Alpha BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9	Beta BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10	Gamma BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
11	Hexachloro benzene (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
12	Heptachlor (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
13	Aldrin (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
14	Dieldrin (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
15	Endrin (mg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
16	Methoxychlor (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
17	P.P - DDE (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
18	O.P-DDD (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
19	O.P-DDT (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
20	P.P-DDT (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
21	Heptachlor endo-epoxide (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
22	Alpha endosulphate (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
23	Beta endosulphate (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
24	carbaryl (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
25	Anilofos (mg/l)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
26	Parathion methyl (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
27	Malathion (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
28	Chlorpyrifos (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table 3aad 3 - DATA FOR THE MONTH OF APRIL 2014

Sr. NO	Parameters	RIVER MANDOVI AT AMONA	RAIA LAKE	CURTORIM LAKE, CURTORIM	RIVER ZUARI AT MADKAI JETTY	RIVER ZUARI AT BORIM BRIDGE	BOREWELL / TUBEWELL/ OPENWELL IN MADKAI INDUSTRIA L ESTATE	ANJUNEM LAKE	RIVER MANDOVI AT RIBANDAR-CHODAN FERRY, PANAJI	HARVELEM WATERFALL
1	Nickel(mg/l)	0.466	BDL	BDL	0.377	0.14	0.038	BDL	1.4	BDL
2	Copper(mg/l)	0.04	BDL	0.01	0.02	0.01	BDL	0.01	0.12	BDL
3	Chromium(mg/l)	BDL	BDL	BDL	0.041	BDL	BDL	BDL	0.19	BDL
4	Cadmium(mg/l)	0.07	BDL	BDL	0.049	BDL	BDL	BDL	1.175	BDL
5	Zinc(mg/l)	BDL	BDL	BDL	BDL	BDL	0.026	BDL	BDL	BDL
6	Lead(mg/l)	0.36	BDL	BDL	0.372	0.091	BDL	BDL	0.962	-
7	Iron(mg/l)	0.45	0.22	0.52	0.774	0.289	0.115	0.148	1.257	0.275
8	Alpha BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9	Beta BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
10	Gamma BHC (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
11	Hexachloro benzene (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
12	Heptachlor (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
13	Aldrin (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
14	Dieldrin (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
15	Endrin (mg/l)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
16	Methoxychlor (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
17	P,P - DDE (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
18	O,P-DDD (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
19	O,P-DDT (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
20	P,P-DDT (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
21	Heptachlor endo-epoxide (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
22	Alpha endosulphate (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
23	β-endosulphar (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
24	carbaryl (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
25	Anilofos (mg/l)	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
26	Parathion methyl (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
27	Malathion (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
28	Chlorpyfos (mg/l)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

## ANNEXURE IV

### GANESH VISARJAN DATA

Table 4 a - River Mandovi at Ferry Point 2014

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.24	7.02	7.05
2	Temperature °C	29.5	28.7	28
3	Cond ms/cm	14.65	3.827	5.714
4	Turb NTU	9.15	15.7	8.86
5	DO mg/l	6.6	6.8	6.8
6	BOD mg/l	0.9	1.6	1.8
7	COD mg/l	25	18	9
8	No <sub>3</sub> -N mg/l	0.67	0.46	0.31
9	No <sub>2</sub> -N mg/l	0.01	BDL	0.01
10	PO <sub>4</sub> -P mg/l	0.02	0.02	0.02
11	Ca mg/l	208.42	32.06	48.1
12	So <sub>2</sub> -4 mg/l	133.1	167.82	289.35
13	Chloride mg/l	4869.41	819.6	1859
14	NH <sub>3</sub> -N mg/l	0.1	0.02	0.035
15	Fecal Coliform MPN/100ml	3300	7900	4900
16	Total Coliform MPN/100 ml	4900	13000	7000
17	Ni mg/l	0.16	0.101	0.112
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.024	0.024	0.018
20	Cd mg/l	0.01	0.005	0.007
21	Cu mg/l	0.013	0.017	0.011
22	Co mg/l	0.202	0.096	0.118
23	Pb mg/l	0.114	0.015	0.045
24	Fe mg/l	1.119	1.159	1.537
25	Mn mg/l	0.134	0.028	0.142

Table 4 b - River Mapusa at Taricode- Mapusa 2014

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.28	6.87	6.41
2	Temperature °C	28.5	28.4	28.3
3	Cond µs/cm	352.6	172.24	256.63
4	Turb NTU	5.78	5.25	6.2
5	DO mg/l	2	2.5	2.9
6	BOD mg/l	-	1.4	1.7
7	COD mg/l	14	5	10
8	No <sub>3</sub> -N mg/l	0.77	0.87	0.96
9	No <sub>2</sub> -N mg/l	0.02	0.02	BDL
10	PO <sub>4</sub> -P mg/l	0.09	0.04	0.05
11	Ca mg/l	12.02	9.62	10.42
12	So <sub>2</sub> -4 mg/l	16.59	9.63	9.41
13	Chloride mg/l	68.46	20.73	43.5
14	NH <sub>3</sub> -N mg/l	0.28	0.08	0.079
15	Fecal Coliform MPN/100ml	17000	17000	13000
16	Total Coliform MPN/100 ml	22000	22000	17000
17	Ni mg/l	0.11	0.068	0.077
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.008	0.004	0.016
20	Cd mg/l	0.004	0.004	0.008
21	Cu mg/l	0.009	0.012	0.012
22	Co mg/l	0.03	0.077	0.061
23	Pb mg/l	0.024	0.024	0.186
24	Fe mg/l	1.495	1.41	2.705
25	Mn mg/l	0.019	0.012	0.282

**Table 4 c - Carambolim Lake at Carambolim 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.96	6.51	6.03
2	Temperature °C	32	28.3	28
3	Cond µs/cm	135.66	96.92	123.28
4	Turb NTU	33.4	8.17	4.85
5	DO mg/l	3.8	4.5	2.8
6	BOD mg/l	2.3	2.8	1.8
7	COD mg/l	14	16	5
8	No <sub>3</sub> -N mg/l	0.07	0.11	4.14
9	No <sub>2</sub> -N mg/l	0.01	0.01	BDL
10	PO <sub>4</sub> -P mg/l	0.01	0.01	0.03
11	Ca mg/l	13.63	9.62	11.22
12	So <sub>2</sub> -4 mg/l	6.02	8.82	10.59
13	Chloride mg/l	10.61	3.37	8.8
14	NH <sub>3</sub> -N mg/l	0.27	0.01	0.014
15	Fecal Coliform MPN/100ml	3300	7900	3300
16	Total Coliform MPN/100 ml	4900	11000	4900
17	Ni mg/l	0.038	0.138	0.15
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.04	0.04	0.022
20	Cd mg/l	0.008	0.013	0.01
21	Cu mg/l	0.015	0.014	0.014
22	Co mg/l	0.073	0.11	0.061
23	Pb mg/l	0.014	0.029	0.136
24	Fe mg/l	1.342	2.516	3.066
25	Mn mg/l	0.118	0.097	0.404

**Table 4 d - Carkhamba (Mansher) Panaji – St. Cruz road 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.93	7.28	7.21
2	Temperature °C	31.5	29	30.4
3	Cond ms/cm	5.23	1.72	14.87
4	Turb NTU	10	15.5	8.49
5	DO mg/l	6.5	6.1	5
6	BOD mg/l	2.2	2.5	1.6
7	COD mg/l	17	18	14
8	No <sub>3</sub> -N mg/l	0.31	0.13	0.57
9	No <sub>2</sub> -N mg/l	0.09	BDL	0.01
10	PO <sub>4</sub> -P mg/l	0.02	0.02	0.02
11	Ca mg/l	39.28	16.83	74.55
12	So <sub>2</sub> -4 mg/l	173.61	275.85	515.04
13	Chloride mg/l	1639.21	241.06	4745.3
14	NH <sub>3</sub> -N mg/l	0.19	0.04	0.016
15	Fecal Coliform MPN/100ml	13000	7900	4900
16	Total Coliform MPN/100 ml	17000	13000	7000
17	Ni mg/l	0.084	0.056	0.189
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.049	0.01	0.068
20	Cd mg/l	0.013	0.006	0.012
21	Cu mg/l	0.011	0.024	0.013
22	Co mg/l	0.117	0.08	0.11
23	Pb mg/l	0.042	0.011	0.089
24	Fe mg/l	1.421	1.603	1.57
25	Mn mg/l	0.018	0.029	0.117

**Table 4 e - Near the bridge , Chereaband , Dandora, Cuncolim 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.48	6.84	6.63
2	Temperature °C	27	27	27
3	Cond µs/cm	89.1	9.43	60.5
4	Turb NTU	9.07	2.93	183
5	DO mg/l	6.1	6.5	7.2
6	BOD mg/l	0.5	0.7	1.1
7	COD mg/l	5	14	20
8	No <sub>3</sub> -N mg/l	0.79	0.66	0.88
9	No <sub>2</sub> -N mg/l	BDL	BDL	0.01
10	PO <sub>4</sub> -P mg/l	0.01	0.02	0.07
11	Ca mg/l	4.01	5.61	5.61
12	So <sub>2</sub> -4 mg/l	4.92	6.44	7.43
13	Chloride mg/l	10.61	5.79	7.8
14	NH <sub>3</sub> -N mg/l	0.04	0.02	0.046
15	Fecal Coliform MPN/100ml	13000	7900	7900
16	Total Coliform MPN/100 ml	24000	13000	13000
17	Ni mg/l	0.111	0.121	0.094
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.027	0.023	0.073
20	Cd mg/l	0.012	0.018	0.008
21	Cu mg/l	0.025	0.046	0.041
22	Co mg/l	0.104	0.052	0.105
23	Pb mg/l	0.045	0.056	0.207
24	Fe mg/l	1.225	3.203	7.91
25	Mn mg/l	0.022	0.222	0.322

**Table 4 f - Near Railway bridge, Khandiwada , Curchorem 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	5.98	6.07	5.6
2	Temperature °C	28.7	28	27.8
3	Cond µs/cm	62.54	49.24	110.2
4	Turb NTU	9.4	5.92	12.8
5	DO mg/l	4.3	7.8	4.8
6	BOD mg/l	0.5	0.8	0.5
7	COD mg/l	6	7	3
8	No <sub>3</sub> -N mg/l	0.29	0.33	0.44
9	No <sub>2</sub> -N mg/l	BDL	BDL	BDL
10	PO <sub>4</sub> -P mg/l	0.03	0.01	0.02
11	Ca mg/l	3.21	3.21	5.61
12	So <sub>2</sub> -4 mg/l	4.46	4.61	7.58
13	Chloride mg/l	6.75	0.96	14.7
14	NH <sub>3</sub> -N mg/l	0.02	0.03	0.028
15	Fecal Coliform MPN/100ml	7900	4900	2300
16	Total Coliform MPN/100 ml	13000	7000	3300
17	Ni mg/l	0.199	-	0.081
18	Cr mg/l	BDL	-	BDL
19	Zn mg/l	0.052	-	0.03
20	Cd mg/l	0.015	-	0.02
21	Cu mg/l	0.023	-	0.019
22	Co mg/l	0.073	-	0.109
23	Pb mg/l	0.053	-	0.044
24	Fe mg/l	1.845	-	1.882
25	Mn mg/l	0.013	-	0.122

**Table 4 g - Paraste, Harmalkar wada, Pernem 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.77	6.97	6.56
2	Temperature °C	27	28.3	28
3	Cond µs/cm	150.5	127.2	203.63
4	Turb NTU	14	9.31	9.3
5	DO mg/l	7.1	7.2	7.4
6	BOD mg/l	0.6	0.8	0.8
7	COD mg/l	3	17	3
8	No <sub>3</sub> -N mg/l	0.32	0.32	0.46
9	No <sub>2</sub> -N mg/l	0.01	BDL	0.01
10	PO <sub>4</sub> -P mg/l	0.02	0.01	0.04
11	Ca mg/l	5.61	4.81	5.61
12	So <sub>2</sub> -4 mg/l	5.42	7	7.14
13	Chloride mg/l	26.03	15.91	38.7
14	NH <sub>3</sub> -N mg/l	0.05	0.07	0.023
15	Fecal Coliform MPN/100ml	13000	13000	7900
16	Total Coliform MPN/100 ml	17000	17000	13000
17	Ni mg/l	0.043	0.048	0.033
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.024	0.03	0.014
20	Cd mg/l	0.01	0.02	0.012
21	Cu mg/l	0.013	0.022	0.016
22	Co mg/l	0.202	0.034	0.074
23	Pb mg/l	0.114	0.011	0.533
24	Fe mg/l	1.119	1.259	1.778
25	Mn mg/l	0.134	0.007	0.028

**Table 4 h - Daudkiwada River, Daudkiwada-velus, ward no. 1, Valpoi 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.22	6.33	6.26
2	Temperature °C	28	28.9	27
3	Cond µs/cm	66.77	58.03	69.07
4	Turb NTU	1.85	6.85	2.02
5	DO mg/l	7.6	7.3	7.6
6	BOD mg/l	0.7	0.3	0.4
7	COD mg/l	2	9	2
8	No <sub>3</sub> -N mg/l	0.27	0.24	0.24
9	No <sub>2</sub> -N mg/l	BDL	BDL	BDL
10	PO <sub>4</sub> -P mg/l	0.004	0.01	BDL
11	Ca mg/l	4.81	4.01	5.61
12	So <sub>2</sub> -4 mg/l	2.95	4.28	4.42
13	Chloride mg/l	2.89	0.96	6.4
14	NH <sub>3</sub> -N mg/l	0.04	0.01	0.005
15	Fecal Coliform MPN/100ml	2300	7000	3300
16	Total Coliform MPN/100 ml	3300	11000	4900
17	Ni mg/l	0.108	0.112	0.159
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.009	0.036	0.009
20	Cd mg/l	0.019	0.013	0.008
21	Cu mg/l	0.017	0.014	0.018
22	Co mg/l	0.103	0.076	0.096
23	Pb mg/l	0.024	0.127	0.035
24	Fe mg/l	1.152	1.424	1.359
25	Mn mg/l	0.044	0.035	0.076

**Table 4 i - Near bridge, Orcotto, ward no. 4, Sanguem 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.07	6.08	5.56
2	Temperature °C	30.4	29	26.7
3	Cond µs/cm	55.21	60.86	40.7
4	Turb NTU	8.12	7.31	66.3
5	DO mg/l	6.3	6.5	6.5
6	BOD mg/l	0.3	1.3	1.8
7	COD mg/l	7	7	17
8	No <sub>3</sub> -N mg/l	0.62	0.25	0.37
9	No <sub>2</sub> -N mg/l	0.01	BDL	0.01
10	PO <sub>4</sub> -P mg/l	0.01	0.01	0.07
11	Ca mg/l	2.4	3.21	3.21
12	So <sub>2</sub> -4 mg/l	3.24	5.5	7.95
13	Chloride mg/l	3.86	1.45	3.9
14	NH <sub>3</sub> -N mg/l	0.07	0.01	0.044
15	Fecal Coliform MPN/100ml	2300	3300	7900
16	Total Coliform MPN/100 ml	3300	4900	11000
17	Ni mg/l	0.136	0.09	0.073
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.015	0.008	0.043
20	Cd mg/l	0.012	0.02	0.01
21	Cu mg/l	0.022	0.024	0.016
22	Co mg/l	0.111	0.094	0.075
23	Pb mg/l	0.036	0.034	0.039
24	Fe mg/l	1.576	1.784	4.511
25	Mn mg/l	0.006	0.074	0.167

**Table 4 j - Pimpolcotto, ward no. 2, Sanguem 2014**

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.14	6.13	5.67
2	Temperature °C	28.4	28.5	27
3	Cond µs/cm	49.05	54.39	53.7
4	Turb NTU	7.62	9.96	36.1
5	DO mg/l	7.2	7.3	6.9
6	BOD mg/l	0.3	0.4	1.3
7	COD mg/l	2	7	2
8	No <sub>3</sub> -N mg/l	0.52	0.4	0.92
9	No <sub>2</sub> -N mg/l	BDL	BDL	0.01
10	PO <sub>4</sub> -P mg/l	0.01	0.01	0.02
11	Ca mg/l	2.4	2.4	3.21
12	So <sub>2</sub> -4 mg/l	2.01	4.61	5.63
13	Chloride mg/l	22.18	1.45	6.4
14	NH <sub>3</sub> -N mg/l	0.004	0.001	0.016
15	Fecal Coliform MPN/100ml	3300	3300	4900
16	Total Coliform MPN/100 ml	4900	4900	7900
17	Ni mg/l	0.091	0.068	0.154
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.005	0.009	0.06
20	Cd mg/l	0.013	0.096	0.019
21	Cu mg/l	0.022	0.02	0.02
22	Co mg/l	0.096	0.124	0.102
23	Pb mg/l	0.048	0.043	0.054
24	Fe mg/l	1.386	1.499	2.175
25	Mn mg/l	0.022	0.097	0.098

Table 4 k - Panefond River, Kindlebag, ward no. 5, Canacona 2014

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	6.89	7.04	6.62
2	Temperature °C	27	28	30
3	Cond ms/cm	11.09	1.59	3.84
4	Turb NTU	3.26	1.77	7.41
5	DO mg/l	6.6	6.8	7.2
6	BOD mg/l	0.8	1	0.8
7	COD mg/l	9	14	4
8	No <sub>3</sub> -N mg/l	0.02	1.86	0.93
9	No <sub>2</sub> -N mg/l	BDL	BDL	0.09
10	PO <sub>4</sub> -P mg/l	0.01	0.02	0.03
11	Ca mg/l	136.27	24.05	32.06
12	So <sub>2</sub> -4 mg/l	52.25	181.33	235.34
13	Chloride mg/l	3808.75	241.06	1174.1
14	NH <sub>3</sub> -N mg/l	0.01	0.02	0.05
15	Fecal Coliform MPN/100ml	13000	13000	17000
16	Total Coliform MPN/100 ml	22000	24000	22000
17	Ni mg/l	0.129	0.069	0.115
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.05	0.006	0.008
20	Cd mg/l	0.011	0.015	0.017
21	Cu mg/l	0.025	0.027	0.109
22	Co mg/l	0.147	0.109	0.072
23	Pb mg/l	0.113	0.068	0.105
24	Fe mg/l	1.318	1.229	1.331
25	Mn mg/l	0.11	0.037	0.044

Table 4 l - Baina Beach, Vasco 2014

Sr.No	Parameters	Before Ganesh Visarjan	After Ganesh Visarjan	After 15 day of Ganesh visarjan
1	pH	7.56	8.02	7.99
2	Temperature °C	27	27	29
3	Cond ms/cm	55.1	29.19	49.6
4	Turb NTU	23.9	4.93	12.9
5	DO mg/l	6.6	7.5	6.5
6	BOD mg/l	1.9	3.4	1.2
7	COD mg/l	-	42	-
8	No <sub>3</sub> -N mg/l	0.27	0.46	0.65
9	No <sub>2</sub> -N mg/l	0.02	0.01	0.07
10	PO <sub>4</sub> -P mg/l	0.08	0.07	0.08
11	Ca mg/l	817.63	200.4	392.78
12	So <sub>2</sub> -4 mg/l	1344.25	916.28	719.52
13	Chloride mg/l	20634.74	9449.55	20840.4
14	NH <sub>3</sub> -N mg/l	0.09	0.15	0.026
15	Fecal Coliform MPN/100ml	5400	3500	1300
16	Total Coliform MPN/100 ml	9200	5400	1700
17	Ni mg/l	0.89	0.384	0.811
18	Cr mg/l	BDL	BDL	BDL
19	Zn mg/l	0.16	0.085	0.142
20	Cd mg/l	0.063	0.024	0.055
21	Cu mg/l	0.054	0.105	0.02
22	Co mg/l	0.674	0.194	0.546
23	Pb mg/l	0.735	0.307	0.702
24	Fe mg/l	2.481	2.015	2.115
25	Mn mg/l	0.059	0.083	0.13

## Annexure V

### AMBIENT AIR QUALITY DATA

Table 5-a Station : Panaji

Month	PM 10	PM 2.5	NO <sub>2</sub>	SO <sub>2</sub>
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	49.1	73.1	BDL	BDL
May-14	26.1	47.3	BDL	BDL
Jun-14	23.6	51.7	BDL	10.0
Jul-14	17.4	50.2	10.6	13.0
Aug-14	16.5	41.5	9.0	7.1
Sep-14	24.4	60.8	7.1	7.1
Oct-14	44.9	72.1	19.1	9.4
Nov-14	68.6	97.32	21.0	6.1
Dec-14	72.5	120.6	13.5	5.1
Jan-15	56.0	102.8	16.8	5.1
Feb-15	65.3	94.03	14.37	BDL
Mar-15	40.0	78.4	18.78	4.32

Table 5-b Station : Fuse Call Office,Vasco

Month	PM 10	PM 2.5	NO <sub>2</sub>	SO <sub>2</sub>
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	53.4	81.0	BDL	BDL
May-14	37.4	70.5	BDL	4.0
Jun-14	37.3	71.0	BDL	6.0
Jul-14	15.9	49.71	9.0	12.1
Aug-14	26.3	64.4	11.9	13.1
Sep-14	26.4	58.2	12.6	8.1
Oct-14	39.0	69.0	16.0	7.0
Nov-14	75.0	119.0	21.0	6.0
Dec-14	62.2	119.2	12.9	7.1
Jan-15	65.1	117.7	20.7	8.33
Feb-15	65.3	94.03	15.23	BDL
Mar-15	58.1	96.6	13.9	7.1

Table 5-c Station : Nr. Fire Brigade Station-MPT,Vasco

Month	PM 10	PM 2.5	NO <sub>2</sub>	SO <sub>2</sub>
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	-	-	-	-
May-14	-	-	-	-
Sep-14	-	-	-	-
Oct-14	-	-	-	-
Nov-14	-	-	-	-
Feb-15	77.7	141.4	14.0	5.4
Mar-15	72.1	135.5	13.9	7.6

Note:- No monitoring was carried from April 2014 till January 2015 at MPT ,Fire station due to unavoidable circumstance .

Table 5-d Station : Assanora

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM10	PM2.5
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	5.29	10.73	63.20	21.91
May-14	4.90	10.02	38.66	14.37
Jun-14	3.95	8.59	37.36	12.58
Jul-14	4.01	9.06	46.10	16.35

Aug-14	4.07	9.01	32.22	11.94
Sep-14	4.06	9.10	49.18	16.35
Oct-14	5.37	8.52	40.72	14.97
Nov-14	4.11	9.13	49.53	18.0
Dec-14	4.1	9.1	62.5	23.1
Jan-15	4.2	9.1	62.0	23.0
Feb-15	4.1	9.1	67.73	23.78
Mar-15	4.2	9.1	63.0	22.0

Table 5-e Station : Amona

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM10	PM2.5
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	5.68	11.63	68.94	24.19
May-14	5.27	10.44	53.82	18.09
Jun-14	4.23	9.23	76.03	28.41
Jul-14	4.22	9.12	53.65	18.90
Aug-14	4.16	9.11	44.61	15.46
Sep-14	4.25	9.09	50.88	16.33
Oct-14	6.04	10.30	57.62	17.82
Nov-14	4.26	9.35	74.76	26.39
Dec-14	4.20	9.16	81.57	29.01
Jan-15	4.3	9.2	86.9	30.7
Feb-15	4.24	9.36	82.03	29.53
Mar-15	4.04	9.15	69.34	25.43

Table 5-f Station : Bicholim

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	5.54	11.33	45.09	15.33
May-14	4.87	9.81	45.34	16.44
Jun-14	3.96	8.59	47.56	16.71
Jul-14	4.14	9.09	45.42	16.03
Aug-14	4.09	9.03	39.45	14.29
Sep-14	4.05	8.95	39.60	13.26
Oct-14	5.84	9.76	50.72	19.25
Nov-14	4.26	9.29	77.44	27.54
Dec-14	4.17	9.09	81.50	30.04
Jan-15	4.1	9.0	68.1	23.8
Feb-15	4.15	9.16	72.86	26.96
Mar-15	4.2	9.1	60.1	20.9

Table 5-g Station : Codli

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Apr-14	5.54	11.28	56.90	19.91
May-14	5.04	10.50	43.83	17.27
Jun-14	3.65	8.56	48.03	16.95
Jul-14	4.07	8.99	40.56	14.36
Aug-14	4.08	9.05	41.45	13.45
Sep-14	4.14	8.89	43.63	13.48
Oct-14	5.95	9.84	45.79	17.06
Nov-14	4.10	9.11	54.29	20.13
Dec-14	4.13	9.12	68.56	23.86
Jan-15	4.1	9.2	64.1	21.6
Feb-15	4.06	9.09	63.63	22.31
Mar-15	4.1	9.1	59.3	18.9

Table 5-h Station : Curchorem

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.57	11.26	40.69	14.99
May-14	5.00	10.58	51.67	17.93
Jun-14	4.06	8.59	44.11	15.21
Jul-14	4.09	8.95	45.41	16.12
Aug-14	4.12	9.04	36.78	13.15
Sep-14	4.00	8.99	38.48	13.46
Oct-14	5.66	10.00	50.19	17.76
Nov-14	4.16	9.11	45.54	16.79
Dec-14	4.17	9.09	64.67	22.62
Jan-15	4.1	9.1	57.5	21.2
Feb-15	4.2	9.21	75.03	26.65
Mar-15	4.1	9.1	60.5	20.2

Table 5-i Station : Honda

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.44	11.06	44.20	14.74
May-14	4.88	9.79	44.96	15.70
Jun-14	4.20	8.61	45.10	16.46
Jul-14	4.07	8.96	44.29	15.63
Aug-14	4.12	9.07	41.51	15.29
Sep-14	4.11	9.05	46.96	16.06
Oct-14	6.01	9.95	41.92	13.89
Nov-14	4.15	9.09	46.74	16.76
Dec-14	4.14	9.11	47.67	17.50
Jan-15	4.2	9.1	62.2	23.5
Feb-15	4.15	9.18	58.86	20.9
Mar-15	4.2	9.1	64.3	22.6

Table 5-j Station : Kundaim Industrial Estate

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.61	11.56	71.67	24.33
May-14	5.08	10.47	62.77	22.47
Jun-14	3.65	8.58	52.71	18.00
Jul-14	4.10	9.06	50.32	17.42
Aug-14	4.08	9.06	38.84	14.63
Sep-14	3.75	8.09	61.64	19.30
Oct-14	6.05	9.91	75.67	25.83
Nov-14	4.30	9.30	74.53	27.50
Dec-14	4.22	9.30	81.06	29.50
Jan-15	4.3	9.3	71.8	27.2
Feb-15	4.3	9.25	84.21	28.58
Mar-15	4.3	9.2	76.9	25.1

Table 5-k Station : Mapusa

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.68	11.63	68.94	24.19
May-14	8.93	11.23	58.76	27.25

Jun-14	3.65	8.58	52.71	18.00
Jul-14	8.03	10.13	40.32	19.43
Aug-14	8.92	11.16	41.60	18.51
Sep-14	9.3	11.6	58.4	27.2
Oct-14	9.31	11.53	60.96	32.18
Nov-14	9.10	11.23	67.72	31.55
Dec-14	8.92	10.96	72.76	33.58
Jan-15	9.08	11.09	63.72	31.66
Feb-15	9.43	11.53	73.08	56.70
Mar-15	9.25	11.17	63.01	32.83

Table 5-l Station : Margao

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.58	11.74	68.86	22.99
May-14	5.22	10.62	62.23	22.23
Jun-14	4.43	9.33	59.54	21.84
Jul-14	4.09	9.05	44.51	14.36
Aug-14	4.04	8.98	39.42	13.63
Sep-14	3.58	6.85	39.60	13.76
Oct-14	5.62	9.01	56.51	20.87
Nov-14	4.30	9.28	63.54	23.05
Dec-14	4.14	9.17	67.80	24.53
Jan-15	4.3	9.3	80.0	29.2
Feb-15	4.18	9.29	79.39	28.09
Mar-15	4.3	9.2	61.2	21.8

Table 5-m Station : Ponda

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.67	11.50	57.99	21.51
May-14	4.98	10.08	51.27	18.06
Jun-14	4.18	9.20	45.83	16.33
Jul-14	4.07	9.02	44.62	15.65
Aug-14	4.12	9.04	49.86	17.94
Sep-14	4.09	9.13	45.34	15.80
Oct-14	5.60	9.03	56.12	19.63
Nov-14	4.11	9.03	55.38	19.10
Dec-14	4.12	9.12	64.56	25.83
Jan-15	4.2	9.2	68.7	25.4
Feb-15	4.1	9.06	67.51	23.64
Mar-15	4.2	9.2	62.9	20.7

Table 5-n Station : Sanguem

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.51	11.29	61.09	23.16
May-14	4.74	9.48	47.58	17.59
Jun-14	3.63	7.99	44.31	16.30
Jul-14	4.06	9.04	43.46	15.87
Aug-14	4.09	9.07	39.36	14.59
Sep-14	3.39	7.44	38.94	13.41
Oct-14	5.60	9.13	39.78	14.94
Nov-14	4.16	9.13	59.43	21.81
Dec-14	4.17	9.12	63.40	22.60
Jan-15	4.1	9.1	60.3	21.7
Feb-15	4.1	9.0	63.58	23.13
Mar-15	4.2	9.1	61.9	21.0

Table 5-o Station : Tilamol-Quepem

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.68	11.53	66.50	23.81
May-14	4.84	10.14	39.41	14.21
Jun-14	3.88	8.56	47.44	24.43
Jul-14	4.07	9.06	56.86	20.56
Aug-14	4.14	9.07	67.41	22.20
Sep-14	3.38	7.43	50.04	17.89
Oct-14	5.41	8.98	47.72	17.72
Nov-14	4.19	9.18	51.78	18.45
Dec-14	4.09	9.11	70.09	26.11
Jan-15	4.2	9.1	68.2	23.8
Feb-15	4.18	9.15	66.7	23.95
Mar-15	4.1	9.1	57.5	21.0

Table 5-p Station : Usgaon

Month	SO <sub>2</sub>	NO <sub>2</sub>	PM 10	PM2.5
	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>	µ g/m <sup>3</sup>
Apr-14	5.57	11.29	52.96	17.74
May-14	5.02	10.20	49.23	17.53
Jun-14	3.66	7.98	49.50	17.63
Jul-14	4.07	9.03	54.30	19.02
Aug-14	4.10	9.07	40.38	13.38
Sep-14	4.06	19.11	57.83	17.60
Oct-14	6.03	9.80	42.03	14.89
Nov-14	4.14	9.14	63.58	22.23
Dec-14	4.16	9.21	72.10	25.06
Jan-15	4.3	9.2	73.3	26.4
Feb-15	4.04	9.15	69.34	25.43
Mar-15	4.2	9.1	61.9	21.2

## Annexure VI

**Table 5: CLOSURE DIRECTIONS ISSUED UNDER THE WATER ACT AND THE AIR ACT**

Sr.No	Name of the unit	Action taken
1	M/s. Dandi Krishna Chari, Chawater,Bandem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
2	M/s. Ganesh Workshop, Dharwada, Virdi, Saqulim-Goa	Directed to immediately suspend the operation of the unit
3	M/s. Ambika Precast Products, Goankarwada, Nanoda, Latambarse, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
4	M/s. Sai Anand Engineering Works, C/oo. Sairaj Chari Panarsha, Kunden, Sakhalem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
5	M/s. Vinayak Yeshwant Chari, C/o. Megha M. Chari, Phalwada, Kudnem, Sanquelim-Goa.	Directed to immediately suspend the operation of the unit
6	M/s. Laxmikant Saw Mill, Amruli, Near Chowgule Mining Plot, Khanjan, Sula, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
7	M/s. Ramdas Engineering Works, Ghadwada, Surla, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
8	M/s. Surya Industries, Amrali, Near Chowgule Mining Plot, Khajian, Surla, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
9	M/s. Navdurga Rubber, C/o. Subash Raghvur, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
10	M/s. Yashodatta Mill, C/o. Mahesh Phadte, Ambikanagar, Bhomai, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
11	M/s. Dalal Enterprises, C/o. Shrikrishna Dalal, Near Tagor high school, Surla, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
12	M.s Shri Laximi Industries, C/o. Shrikrishna Ganpat Dalal, Ambegal, Pale,Bicholim-Goa.	Directed to immediately suspend the operation of the unit
13	M/s. Durga Rice & Flour Mill, C/o. Surrendra G. Paidankar, Ambegal, pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
14	M/s. Durga Bakery, C/o. Laxmi Anant Paidankar, Ambegal, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
15	M/s. Hindustan Tyre Works, C/o. Subash Raghvani, Ambegal, Plae, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
16	M/s. Mallikarjun Sankhelo Prossom Bakery, C/o. Jose Barretto, Mutiem, Bhomai, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
17	M/s. Dad Engineering Works, C/o. Raghvur, Asolkar, Bhomai, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
18	M/s. Metalcraft Industries, D3/1, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
19	M/s. Goa Hydrolics India Pvt. Ltd. Plot No. 121, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
20	M/s. Suresh Rice & Flour Mill, C/o Sapana S. mashaikar, Gudwada, Karapar, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
21	M/s. Mahalaxmi Areated Water, Van Maulinguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
22	M/s. Shinddi Cashew Industries, C/o. Ramakant Nagvekar, Maulinguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit

23	M/s. Rubby Engineering Works, Opp. Fish Market, Velguem, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
24	M/s. L.v.S. Tyre Works, C/o. Ajanta Tyre , k.M.Mathew, Velguem, Pale, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
25	M/s. The Bombay Engineering Works, C/o. Siddesh Laxmikant Chodankar, Saviribhat, Velguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
26	M/s. Sampada Flour Mill, Kelbaiwado, Maem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
27	M/s. Kalan Bakery, Ordawado, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
28	M/s. Laxmi Rice & Flour Mill, Shikeri, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
29	M/s. Jeevan Rice & Flour Mill, Vainguem, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
30	M/s. Satyakatha Rice & Flour Mill, Chinch, Bhatwada, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
31	M/s. Rajaram deulkar, C/o. Laxmikant R. Deulkar, Old Market Bicholim-Goa.	Directed to immediately suspend the operation of the unit
32	M/s. Chari Automobile, Co. Ramchandra A. Chjari, Goankarwada, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
33	M/s. Technical Precisions, D3/20, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
34	M/s. Kumbhar, Plot No. 91, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
35	M/s. Nitu Plast, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
36	M/s. Hydroprematic Pvt. Ltd, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
37	M/s. Rajaram P. Deulekar, Old Market, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
38	M/s. Vasudew Vaman Chari, Goankarwada, Mayem-Goa.	Directed to immediately suspend the operation of the unit
39	M/s. Bavai Bhjavani Bakery, Goankarwada, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
40	M/s. Radha Furniture, Goankarwada, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
41	M/s. Dwarki rice & Flour Mill, Goankarwada, Mayem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
42	M/s. Shree Sai Workshp, C/o. Saibaba D. Naik, Velguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
43	M/s. Devani Bakery, C/o. Phondo, Bhoma Ghadi, Velguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
44	M/s. Shambu Narayan Chibde, Ghadiwada, Maullinguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
45	M/s. Savitri Workshop, Kthiwada, Karapur, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
46	M/s. Road Star Tyre Works, D4/2, Bicholim Industrial estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
47	M/s. Prakash Rice & Flour Mill, C/o. Kum. Priyanka Parab, Ambheshi, Amobna, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
48	M/s. Kaveri Agro Product, C/o. Lina Sawaikar, Viridi, Sanqulim-Goa.	Directed to immediately suspend the operation of the unit
49	M/s. Geeta Engineering Works, C/o. Prakash Laxman Popkar, Langao, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
50	M/s. National Engineering Works, C/o. Krishna Chari, Velguem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit

51	M/s. Micron Industries, D3/3, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
52	M/s. Sai Tiles, Plot No. 120, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
53	M/s. Sai traders, Plot No. 119, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
54	M/s. Koteswar Engineering Works, Plot No. 119/B, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
55	M/s. Pop's Snacks Services, D3/16, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
56	M/s. Sai Prasad Oil Industry, Plot No. 31B, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
57	M/s. Bharat Engineers, Gala No. 8, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
58	M/s. Gajanan Engineering Works, D2/24, Bicholim Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
59	M/s. Class Packers, Sai Krishna, Bardem, Bicholim-Goa.	Directed to immediately suspend the operation of the unit
60	M/s. The "O Spa, The 'O" Hotel, Survey No. 114/1, Dando, Candolim, Bardez, Goa.	Directed to immediately to close/suspend the operation of the unit
61	M/s. Prakriti Ayurvedya Centre, Neelams, The Grand, Post Office Road, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
62	M/s. Revive SPA, Country Inn & Suites, C/o. Carlson, Bamanvaddo, Candolim, Bardez,-Goa .	Directed to immediately to close/suspend the operation of the unit
63	M/s. Pousada Tauma, Porbavaddo, Calangute, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
64	M/s. The Camelot Resort, Baga Arpora Road, Cobravaddo, Baga, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
65	M/s. Tatva Elements Spa, Hotel Whispering Palms, Candolim, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
66	M/s. Amanya Spa & Salon, C/o.Nitya Resort, Naikwado, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
67	M/s. Azzure by Spree Hotels, H. No. 2/16 A, Naikwado, Calangute, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
68	M/s. Jewel Inn & Spa, opp. Don Bosco Hostel, Tivai Vaddo, Calangute, Bardez-Goa	Directed to immediately to close/suspend the operation of the unit
69	M/s. The Golden Palms Hotel & SPA, Next to Alex Church, Naikvaddo, Calangute, Bardez-Goa	Directed to immediately to close/suspend the operation of the unit
70	M/s. Suncity Resort, Sauntawaddo, Calangute Baga Road, Calangute, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
71	M/s. Fortune Select Regina, 376, Fort Aguada Road, Candolim, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
72	M/s. The SPA at Royal Park Beach Resort, 1/230 A, Holiday St, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
73	M/s. Nature Touch Candolim, Fort Aguada Road, Souzawaddo, Candolim, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
74	M/s. Massage & Jacuzzi at Beauty Parlour, Resorte Marinha Dourada, Tambudki, Arpora, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit

75	M/s. SPA/Massage at Phoenix Park Inn Resort, Sequera Vado, Candolim, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
76	M/s. The spa/massage Centre at Kingstork Beach Resort, Candolim, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
77	M/s. Sukhmantra Resort & SPA, 317/C, Bamon Vaddo, Candolim, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
78	M/s. 360, Beach Retreat, Main Candolim Beach, Candolim, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
79	M/s. Toto's Foot Spa, Khobravaddo, Near Our Lady of Piety Chapel, Baga Road, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
80	M/s. Massage Centre at Nazri Resort, Sauntawaddo, Baga, Calangute, Bardez-Goa is operating	Directed to immediately to close/suspend the operation of the unit
81	M/s. Primrose SPA, Opp. Centurion Bank, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
82	M/s. Tatva Element SPA, Shop No. 3/1, Ward No. 3, Tivaiwaddo, Velvet Inn, Behind Calangute Chapel, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
83	M/s. Sunflower Salon and Spa, Sunshine Park Resort, Fort Aguada Taj Road, Candolim, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
84	M/s. Tatva Element SPA, Nagoa Grande N/18/1, Nagoa Arpora, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
85	M/s. Oasis SPA, No. 2/132 A, Naikwado, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
86	M/s. Spa Sitara, 283/7, Bamanvaddo, Fort Aguada Road, Candolim Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
87	M/s. Orient Spa, Cambay Beach Resort, Holiday street, Kerkar Art Gallery Lane, Calangute, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
88	M/s. Lotus Beauty Salon, Prudential Palms Building, Alto Porvorim, CHOGM Raod, Porvorim-Goa.	Directed to immediately to close/suspend the operation of the unit
89	M/s. Deltin Suites, Nerul Candolim Road, Fadtewada, Nerul, Bardez-Goa .	Directed to immediately to close/suspend the operation of the unit
90	M/s. Deltin Palms, H. No. 542/1, Malim, Penha de Franca, Next to Britona Church, Britona-Goa.	Directed to immediately to close/suspend the operation of the unit
91	M/s. "K" SPA, C/o The Royal Goan Beach Club, Menleiro, next to Blue Lady Water Park, Baga, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
92	M/s. "O2" SPA, Double Tree by Hilton, Arpora, Baga, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
93	M/s. Massage Centre at TESO Water Front, Vaddy, Siolim, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
94	M/s. Avamam Massage Centre, Near Cavala & La Calypso Beach Resort, Baga, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
95	M/s. Spa at White Pearls Suites, Opp. Hanuman Temple, Sanqwadi, Baga, Arpora, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
96	M/s. Hotel Dona Terezinha, Fort Aguada Road, Arpora, Bardez-Goa..	Directed to immediately to close/suspend the operation of the unit
97	M/s. Ayurvedic Massage, Looney Resort, Goa, Ozran Beach Road, Anjuna, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit

98	M/s. Spa and Wellness, Willows Elite Resort, Bairo Alto, Anjuna Assagao, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
99	M/s. La Gulls Court SPA , 474/1, Near Savitri Supermarket, Devulvaddo, Chapora, Vagotor, Bardez-Goa.	Directed to immediately to close/suspend the operation of the unit
100	M/s. Marbela Beach Resort SPA, 782, Gawdewada, Morjim, Pernem -Goa.	Directed to immediately to close/suspend the operation of the unit
101	M/s. Rock Water Resort, Morjim, Pernem -Goa.	Directed to immediately to close/suspend the operation of the unit
102	M/s. The Mandala, Ashwem, Mandrem, Pernem-Goa.	Directed to immediately to close/suspend the operation of the unit
103	M/s. Ecowoods Village Resort & Spa, 183/4, Gaudewaddo, Morjim, Pernem-Goa.	Directed to immediately to close/suspend the operation of the unit
104	M/s. The Tatva Element Spa , La Cabana, Ashwem Mandrem, Pernem-Goa .	Directed to immediately to close/suspend the operation of the unit
105	M/s. Amarya Shamiyan, Ashwem Beach, Mandrem, Pernem-Goa.	Directed to immediately to close/suspend the operation of the unit
106	M/s. Lotus Bambolim Beach Resort, Nunes Beach, Bambolim-Goa .	Directed to immediately to close/suspend the operation of the unit
107	M/s. Meenas Ayeena Beauty Studio & SPA, F/3, Britos Enclave, Near Petrol Pump, Next to Manoshanti Hotel, Miramar-Dona Paula Highway, Caranzalem-Goa.	Directed to immediately to close/suspend the operation of the unit
108	M/s. Sensation Beauty Salon, Bhashyam Chambers, Adarsh Colony, Caranzalem-Goa .	Directed to immediately to close/suspend the operation of the unit
109	M/s. Goa Sea Spa , Nunes Beach Properties, Bambolim-Goa.	Directed to immediately to close/suspend the operation of the unit
110	M/s. Goveia Holiday Homes, next to Aradi Sub Station, Candolim, Bardez-Goa.s	Directed to immediately to close/suspend the operation of the unit
111	M/s. Goveia Holiday Homes , next to Aradi Sub Station, Candolim, Bardez-Goa.s	Directed to immediately to close/suspend the operation of the unit
112	M/s Vallabh Crushing Industries, Sarzora, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
113	M/s Namdev Narcinva Lotlikar, Murida, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
114	M/s Sun Bakery, Pedda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
115	M/s Neo Mech Engineering Works, C/o. Virendra Bandodkar, Opp. Rajendra Prasad Stadium, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
116	M/s Trimurti Die Press, C/o. Shivaji S. Mane, Gandhi Market, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
117	M/s Ajanta Printers, C/o. Putu Venkatesh Alvonkar, Erasmo Carvalho street, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
118	M/s Anant Shabu Pai Fondekar(Sambari Flour Mills), New Bazar, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
119	M/s Lorez Imaging, C/o. Adelina Fernandes, Behind Muncipal Bldg., Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
120	M/s Apa Somo Redkar, Station Road, Behind Bata Shop, Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
121	M/s Luizinho Printing Press, Shop No. 8, Vaishak Appts., Behind Dr. Rebello's Hospital, Mada, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

122	M/s Raikar Colour Lab., Shop No. GS 11, Rigim classic Bldg., Opp. Chamundi Bldg., Malbhat, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
123	M/s Prasad Drinks, C/o. Sadanand Mayekar, H. No. 88, Malbhat, Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
124	M/s Shri Umesh Mukund Chari, H. No. 487, Malbhat, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
125	M/s Tak-Tik Metal Works, C/o. Antonio M. Fernandes, Behind Durga Hotel, Santimano Bldg., Khareband, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
126	M/s Lezia Auto Servicing Centre, Near Cine Lata, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
127	M/s Keris Engineering Works, C/o. Jose K. Fernandes, Borda, Near IIT, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
128	M/s Marcarfly's Industries, C/o. Eoque C. Souza, H. No. 356, St. Joaquim Road, Near Jet Traval, Borda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
129	M/s Rolex Dry Cleaners, C/o. Rajendra Telu, 2/s Borda Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
130	M/s Shree Giroba Prasanna Industries, C/o. Suryakant Narayan Dabolkar, Near BM Service Station, Modsai, Borda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
131	M/s Vini Cola Pvt. Ltd., H. No. 248, St. Joaquim Road, Opp. B.M. Hall, Borda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
132	M/s Reliance Printing & Stationary, C/o. Mahendra Karmali, Behind old Survey Office, Borda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
133	M/s Bhavani Enterprises, C/o. O.V.B. Patel, Opp, Survey Office, Behind State Bank, Borda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
134	M/s Savio Service Centre, C/o. Manuel Perreira, H. No. 130, Behind Pedar Chapel, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
135	M/s Technical Engineers, Opp. Borkar Super Market, Vidhyanager, Aquem, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
136	M/s Sanyo and Sanyo, C/o. Tilak Raj Mehta, Shop No. 5, Sundew Apts., Near Cine Vishant, Aquem Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
137	M/s Family Ice Cream Factory, C/o. Rajesh Kerkar, Aquem Alto Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
138	M/s. St. Francis Xavier Workshop, C/o. Allwin Fellis, Opp. Kerkar Hospital, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
139	M/s. Renuka Flour Mill, C/o. Ramchandra Patil, Near Kerkar Hospital, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
140	M/s. Shree Mallikarjun Alluminium, C/o. Shaikh Jalal Daud, Near Babu Nayak House, 5-8, Priyanka Enclave, Aquem, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
141	M/s. Chougule Industries Pvt, Ltd,. S. No. 41/4, Cotto co Mill, Aquem, Baixo, Shantinagar Navelim Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
142	M/s. Dattaraj Ramchandra Sawamt, Aquem, Alto-Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

143	M/s. Shirodkar Wooden Furniture, C/o. Reshma Shirodkar, 533, Taleband, Aquem, Near Ram Mandir, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
144	M/s. Sideshwar Aluminium, Shop No. 7, Coelho Apts., Grd. Floor. Ponder Chapel. Aquem Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
145	M/s. Garage National, Aquem, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
146	M/s Narayan Pissurlekar, C/o. Mr. Narayan Pissurlekar, H.No. 28, Pedda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
147	M/s Gomes Cement Unit, C/o. Costa Pereira Bldg, Nr, Municipal Garden, Margao-Goa.(Solva)	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
148	M/s Chandrakant B. Naik, Shop No. 4, Opp. Rukrush Hotel, Margao-Goa, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
149	M/s Fernandes Vulcanising Shop, C/o. Mr. Lourenzo Fernandes, Old Market, Market, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
150	M/s. D. V. Kamat & Brothers, khareband, Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
151	M/s. Modern Auto Industry, C/o. Iftikar khan, Santimano Bldg., Sirvodem, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
152	M/s. Prashant S. Nadkarni Flour Mill, Sirvoddem, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
153	M/s. Sunivas Funnisher, C/o Mahalaxmi Saw mill, P.S.Gauenkar, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
154	M/s. City Technical Services, C/o. Hemlet Coelho, Carvelho Apts. Shop No. 4, Behind Loyola High School, Comba Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
155	M/s. Sebi Engineering Works, C/o. Sebino Fernandes, Near Panchayat, Kotkomoll, Figuelem Aquem, Baixo, Navelim, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
156	M/s. Babuliram A. Bandothkar, C/o. Babuliram A. Bandothkar, Tripoli Bldg, Shop No. 13, Pajifond, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
157	M/s. Rodsons Engineering Works, C/o. Visitacho Rodrigues, Vissu Virgincar Building, Quepem Road, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
158	M/s. Esmail Kansar, Comba Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
159	M/s. Kismet Industries, C/o. Krishnanath Kakode, Behind Rebello Hospital, Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
160	M/s. Shubha Engineering Works, C/o. Shailendra P. Sanzagiri Shivam, Aquem, Dovorlim Road, Near Church Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
161	M/s. Naguesh Auto Servicing Centre, C/o. Rajendra Lotlikar, Davorlim, Margao, Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
162	M/s. Shanta Printing Press, C/o. Kamal Zambaulika, Davorlim, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
163	M/s Narcinva D. Bandothkar, Igrejawado, Cavelossim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
164	M/s Kamat Securities, C/o. Dr. Giri Baban Kamat, Near Hari Mandir, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

165	M/s Bhavani Sweet & Purohit Refreshment, C/o. Narayan Ninnel Rohit, Near Railway, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
166	M/s Reliance Fabrication, C/o. Dinesh Kakodkar, H. No. 365 Opp. Wood House, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
167	M/s Alcon Alluminium Industries Pvt. Ltd, Plot No. 29, Near Hotel Shinkre, Natasha, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
168	M/s Aryan Industries, C/o. Nesh Naik, H. No. 113, Chandrawad, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
169	M/s Noor Flour Mill, C/o. Shaikh Noor Mohammed, Chandrawado, Fatorda Margao, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
170	M/s Sushree Products, C/o. Rajendra S. Ghate, H. No. 309, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
171	M/s Construction & Traders, C/o. V. K. Naik, Gauliwada, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
172	M/s Mac Fabrications, C/o. Khalid Shaikh, Chandrawada, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
173	M/s Felero Drinks, C/o. Conceica Felero, Chandrawada, Fatorda Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
174	M/s Harish Timber Depot, C/o. Damodar Patel, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
175	M/s Keytech Electronics System Pvt. Ltd., C/o. Shirish Shetye, Gogol, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
176	M/s. Rodrigues Furniture, C/o. Minguel Rodrigues, Near St. Ann School, H. No. 357, Agate, Gogol, Margao, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
177	M/s. Citizen Battery, Opp. Hotel Shekar, below Sydicate Bank, Khareband Road, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
178	M/s. Vaman G. Chari & Sons, Khareband, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
179	M/s. Saeesh Enterprises, C/o. Seema S. Kamat, Khareband, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
180	M/s Raikar Diamond Cutting Centre, Shop No. 229, Gandhi Market, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
181	M/s Damodar Fabrication Works, C/o. Damodar Parkar, Pereira Bldg., Quepem Raod, Margao, Salcete-Go	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
182	M/s Grace Printers, C/o. Cedric Domic Fernandes, P C Pacheco Bldg., Varde Valaulikar Road, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
183	M/s Kakodkar Printing Press, C/o. Umakant kakodkar, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
184	M/s Penguins Casa De Gelados, C/o. Abdul Kedar Haji Gaffar, Near Municipality, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
185	M/s. Madhukar R. Acharya, Near Power House, Aquem, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
186	M/s. Shree Damodar Saw Mill, C/o. D. B. Patil, Aquem, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
187	M/s. Laxmi Cement Grill, C/o. Vasanti Naik, H. No. 398, Shantinagar, Rawanpond, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

188	M/s. Natraj Industries, C/o. Naresh Zambaulikar, Shantinagar, Aquem, Baixo, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
189	M/s. Madgaum Soda Factory, 572, Colomorod, Below Bridge, Quepem Road, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
190	M/s. Ratnadeep Bakery, C/o. Vithal K. Dhavaskar, H. No. 260, Calcondem, Quepem Road, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
191	M/s. Alve-Weld-O-Crafts, C/o. Ajit Alve, Near popular High School, Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
192	M/s. Natasha Fuel Injection Service Centre, C/o. Minguel Carvalho, H. No. 91 E, Near Gomantak Viya Niketan, Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
193	M/s. Vaz Liquir Industries, C/o. Jose F. S. Gonsalves, Comba, Parcotto, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
194	M/s. Grace Printing & Stationary, Indira Apts. Near Milk Booth, Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
195	M/s. SSS Service Station, C/o. P. N. Shanoy, Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
196	M/s. Engee Combine, C/o. Raghunath Nadkarni, A 5-2, Laxmi Co-op Housing Society Ltd. Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
197	M/s. Laxmi Bakery, C/o. Shripad Shirodkar, H. No. 229, Near Old Court, Aquem, Comba, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
198	M/s. K. B. Cement Products, C/o. K. B. Naik Gauliwada, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
199	M/s. Answin Plastic Industries, C/o. Anita Vaz, Behind Gouri Petrol Pump, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
200	M/s Sai Prasad Batteries, C/o. Keshavrao Revankar, Shop No. 7, Shinkre hotel Building, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
201	M/s Perfect Coaters, C/o. Ulhas P. Naik, Opp. Maria Bar, Ambajim, Fatorda, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
202	M/s Bombay Furniture Works, C/o. Shaikh Abdul Roof, 16, Sterley Apts., Pajifond, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
203	M/s. Goa Auto Reconditioners, C/o. Shri Raghuvir Paikane, Navelim, Salcete-Goa,,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
204	M/s. Vaibhav Bakery, C/o. Shri Kashinath V.Gurav, Sarvadem, Navelim, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
205	M/s. Bright Packaging, C/o. Shri Tulshidas Gavade, H. No. 583, Revora, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
206	M/s. Shree Laxmi Marbles, C/o. Clara Pinto Rodrigues, H. No. 740, Fradilem, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
207	M/s. Wood Art Furniture, H. No. 455, Sirvodem, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
208	M/s. Prabhu Cement, C/o. Shri Mahadev Prabhu, H. No. 137, Nagmodem, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
209	M/s. Castle Rock Industries, C/o. Mrs. Gracy George, Colmorod, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
210	M/s. Margarida Cardoz, Dialgora, Telaulim, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
211	M/s. M.P.D'Costa Workshop, C/o. Late Menino Paul-wife Conceicao Rebello, Belem, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

212	M/s. Lakaki Dry Cleaners & Art Dryers, C/o. Venetesh Naik Dalal, Dicarpali, Quepem Rd., Margao - Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
213	M/s. Madina Furniture Works, C/o. Shaikh Shaffi Hussai, H. No. 190, Dicarpali, Navelim, Salcete, Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
214	M/s. Fericon, C/o. Mr. Khaja Kuknoor, 1st Floor, David House, Dicarpali, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
215	M/s. Sunshine Laundry, C/o. Prakash M. Redkar, H. No. 64-E, Tolleaband Opp. Datta Mandir, Davorlim, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
216	M/s. Mahalaxmi Saw Mill, C/o. Tivikumar S. Naik, Quepem Road, Davorlim, Salcete- Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
217	M/s. Sagar Printing Press, C/o. Balchandra Kakodkar, Station Road, Margao, Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
218	M/s. Casa Gomantak, C/o. J. N. Nayak, P. Box No. 04, New Market, Margao - Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
219	M/s. Shirley & Co., C/o. Shirley Countinho, Shop No. 2, Aribhat Appts., Erasmo Corvalho street, Margao-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
220	M/s. Shivshakti Engg. Works, C/o. Mr. Ratnakar Bandodkar, Davorlim, Margao, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
221	M/s. Vishnu Arjun Takekar, C/o. Vishnu Arjun Talekar, H. No. 73 K, Baga, Davorlim, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
222	M/s. Khan Bakery, C/o. Hussain Khan, H. No. 80/A, Indona, Davorlim, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
223	M/s. Gautam Wood Industries, C/o. Mr. Gautam Patel, Indona, Davorlim, Salcete - Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
224	M/s. Nicholas & Sons Engineering Works, C/o. Nicholas D' Costa, Tolleband, Davorlim, Salcete - Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
225	M/s. J. N. Kamat & Sons, C/o. Shri Subhase J. Kamat, Dicarpale, Davorlim, Margao, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
226	M/s. Carol Modern Furniture & Decorators, C/o. Mr. Michael D'Costa, Below Comunidad Bldg, Old Market, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
227	M/s. Moosa's Tea & Coffee Centre, C/o. Hajee Mussa Mohammad, Near Market, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
228	M/s. Souza & Sons, C/o. Romello De Souza, Old Market, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
229	M/s. Minerva Ice Cream and Cold drink house, C/o. Mr. Badruddin Massani Amir Ali, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
230	M/s. Fernandes Engg. Works, C/o. Antonio Fernandes, Old Market, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
231	M/s. Espec Diesel Engineering, C/o. Monica D'Souza & Micheal A. D'Souza, Correia Building, Near Woodland Hotel, Margao-Salcete-Go	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
232	M/s. Gomant Prnting Press, C/o. Mr. Jayprakash D. Kare, Rua Martines Dias Road, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
233	M/s. Himalaya Ice Cream, C/o. Mr. Madhusudan Vithal Prabhu Gaonkar, Virjinkar Bldg, Qupem Road, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
234	M/s. Crystal Ceramics, Dental Laboratory, C/o. Dr. Hubert Gomes, Avenue Bldg, Pajifond, Margao-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
235	M/s. Shyam Printers, C/o. Shri. Rohidas G. Lotlikar, H. No. 44, Near Jain Manddhir, Pajifond, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

236	M/s. Kala Windecors, C/o. Mr. Rajiv Kamat, D-1, Gound Floor, Sea Gull Appts, Near Jain Temple, Panjifond, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
237	M/s. Mona Ice Cream Factory, C/o. Shaik Abdul Rahin, Panjifond, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
238	M/s. Anand Industries, C/o. Naresh Bandodkar, 13, Tripoli Building, Pajifond, Margao, Salcete - Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
238	M/s. Jayasu Industries, C/o. Vasudev Karpe, Karpe Agencies, Balaji Kakode Chawl, Pajifond, Margao - Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
240	M/s. Valankani Garments & Sticking Works, C/o. Santana Pinto, Crismichel Building, Pajifond, Margao, Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
241	M/s. Coast Air Conditioning Refrigeration Ind., C/o. Mr. Constancio Costa, G-2, Vaibhav App., Davorlim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
242	M/s. Shree Gaulaxmi Saw Mill, C/o. Mangalaben Patel, Davorlim, Navelim, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
243	M/s. Favour Steel Doors Mfg. Co., , C/o. Mohammad Hussain, Zoriwado, Davorlim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
244	M/s. Ranjit Fabricators, C/o. Necholi Ranjeet Kumar, H. No. 122, Zoriwado, Davorlim, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
245	M/s. Car Care Centre, C/o. Mr. Stanislaus Noronha, H. No. 102, Seraulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
246	M/s. Apollo Tiles & Marbles, C/o. Mr. Pedro J.A.Domado, Kirbhat, Nuvem, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
247	M/s. Jose Antonio Pinto, H. No. 92, Nuvem, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
248	M/s. My Choice, C/o. Mr. Inacinho Albuquerque, H. No. 86, B, Cupem, Nuvem, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
249	M/s Annie Workshop, C/o. Mr. Julio Fernandes, Verna, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
250	M/s Remedios Baker, H. No. 73, Bello, Nuvem, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
251	M/s Modern Chemical Works, H. No. 349, Sonarvaddo, Nagoa, Verna, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
252	M/s . St. Jose Wood Works, C/o. Mr. Joao Jose Feria, Pimpolwado, Nagoa, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
253	M/s Periera Rice Mills, C/o. Mr. Justino Fernandes, H. No. 177, Adaowaddo, Majorda, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
254	M/s Majorda Printers & Stationers, C/o. Mr. J. J. Fernandes, 8 Club Bldg, Majorda, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
255	M/s Golden Cane Industries, C/o. Mr. Abdul Rehman, Shop No. 333(4), Near Railway Station, Majorda, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
256	M/s Meca Industries, C/o. Mr. Antonio J. N. Carvalho, H. No. 422, Sanlem Waddo, Majorda, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
257	M/s. Pinto General Works, C/o. Bertha Pinto, Behind Fatima Convent, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
258	M/s. Pinto's Flour Mill, C/o. Jonita Pinto, Near Maruti Temple, Peddem, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
259	M/s. Areal Printing Press, C/o. Manuel Fernandes, , Near Grace Church, Isidore Baptista Rd, New Market, Margao-Goa.	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

260	M/s Sabina Bakery, C/o. Manuel Fernandes, Bus Stand, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
261	M/s. Unique Graphic Prints, C/o. Chandramohan Madkaikar, H. No. 1616, Shambaseth Smriti, Martines Dias Road, Margao-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
262	M/s Shantnag Printing Press, C/o. Shri Ragoba R. Nagvekar, Panzorconi, Cuncoilm, Salcete-Go	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
263	M/s. Bona Steel, C/o. Mr. Ramesh Naik, Velim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
264	M/s. Oscar Auto Servicing Centre, C/o. Mr. Oscar Pereira, Oromorod, P.O. Dramapur, Sirlern, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
265	M/s. Minguel Luis Gomes, C/o. Mr. Minguel L. Gomes, 2nd Dadio, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
266	M/s. Yash Enterprises, C/o. Mrs. Deepika D.Lotlikar, Dylon Bldg, Navelim Rd., Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
267	M/s. Vailankani Cement Products, H. No. 17, Davoriim, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
268	M/s. Wood Teq Furniture, H. No. 86, Sirvodem, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
269	M/s. Prakash V. Prabhu Dessai, C/o. Mr. Santosh Chandak, St. Jose de Areal, Sarzora, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
270	M/s. Mahesh Saw Mills, C/o. Mr. Khaboodin Antoni, Sarzora, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
271	M/s. Domnisson Rice & Flour Mill, Varca, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
272	M/s. Futura Solutions, C/o. Fr. Antonio Furtado, G-24,25, Church View Complex, Varca, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
273	M/s. Francis Welding Workshop, Velim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
274	M/s. R.R. Engineering, C/o. Mr. Eutinio Fernandes, H. No. 390, Shop No. 2, Gr. Floor, Varca, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
275	M/s. Asha Steel Industries, Velim Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
276	M/s. Joscar Rice & Flour Mill, H. No. 552, Velim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
277	M/s. Brothers Bakery, H. No. 1134, Silva Waddo, Velim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
278	M/s. Cota Industries, Gudi, Paroda, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
279	M/s Super Structures, C/o. Mr. Placentino A. Rodrigues, H. No. 353, Thand Vaddo, Betalbatim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
280	M/s Cedric Judes Bakery, C/o. Mr. Inocencio Rodrigues H. No. 94/A, Nagravaddo, Betalbatim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
281	M/s Allwyn's Enterprises, C/o. Mr. Allwyn Periera, H. No. 13(d), Thondwado, Betalbatim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
282	M/s Pedro Costa Cupatoz, C/o. Mr. Vidhyadhar V. Arsekar, Macasana Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
283	M/s Bhagwati Cement Products, C/o. Mr. Ladram Patel, Mugali, Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

284	M/s Fine Industries, C/o. Shri Muhammad Yusuf, H. No. 840, Mugali, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
285	M/s Asia Trade Combines, C/o. Mrs. Dipti A. Shah, 2/7, Libiyana Bldg., New Market, Margao, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
286	M/s Mathew Joaquim Simao, Leandrika Appts., 2nd Floor, Madel Grande, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
287	M/s Mangesh Traders, C/o. Mr. Mahesh Vithalkar, Shop No. 3, Guru Krupa, Malbhat, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
288	M/s Chandrakant K. Shet Verenkar, C/o. Mr. Chandrakant Verancar, Malbhat, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
289	M/s Dinesh Aluminium Work, C/o. Dinesh Nagvenkar, H. No. 108, Ramodem, Nr. Church, Carmona Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
290	M/s Dalima Bakers & Confectionery, C/o. Mr. Peter Fernandes, 622, Pulwado, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
291	M/s Kay Electronics, C/o. Mr. Jayant G. Kamat, H. No. 69, Grand Venelim, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
292	M/s Robot Soap Products, Next to M/s. Santos Engineering, Vidyanagar, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
293	M/s Tiborcio Gabriel Fernandes, Carmona, Gerogewado, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
294	M/s. Antonio Rodrigues, H. No. E-27, Karali, Paroda, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
295	M/s. Longrun Bottling Co., C/o Hotel Longuinhos, Dr. Antonio Dias Bldg, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
296	M/s. Vinayak Gopal Shelvi, Ravalphond, Navelim, Salcete-Goa.	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
297	M/s. Vailankani Power Laundry, C/o. Philipina Pereira, H. No. 160/A-1, Codeavaddo, Deussa, Chinchinim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
298	M/s. Sanwil Fabricatio, 2nd Palvem, Chinchinim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
299	M/s. Benson Bakery, C/o. Mr. Benjamin Dias, Dandoavaddo, Chinchinim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
300	M/s. Costa Chari, C/o. Mr. Joao M. da Costa, Dramapur, Salcete-Goa.	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
301	M/s. German Refrigeration, C/o. Seema H. Kalkar, Raikar Residency, NH-17, Bellay, Nuvem, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
302	M/s. Officina Bhandar, C/o. Mr. R. V. Bhandari, Benaulim, Salcete-Goa.	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
303	M/s. Roshan Welding, C/o. Mr. William Vaz, H. No. 103, Ambexin, Seinabetim, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
304	M/s. Anandrao X Lotlikar, C/o. Mr. Anandrao X. Lotlikar, Sernabatim, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
305	M/s. Vicente Alvaro Serrao, Seraulim, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
306	M/s. Shival Candle Industry, C/o. Mr. Shivanand Anand Lotlikar H. No. 142, Chinchmorod, Vanelim, Colva, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

307	M/s. Macson Carpenters, C/o. Mr. Micheal Baptista, H. No. 47, Peda Grande, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
308	M/s. Sonia Metal Works, C/o. Mr. Pascoal Rodrigues, Manzilwaddo, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
309	M/s. Furtado Workshop, H. No. 1246/1, Manzilvaddo, Benaulim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
310	M/s. Infant Jesus Furniture Works, C/o. Mr. Sebastiao Fernandes, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
311	M/s. Joaquim Joao Fernandes, H. No. 32, Near Agnel Ashram, Matola Verna, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
312	M/s. M.R. Furnitures, C/o. Manuel Mascarenhas, Musali, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
313	M/s. Bhagawati Enterprises, C/o. Khinji Patel, Musali, St. Jose De Areal, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
314	M/s Tanmay Offset Prints, C/o. Sudip Karmali, H.No.342, opp. Nita Ind. Nispabhat, St. Jose de Areal, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
315	M/s. Joseph Cardozo, C/o. Christo Cardoso, Nr. Two Cross, Bhati, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
316	M/s. Vishwanath Saw Mill, C/o. Ramesh Patel, Musali, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
317	M/s Gauri Enterprises, Padribha, Odli Bondgal, St. Jose de Areal, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
318	M/s. Shree Jaiaram Stone Industry, C/o. Haribai N. Patel, Musali, St. Jose de Areal, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
319	M/s. Sasar Powder Laundry, C/o. Galaya Palconda, 328/c, Pullamol, St. Jose de Areal, Salcete-Goa(Sagar Powder Laundry)	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
320	M/s Hazrat Dadapeer Workshop, C/o. Mehboob Panwada, Ambixir, Sonarbatim, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
321	M/s. Goa Liquor Industries, C/o. Premanand Naik, Musale, St. Jose de Areal, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
322	M/s Bhagwati Timblo, C/o. Arjun J. Patel, Mugali, St. Jose de Areal, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
323	M/s. Nita Industry, C/o. John Mascarenhas, Gudi, St. Jose de Areal, Salcete – Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
324	M/s. Super Weld Engineering, C/o. Mr. Jacinto Azavedo, H. No. 35, Betalbatim, Colva, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
325	M/s. Chandrakant Bandodkar, Bamborda, Verna, Salcete-Goa.	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
326	M/s. Emmy Bottling, C/o. Mrs. Jasin Fernandes, H. No. 1706/A, Vasuado, Ambodd, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
327	M/s. Mangush Soda Factory, C/o. Mrs. Veena Mangueshkar, Adsule, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
328	M/s. Socorina Carpentry, C/o. Mr. Minguel Fernandes, H. No. 977, Voddlem Bhat, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
329	M/s. Agnelo Furniture Works, C/o. Shri Agnelo Fernandes, Grande Pulvado, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

330	M/s. Nadkarni Metals, C/o. Mr. Kishor Nadkarni, H. No. 11, Povoacao, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
331	M/s. Hema K. Nadkarni, H. No. 11, Povoacao, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
332	M/s. Pinto Fabrication, C/o. Mr. Trevor Pinto, Magilwada, Benaulim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
333	M/s. Jadhav Brothers, C/o. Mr. Gokuldas K. Jadhav, Birondi, Benaulim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
334	M/s. Ideal Paper Works, C/o. Ms. Savita Shirodkar, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
335	M/s. Rato Carpentry, C/o. Mr. Sebastiao Rato, H. No. 240, Benaulim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
336	M/s. Naik Binder, C/o. Mr. Hari G. Naik, H. No. 355, Pulvado, Benaulim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
337	M/s. Perpetual Soap Industries, C/o. John Mascarenhas, Next to Santos Garage, Vidyanagar, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
338	M/s Damodar Enterprises, C/o. Prakash Prabhudesai, Sy. No.53/1, Sarzora, Salcete- Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
339	M/s Souza Farm Products, C/o. C.A.D'Souza, Ambaji, Margao-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
340	M/s. Ann Engineering, C/o. Mr. Joe Paulo Fernandes, H. No. 1202, Collea Dongor, Raia, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
341	M/s. Freshy Drinks,C/o. Binny Xavier, H. No. 547, Dagualli, Raia, Salcete.-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
342	M/s. Pereira Pimenta Bricks, Solva, Raia, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
343	M/s. Arlem Carpentry, C/o. Mrs. Alime Menezes, Arlem, Raia, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
344	M/s. Manora Auto Works, C/o. Mrs Agostino Barbosa H. No. 430, Manora, Raia, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
345	M/s. S.M. Services, C/o. Mr. Seby Mendes, Raia, Dogri, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
346	M/s Solar Power Corporation, C/o. Mr. John D'Souza, H. No. 1202, Collea Dongor, After Electricity Dept. Raia, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
347	M/s. Spectrum, C/o. Aires S. Da Costa, 1221, Ungirim, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
348	M/s. Jose Francisco Dos Santon, C/o. Robin Dos Santos, Vidyanagar, Margao, Salcete, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
349	M/s. Pauline Cement Products, C/o. Savio Rodrigues, Vidyanagar, Margao, Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
350	M/s. Damodar Wood Industries, C/o. Hansraj G. Patel, Davorlim, Navelim, Salcete- Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
351	M/s. Atchut Raghunath Shirodkar, C/o. Atchut.R.Shirodkar Maina, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
352	M/s. Emaben Enterprises, C/o. Maria Lourdes D'costa, Pequeno, Rumburdem, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
353	M/s. Vishal Enterprises, C/o. Mrs Padma Shantaram Gaonkar , 285-E, Maina, Vagulem, Maina, Curtorim, Salcete-Goa.	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

354	M/s. Costa Electronics, C/o. Cecil Costa, Near Post Office, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
355	M/s. Manuel Da Costa, C/o. Manuel D'Costa, H. No. 1560, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
356	M/s Lina Borges, Curtorim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
357	M/s. Spent Bottling, C/o. Uhas Sawant, 622, Ralloi, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
358	M/s. Metro Eyelet Industries, C/o. Maria Barreto, H. No. 366/D, Maina Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
359	M/s Jesus Industry and Carpenteres, C/o. Francisco Xavier Miranda, H. No 150, Hirabhat, Ambaji, Margao-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
360	M/s Farm Hots Food Products, C/o. Shamkant.P.Kholar, H.No.138, Ambajim-Loutolim, Salcete.-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
361	M/s. Bandodkar Rice n Flour Mill, C/o. Vasant Vithal Bandodkar, Loutolim-Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
362	M/s Chandrakanta Vanu Bandodkar, C/o. Chandrakanta Vanu Bandodkar, Canvota 30, Loutolim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
363	M/s Vijay Industries, C/o. Suraj Dailani, Loutolim-Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
364	M/s P. Gomes Carpentry, C/o. Pedro Gomes, Caizvot, Sanarbhat, Loutolim-Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
365	M/s Parkar Mill, C/o. Premanand Parker, Vanshem, Loutolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
366	M/s Snow Baker and Confectionaries, C/o. Mr Antonio Rodrigues, Sonanvado, Raia, Salcete –Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
367	M/s Makbul Mechanised Center, C/o. Shaikh Mohamed Hussaim, Uzro, Raia, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
368	M/s Steel Tech Association, C/o. Jose Francisco Rodrigues, Dongnim, Raia, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
369	M/s. Central Mechanical Workshop, C/o. Jose Anthony Fernandes, Raia, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
370	M/s. Central Rice & Flour Mill, Santemol, Rachol, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
371	M/s. Bandekar's Annapurna Masale, C/o. Yashoda Bandekar, 913/c, Bacbhat Raia, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
372	M/s. Seal O Pack, C/o. George Fernandes, H.No 751, Gonapoga, Raia, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
373	M/s. Alemao Workshop, C/o. Piedade Alemao, H.No.727, Raia, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
374	M/s. Bona Aerated Waters, C/o. Bruno Lourenco, H. No. 1032/A, Povoacao Curtorim, Margao, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
375	M/s. Primorose Printers, C/o. Francis D'Costa, Curtorim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
376	M/s. Pemla Engg. Works, C/o. Joaquim Alemeida, Povoacao, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
377	M/s. Mayur Industries, C/o. Mayura Mirji, H. No. 745/A, Shivdaan, Sandaiul, Raitolam, Curtorim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

378	M/s. Camilsons Industries, C/o. Mrs. Elizabeth Lobo e Dias, H. No. 236, Naquelim, Camorlim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
379	M/s. Super Structures Pvt. Ltd, C/o. Mr. S. V. Shet, Margao-Ponda High way, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
380	M/s. Jila Bakers & Confectionarier, C/o. Reginaldo Antao, H. No. 133 Ambora, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
381	M/s. Todaco Industries, C/o. Shri Anthony Fernandes, Navelim, Dongri-, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
382	M/s. R. K. Tiles, C/o. Shri G.S.Purohit, Fradilem, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
383	M/s. Sameer Engineering, C/o. Smt. Geeta G. Lotlikar, H. No. 2341, Sinquetim, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
384	M/s. Rosma Printing Press, C/o. Shri Diogo R.Gomes, H. No. 27, Ratwada, Navelim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
385	M/s. Vailankani Eng. Works, C/o. Joao Viegas, H. No. 807/A, Musale, Opp. Chapel, St. Jose de Areal, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
386	M/s Lenz Store Crushing Co, C/o. Shri Lenie Rosario, Sy. No. 250, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
387	M/s P. D. Dessai Crushers, C/o. P.P.Dessai, Sy. No.250, Sauricho Dando, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
388	M/s Furtados, C/o. Augustinho Tereza, Sy. No.130, Fatorgallidenyos, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
389	M/s Everest Ice & Cold Storage, C/o. Prabhakar Gajanan Naik, Nessai, Musale, St. Jose de Areal, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
390	M/s Maria Feliciano Vaz, H. No. 204, Demo Naik, Opp. Vithoba Temple, Orlim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
391	M/s Silva Engineering, C/o. Sebastiao D'Silva, H. No. 382, Mobor, Cavelossim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
392	M/s Shalom Exports, SA-4, 5, 15, 16 & 17 Cuncolim Industrial Estate, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
393	M/s Royal Milk Products, Plot No. SA A/2, Cuncolim Industrial Estate, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
394	M/s. Rocha Industries, Plot No. SA-6, Cuncolim Industrial Estate, Cuncolim-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
395	M/s Goa Indu. Tapes Pvt. Ltd, Plot No. SB-1, Cuncolim Ind. Est. Cuncolim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
396	M/s Panies Earth Moving Retreads, SA-67, 68 & 84, Cuncolim Industrial Estate, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
397	M/s Chari Garage, C/o. Bicaji Chari, Demani, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
398	M/s Umesh Laxmikant Chitari, Demani, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
399	M/s New Sha Aerated Water, C/o. Enoziana Fernandes, H. No. 57/B, 2489, Secreqcotta, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
400	M/s Anand Industries Comb, C/o. Vasant S. Prabhu Desai, Poricotto, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
401	M/s Chandreshwar Milling Works, C/o. Hari S. W. Kurade, Kurade, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board

402	M/s Saroj Vassu Pai Angle, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
403	M/s Mahadev Bakers & Confectioners, C/o. Mahalaxmi Book Depot, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
404	M/s Mitmah Garments, C/o. Mitsy Fernandes, H. No. 1651, Sanvorcotto, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
405	M/s Rudy Enterprises, C/o. Rudolf Fernandes, Cacnamoddi, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
406	M/s 1-UP Beverages, C/o. Deepak A. Mopkar, Demani, Cuncolim Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
407	M/s Mahalaxmi Engg. Works, C/o. Umesh Shirnath Shirvant, Veroda, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
408	M/s Kamalakar Vasudev Chittari, C/o. Nagesh V. Chittari, Demani Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
409	M/s Kamu Pawaskar, Bazar, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
410	M/s Prabhakar Vasudev Chitari, Demani, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
411	M/s Fabrica Descasque Cacodo, C/o. Srinivas Pai Kakode, Nr. Market, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
412	M/s Anant Sukdow Kansar, H. No. 85, Sanvorcotto, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
413	M/s Richardson Bakers & Confectioners, C/o. Miltony C. Fernandes, H. No. 103, Nr. Church, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
414	M/s Gopal Industry, C/o. Gopal A. Chitari, Cuncolim, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
415	M/s Sumangal Ice Cream Factory, C/o. Harshad R. Dessai, Behind Fish Market, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
416	M/s Sripad Laxman Chari, Demani, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
417	M/s R. M. Navekar & Sons, C/o. Ramchandra Navelkar, Assolna, Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
418	M/s Amol Rice & Flour Mill, C/o. Kesharai Kane, Assolna Bazar, Assolna Salcete-Goa,	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
419	M/s Eagle Industries, Shed No. D3-1, Cuncolim Ind. Estate, Cuncolim-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
420	M/s Sripad Vaidya, Madga Cotto, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
421	M/s Shankar Metal Quarry Industries, C/o. Shri Prasad Dessai, Futtigal, Acamol, Cuncolim, Salcete-Goa	Directed to immediately suspend the operation of the unit till further order or unit obtain CTO of the Board
422	Mithai Mandhir, Shop. No. 7, Somingos Co-op. Hosg. Society, Corlim,, St.Cruz, Ilhas-Goa.	Directed to close the unit
423	M/s. Tibna Metal Industries, Saurichodando, St Jose da Areal, Salcete-Goa.	Directed to close the unit
424	M/s. Mallikarjun Crushing Co. , Issorgal, St Jose de Areal, Salcete-Goa.	Directed to close the unit
425	M/s. Sandhya Enterprises, Sanzora, St Jose Da Areal, Salcete-Goa.	Directed to close the unit
426	M/s. Sandhya Enterprises, Sanzora, St Jose Da Areal, Salcete-Goa.	Directed to close the unit

427	M/s. Gonsalves Enterprises, St Jose Da Areal, Salcete-Goa.	Directed to close the unit
428	M/s. Quality Granite, Sauridando, St Jose da Areal, Salcete-Goa.	Directed to close the unit
429	M/s. S.J.Enterprises, Oilmoll, St Jose da Areal, Salcete-Goa.	Directed to close the unit
430	M/s. Tibna Metal Industries, Saurichodando, St Jose da Areal, Salcete-Goa.	Directed to close the unit
431	M/s. Jerry Enterprises, Oilmoll, St Jose da Areal., Salcete-Goa.	Directed to close the unit
432	Mr. Deepak Chari, Mestawaddo, Vasco-Goa.	Directed to close the unit
433	M/s. Rukmini Workshop, gaelbhat, Chimbhel, Tiswadi-Goa.	Directed to stop the operation of unit
434	M/s. Oleger Nazareth Poultry Fram, H. No. 3, Punola Ucassaim, Bardez-Goa.	Directed to suspend the operation of the unit , untill the unit obtain consent from the Board
435	M/s. Navbharat Granite & Marbles. Pilerne Industrial Estate, Bardez-Goa.	Directed to stop the operation of unit
436	M/s. Prakash Corrugated Products, Plot No. L-116(B), Verna Industrial Estate, Verna, Salcete-Goa.	Directed to close/suspend the operation of unit until the unit stop the discharge of wash water outside the unit premises.
437	Mr. Rajendra P. Naik., Automobile Workshop, Baithkol, Ponda-Ga.	Directed to close the operation of unit until the unit obtained the valid Consent from the Board.
438	M/s. Franria Guest House, Survey No. 1098/20-C, H. No. 1/152 A & C, Near Mark Memorial High School, Gaura Vaddo, Calangute, Bardez-Goa.	Directed to close the unit within 15 days
439	Mr. Rajendra P. Naik, Automobile Workshop, Baithkol, Ponda-Goa. Copy to, 1.0 The District Collector(North), Collectorate Building, Panaji-Goa.	Directed to close the unit
440	Mrs. Freda D'Sa, Dongorim, Nuvem, Salcete-Goa. 1. The Collector & District Magistrate(South), New Collectrate Building , South-Goa.	Directed to close the unit
441	The Collectorate and District Magistrate of North, Panaji-Goa.	Directing the activites of the stone quarries existing at Survey Nos. 99/1 & 70/4 are stoped and sealed within 7 datys
442	M/s. Rakesh Cement Blocks, Sancolae Industrial estate, Zuarinagar-Goa. Copy to the Collector & District Magistrate(South Goa District), Collectorate Building, margao -Goa.	Directed to close/suspend the operation of your unit till the management install water sprinklers, and obtain Consent to Operate of the Board.
443	M/s. Navdurga Hotel, Banastri, Ponda-Goa., Copy to,1. The Collector(North Goa District),Collectorate building, Panaji-Goa.	Directed to close/suspend the operation of your unit .
444	M/s. Hotel Goa Pride, H. No. 481/A, Aquem Baxio, Margao-Salcete-Goa.	Directed to close/Suspend the operation of unit
445	The Collector, North Goa District, Collectorate Building, Panaji-Goa.	Directed to close/sealed the unit of Goa Auto Works with immediate effect.
446	M/s Sanjiv Workshop, Survey No. 103, Barbhat, Talegao, Tiswadi-Goa.	Directing the unit not to commence the operation of the unit without obtaining Consent to Opertae from the Board
447	M/s. Hotel Saaj, H. no. 14/3065, Near Telephone Exchane, Margao-Goa.	Directed to close/suspend the operation of unit until the unit comply the direction dated 03/04/2014
448	Minguel D'Sa, Mandrem, Pernem-Goa.	Direction to stop the operation of quarry until such time unit obtained Consent from the board.
449	The Collector & District Magistrict, Collectorrate Building, Margao-goa.	Directed to seal the unit namely M/s. Sandhya Enterprises, Sarzora, St jose De Areal , Salcete-Goa, and submit a compliance report to this office

450	M/s. Anthony Traders, Survey No. 55/1, St. Augustinho Santa Cruz, Ilhas-Goa.	Directed to shift the activities of the unit to industrial estate/industrial area
451	M/s. Andrew Telecommunication India Pvt. Ltd, Plo No. N-2, Phase IV, Vena Industrial estate, Verna, Salcete-Goa,	Directed to stop the production and utilization of polyurethane at your unit with immediate effect until further Orders.
452	St Francis Xavier Laundry Services, Mr. Dle Dalgo, Portais, Reis Magos, Bardez-Goa.	Directed to immediately close/suspend the operation of the unit with immediate effects till such time the unit obtain valid CTO of the Board.
453	M/s. Mandovi Hotels Pvt. Ltd, (Hotel Mandovi), D.B. Bandodkar Marg, Panaji-Goa.	Directed to immediately close/suspend the operation of the unit within 15 days from date of receipt of this direction
454	The Collector & District Magistrate (North Goa District), Collectorate Building, Panaji-Goa.	Directed to suspend/close the health care unit within 15 days
455	The Collector & District Magistrate (South Goa District), Collectorate Building, Margao-Goa.	Directed to seal the slaughtering house located at near bridge kharebandh with immediate effects
456	M/s. Goa Steels Rolling Mills, Plot No. 37/1, Radakrishna Industrial Estate, Bicholim-Goa.	Directed to immediately suspend the operation of the unit till unit comply with the above direction and appropriate pollution control measures are taken by you
457	Dyneshwar Harmalkar & Raju Madekar, C/o. Semeshwar Gargage, Ward No. 1, Kamurlim, Bardez-Goa.	Directed to suspend/close the operation of the unit with immediate effects or till the unit obtained the consent of the Board.
458	ABC Trading Company (M/s. Cofe Coffe Day), M/s. P.G. Holiday Inn Pvt. Ltd, (Silver Sand Beach resort), Colva, Salcete-Goa.	Directed to close/suspend the operation of the unit or until unit obtain Consent from the Board
459	M/s. C-Farm, 257, Padri Vaddo, Gavoi Tivem, Bardez-Goa.	Directed to close the operation of unit
460	M/s. Mahalasa Foods, Plot no. 157/1 Part, Antique Mardol Bldg, Verna Industrial Estate, Verna, Salcete-Goa.	Directed to close/suspend the operation of your unit with immediate effects till such time as you comply with observation made during the inspection and adequate measures to stop pollution.
461	M/s. Hotel Goa Pride, H. no. 481/A, Aquem Baxio, Margao-Goa	Directed to close /suspend the operation of your establishment within 15 days
462	M/s. Ashok Curry House & Restaurant, Survey no. 59/1, Betim, Bardez-Goa.	Directed to close /suspend the operation of your establishment within 15 days
463	Mr. Jignesh Karolia, CP6 and CP5, Silver Tower Complex, Next to Cine Vishant, Aquem, Margao-Goa.	Directed to close/suspend the operation of the unit within 7 days or till such the unit submit proper document
464	Minguel S'Souza, H. no. F106 & F108, Near Chapel, Christian Vaddo, Ashvem, Mandrem, Pernem-Goa.	Directed to seal/suspend the operation of the laterite stone quarry
465	M/s. Nelmar Nest, Naikwado, Calangute, Bardez-Goa.	Directed to close/suspend the operation of the unit
466	M/s. Ocean Spa and Salon, Nova Colva, Colva, Salcete-Goa.	Directed to close/suspend the operation of the unit with immediate effects or till the unit obtained CTO
467	Ashok Treat Fast Food, Near Petrol Pump, Betim, Bardez-Goa.	Directed to suspend/close the operation of your unit or till such time the unit obtained valid CTO from the Board.
468	Agnelo Barros, H. no. 184/2, Mascrenhas Ward, Velim, Salcete-Goa.	Directed to stop the cement trading activity with immediate effects.
469	Hotel Holiday Home, Plot No. 14, Mercedes, Gauchem hat, Santana, Taulaulim, Mercedes-Goa.	Directed to suspend/close the operation of your unit.
470	Umesh Sharma, C/o. Nevil Fernandes, Behind Village Panchayat office, St Lawrence, Aggasaim, Tiswadi-Goa.	Directed to close/suspend the operation of your unit with immediate effects till such time a valid CTO is obtained from the board.
471	Anthony Traders, St Augustinho, St. Cruz, Ilhas-Goa.	Directed to stop your trading activity within 7 days
472	Vinayak Naik, H. No. 643, Aquem House, Margao-Goa.	Directed to obtain CTO, provide an enclosure/closed shed for carrying painting activities at the workshop, provide breaking walls, further the unit is directed to close/suspend the operation with immediate effect till unit obtained CTO from the Board.

473	M/s. Kamleshwar Workshop, Khorlim, Mapusa-Goa.	Directed to suspend/close the operation of the unit with immediate effects or till the unit obtained the consent of the Board.
474	Shri. Marut Goankar, H. No. 858, Near Journalist housing residential colony, Alto Betim, Porvorim-Goa.	Directly to immediately stop the operation of the two mobile towers installed on the roof to of his aforestated residence, till such time as you obtained CTO/CTE from the Board.
475	Smt. Chandrakal Goankar, H. No. 858, Near Journalist housing residential colony, Alto Betim, Porvorim-Goa.	Directly to immediately stop the operation of the two mobile towers installed on the roof to of his aforestated residence, till such time as you obtained CTO/CTE from the Board.
476	Mr. Shaikh Aziz, KHB Plot No. 16, H. no. 1760, Near Journalist housing residential colony, Alto Betim, Porvorim-Goa.	Directly to immediately stop the operation of the two mobile towers installed on the roof to of his aforestated residence, till such time as you obtained CTO/CTE from the Board.
477	Thomas Garage, Near St. Inez Creek, Panaji-Goa.	Directed to close/suspend the operation of your establishment within 15 days
478	Thomas Garage, Near St. Inez Creek, Panaji-Goa.	Directed to close/suspend the operation of your establishment within 15 days
479	Darisa resort (Mella Rosa), Mainanth Bhati, Arpora, Bardez-Goa.	Directed to close/suspend the operation of your hotel unit
480	Mirchi Masala Bar & restaurant, Near Syndicate Bank, Caranzalem, Panaji-Goa.	Directed to close the operation of your establishment
481	Central Lodging, Near Inox Theatre, Opp. Directorate of Health Centre, Panaji-Goa.	Directed to close the operation of your establishment
482	Lotus Inn, New Market, Above unjab National Bank, Margao-Goa.	Directed to close/suspend the operation of hotel unit with immediate effect till such time as your unit install STP and submit Bank Gurantee of Rs. 5 Lakh.
483	Mr. Pandurang rajput, Gogal Housing Board, Nessai Road, Near PWD office, Salcete-Goa.	Directed to immediately close/suspend the operation of the unit
484	Mr. Nizamuhuk Dilshad, Gogal Housing Board, Nessai Road, near PWD office, Salcete-Goa.	Directed to suspend/close the operation of unit within aperiod of 15 days
485	Mr. Mayendra Goankar, Nagarshem, cancona-Goa.	Directed to suspend/close the operation of your unit with immediate effects till such time as you obtain valid Consent to Operate of the Board
486	Mr. Nitin Dessai. Opposite KTC bustand , Kalta, Chncholim-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit CTO of the Board
487	Mr. Raju Khan, Opposite Malikarjun High School, Char Rasta, Canacona-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit CTO of the Board
488	Mr. Chandu Khan, Gulem, Canacona, Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit CTO of the Board
489	Mr. Zaheer Ahmed Bliqerm Gulem, Canacon-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit CTO of the Board
490	Mr. Rekhan Khan, Opposite to KTC Busstand, Cuncholim-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit CTO of the Board
491	Mr. Raju Khan, Near Karmali Bar and Restaurant, Gulem, Canacona-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit CTO of the Board
492	Mohammad Ikbal, Near Pillar Bypass junction, Pilar, Goa Velha-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
493	Ranjeet Singh, near St Francis Xavier Residency, Oild Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board

494	Mr. Raju Kumar, Road side on NH4, Dupae, Corlim before Banastarim Bridge, Corlim, Tiswadi-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
495	Mr. Nehal Khan, Near Petrol Pump, Panaji-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
496	Mr. Alam Shehah, Gauchem Mercedes, Mercedes circle, Mercedes, Tiswadi-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
497	Mr. Prashant Naik, Balli Station Road, Balli, Cuncholim-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
498	Mr. Naved Khan, Right side NH17, Near Pilar bypas junction, Pilar, Goa Velha, Tiswadi-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
499	Mr. Mehboob Ali, opposite to New Hospicio Hosiptal, Margao-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
500	Mr. Samsu, opposite to New Hospicio Hospital, Margao-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
501	M/s. Priyadas Fatarpekar, Survey No. 120/1, Near Carbolim Railway Station, Ella Old Goa, Tiswadi-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
502	Mr. Zilani Khan, Next to Mumbai Goa Highway, Bastora junction, Bastora, Bardez-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
503	Mr. Wasim Mohammad, Shirodwadi, Mulgao, Bicholim-Goa.	Directed to close/suspend the operation the unit within 15 days or till the unit obtained CTO of the Board
504	M/s. Maz Cemen Works, C/o. Waseeg Ahmed, Madhegal, Kakoda, Curchorem-Goa.	Directed to close /suspend the operation of your establishment within 15 days
505	Mr. Furkhan Ali, Fuldem Vaddo, Arpora, Nagao, Bardez-Goa.	Directed to close /suspend the operation of your establishment within 15 days
506	Mr. Ashay M. Phal Dessai, Survey no. 11/1, Nagvem Village, Molcornem, Quepem-Goa.	Directed to close /suspend the operation of your establishment within 15 days
507	Mr. Mohamad Afzal, Near St, Sebastian Chapel, Chichinim, Deussua, Salcee-Goa.	Directed to close /suspend the operation of your establishment within 15 days
508	Mr. Mohamad Wasim, Jurisdiction of Karapur Savarna Panchayat, Opp. To Bicholim Pwd office, Bicholim-Goa.	Directed to close /suspend the operation of your establishment within 15 days
509	Haseeb Ahmed, Opp. Valankanni Fast Food, Mungul Junction, Mungul, Salcete-Goa.	Directed to close /suspend the operation of your establishment within 15 days
510	Marrix Cement Blocks, Plot no6, Patnem, Bali, Cuncolim	Directed to close/suspend the operation of the unit
511	Mr. Ajeeb Khan, Near Amulyani, Opp. Krantiraj Hotel, Mushirwaddo, Colvale, Bardez-Goa.	Directed to close/suspend the operation of the unit
512	Afroz Alam, Gulem, Cancona-Goa.	Letter issued to canacona police station for service of direction of Afroz alam
513	Mr. Cruz Palha, On the side of bypass hifgway at Aggassim, Tiswadi-Goa.	Directed to close /suspend the operation of the establishment within 15 days
514	Mr. Irish Abhas, C/o. Sara Enterprises, H. no. 131, Dexibhat, Aggassaim, Tiswadi-Goa.	Directed to close /suspend the operation of the establishment within 15 days
515	M/s. Tibna Metal Industries, Saurichodando, St Jose da Areal, Salcete-Goa.	Directed to close the unit
516	M/s. Mallikarjun Crushing Co. , Issorgal, St Jose de Areal, Salcete-Goa.	Directed to close the unit
517	M/s. Sandhya Enterprises, Sanzora, St Jose Da Areal, Salcete-Goa.	Directed to close the unit

518	M/s. Jerry Enterprises,Oilemoll, St Jose da Areal., Salcete-Goa.	Directed to close the unit
519	M/s. Gonsalves Enterprises, St Jose Da Areal, Salcete-Goa.	Directed to close the unit
520	M/s. Quality Granite, Sauridando, St Jose da Areal, Salcete-Goa.	Directed to close the unit
521	M/s. S.J.Enterprises, Oilemoll, St Jose da Areal, Salcete-Goa.	Directed to close the unit
522	M/s. Tibna Metal Industries, Saurichodando, St Jose da Areal, Salcete-Goa.	Directed to close the unit
523	M/s. Jerry Enterprises,Oilemoll, St Jose da Areal., Salcete-Goa.	Directed to close the unit

## ANNEXURE VII

### Annual Returns of E- Waste for the year 2014 - 2015

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 – 08 nos. b) Collection Centres- 03nos. c) Dismantler and Recyclers- Nil
4.	Categories of waste collected along with their quantities on a monthly/yearly average basis.	a) IT waste- 40,810.9 Kg/annum b) Non-IT- 7075 Kg/annum
5.	A summary Statement on Category wise product wise quantity of e-waste Collected	a) IT wastes- 40,810.9 Kg/annum, which include Computers, CPU, UPS, Laptops, Printers etc. b) Non-IT waste- 7075 Kg/annum, which includes consumers E-waste i.e. House hold items.
6.	Mode of treatment with details	The E waste collected from the State of Goa is transported to outside States for processing.
7.	Brief details of collection, dismantling and Recycling facilities	The Goa State Pollution Control Board has granted authorization for 03 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. There are no dismantler/ recycling facilities established within the State of Goa.
8.	Any other information	-
9.	Certified that the above report is for the period from	1 <sup>st</sup> April 2013 to 31 <sup>st</sup> March 2014

## ANNEXURE VIII

### Annual Returns of Bio-medical waste Management for the year 2014

Hospitals & Nursing homes (HCFs) in village/town/city as per schedule VI (1)	Total no. of HCF's irrespective of number of patients treated (2)	Total no. of Beds (3)	No. of HCF's required to take authorisation (4)	No. of HCF's granted authorisation (5)	No. of HCF's having treatment and disposal facilities (6)	Total no. of captive treatment equipment installed by HCF's (i.e excluding CBWTF) (7)				No. of CBWTF (8)		Total Qty of BMW generated kg/day (10)	Total Qty of BMW treated kg/day (11)	No. of Health Care Facilities violated BMW Rules (HCF) (12)		Total no. of Show Cause Notices/Directio ns issued to defaulter HCF (13)	
						Incinerator With Air Polluti on Control Device (APCD )	Witho ut APCD	No. of Autocla ve	No. of Microwa ve	No. of Hydrocla ve	No. of Shredd er			In operati on	Under Constru cti on	HC F	CBW TF
A) HCF in town with population of 30 lakhs and above	0																
B) HCF in town with population below 30 lakhs:																	
a) with 500 beds and above	1																
b) with 200 beds but less than 500 beds	3	518	440	434	1			186	-	-			9586	9586	1	-	1
c) with 50 beds but less than 200 beds	17																
d) with less than 50 beds	406																
C) All other institutions generating bio-medical waste not included in A) and B)	7																
<b>Total</b>	434	518	440	434	1		186	-	-	-			9586	9586	1	-	1

## ANNEXURE IX

### IMPLEMENTATION OF PLASTIC WASTE (MANAGEMENT AND HANDLING) RULES 2011 IN STATES/UTS.

Name of SPCB/CP CB	Estimated Plastic Waste generation Tons Per Annum(TPA ) or TPD	No. Of registered Plastic Manufacturing/Recycling (including multilayer, compostable) units (Rule 9)			No. Of unregistered Plastic Manufacturing /recycling units in residential area	Explicit Pricing of carry bags (Rule 10)	Detailed Status of Plastic Waste Management (PWM) (Rule 6-a to h) eg. Collection, segregation, disposal (Co-processing, road construction etc, conversion of plastic waste into fuel etc.	Partial Ban on Plastic Bags (through executive order) (please mention name tourist places, pilgrimage centres historical places etc.	Complete ban on use of plastic bags including multilayer sachets on Gutkha etc.	Status of Constitution of State Level Advisory Body (Rule 11)	No. Of violation and action taken against manufacturing stock and use of thin (<40µ) carry bags and sachets etc. (Rule 5)
		Plastic units	Compostable Plastic units	Multilayer Plastic units							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
Goa State Pollution Control Board	Approximately 9,811 MT/month (reused in process/sold to scrap dealers)	21	Nil	Nil	Nil	Goa No-Biodegradable Act	MOU signed with M/s. ACC, Wadi & Vasavadatta 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	125 Violations against manufacturing stock and use of thin (<40µ) carry bags Collected fine of Rs. 31800/-

## ANNEXURE X

### Table 8: Annual Returns of Lead Acid Batteries from April 2014-March 2015

Sr. No	Type of Category	Total No	Total no. Production/Imported/Consumption /Recycled of LAB/(Qty)	Sale of Lead Acid Batteries in units	Total collection of Lead Acid Batteries in units	Annual Returns submitted	Action taken	Remarks
1	Manufacturer	5	13825 Nos (248.395 T)	NA	289 Nos	Yes	Units which have not submitted returns have been directed to do so.	Battery Scrap has been sent to 1. Sterling Lead Pvt. Ltd, Kolhapur, 2. Krishna Metal Refinery, Thane.
2	Reconditioner	11	2182 Nos (9.65 T)	NA	394 Nos	Yes		
3	Assembler	1	0	NA	0	No		
4	Collection Centre	1	Nil	NA	Nil	No		
5	Dealer	14	NIL	23186 nos (146.141 T)	5722 Nos	Yes		
6	Importer	Nil	Nil	Nil	Nil	NA		
7	Blk. Consumer	33	1636 Nos (67.731 T)	Nil	NA	Yes		
8	Auctioneer	Nil	NA	NA	NA	NA		
9	Recycler	Nil	NA	NA	NA	NA		

- 1 Details of action initiated/taken against illegal/unauthorised recycler and smelter of used lead acid batteries:  
No case of such illegality has been reported/observed by the Board
- 2 Percentage of compliance achieved in the state for the collection of used batteries as per schedule I of the rules : **25%**