GOVERNMENT OF MAHARASHTRA

WATER RESOURCES DEPARTMENT

HYDROLOGY PROJECT (SW)

Chief Engineer, Planning & Hydrology, Nashik

WATER QUALITY LAB LEVEL-II, NASHIK

ANNUAL REPORT

YEAR 2010-11

Superintending Engineer

Data Collection, Planning &

Hydrology Circle, Nashik

Preface

When Neil Armstrong saw the Earth from the Moon, it appeared blue! This is because water covers more than two-thirds of the Earth's surface. But fresh water represents less than 0.5% of the total water on Earth. The rest is either in the form of seawater or locked up in icecaps or the soil, which is why one often hears of water scarcity in many areas.

Water is continuously moving around the earth and constantly changing its form. It evaporates from land and water bodies and is also produced by all forms of life on Earth. This water vapour moves through the atmosphere, condenses to form clouds and precipitates as rain and snow. In time, the water returns to where it came from, and the process begins all over again. Although water is constantly moving, its total quantity on Earth's surface is constant.

The water quality criteria have been prepared by taking into consideration various designated uses. In order to assess the quality of water, various government agencies are working at National and State levels. This report includes water quality data generated in Maharashtra State through the Office of the Chief Engineer, Hydrology Project (SW), Nashik (Maharashtra). The data has been interpreted to know the 'Surface Water Quality Status in Maharashtra' with respect to various uses and criteria of CPCB, ICAR for various Water Uses.

Therefore it is a great pleasure to handing over this precise report on analysis of water samples it WQ Laboratory Level – II at Nashik which is established in Jal Vigyan Bhavan .

This booklet attempts to briefly describe an over view and general conclusion based on the basis of one year quality data of water samples collected from selected locations and define frequencies.

It is expected that this booklet will provide an idea in brief about Water Quality Lab. Level -II at Nashik. Our efforts can always be updated through valuable suggestions.

(A.S. Suryawanshi)
Superintending Engineer
Data Collection Planning & Hydrology Circle
Nashik (Maharashtra)

ANNUAL REPORT

On Water Quality Monitoring through Water Quality Lab Level-II,

Nashik for the 2010-2011

I N D E X

CHAPTER-1

EXECUTIVE SUMMERY

Annual Report
On Water Quality Monitoring through Water Quality Lab Level-II, Nashik for the Year 2010-2011

1.1 Preamble:

The water quality monitoring in the area of surface water is performed in order to determine the quality of water. Various parameters are analyzed in the laboratory and 6 parameters are tested at field level. All these tasks are recorded are utilized for preparing the Annual Report by performing some specific exercise. These data are considered in order to specify the quality of water at each location. This also helps to determine the pollution level or concentration in each source of water at each station.

1.2 Water Quality Monitoring - Objectives

Observations of analysis of physical & chemical parameters as per "Uniform Protocol for Water Quality Monitoring Order 2005" for each location followed by Operation and Maintenance of Water Quality Laboratory Level-II, Nashik as per Standard Guidelines and mandates including collection, transportation and analysis of samples, data entry in SWDES Software and preparation of the said Annual Report as per specific guidelines issued by Superintending Engineer, Data Collection, Planning & Hydrology Circle, Nashik.

1.3 Water Quality Monitoring - Scope

The Annual Report is prepared for the year 2010-2011. The Table below shows the number of sample analyzed during the reported period. In order to study water quality status station wise, all locations covered under this lab during the year 2010-2011.

TABLE SHOWING SAMPLES ANALYSED DURING THE REPORTING PERIOD

Sr. No.	Year	Trend Sample (First Round)	Trend Sample (Balance Round)	Dam Sample (First Round)	Dam Sample (Balance Round)	Total
1	2010-11	09	218	08	184	419
Total Samples analyzed during reporting period						**419**

Seasonal averages of all analyzed parameters are calculated for study of seasonal water quality trend at each location.

1.4 Methodology:

Analysis of Physical and Chemical parameters is done in the laboratory on the basis of Standard Analytical Procedure, Instrument Operating Instructions, HIS Manuals, CPCB Guidelines and APHA, 21st Ed., 2005.

Data analyzed further validated with prescribed method as per Water Quality Manuals to verify various Ratios manually and then it is entered in SWDES Software for Water Quality Data Entry. Further the data is sent to State Data Center for further dissemination to user end.

Further more to get an idea of about data generated for the period it is decided and instructed to analyzed the generated data for the said period in the form of Annual report with the help of various tools in SWDES Software to find out critical parameters and critical locations in the jurisdiction of this Lab.

1.5 Result and Observation:

After observing all this data the physiochemical parameters like Biological Oxygen Demand exceeds its tolerance limit in all season at all location. Total Dissolved Solids exceeds its limit at Kopergaon in monsoon season. At Takali & Nasardi in monsoon season turbidity exceeds its prescribed limit. At Kushawarta, Takali, Nasardi, D/s of Eklahare, Saikheda, Nadurmahameshwar Dissolved Oxygen observed less than its desirable limit. Total Alkalinity at Takali in winter season & at Nasardi in summer &n winter season exceeds its prescribed limit. At Saikheda in summer season Boron exceeding its prescribed limit.

Bacteriological parameters i.e. Total coliforms & Faecal coliforms exceeds its prescribed limit at all location in all season

1.6 Conclusion

After the observing all the results it can be concluded that, the value of Biological Oxygen Demand is very high, even exceeding beyond desired limit is due to the presence of organic matter, which reduces oxygen content in the water. Water having excess Biological Oxygen Demand is not fit for human activities or consumption. The domestic waste may add great quantity of organic & some inorganic materials that contribute turbidity. Under certain conditions, natural water may contain appreciable ammonia of carbonate & hydroxide alkalinity.

Analysis results from all the locations have shown increase in value of Total Coliforms & Feacal Coliforms because the discharge of sewage drainage waste into the water source even increase in domestic discharge bacteria's of various types increased.

With reference to Wilcox technique, it is observed that 3 locations such as Kushawarta, Nasardi & Nandurmahadhmeshwar belongs to class C2 & S1. This indicates that the water flowing along these locations is mostly suitable for irrigation purpose. For drinking purpose, it should be treated before use.

1.7 Recommendations/Remedial Measures:

- Domestic effluents may be treated and disinfected before discharging.
- Effluents from the non-point sources may be identified. These are required to be collected and treated.
- Use of water of such polluted locations may be useful for salt tolerance crop and is recommended based on special study.
- Use of direct source of water is to be avoided.
- Bathing at such location should be restricted.
- Tree plantation may be done on banks of rivers to minimize soil erosion and to improve the area aesthetically.
- The artificial recharge of ground water through integrated watershed management programme and rainwater harvesting will help to improve the ground water quality in the area where the problem exists.

1.8 Suggestions:

- Awareness in community through local bodies, NGO's, Educational institutes.
- Water literacy shall be increased.
- All disciplines can come together for water awareness campaigning.
- Annual Report shall be published regularly.
- Lean flow in river shall be maintained.
- Measures for sustainable use of water resources are necessary
- Measures for water conservation, recycling and optimal conjunctive use of surface and ground water for specific uses are necessary.
- Farmers in the catchment area should be educated against use of extensive amount of pesticides and chemical fertilizers. They should be encouraged to use organic manures.
- To create Environmental consciousness through education and mass awareness programmes may be planned
- Besides the regular ground water quality monitoring, special studies should be undertaken on micro-level basis where ground water quality has undergone deterioration to ascertain the reasons, extent and remedial measures thereafter.
- The lack of facilities and awareness for proper disposal of waste and wastewater is mainly causing the ground water quality deterioration in the state. Hence, it is suggested that people in the rural and urban parts of the State should be made aware about the pollution of the ground water and its impacts. Strict regulations must be observed to stop pollution of ground water.

CHAPTER-2

INTRODUCTION

2.1 General:

The water quality monitoring is being carried out under Hydrology Project. Hydrology Project SW, Maharashtra takes care of Surface Water Quality monitoring through 163 locations spread over the division through the year. In accordance with decision taken in 1st meeting of Water Quality Review Committee of state of Maharashtra, "The Uniform Protocol" for water monitoring finalized by the Water Quality Assessment Authority formulated by the Ministry of Water Resources is made available to Hydrology Project Surface Water, Maharashtra. In order to determine the quality of water various parameters are analyzed in the laboratory and 6 parameters are tested at field level. All these tasks are recorded are utilized for preparing the Annual Report by performing some specific exercise. These data are considered in order to specify the quality of water at each location. This also helps to determine the pollution level or concentration in each source of water at each station.

2.2 Water Quality Monitoring - Objectives

Observations of analysis of physical & chemical parameters as per "Uniform Protocol for Water Quality Monitoring Order 2005" for each location followed by Operation and Maintenance of Water Quality Laboratory Level-II, Nashik as per Standard Guidelines and mandates including collection, transportation and analysis of samples, data entry in SWDES Software and preparation of the said Annual Report as per specific guidelines issued by CPCB, Delhi.

2.3 Water Quality Monitoring - Scope

The Table below shows the number of sample analyzed during the reported period. In order to study water quality status station wise, all locations covered under this lab during the year 2010-2011.

Seasonal averages of all analyzed parameters are calculated for study of seasonal water quality trend at each location.

2.4 Other activities

Apart from monitoring of water quality network for Water Quality lab level II at Nashik, the infrastructure facility is made available to the users from various Government, Non Government, Private sector as well as individuals.

The facility is availed by many users with testing of sample towards drinking purpose, construction purpose, swimming tanks, irrigation purpose & study purpose.

During the year 2010-2011 many clients approached to the laboratory. The valuable clients availed the facility of the laboratory are as below;

1. Nashik Municipal Corporation
2. National Thermal Power Station
3. Various International School in Nashik City
4. Medical Institute like Ayurved College
5. KTHM College for study purpose.
6. Client from MIDC, Satpur.

REVENUE GENERATED DURING THE REPORTED PIRIOD

Sr. No.	No. of clients approached	Amount Received
1.	104	2,44,804/-

2.5 Extended Scope of Laboratory

Under Hydrology Project(SW) Maharashtra Water Quality Monitoring is being carried out with prescribe W.Q. Network with 6 Level-II & 38 Level-I Labs followed by 163 sampling locations spread all over the State.

During the meeting of WQRC held in Mumbai Water Quality Lab Level-II, Nashik has recommended as a referral lab for the State of Maharashtra. Hence Government of Maharashtra has approved the proposal of up gradation of this lab to Level-II^{+} with provision of sophisticated instruments like AAS, GC and Laminar Flow unit with raised layout as per prescribe norms of towards recommended by MoEF & NABL accreditation as per Uniform Protocol.

AQC Exercise organized by CPCB – This lab participated in AQC Exercise organized by CPCB during the reported period and will also participate in forthcoming exercise sustainable development in Quality Assurance & Quality Control.

Training and Visits: Infrastructure facility is made available to the college student for in plant training and their research purposes. Many visitors from various sectors visited the lab and appreciated the efforts taken by this lab.

The infrastructure facility is also made available to all institutional organization for visit and study purposes and the generated data of water quality is also made available to the users who are a member of Hydrology Data User Group (HDUG) of Hydrology Project, Nashik.

ANNUAL REPORT FOR THE PERIOD OF 2010-2011

Water Quality Laboratory Level II at Nashik

Salient Feature :-

1. General Structure of Laboratory:

1) Sampling Locations as per Water Quality Network covered in this Lab:-23

2) Monthly sample collection: - 23 samples.

3) Frequency of sampling: - **Trend:** – Monthly

Dam samples:– Fortnightly

4) Govt. staff related to Laboratory: -

1. Mr. M. K. Pokale, Superintending Engineer

2. Mr. V. D. Nemade, Executive Engineer

3. Mr. V. K. Kapoore, Asst Supt. Engineer

4. Mr. S.K. Kshirsagar (Govt. Analyst)

5) Lab operating Agency: - Ashwamedh Engineers & Consultants

C.S.L.,Nashik

a) Indoor Work – **1.** Mr. H. P. Bhavsar (Branch Manager, Nashik Branch)

2. Mrs. C.A. Ekhande (Chief Analyst)

3. Mrs. N. Kapdnis (Microbiologist)

4. Mrs. N. Y. Mandlik (Jr. Analyst)

5. Mrs. N. S. Patil (Jr. Analyst)

6. Mr. R. N. Patil (Lab. Assistant)

b) Outdoor Work – **1.** Mr. S.A. Shelar (Chemist & Outdoor work Coordinator)

2. Mr. K. N. Gujar (Chemist)

3. Mr. B. G. Jadhav (Chemist)

4. Mr. R. P. Bhalerao (Khalashi)

5. Mr. M. A. Albad (Khalashi)

6. Mr. P. D. Dhongde (Khalashi)

2. Scope of Work: Operation and Maintenance of Water Quality Laboratory Level-II, Nashik

2.1 Outdoor Work: Surface water sampling and transporting the sample from selected Water Quality network sampling points as per schedule of sampling during the said period.

The Surface Water sampling includes:

a) Field determination as per standard guideline.

b) Field parameters to be tested on site & entry to be taken on ID form.

c) Sample to be transported to laboratory within prescribed time limit.

2.2 Indoor Work:

- Day to Day Operation and Maintenance of Water Quality Laboratory Level II.
- The work includes analysis of water samples as per the test procedures.
- Operating the instruments as per specified instruction manual.
- Entry of data in SWDES Software.
- Participating in Analytical Quality Control Exercise (AQC) round.
- Documents as per ISO 9001:2008 mandates.

i) Within Laboratory AQC **ii)** Intra Laboratory AQC **iii)** AQC by CPCB

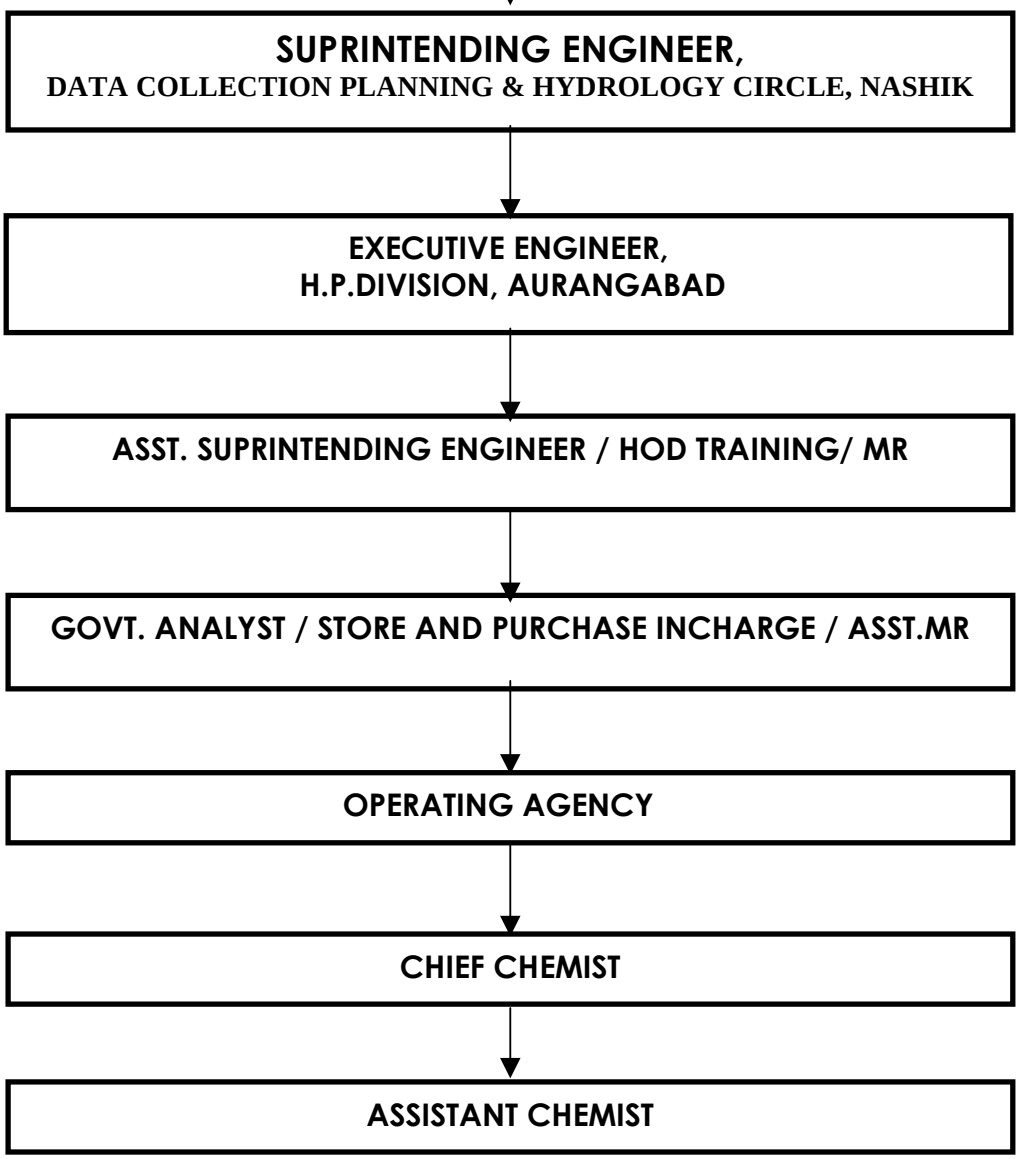
- The Laboratory staff employed;
    1) Chief Chemist: 1 No.
    2) Sr. Research Officers: 2 Nos.
    3) Research Assistant: 1 No.
    4) Lab. Assistant: 1 No.
- The Indoor work also includes keeping data record.
- Log book of Lab equipment
- Preparation of monthly sampling Schedule.
- Keeping sampling record, instruments operation, Laboratory Management, demonstration
- Training to Departmental staff as and when required.

Information gives to visitors & Customer Satisfaction. Work is carried out as per flow chart.

DATA COLLECTION PLANNING & HYDROLOGY CIRCLE, NASHIK

WATER QUALITY LAB, LEVEL – II NASHIK

ORGANISATION CHART



CHAPTER-3

METHODOLOGY

3.0 General:

This laboratory covers Surface Water component which covers Rivers and Reservoir Locations in Godavari basin up to Kopergaon & Dhule district.

3.1 Rivers

Water is life and rivers are lifelines. Fortunately almost the entire country is criss-crossed by rivers. Geographical area of the state is divided in five river basins viz. Godavari, Tapi, Panzara & west flowing rivers in Konkan region.

3.2 Water Quality Monitoring - Objectives

Observations of analysis of physical & chemical parameters as per “Uniform Protocol for Water Quality Monitoring Order 2005” for each location followed by Operation and Maintenance of Water Quality Laboratory Level-II, Nashik as per Standard Guidelines and mandates including collection, transportation and analysis of samples, data entry in SWDES Software and preparation of the said Annual Report as per specific guidelines issued by Superintending Engineer, Data Collection Planning & Hydrology Circle, Nashik.

3.3 Methodology:

Analysis of Physical and Chemical parameters is done in the laboratory on the basis of Standard Analytical Procedures, Instrument Operating Instructions, HIS Manuals, CPCB Guidelines and APHA, 21st Ed., 2005.

Data analyzed further validated with prescribed method as per Water Quality Manuals to verify various Ratios manually and then it is entered in SWDES Software for Water Quality Data Entry. Further the data is sent to State Data Center for further dissemination to user end.

Furthermore to get an idea of about data generated for the period it is decided and instructed to analyzed the generated data for the said period in the form of Annual report with the help of various tools in SWDES Software to find out critical parameters and critical locations in the jurisdiction of this Lab.

The Table below shows the number of sample analyzed during the reported period. In order to study water quality status station wise, all locations covered under this lab during the year 2010-2011 are considered.

TABLE SHOWING SAMPLES ANALYSED DURING THE REPORTING PERIOD

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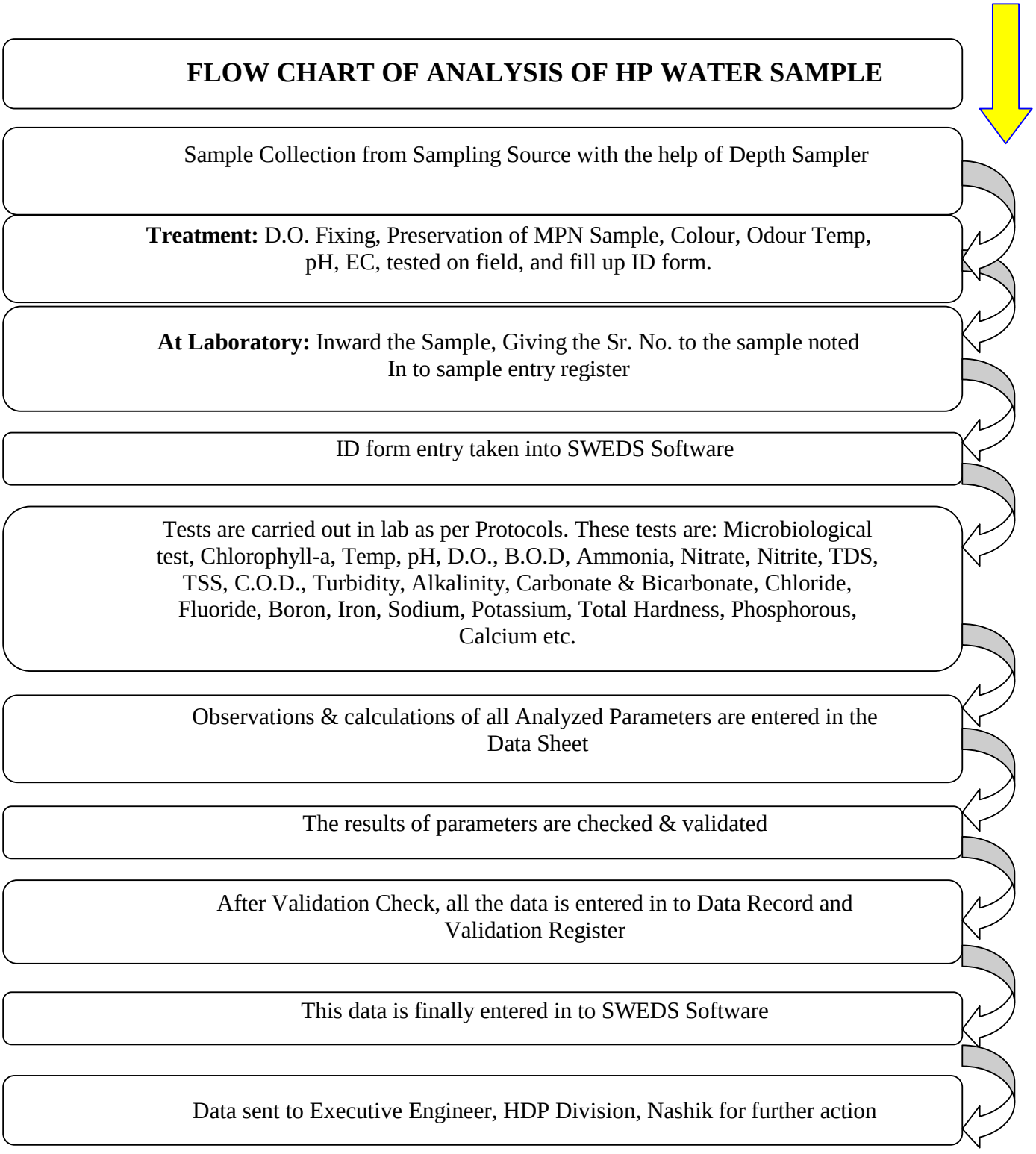
Total Samples analyzed during reporting period						**419**

3.4 Flow Chart

The work of analysis of sample is being monitored on the basis of flow chart generated in the lab as per standard guidelines and analysis of sample is performs as per guidelines of world bank with HIS manuals and APHA ,21 st Ed, 2005 as a standard procedures for analysis of samples.

As well refers BIS standards IS:10500 and other relevant BIS standards for analysis of various samples received from users for various purposed like Drinking, Irrigation, Ice preparation, Bathing (Swimming Tank),Construction, study and various R & D Activities.

FLOW CHART OF ANALYSIS OF HP WATER SAMPLE



Methodology For the analysis of Water Quality samples the following parameters were analyzed during the Period 2010 – 2011

Table showing list of parameters and the methodology used for the analysis.

Sr. No	Parameters	Methodology
1.	Colour	APHA, 21st Ed., 2005, 2120-B, 2-2
2.	Odour	IS 3025 (Part 5): 1983, Reaffirmed 2006
3.	Temperature	APHA, 21st Ed., 2005, 2550-B, 2-61
4.	pH	APHA, 21st Ed., 2005, 4500-H^+- B, 4-90
5.	Electric Conductivity	APHA, 21st Ed., 2005, 2510- B, 2-47
6.	Dissolved Oxygen	IS 3025 (Part 38): 1989, Reaffirmed 2003
7.	Turbidity	APHA, 21st Ed., 2005, 2130-B, 2-9
8.	Total Solids	IS 3025 (Part 15): 1984, Reaffirmed 2003, Amds.1
9.	Dissolved Solids	IS 3025 (Part 16): 1984, Reaffirmed 2006, Ed.2.1 (1999-12)
10.	Suspended Solids	IS 3025 (Part 17): 1984, Reaffirmed 2006, Amds.1
11.	NH_3-N	APHA, 21st Ed., 2005, 4500-NH_3 F, 4-110
12.	NO_2^-	APHA, 21st Ed., 2005, 4500-NO_2-B, 4-118
13.	NO_3^-	APHA,21st Ed., 2005, 4500-NO_3, B -4 -120
14.	Total Phosphorous	APHA, 21st Ed., 2005, 4500 P, E, 4-153
15.	Biochemical Oxygen Demand	IS 3025 (Part 44): 1993, Reaffirmed 2003, Amds.1
16.	Chemical Oxygen Demand	APHA, 21st Ed., 2005, 5220-B, 5-15
17.	Potassium K^+	IS 3025 (Part 45): 1993, Reaffirmed 2003, Amds.1
18.	Sodium Na^+	IS 3025 (Part 45):1993, Reaffirmed 2003, Amds.1
19.	Calcium Ca^{++}	APHA, 21st Ed., 2005, 3500-B, 3-65
20.	Magnesium Mg^{++}	APHA, 21st Ed., 2005, 3500-Mg, B, 3-84
21.	Iron (as Fe)	APHA, 21st Ed., 2005, 3111-B, 3-17
22.	Carbonate CO_3	APHA, 21st Ed., 2005, 2320-B, 2-27, 5 -1 & 4500-CO_2-D, 4-34
23.	Bi-Carbonate HCO_3	APHA, 21st Ed., 2005, 2320-B, 2-27, 5 -3 & 4500-CO_2-D, 4-34
24.	Chloride Cl	APHA, 21st Ed., 2005, 4500-Cl, B, 4-70
25.	Fluoride F	APHA, 21st Ed., 2005, 4500-F^-, D, 4-85
26.	Boron B	APHA, 21st Ed., 2005, 4500-B-C, 4-23
27.	Total Coliforms	APHA, 21st Ed., 2005, 9221-B, 9-49
28.	Faecal Coliforms	APHA, 21st Ed., 2005, 9221-E, 9-56
29.	Alkalinity	IS 3025 (Part 23): 1986, Reaffirmed 2003, Amds.1

Table showing No. of Location Covered under the jurisdiction of Water Quality Lab Level-II, Nashik.

Sr. No.	Name of Location	Frequency of sampling
1	Kushawarta	Fortnightly
2	Gangapur	Fortnightly
3	Someshwar	Fortnightly
4	Ramkund(U/S)	Fortnightly
5	Ramkund(D/S)	Fortnightly
6	Tapovan	Fortnightly
7	Nasardi	Fortnightly
8	Takali (Nashik)	Monthly
9	D/S of Eklahare	Fortnightly
10	Saikheda	Fortnightly
11	Darna (Pimpalgaon)	Fortnightly
12	Nandurmadhmeshwar	Fortnightly
13	Kopargaon	Monthly
14	Bhandardara	Fortnightly
15	Mula	Fortnightly
16	Kadwa	Fortnightly
17	Sukwad	Monthly
18	Akkalpada	Monthly
19	Dhule	Monthly
20	Suple	Monthly
21	Malegaon	Monthly
22	Girna	Fortnightly
23	Upper Vaitarna	Fortnightly

CHAPTER - 4

RESULTS AND OBSERVATIONS

4.1 RESULTS AND CONCLUSIONS

The water quality monitoring in the area of surface water is performed in order to determine the quality of water. Various parameters are analyzed in the laboratory and 6 parameters are tested at field level. All these tasks are recorded are utilized for preparing the Annual Report by performing some specific exercise. These data are considered in order to specify the quality of water at each location. This also helps to determine the pollution level or concentration in each source of water at each station.

4.2 Water Quality status- Stations wise Exercise

In order to study water quality status station wise, all locations covered under this lab during the year 2010-2011. Seasonal averages of all analyzed parameters are calculated for study of seasonal water quality trend at each location.

4.3 Objectives:

Observations of all physical & chemical parameters analyzed for each location individually & interpretation of data to identify seasonal trend. Also critical parameters are identified at every location, including finding out causes behind it at every location and every parameter.

4.4 Critical parameters Identified:

After observing all this data it is clear that most of the physical parameter are within tolerance limit except at few locations, like Takali, Nasardi & Kopergaon etc.

Most of the chemical parameters are also within tolerance limits, except following parameters.

i) Dissolved Oxygen ii) Biological Oxygen Demand

Bacteriological parameters like Total Coliform and Faecal Colifroms are also exceeding the limits.

Classification of location on the basis of Wilcox technique towards use of water for irrigation purpose

Sr. No.	Name of Location	Classification As per Wilcox Technique	Remarks
1	Kushawarta	C2 & S1	B
2	Gangapur	C2 & S1	B
3	Someshwar	C2 & S1	B
4	Ramkund(U/S)	C2 & S1	B
5	Ramkund(D/S)	C2 & S1	B
6	Tapovan	C2 & S1	B
7	Nasardi	C2 & S1	B
8	Takali (Nashik)	C2 & S1	B
9	D/S of Eklahare	C2 & S1	B
10	Saikheda	C2 & S1	B
11	Darna (Pimpalgaon)	C1 & S1	A
12	Nandurmadhmeshwar	C2 & S1	B
13	Kopargaon	C2 & S1	B
14	Bhandardara	C1 & S1	A
15	Mula	C2 & S1	B
16	Kadwa	C2 & S1	B
17	Sukwad	C2 & S1	B
18	Akkalpada	C2 & S1	B
19	Dhule	C2 & S1	B
20	Suple	C1 & S1	A
21	Malegaon	C2 & S1	B
22	Girna	C2 & S1	B
23	Upper Vaitarna	C1 & S1	A

Note: A: Water is Good for Irrigation Purpose.

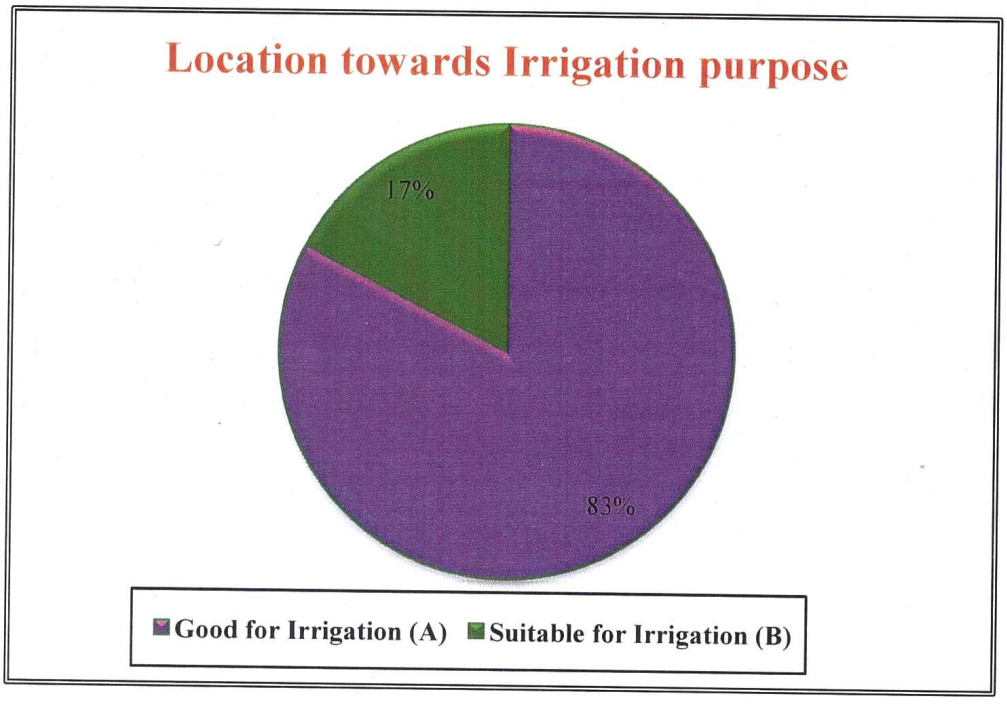
B: Water is Suitable for Irrigation Purpose.

C: Water is suitable for Salt Tolerant Plant.

D: Inadequate data and no flow in the river

Abstract for classification of water towards Irrigation purpose

Sr. No.	Good for Irrigation (A)	Suitable for Irrigation (B)	Total
1	19	4	23



CPCB Water Quality Criteria

Designated best use	Quality Class	Primary Water Quality Criteria
Drinking water source without conventional treatment but with chlorination	A	➢ Total coliform organisms (MPN/100 ml) shall be 50 or less ➢ pH between 6.5 and 8.5 ➢ Dissolved Oxygen 6 mg/l or more, and ➢ Biochemical Oxygen Demand 2 mg/l or less
Outdoor bathing (organized)	B	➢ Total coliform organisms(MPN/100 ml) shall be 500 or less ➢ pH between 6.5 and 8.5 ➢ Dissolved Oxygen 5 mg/l or more, and ➢ Biochemical Oxygen Demand 3 mg/l or less
Drinking water source with conventional treatment	C	➢ Total coliform organisms(MPN/100 ml) shall be 5000 or less ➢ pH between 6 and 9 ➢ Dissolved Oxygen 4 mg/l or more, and ➢ Biochemical Oxygen Demand 3 mg/l or less
Propagation of wildlife and fisheries	D	➢ pH between 6.5 and 8.5 ➢ Dissolved Oxygen 4 mg/l or more, and ➢ Free ammonia (as N) 1.2 mg/l or less
Irrigation, industrial cooling, and controlled disposal	E	➢ pH between 6.0 and 8.5 ➢ Electrical conductivity less than 2250 micro mhos/cm, ➢ Sodium Aborption Ratio less than 26, ➢ and Boron less than 2 mg/l.
	Below E	➢ Not Meeting A, B, C, D & E Criteria

Classification as per Wilcox Technique

Sr. No.	Parameter	Class	Range	Remark
1.	Electrical Conductivity	C1	<250	Good For Most Soils & Crops
		C2	250-750	Some Leaching For Sensitive Crop
		C3	750-2250	Tolerant Crops & Leaching
		C4	>2250	Only For Permeable Soils And Tolerant Crops
2.	SAR (Sodium Absorption Ratio)	S1	0-10	Excellent
		S2	10-18	Good
		S3	18-26	Fair
		S4	>26	Poor

ICAR Standard for Irrigation Water

Sr. No.	Parameter	limit	Unit
1.	pH	6.5-8.5	-
2.	Electrical Conductivity	2250	Micromhos/cm
3.	Total Dissolved Oxygen	2100	mg/Lit
4.	Chloride	600	mg/Lit
5.	Sulphate	1000	mg/Lit
6.	Boron	2	mg/Lit
7.	% Sodium	60	%
8.	SAR (Sodium Absorbance Ratio)	26	-

Summary of Result on the basis of Graph

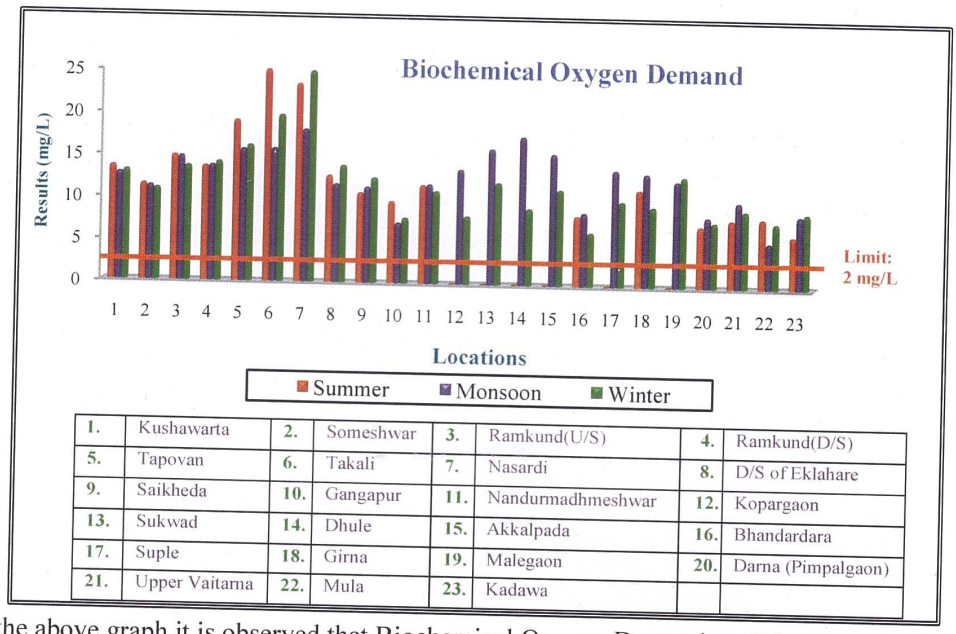
Sr. No.	Parameters	Limits			Name of Critical Location Identified	Result	Unit
		As per ICAR	As per 10500 Standard	CPCB Water Quality Criteria			
1.	Dissolved Oxygen	-	-	>6	Kushawarta	3.3	mg/L
					Takali	0.8	
					Nasardi	1	
					D/S of Eklahare	3	
					Saikheda	4.3	
					Nandurmadhmeshwar	4.3	
					Kopargaon	3.3	
					Sukwad	3.9	
					Dhule	3.3	
					Akkalpada	3.4	
					Suple	4.1	
					Malegaon	4.0	
2.	Biological Oxygen Demand (3 days at 27^0C)	-	-	2	Kushawarta	13.1	mg/L
					Someshwar	11.2	
					Ramkund(U/S)	14.4	
					Ramkund(D/S)	13.8	
					Tapovan	16.9	
					Takali	20.1	
					Nasardi	22.1	
					D/S of Eklahare	12.7	
					Saikheda	11.4	
					Gangapur	8.1	
					Nandurmadhmeshwar	11.4	
					Kopargaon	7.2	
					Sukwad	9.3	
					Dhule	8.8	
					Akkalpada	8.9	
					Bhandardara	7.7	
					Suple	7.9	
					Girna	11.4	
					Malegaon	8.5	
					Darna (Pimpalgaon)	7.7	
					Upper Vaitarna	9.1	
					Mula	7.1	
					Kadawa	7.9	
3.	Total Alkalinity	-	300	-	Nasardi	305.1	mg/L
					Takali (winter)	318.3	
4.	Turbidity	-	5	-	Nasardi (monsoon)	6	NTU
					Takali (monsoon)	6	
5.	Boron	2	1	-	Saikheda	1.59	mg/L
6.	Total Dissolved Solids	2100	500	-	Kopargaon	505	mg/L

Summary of Result on the basis of Graph

Sr. No.	Parameters	Limits			Name of Critical Location Identified	Result	Unit
		As per ICAR	As per 10500 Standard	CPCB Water Quality Criteria			
8.	Total Coliform		10	50	Kushawarta	387222	MPN /100 ml
					Someshwar	26063	
					Ramkund(U/S)	161762	
					Ramkund(D/S)	412457	
					Tapovan	4748095	
					Takali	1474444	
					Nasardi	1198333	
					D/S of Eklahare	47733	
					Saikheda	2897	
					Gangapur	3052	
					Nandurmadhmeshwar	4997	
					kopargaon	22833	
					Sukwad	1328	
					Dhule	4900	
					Akkalpada	1711	
					Bhandardara	1795	
					Suple	10445	
					Girna	2597	
					Malegaon	3650	
					Darna (Pimpalgaon)	2045	
					Upper Vaitarna	1399	
					Mula	2180	
					Kadawa	1392	
9.	Feacal Coliform	-	Absent	-	Kushawarta	167700	MPN/ 100 ml
					Someshwar	16645	
					Ramkund(U/S)	112352	
					Ramkund(D/S)	484841	
					Tapovan	571905	
					Takali	767000	
					Nasardi	789714	
					D/S of Eklahare	32786	
					Saikheda	1860	
					Gangapur	1593	
					Nandurmadhmeshwar	3202	
					kopargaon	12667	
					Sukwad	846	
					Dhule	2164	
					Akkalpada	1027	
					Bhandardara	1045	
					Suple	5578	
					Girna	1697	
					Malegaon	2500	
					Darna (Pimpalgaon)	1282	
					Upper Vaitarna	895	
					Mula	1412	
					Kadawa	893	

RESULTS OBTAINED DURING 2010-2011

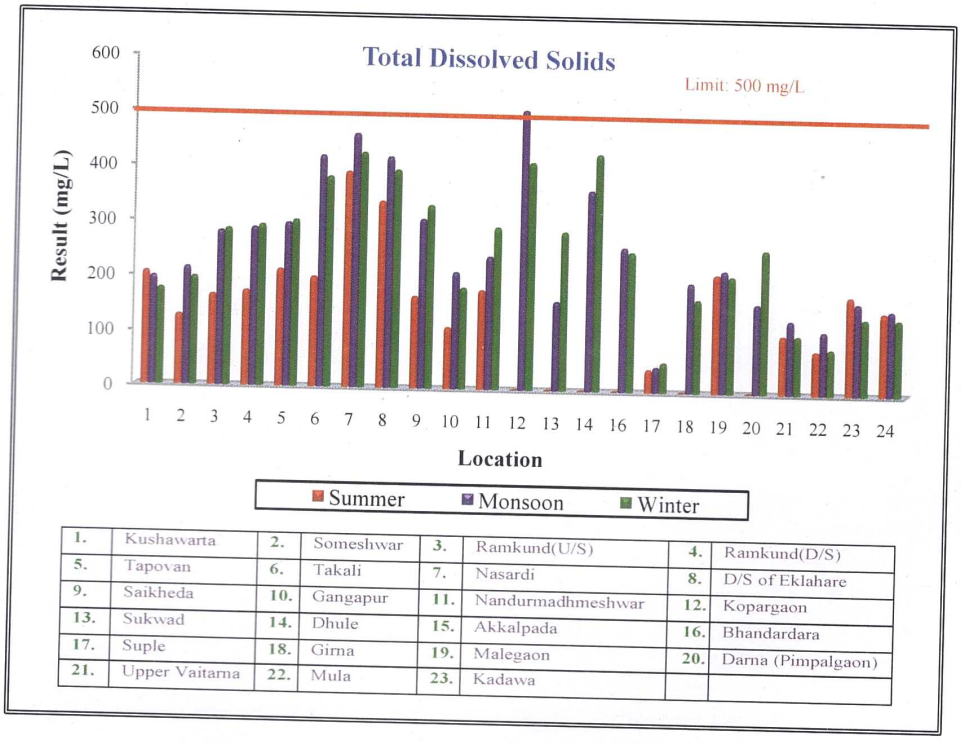
1. Biological Oxygen Demand:



1.	Kushawarta	2.	Someshwar	3.	Ramkund(U/S)	4.	Ramkund(D/S)
5.	Tapovan	6.	Takali	7.	Nasardi	8.	D/S of Eklahare
9.	Saikheda	10.	Gangapur	11.	Nandurmadhmeshwar	12.	Kopargaon
13.	Sukwad	14.	Dhule	15.	Akkalpada	16.	Bhandardara
17.	Suple	18.	Girna	19.	Malegaon	20.	Darna (Pimpalgaon)
21.	Upper Vaitarna	22.	Mula	23.	Kadawa		

From the above graph it is observed that Biochemical Oxygen Demand at all locations in all season exceeding its tolerance limit.

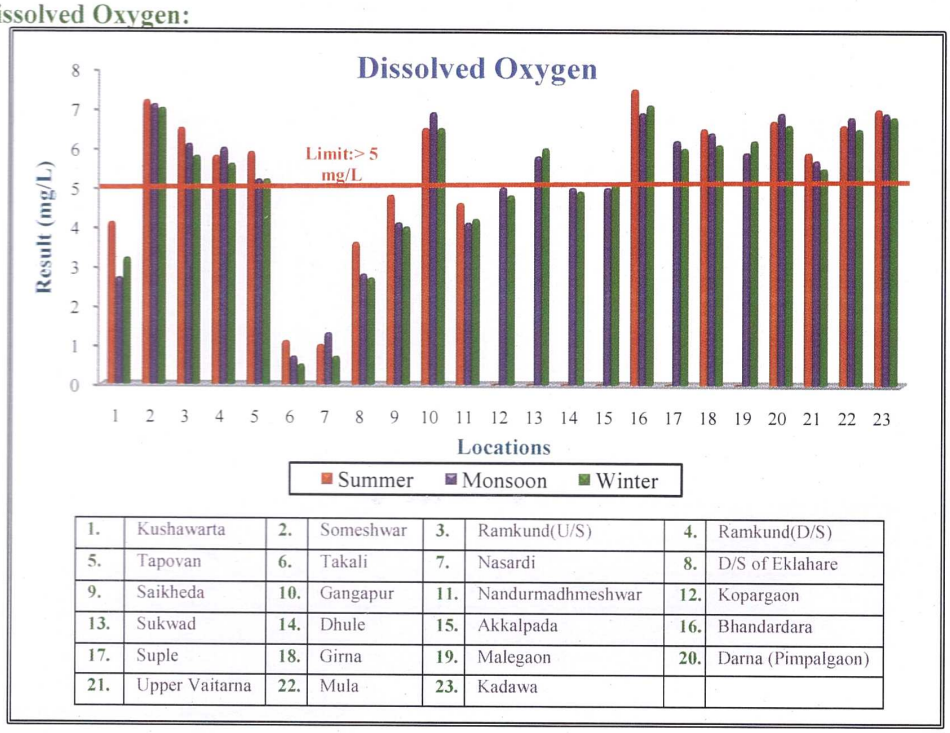
2. Total Dissolved Oxygen:



1.	Kushawarta	2.	Someshwar	3.	Ramkund(U/S)	4.	Ramkund(D/S)
5.	Tapovan	6.	Takali	7.	Nasardi	8.	D/S of Eklahare
9.	Saikheda	10.	Gangapur	11.	Nandurmadhmeshwar	12.	Kopargaon
13.	Sukwad	14.	Dhule	15.	Akkalpada	16.	Bhandardara
17.	Suple	18.	Girna	19.	Malegaon	20.	Darna (Pimpalgaon)
21.	Upper Vaitarna	22.	Mula	23.	Kadawa		

From the above graph it is observed that Total Dissolved Solids at Kopergaon exceeding its tolerance limit in Monsoon season.

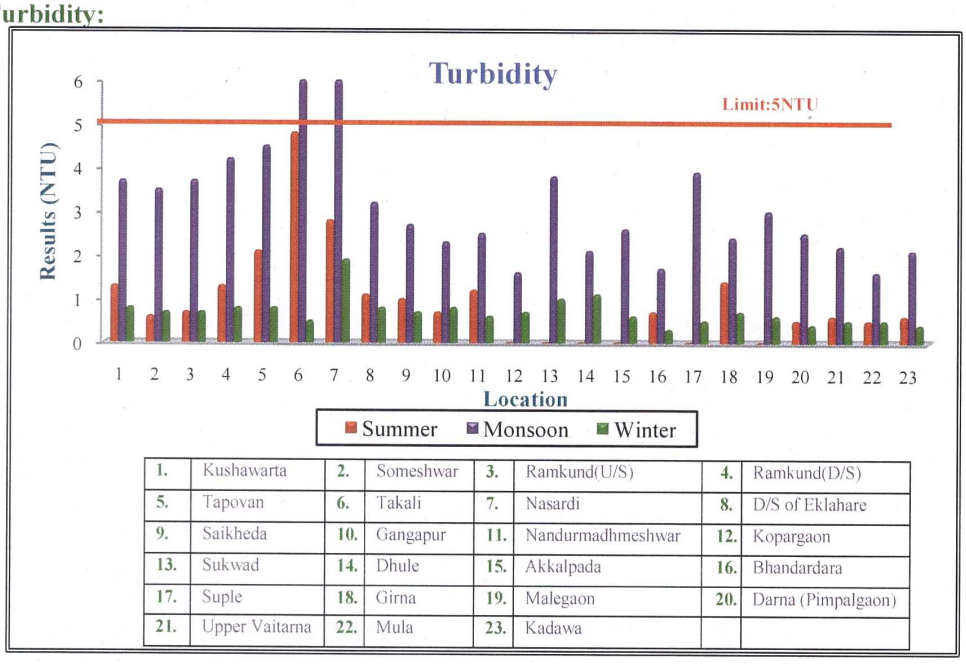
3. Dissolved Oxygen:



1.	Kushawarta	2.	Someshwar	3.	Ramkund(U/S)	4.	Ramkund(D/S)
5.	Tapovan	6.	Takali	7.	Nasardi	8.	D/S of Eklahare
9.	Saikheda	10.	Gangapur	11.	Nandurmadhmeshwar	12.	Kopargaon
13.	Sukwad	14.	Dhule	15.	Akkalpada	16.	Bhandardara
17.	Suple	18.	Girna	19.	Malegaon	20.	Darna (Pimpalgaon)
21.	Upper Vaitarna	22.	Mula	23.	Kadawa		

Above graphical Representation of Dissolved Oxygen shows at Takali, Nasardi, D/s of Eklahare, Saikheda, Nandurmadhmeshwar, Kopergaon, Dhule it is less than its desirable limit. In all season.

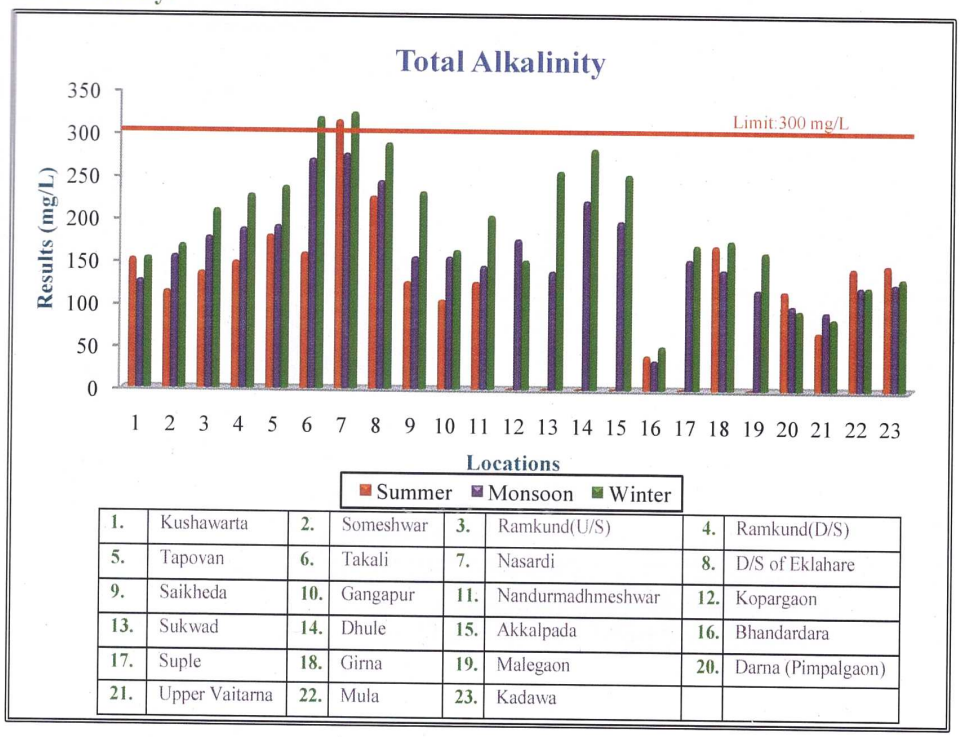
4. Turbidity:



1.	Kushawarta	2.	Someshwar	3.	Ramkund(U/S)	4.	Ramkund(D/S)
5.	Tapovan	6.	Takali	7.	Nasardi	8.	D/S of Eklahare
9.	Saikheda	10.	Gangapur	11.	Nandurmadhmeshwar	12.	Kopargaon
13.	Sukwad	14.	Dhule	15.	Akkalpada	16.	Bhandardara
17.	Suple	18.	Girna	19.	Malegaon	20.	Darna (Pimpalgaon)
21.	Upper Vaitarna	22.	Mula	23.	Kadawa		

From the above graph it is observed that during monsoon season at Takali & Nasardi exceeding the permissible limit.

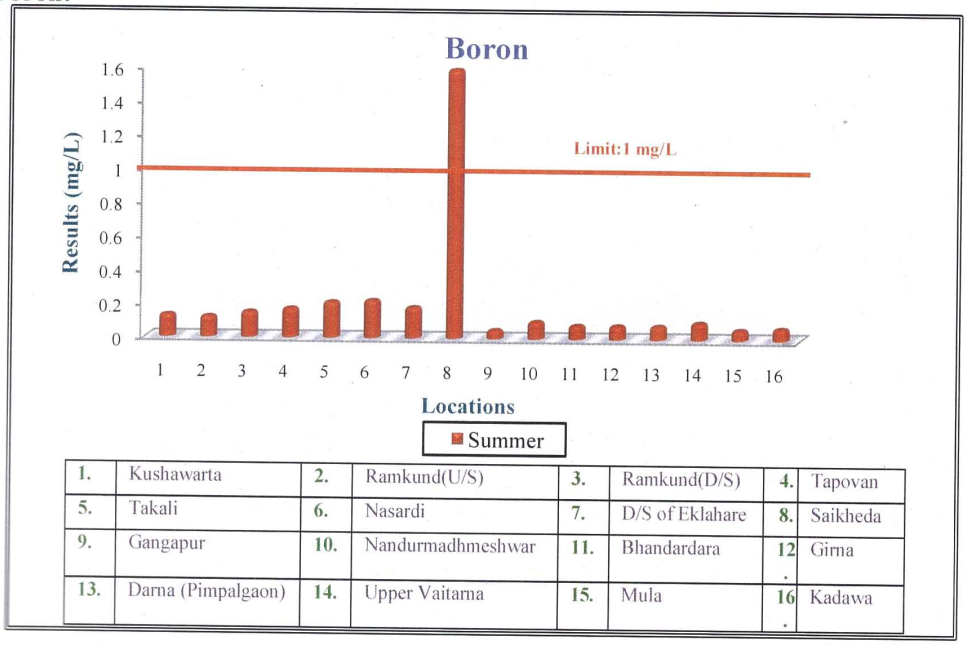
5. Total Alkalinity:



1.	Kushawarta	2.	Someshwar	3.	Ramkund(U/S)	4.	Ramkund(D/S)
5.	Tapovan	6.	Takali	7.	Nasardi	8.	D/S of Eklahare
9.	Saikheda	10.	Gangapur	11.	Nandurmadhmeshwar	12.	Kopargaon
13.	Sukwad	14.	Dhule	15.	Akkalpada	16.	Bhandardara
17.	Suple	18.	Girna	19.	Malegaon	20.	Darna (Pimpalgaon)
21.	Upper Vaitarna	22.	Mula	23.	Kadawa		

From the above graph at Takali & Nasardi in monsoon & winter season it is observed that Total Alkalinity exceeding the limit.

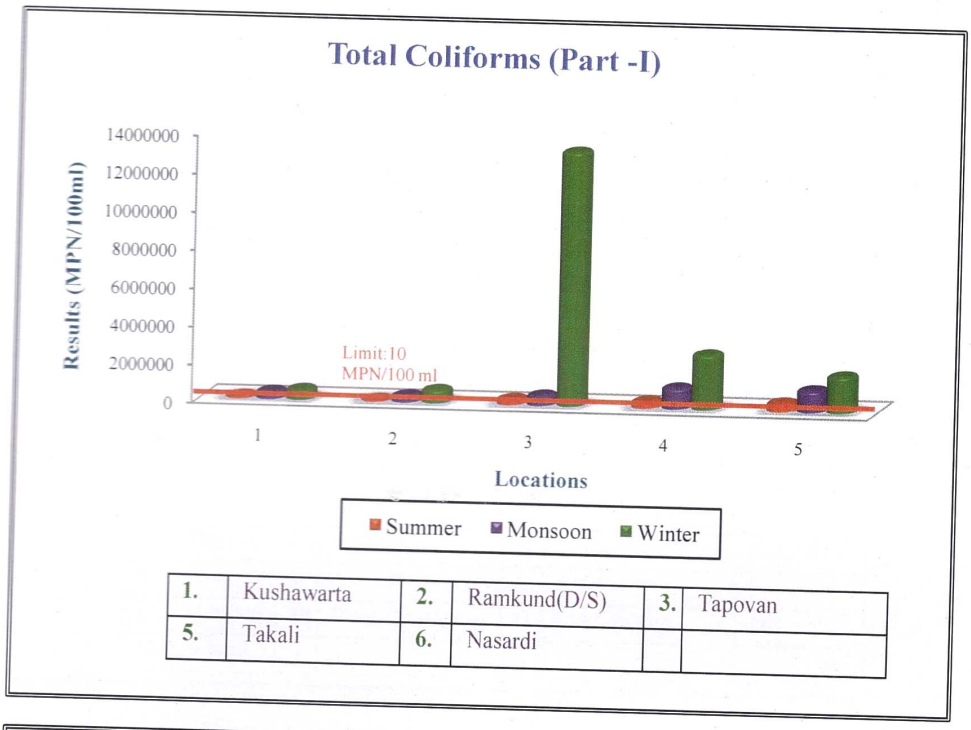
6. Boron:



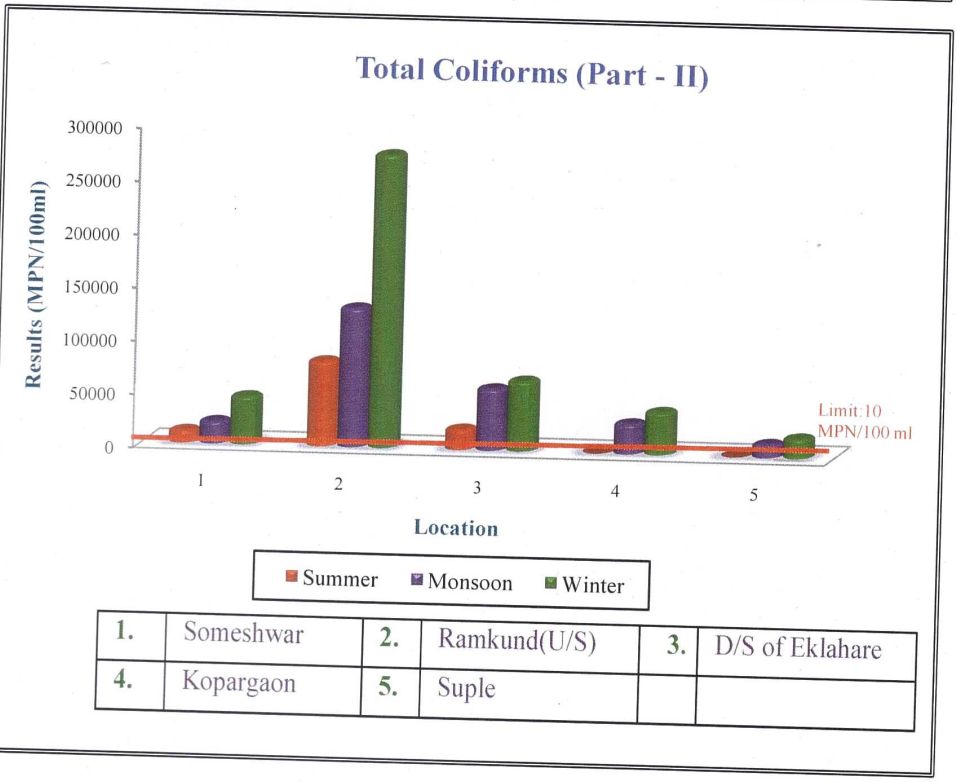
1.	Kushawarta	2.	Ramkund(U/S)	3.	Ramkund(D/S)	4.	Tapovan
5.	Takali	6.	Nasardi	7.	D/S of Eklahare	8.	Saikheda
9.	Gangapur	10.	Nandurmadhmeshwar	11.	Bhandardara	12.	Girna
13.	Darna (Pimpalgaon)	14.	Upper Vaitarna	15.	Mula	16.	Kadawa

From the above graph it is observed that at Saikheda during summer season exceeding the limit.

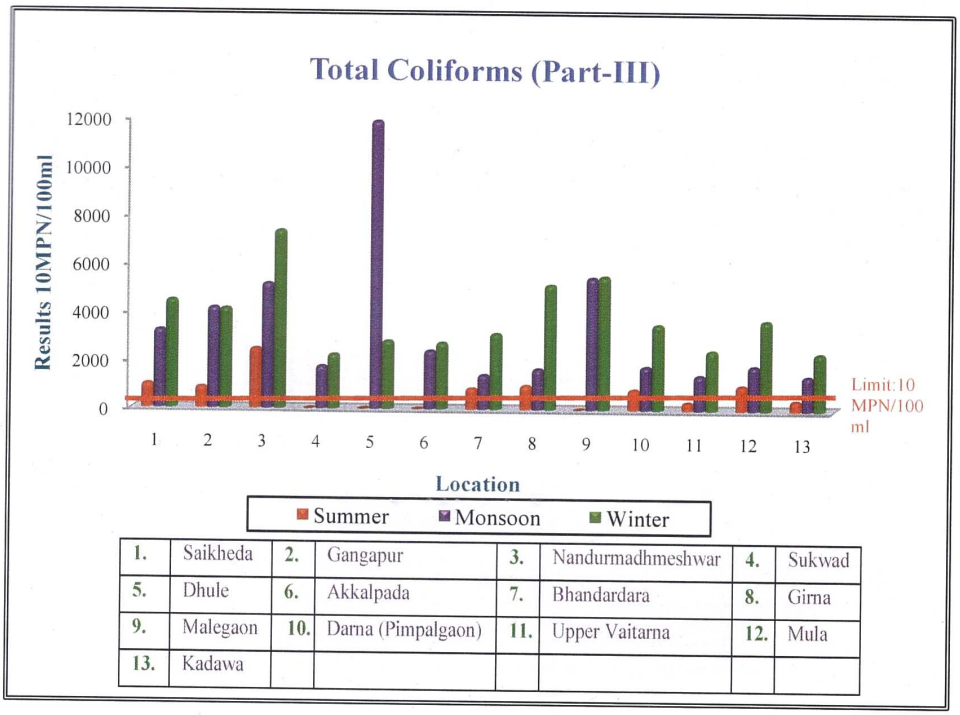
7. **Total Coliforms:**



1.	Kushawarta	2.	Ramkund(D/S)	3.	Tapovan
5.	Takali	6.	Nasardi		



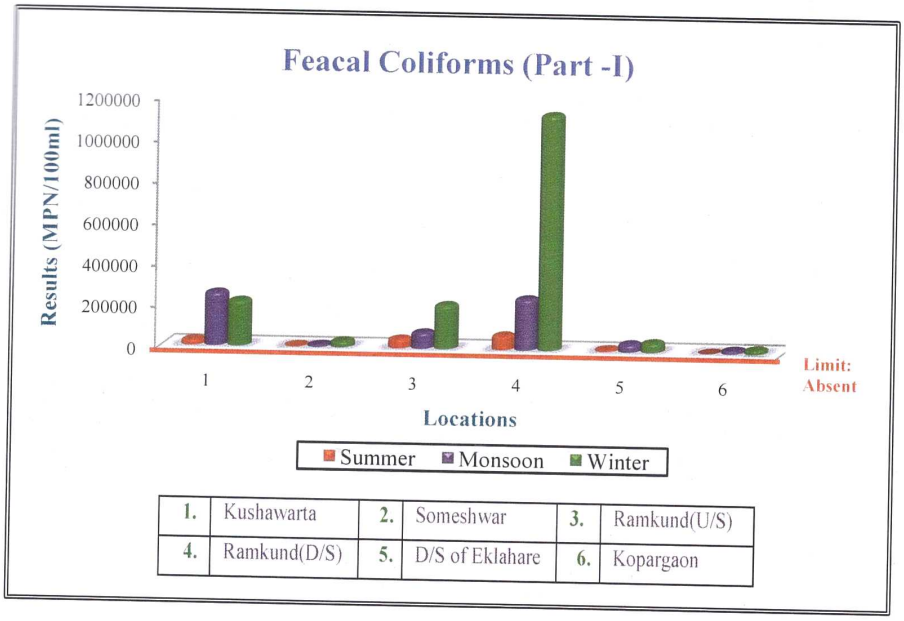
1.	Someshwar	2.	Ramkund(U/S)	3.	D/S of Eklahare
4.	Kopargaon	5.	Suple		



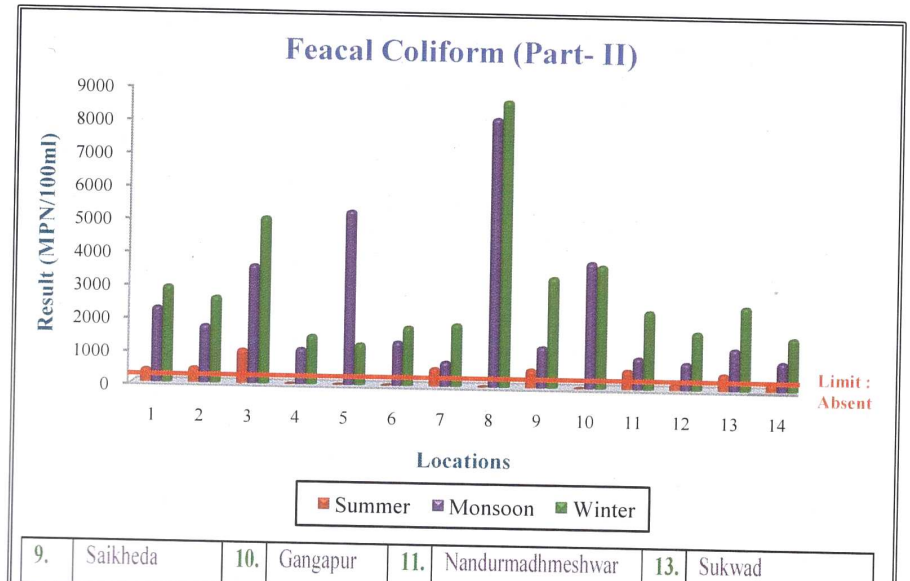
1.	Saikheda	2.	Gangapur	3.	Nandurmadhmeshwar	4.	Sukwad
5.	Dhule	6.	Akkalpada	7.	Bhandardara	8.	Girna
9.	Malegaon	10.	Darna (Pimpalgaon)	11.	Upper Vaitarna	12.	Mula
13.	Kadawa						

From the graphs it can be observed that the values of Total Coliforms exceeding the limit during all season at all locations.

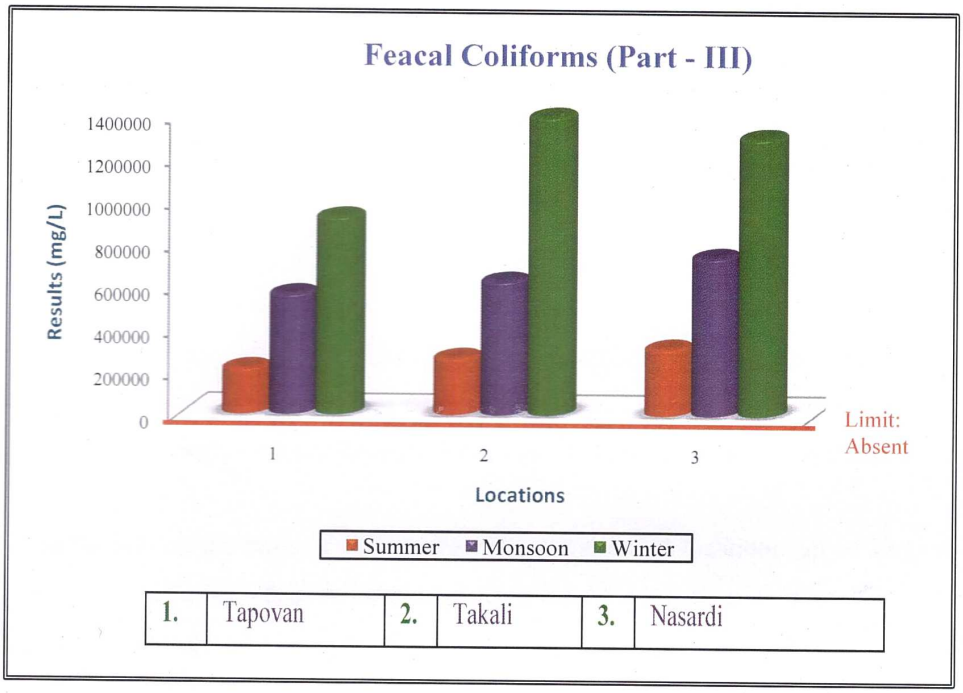
8. Feacal Coliforms:



1.	Kushawarta	2.	Someshwar	3.	Ramkund(U/S)
4.	Ramkund(D/S)	5.	D/S of Eklahare	6.	Kopargaon



9.	Saikheda	10.	Gangapur	11.	Nandurmadhmeshwar	13.	Sukwad
14.	Dhule	15.	Akkalpada	16.	Bhandardara	17.	Suple
18.	Girna	19.	Malegaon	20.	Darna (Pimpalgaon)	21.	Upper Vaitarna
22.	Mula	23.	Kadawa				



From the above graphs it can be observed that Feacal Coliforms during all the seasons at all location exceeding the limits.

CHAPTER – 5
CONCLUSION

Observing Results of all the locations & the parameters tested during reported period, it can be concluded that the value of chemical parameters exceeding the desired limits. This is due to the presence of organic matter, which also reduces Oxygen content in the water. Water having excess Biological Oxygen Demand is not fit for direct consumption.

Biological parameter i.e. Total Coliform & Feacal Coliform at every location exceeds the prescribed limit as per IS 10500 of Drinking Water Standard. This is mainly due to discharge of sewage; drainage in to water sources through Non-Point Sources needs to be identified.

As per classification on the basis of Wilcox Technique water at 4 locations out of 23 locations is suitable for irrigation purpose & at 19 locations water is good for irrigation purpose.
Overall trend of water quality in reported period for covered location is indicating suitably of water for irrigation purpose.

Finally, it can be concluded that water from all these locations is not suitable for drinking purpose without treatment. It requires treatment before use. Secondly this water can be used for irrigation purpose followed by traditional irrigation method.

CHAPTER - 6

OTHER ACTIVITIES

6.1 REVENUE GENERATION TO GOVERNMENT OF MAHARASHTRA

Apart from monitoring of water quality network for Water Quality lab level II at Nashik, the infrastructure facility is made available to the users from various Government, Non Government, Private sector as well as individuals.

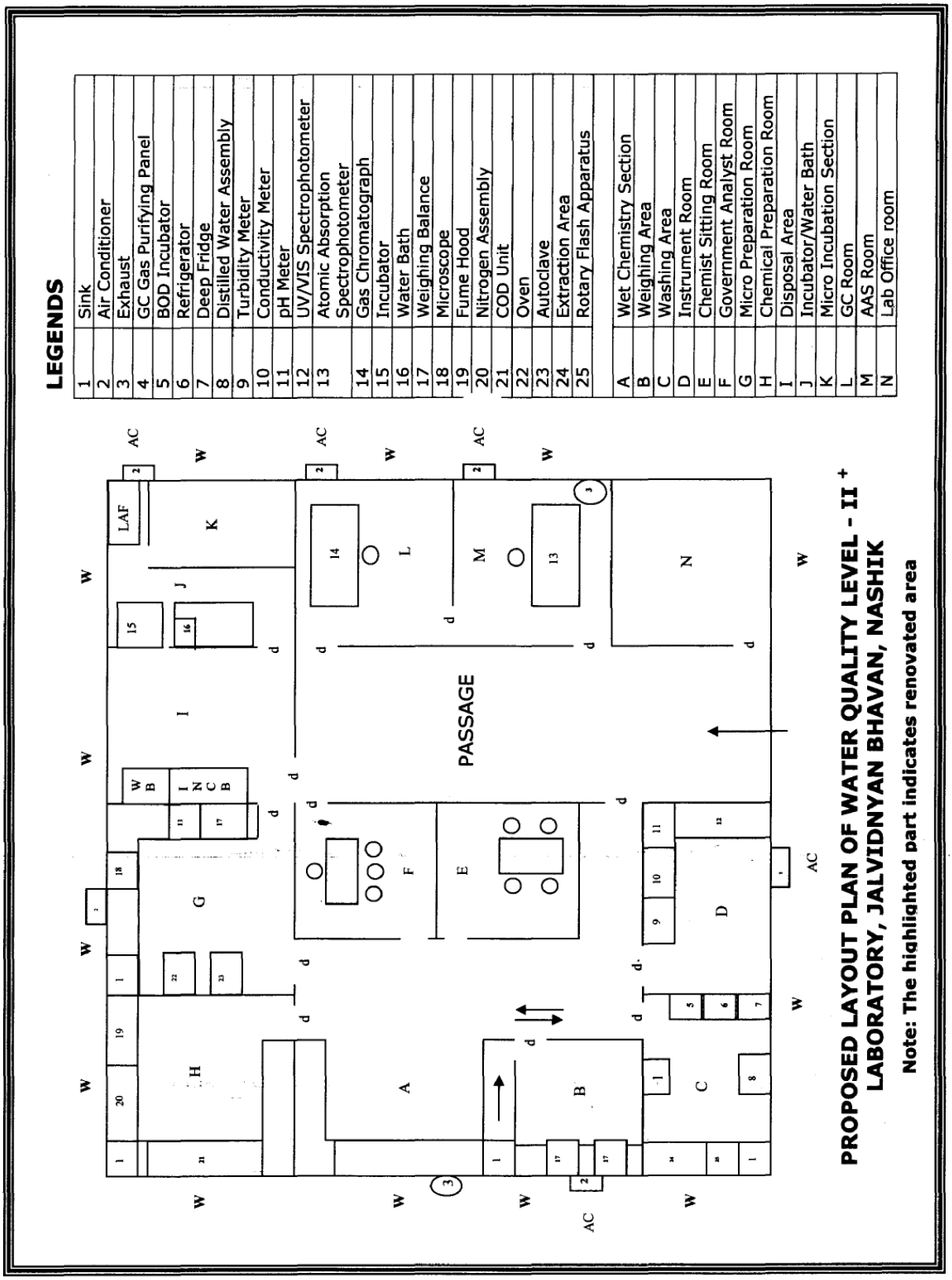
The facility is availed by many users with testing of sample towards drinking purpose, construction purpose, swimming tanks, irrigation purpose & study purpose.

During the year 2010-2011 many clients approached to the laboratory. The valuable clients availed the facility of the laboratory are as below;

1. Nashik Municipal Corporation
2. National Thermal Power Station
3. Various International School in Nashik City
4. Medical Institute like Ayurved College
5. KTHM College for study purpose.
6. Client from Satpur MIDC

6.2 REVENUE GENERATED DURING THE REPORTED PIRIOD

Sr. No.	No. of clients approached	Amount Received
1.	49	3,83,152/-



PROPOSED LAYOUT PLAN OF WATER QUALITY LEVEL - II + LABORATORY, JALVIDNYAN BHAVAN, NASHIK

Note: The highlighted part indicates renovated area

Annexure – II

List of Client 2010-2011

Sr. No.	Name of Clients	Purpose
1	Navjivan Education Society Vinchurigaoli P.O. Maadsangvi, Nashik	Drinking
2	Sandip Foundation Mahiravani, Trimbak road Nashik	Drinking
3	Asmita Agro dairy Gut no 439/1 Chinchpur BK, Sanganmaner	Drinking
4	Avanish Enterprises, satpur nashik Nashik	Drinking
5	Harsh Consruction, HO 1 Sanscruty Murkute lane new pandit colony nashik (Tal. Roha, Dist. Raygad)	Construction
6	Vijay Shingne,Samarth Behind Bank of Maharashtra Indira Nagar, Nashik	Drinking
7	G,D, Chipalunkar, Mumbai	Drinking
8	Kantilal Lodha,Omnagar plot no 8 Hiravadi Nashik	Drinking
9	Shree. Vaishanpayan, (Modern kafe hotel marathi), Gangapur Road, Nashik.	Drinking
10	Mitra Vihar, Nashik	Drinking
11	Sanjivani Gramin Shikshan Sansta, Sahajanandnagar Post Shingnapur 423603, Tal. Kopargoan, Dist. Nagar	Drinking
12	Peninsula Megatownship Developers Pvt. Ltd. Gut No. 2, Govardhan Girnare Road , Nashik	Drinking
13	Principal Abhinav Bal Vikas Mandir	Drinking
14	Sau. Suman Baburao Khandve .Kandave Saw Mill Compound Makhamalabad naka Panchvati nashik	Drinking
15	Divi. R.P.M.Makhamalabad, Nashik	Drinking
16	Dhammagiri, Igatpuri Nashik	Drinking
17	Sandharbha Seva Rugnalaya, Late Indira Gandhi Chawk, Shalimar Nashik	Drinking
18	Pitambar Rolling Mill Pvt. Ltd., Gut No. 192, Part Village Khatvad, Tal. Dindori, Dist. Nashik	Drinking
19	Good Shephar School, Manmad, Nashik	Drinking
20	Kadva Sahakari Sakkar Karkhana Ltd., Materevadi, Rajaram Nagar Tal. Dindori, Nashik	Drinking
21	E.P. C. Industries Ltd, H-109, MIDC Ambad, Nashik	Drinking
22	Sanjivani College of Engineering, Kopergaon	Drinking
23	Prashant Narayan Patil, Nashik	Drinking
24	Karyakari Sanchalak Dadasaheb Bowa, Jay Bajarang Colony, Malegaon Camp, Nashik	Study
25	Saptshrungi Aurvedik College, Kamalnagar Hirawadi Panchavati, Nashik	Drinking
26	Sachiv Gramin Water Supply & Sanitory Division, Niphad	Drinking
27	Trambak Tukaram Eghe, Bhaparvadi, Sinnar, Nashik	Drinking
28	Anant Bhavasar, Mahatma Phule Colony, Yevala, Nashik	Drinking
29	Saptshrungi College, Kamalnagar, Hiravadi, Nashik	Drinking

Sr. No.	Name of Clients	Purpose
30	Sapkal Knowledge Hub Anjeneri, Nashik	Drinking
31	Karyakari Sanchalak Dadasaheb Bowa, Jay Bajarang Colony, Malegaon Camp, Nashik	Study
32	Shri Parag Prabhakar Mule, Mulewada, Trambak, Nashik	Drinking
33	Mr. Mali C.N.	Drinking
34	Exe. Eng. Man Project Division, Khamgaon	Drinking
35	Sanjivani Sainiki School & Junior College, Kopargaon	Drinking
36	A.P. Magar Panchvati Police Station, Nashik	Drinking
37	Matoshri Hotel, Shirdi	Drinking
38	Sanjivani Sainiki School, Kopargaon	Drinking
39	B.A.P.S. Milap, Patel Plot No. 23 Kevadivan Near Dental College, Tapovan, Panchvati	Drinking
40	MAHAGENCO, Eklahare	Drinking
41	Gondavane Eng. Ltd.52 M.L.D., Tapovan, Nashik	Drinking
42	Peninsula MegaTownship Developer Pvt. Ltd, Gut No 2, Govardhan Girnare Road, Nashik	Drinking
43	Good Shephard School, Manmad	Drinking
44	Executive Eng. Civil Construction Div. No. I, MSGPCL, Bhusaval	Drinking
45	Avanish Enterprises, Satpur, Nashik	Drinking
46	Suleman Hudda Vadala Naka, Nashik Puna Road, Nashik	Drinking
47	Navjivan Institute, Shivshakti Chowk, CIDCO, Nashik	Drinking
48	Sapkal Knowledge Hub, Nashik	Drinking
49	Ashoka Pride Appt Association Plot No 7,8, Mumbai Agra Road Govind Nagar, Nashik	Drinking
50	Anant Aroga, Soubhagya Nagar, Nashik Road, Nashik	Drinking
51	Ganpat Shankar Navale, At/P Savul Vilholi, Nashik	Drinking
52	Gondavane Eng. Ltd.52 M.L.D., Tapovan, Nashik	Drinking
53	Nandanvan Shivandan Socity, Nashik	Drinking
54	Pune Vidyarthi Gruh, Institute of Managament, 206 Dindori Road Mhasrul, Nashik	Drinking
55	Gondavane Eng. Ltd., 52 M.L.D., Tapovan, Nashik	STP Outlet
56	Ins.of Pharmaceutical Science, Nashik	Drinking
57	Prasad Gayakwad, Vilholi	Drinking
58	NIT Survey No.155/1A/156, Cannal Road, Dindori Road, Panchvati, Nashik	Drinking
59	Ashoka Universal School, Nandavan Estate Near Chandsi Village, Anandwalli, Gangapur Road, Nashik	Drinking
60	Secretary Shri Gurudatta Shikshan Sanstha, Malegaon	Drinking
61	Asian Institute of Management, Pharmacy College, Dattatray Valse Patil Vidyanagari, Pathardi Road, Nashik	Drinking
62	Institute of Pharmacy MVP Science Dr. Vasantrao Pawar Medical College Campus, Vasantdada Nagar, Adgoan, Nashik	Drinking

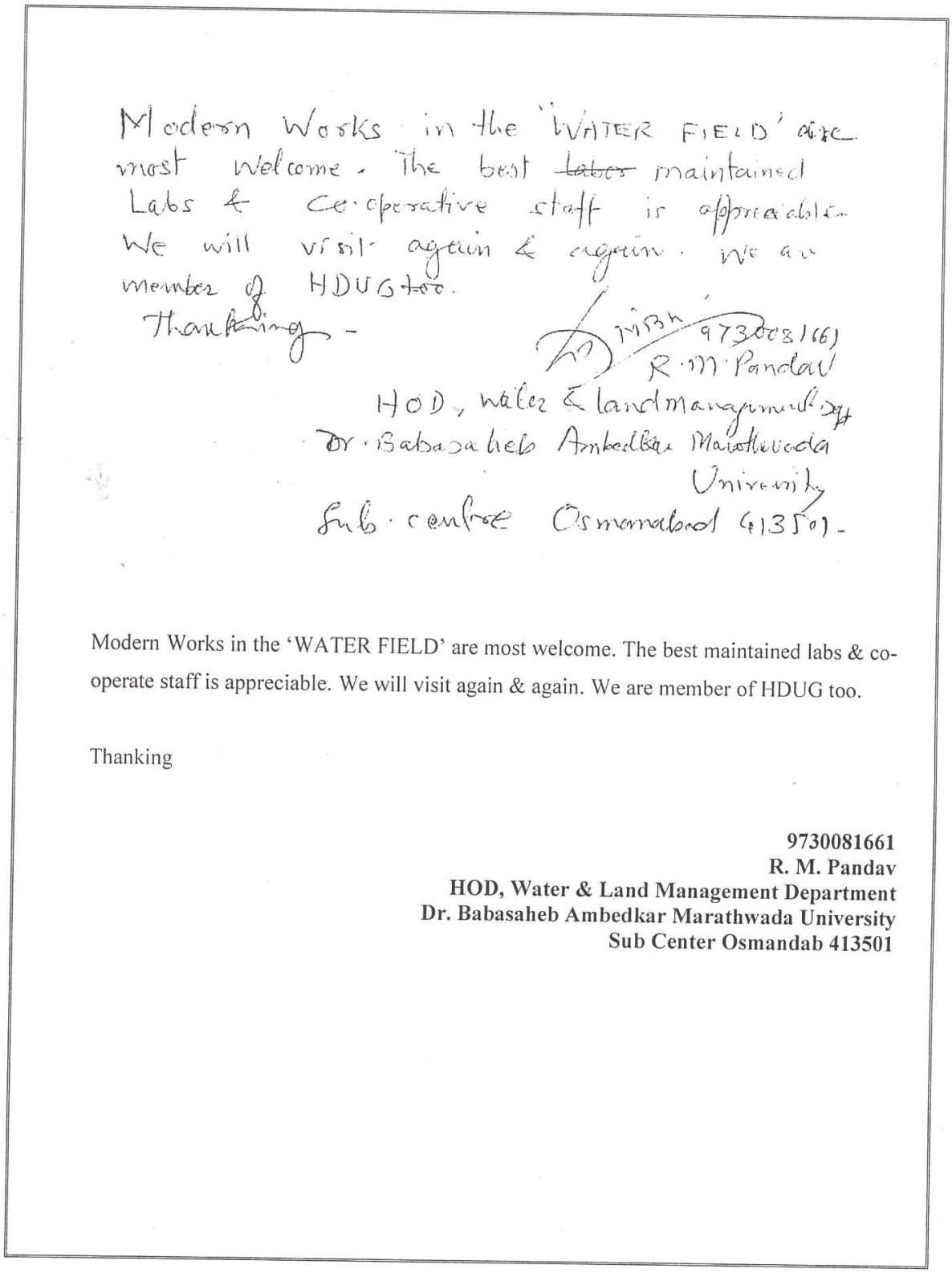
Sr. No.	Name of Clients	Purpose
63	Ranjansen Gupta, Guruvilla Plot No 2, Dattanagar, Asarambapu Ashram, Savarkar Nagar, Gangapur Road, Nashik	Drinking
64	K.K.Wagh College Hirabai Haridas Vidyanagari Amrutdham, Panchavati, Nashik	Drinking
65	H.H.J.B. Politechnique, Chandvad	Drinking
66	Shri Mukund Joshi, Nashik	Drinking
67	Vibhagiy Sandharbh Seva Rugnalaya, Indira Gandhi Chowk, Shalimar, Nashik	Study
68	K.K.Wagh Politechnique College, Chandori, Tal. Niphad, Nashik	Drinking
69	Jogeshori Indusrties , Office No 1.5.6, Bldg No 1, Shraddha Sankul, Old Gangapur Naka, Gangapur Road, Nashik	Drinking
70	Shiladevi Mahila Gruh Uyog, Plot No 11, Snehbandhan Appt. Apala Maharashtra Colony, Hiravadi, Panchvati	Drinking
71	Dhansukhalal Jain, Makhamalabad naka Panchvati	Drinking
72	SMBT College of Pharmacy, Nandihill, A/P Dhamangaon, Tal. Nashik	Drinking
73	Yadav Gopinath Vidhate, At/P Janori Tal. Dindori, Nashik	Drinking
74	Sachin Vasant Patil, Plot No 2, Kartica Center Vijay Nagar, Navin CIDCO, Nashik	Drinking
75	Sanjay Purohit, Flat No. 8, Sainandan Appt. Sarswati Nagar, Hiravadi Road, Panchvati, Nashik	Drinking
76	Prashant Narayan Patil, Nashik	Study
77	Dipak Daguji Bankar	Drinking
78	Bhagvati Ferrometal, Gat no 7,8, M.I.D.C., Malegoan, Sinnar	
79	Principle Pushpatai Hire, Hatgad, Surgana	Drinking
80	Pentacostal Barnes School Road, Deolali, Nashik	Drinking
81	Good Shephar School, Manmad	Drinking
82	Switesha Sonwane, KTHM College, Nashik	Study
83	Dipak Bankar, Pimpalgaon Basvant, Tal. Niphad, Nashik	Drinking
84	Vispute Sivnath Kondaji, A/p Shinde, Chandvad	Drinking
85	Bulders & Developers Deovlali	Drinking
86	Suwasan Hotel, Gurunanak House New Mumbai Agra Road, Mumbai Naka, Nashik	Drinking
87	Baban Sampat Dhage	Drinking
88	Silver Oak School, Nashik	Drinking
89	Moulik Shah, Mayur Resi. S. No. 524/1/825, Bodhale Nagar, R.T..O Colony, Pune Road, Nashik	Drinking
90	Avanish Enterprises, Nashik	Drinking
91	R.K. Enterprises, Aurangabad Road, Nashik	Drinking
92	P.N. Narkhede, Executive Engineer, C.D.O., Nashik	Irrigation
93	Parag Mule, Trambak	Drinking

Annexure – III

List of Trainee Visitor 2010-2011

Sr. No.	Date	Name of Trainee	Purpose of training	Contact no.
1	17/07/2010	Miss. Bharti Ganpat Kolhe Lecturer in Zoology, Arts Commerce & Science College, Dindori, Nashik	Study	02557-222333
2	24/09/2010	Class I officers of Jalsampada dept.	An official part of one year training	0253-2533408
3	27/01/2011	Service staff of hydrology project	In house training course on SWDES	0253-2533408

Annexure – IV



Modern Works in the 'WATER FIELD' are most welcome. The best maintained labs & co-operate staff is appreciable. We will visit again & again. We are member of HDUG too.

Thanking

9730081661
R. M. Pandav
HOD, Water & Land Management Department
Dr. Babasaheb Ambedkar Marathwada University
Sub Center Osmandab 413501

Detail information of drinking water in done & performing here in standerum way at state level & it is very good & information

23/8/2010.
Dr. Sandip Jaf
Amravati

Detail information of drinking water in done & performing here in standard way at state level & it is very good & information.

23/08/2010
Dr. Sandip
Amrawati

19.11.10 It is indeed a matter of pride for Nasik to have a Laboratory of this Standard extremely useful for all at this Institute.
We learnt new knowledge after this visit. We hope more people will be aware about this work.

Dr Deodatta Chafekar
MS; DM
Nasik
Ph-9822432736

Dr Neelima Chafekar
MD BRM
nuclear med physician
Ph 9822408536

Date: 19.11.2010

It is indeed a matter of pride for Nasik to have laboratory of this standard extremely useful for all at this institute.

We learnt new knowledge after this visit. We hope more people will be aware about this work.

Dr. Deodatta Chafekar
Nashik

Dr. Neelima Chafekar
Nashik

for Date 26/08/2010

Hydrology project is one of the best project conducting the activities related to water importance and measuring the water quality and providing the data wherever needed to individual or organization.
I really thankful for providing the permission and giving ppt and showing water quality lab and exhibition.
I really appreciate the coordination done by Shri. S.K. Chirsagar for arranging their visit of B.E. Chemical of our institute. I thanks and appreciate the ppt given by Superintending Engineering Shri. Manohar Pokale sir to ~~our~~ 50 students.
Thanks a lot and my best whishes for this mission.

Yours

Prof. V.S. Mane
HOD, Chemical Engg.
KKWET & R, Nashik.

Date:26/08/2010

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HOD, Chemical Engineer
KKWET & R, Nashik

Date 26.5.2010

I have visited the top rank water Quality lab. The lab is ISO certified, with state of the art instruments and most competent staff. This lab is a model lab for the other WQ Laboratorys.

26/5

Ex Engg, HP Div
Pune.

Date:26.05.2010

I have visited the top rank Water Quality Laboratory. The lab is ISO certified with state of the art instruments and most competent staff. This lab is a model lab for the other Water Quality Laboratories.

Ex Engineer, HP Division
Pune

Date- 26/08/2010

We all along two staff & 50 students from final year student visited Hydrology project Meri. Mr. Pokale sir present about the science of water & all the about Hydrology Project & their goal. Or establishment. The student will be beneficial for their project point of view.

We will thank to all staff of Hydrology Project. Pokale sir & Kshirsagar sir.

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Prof S.N. Desle
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Prof. V.S. Mane
Prof S.N. Desle
(KKWIEE&R, Nashik)

26/ March - 2011. 1200 hrs.

"We Indian think a lot speak a lot and act very less."
But now on word I may not think the same always.
Coz they are few people who are really working hard for the nation -
working for me.

I promise to join you and work innovative so that we all can save our nation.

Prof. P. R. Ingle
PG Dept Environment Sc.
(Head) KTHM. college
Nashik

Date: 26 March 2011 12.00 Hrs

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PG Department Environment
(Head) KTHM College
Nashik

19.4.2011 I.M.T.I. के प्रतिनिधियों ने Water Quality Level two की visit किया, रिकार्ड का maintance उत्कृष्ट पाया तथा Quality Related test Annually किये हुए Booklet की form में रिकार्ड maintain किया हुआ था तथा विजिट के समय उपस्थित कर्मचारी, अधिकारों से विस्तृत विवरण के बारे में explain किया गया। यह प्रणाली अच्छी पायी गई

B.R. Chaudhary
SB IGNT
Team member

19.04.2011

I.M.T.I. के प्रतिनिधियों ने Water Quality Level two की visit किया, रिकार्ड का maintenance उत्कृष्ट पाया तथा Quality related test annually किये हुए Booklet की form में रिकार्ड maintain किया हुआ था तथा विजिट के समय उपस्थित कर्मचारी, अधिकारों से विस्तृत विवरण के बारे में explain किया गया यह प्रणाली अच्छी पायी गई

B.R. Chauadhary
SB IGNT
Team Member

Annexure – V

Water Quality Lab – II, Hydrology Project Circle (Collection) Nashik		
QF/MR/12	Issue No.:01	Rev. No.:00
	Date: 01/07/2009	Page No.: 01 of 01

CUSTOMER FEEDBACK FORM
(FOR LAB TESTING ASSIGNMENT)

Name of customer : Asmita Agrovet Agency Date : 23/06/2011

Type of sample : Drinking Water

Reference : Direct

1. Whether testing is done within time frame? ~~Yes~~/No

2. Whether the specified parameters checked? ~~Yes~~/No

3. Any comments? No

Sign & Seal of Customer :

ONLY FOR OFFICE USE

MARKS	MARKING	GRADE	RATING	REMARK
30	if all three question's answer is positive	A	good	✓
20	if any two question's answer is positive	B	satisfactory	
10	if any one question's answer is positive	C	unsatisfactory	
00	if all question's answer is negative	C - Negative	poor	

RATING: good.

I/C Signature

Water Quality Lab – II, Hydrology Project Circle (Collection) Nashik		
QF/MR/12	Issue No.:01	Rev No:00
	Date: 01/07/2009	Page No: 01 of 01

CUSTOMER FEEDBACK FORM
(FOR LAB TESTING ASSIGNMENT)

Name of customer : Saplea knowledge Hub Date : 29.09.2010

Type of sample RO : Water Analysis.

Reference :

1. Whether testing is done within time frame? Yes/~~No~~
2. Whether the specified parameters checked? Yes/~~No~~
3. Any comments? No.

Sign & Seal of Customer :

ONLY FOR OFFICE USE				
MARKS	MARKING	GRADE	RATING	REMARK
30	if all three question's answer is positive	A	good	Good
20	if any two question's answer is positive	B	satisfactory	~~Good~~
10	if any one question's answer is positive	C	unsatisfactory	~~Good~~
00	if all question's answer is negative	C - Negative	poor	~~Good~~

RATING: Good.

I/C Signature

Water Quality Lab – II, Hydrology Project Circle (Collection) Nashik		
QF/MR/12	Issue No.:01 Date: 01/07/2009	Rev No:00 Page No: 01 of 01

CUSTOMER FEEDBACK FORM
(FOR LAB TESTING ASSIGNMENT)

Name of customer : Avnish Enterprises. Date : 22/06/2010

Type of sample : Borwell

Reference : Direct

1. Whether testing is done within time frame? Yes/~~No~~
2. Whether the specified parameters checked? Yes/~~No~~
3. Any comments?

Sign & Seal of Customer :

NO.

ONLY FOR OFFICE USE

MARKS	MARKING	GRADE	RATING	REMARK
30	if all three question's answer is positive	A	good	✓
20	if any two question's answer is positive	B	satisfactory	
10	if any one question's answer is positive	C	unsatisfactory	
00	if all question's answer is negative	C - Negative	poor	

RATING: A

I/C Signature

Annexure – VI

QUALITY POLICY

Water quality laboratory, level-II, Nashik,

declared the purpose of the organization i.e *Collection & Testing of Water Samples*

Has laid down the following quality policy, that has been communicated and understood within the organization and has provided adequate frame work for reviewing its quality objectives and quality policy for continuing suitability

And is committed.....

1. To monitor effectiveness of QMS time to time & will also work for continual improvement of the activities.
2. To work for continual improvement in its technology, processes and to increase competency levels have its personnel.
3. To delight the customer by fulfilling customer needs, statutory/regulatory requirements and any requirement which is not stated but which is required for application of customer service.

गुणवत्ता धोरण

जलगुणवत्ता प्रयोगशाळा स्तर-२, नाशिक

या प्रयोगशाळेच्या कार्यप्रणालीचा उद्देश

पाणी नमुने संकलन व पृथःकरण.

हे गुणवत्ता धोरण आम्ही अंगीकारले असुन ही प्रयोगशाळा असे जाहीर करते की,

हे गुणवत्ता धोरण या प्रयोगशाळेशी संलग्न सर्व कर्मचा-यांना समजले असुन, याचे अंमलबजावणीसाठी पुरेसे नियोजन व आढावा घेण्याचे तरतुदीसह ही प्रयोगशाळा खालील बाबींसाठी कटीबध्द आहे.

१.जलगुणवत्ता पर्यवेक्षण कार्यप्रणाली सक्षमपणे कार्यान्वित आहे किंवा नाही याचा वेळोवेळी आढावा घेणे तसेच सुधारणेत सातत्य राखणे.

२.नवनवीन तंत्रज्ञान,पध्दती आत्मसात करुन कार्यरत कर्मचा-यांची कार्यक्षमता व गुणवत्ता वृध्दींगत करणे.

३.उपभोक्त्याची गरज ओळखुन त्यासाठी आवश्यक कायदेशीर तरतुदी व सेवानिकषांचे अधीन राहुन त्यांची निकड जोपासणे. प्रसंगी आवश्यकता पडल्यास उपभोक्त्याचे गरजेनुसार व मागणीनुसार त्यांचे समाधान होईपर्यंत सेवा पुरविणे.

Annexure – VII

INTERNATIONAL CERTIFICATIONS SERVICES
AUDIT REPORT – 1st SURVEILLANCE

Report No: 91/6401/2010/11/06

Organisation	:	HYDROLOGY PROJECT DIVISION, NASHIK
Address	:	**Hydrology project, jalvigyan bhavan, dindori road, nashik- 422004.**
Site(s) Audited	:	same as above
Audit Date (s) /Duration	:	26.11.2010
Standard (s)	:	ISO 9001:2008
Scope	:	Collection & Testing of samples of water & waste water.
Scope & Capability	:	Capability of HYDROLOGY PROJECT DIVISION is verified and found to Be adequate with respect to the above scope.
SIC Code	:	7829
Exclusion of clause	:	7.3
Requirement from ISO Standard if any	:	**ISO 9001:2008**
Outsource Process affecting Quality if any	:	Operation & maintenance of water quality lab level II.
Auditor Team	:	Mr.Manish Wath (Lead Auditor), Mr.Harish Mendhi(TE)
Statutory & Regulatory Requirements	:	Govt. GRR, Uniform Protocol for water quality monitoring.

Reported by : Mr.Manish Wath

Sign :

Date: 30.11.2010

INTERNATIONAL CERTIFICATIONS SERVICES
AUDIT REPORT – 1st SURVEILLANCE

1.0 General

The 1ST Surveillance audit was conducted of HYDROLOGY PROJECT DIVISION, Quality Management System on 26.11.2010 in accordance with the audit schedule w.r.to ICS procedures to verify compliance and effectiveness of quality management system and its documented procedures to the requirements of ISO 9001:2008 International Standard. The quality management system is applied throughout the organization in a determined sequence and interactions of the processes.

1.1 Corrective Action Request - Minor

No minor CAR raised during audit by sampling depth of QMS ISO 9001:2008.

1.2 Corrective Action Request - Major

No major CAR raised.

2.0 Assessment of Documentation:

2.1 List of documentation assessed (System Manual, Procedures and related documentation) :

No	QMS Document Requirement	Doc. No	Issue		Issue Date	Assessed on
1	ALL	Quality Manual	QM	01	01/07/2009	19.10.2009
2	ALL	Quality Procedure	QSP	01	01/07/2009	19.10.2009
3	ALL	Work Instruction	--	--	01/07/2009	19.10.2009
4	ALL	Formats	--	--	01/07/2009	19.10.2009

2.2 Summary of Document Review :

HYDROLOGY PROJECT DIVISION has established, documented, implemented and maintained an Adequately defined quality management system. Documented Quality Management System found OK . Control of Documents and control of records were observed to be adequate.

3.0 Location and Shift Audited

HYDRO;OGY PROJECT CIRCLE, JALVIGYAN BHAVAN, DINDORI ROAD, NASHIK-422004, audit on 6.11.2010 in accordance with ICS audit schedule.

INTERNATIONAL CERTIFICATIONS SERVICES
AUDIT REPORT – 1st SURVEILLANCE

4.0 AUDIT SUMMARY :

4.1 Representative Interviewed - Function/Process Audited.

S.No.	Name & Designation	Function/Process
1.	Mr.K.Pokale / S.E Mr. Kapare V.K. / A.S.E	Top Management
2.	Mr. S. Kshirsagar / Govt. Analyst	MR / Laboratory Incharge.
3.	Mr. Thakare	Laboratory Process
4.	Mrs. C.A. Ekhande / Chief Chemist	Laboratory process
5.	Mr. V.Kadi / Co-ordinator	Laboratory Process.
6.	Mr. H.P. Bhausar / Br.Mgr.	Laboratory Process

4.2 Exclusion of ISO Clauses (Justification) :

7.3

4.3 Observations made during the audit (Record corrective actions only) :NA

S.No.	Process/Function	ISO Clause	CAR No.	Brief Description of CAR Raised

4.4 Verification of Certification Marks (Logos of ICS and Accreditation Body applicable during Surveillance Audit/Reassessment) :

OK

5.0 EFFECTIVENESS, CONCLUSIONS & RECOMMENDATIONS

5.1 Degree of Effectiveness & Reliance of Internal Audit :

Internal audit found conducted as per the decided frequency but needs to be conducted more effectively.

5.2 Positive Findings:

1) Co-operative & skilled employees

2) Good housekeeping.
3) Two papers submitted & published in National Conference on Surface water quality status in Maharashtra.
4) Approval for 1 DG set.

5.3 Area For Improvement:

1) Quality plan needs to be prepared considering & stating sample qty/Analysis time/Transportation period/Analysis time/Std reference/Record reference.
2) As per APHA, Analysis tome for all the parameters needs to be monitored.
3) In sample identification form, time for analysis of PH on spot needs to mentioned..
4) DO fixation time (0.25 Hrs) needs to be effectively monitored. All the parameters analysis time needs to be monitored & recorded.
5) Format no. to be given to Data record register & month needs to be stated.
6) Quality Objectives needs to be reviewed .
7) In Calibration Plan : Year needs to be properly stated, Acceptance criteria needs to be decided & calibration certificates needs to be reviewed.
8) In Audit Schedule ,all the processes needs to be properly stated along with the clause no.
9) In CAR, root cause & corrective action needs to be appropriately stated.
10) In Audit observation sheet, evidence collected needs to be properly stated.
11) MRM date needs to be properly stated & needs to be conducted more effectively.
12) MRM agenda needs to be reviewed.

5.4 Effectiveness of Management System Implementation:

QMS ISO 9001:2008 found implemented but requires further effort to improve the system continually.

5.5 Conclusion:

The basics of the Quality Management system have been found implemented in the applicable limits of ISO 9001: 2008 Standard. Further efforts will be required in order to develop the system continuously.

5.6 Recommendation:

QMS of Hydrology Project Division, Nashik is recommended for continuation of Certification to ISO9001:2008 , since no Minor or Major corrective action request raised during the audit. However the above report is subject to be reviewed by the Certification cell.

Lead Auditor :

(Sign)

Name : Mr.Manish Wath

Place : Nagpur

Date : 30.11.2010