

# ANNUAL REPORT

1994-1995



MEGHALAYA STATE POLLUTION CONTROL BOARD,  
"ARDEN", LUMPYNGGAD,  
SHILLONG - 793014

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## ANNUAL REPORT – 1994-1995

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## 1. INTRODUCTION

The State Board for Prevention and Control of Water Pollution, Meghalaya was constituted by the Government of Meghalaya on the Sixteenth Day of November, Nineteen Eighty –Three (16/11/1983) in pursuance of the Water (Prevention & Control of Pollution) Act, 1974. After the enactment of the Air (Prevention & Control of Pollution) Act, 1981, the enforcing responsibility of the Act was also entrusted to the above Board. As such, the Board was later renamed as Meghalaya State Pollution Control Board in 1988. The functions of the Board are as laid down under Section 17 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 17 of the Air (Prevention and Control of Pollution) Act, 1981.

Besides the enforcement of the Water Act and the Air Act, the Board is also enforcing the following Acts and Rules.

- 1) The Water (Prevention and Control of Pollution) Cess Act, 1977, as amended by Amendment Act 1991.
- 2) The Water (Prevention and Control of Pollution) Cess Rules, 1978.
- 3) The Hazardous Waste (Management and Handling) Rules, 1989.
- 4) The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
- 5) The Manufacture, Use, Import, Export & Storage of Hazardous Micro organism or Cells Rules, 1989.
- 6) The Public Liability Insurance Act, 1991.

The Board has been functioning with 27 staffs as on 31-3-1995 against a sanctioned strength of 82. The details of staff position are given in Annexure-I. The organization chart of the Boards is given in Annexure-II.

The Central Office of the Board is located in Shillong and there are no Regional, Divisional or District Offices. The Central Office is responsible for making general policies relating to enforcement of the Acts and Rules. It also looks after general administration and co-operation with other agencies. Besides, it takes up public awareness programmes on matters relating to environment pollution. The Central Laboratory is well-equipped and carries out analysis of samples of water, waste water, stack emission, ambient air, bacteriological, bio-assay tests etc.

The other activities of the Central office of the Board are:-

- (i) Inspection of industries and local bodies.

- (ii) Monitoring the quality of water and wastewater.
- (iii) Monitoring the quality of ambient air and stack emissions.
- (iv) Inspection of sites proposed for setting up of industries to verify the suitability of the same from environmental point of view.
- (v) Water bodies monitoring under MINARS(Monitoring of Indian National Aquatic Resources System)programme.
- (vi) Ambient Air Quality Monitoring under National Ambient Air Quality Monitoring (NAAQM)programme.
- (vii) Offering guidance to industries and local bodies on statutory provisions.
- (viii) Issue of Consents to Establish and Consents to Operate in respect of industries and Municipal Boards.

## **2. CONSTITUTION OF THE BOARD**

The State Government nominates the members of Meghalaya State Pollution Control Board. The Board was originally constituted under Section 4 of the Water (Prevention & Control of Pollution) Act, 1974 vide Notification No. PHE. 161/83/1 dt. 16.11.83. The last reconstitution was in January 1995 vide Notification No. PHE 161/83/114 dated 16<sup>th</sup> Jan. 1995.

The Board consists of 20(twenty) members nominated by the State Government as per Provisions laid down in Sub Section (2) of section 4 of the Water (Prevention and Control of Pollution) Act 1974. Besides the Chairman and the Member Secretary, there are 6(six) official members representing various State Government Departments, 4(four) members representing local Authorities, 3(three) Members representing the Co-operatives and Corporations Owned, managed or Controlled by the State Government and 5(five) Non-official Members.

The list of the Members of the Board is as appended at Annexure-III

- (i) Shri Kunal Sen took over charge as Chairman on 8.6.92 and continued as Chairman of the Board during the financial year.
- (ii) Shri B.N.Mishra took over charge as Member Secretary of the Board on 24.2.94 and Continued as Member Secretary of the Board during the financial year.

### 3. MEETINGS OF THE BOARD WITH MAJOR DECISIONS

During the year 1994-1995 the Board conducted the following Meetings:

Name of the Meeting ..... The 22<sup>nd</sup> Board Meeting of the  
Meghalaya State Pollution  
Control Board, Shillong.

Date .....24<sup>th</sup> November, 1994

Venue.....Conference Room, MSPCB,  
Lumpynggad, Shillong

Number of Members present.....7(seven)

The following major decisions were taken during the course of the Meeting:-

- The Board approved the proposal for the creation of some new posts subject to the approval of the Government.
- The Board accorded approval to the re-constitution of the Purchase Committee.
- The Board accorded approval to the re-constitution of the Consent Committee.

### 4. COMMITTEES CONSTITUTED BY THE BOARD

During the year 1994-1995, the members of the Consent Committee remain as notified in the previous year.

The list of members of this Committee is as appended at Annexure-IV.

## 5. MONITORING NETWORK FOR WATER AND AIR QUALITY

### 5.1 MONITORING OF AIR QUALITY

#### (a) Air quality Monitoring under National Ambient Air Quality Monitoring Programme (NAAQM)

There are 2(two) nos. of ambient air quality monitoring stations in the State. Both the stations are located in Shillong city. One Station is located at the State Central Library building, which is in the heart of the city. The other Station is located at Lumpyngngad inside the Board's office premises. Both these stations have been functioning since March 1989. The major pollutants monitored at these stations are Suspended Particulate Matter (SPM), Sulfur Dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>). The observations/data recorded at the stations are as given below:-

STATION – I: Ambient Air Quality Data at the State Central Library Building, Shillong.

MONTH & YEAR	PARAMETERS					
	SPM		SO <sub>2</sub>		NO <sub>x</sub>	
	MINIMUM (µg/m <sup>3</sup> )	MAXIMUM (µg/m <sup>3</sup> )	MINIMUM (µg/m <sup>3</sup> )	MAXIMUM (µg/m <sup>3</sup> )	MINIMUM (µg/m <sup>3</sup> )	MAXIMUM (µg/m <sup>3</sup> )
APRIL, 1994	27.8	36.8	BDL*	BDL	BDL	4.2
MAY, 1994	27.0	28.8	BDL	BDL	BDL	2.0
JUNE, 1994	23.2	27.8	BDL	BDL	BDL	6.2
JULY, 1994	27.8	36.5	BDL	BDL	BDL	7.4
AUGUST, 1994	29.6	32.9	BDL	3.2	4.2	5.2
SEPTEMBER, 1994	26.4	28.4	BDL	BDL	BDL	3.8
OCTOBER, 1994	29.2	31.9	BDL	BDL	BDL	4.6
NOVEMBER, 1994	31.6	40.3	BDL	BDL	4.8	6.0
DECEMBER, 1994	43.0	50.0	BDL	BDL	6.2	6.8
JANUARY, 1995	51.4	55.6	BDL	BDL	6.8	8.2
FEBRUARY, 1995	49.3	50.8	BDL	BDL	4.0	6.0
MARCH, 1995	40.3	46.0	BDL	BDL	BDL	4.2

\* BDL:: Below Detectable Limits



## STATION – II Ambient Air Quality Data at the BOARD’S PREMISES, LUMPYNGNGAD, SHILLONG.

MONTH & YEAR	PARAMETERS TESTED					
	SPM		SO <sub>2</sub>		NO <sub>x</sub>	
	MINIMUM ( $\mu\text{g}/\text{m}^3$ )	MAXIMUM ( $\mu\text{g}/\text{m}^3$ )	MINIMUM ( $\mu\text{g}/\text{m}^3$ )	MAXIMUM ( $\mu\text{g}/\text{m}^3$ )	MINIMUM ( $\mu\text{g}/\text{m}^3$ )	MAXIMUM ( $\mu\text{g}/\text{m}^3$ )
APRIL, 1994	22.8	26.2	BDL*	BDL	BDL	5.0
MAY, 1994	24.0	25.0	BDL	BDL	BDL	5.8
JUNE, 1994	20.8	23.2	BDL	BDL	BDL	BDL
JULY, 1994	24.3	27.4	BDL	BDL	BDL	5.8
AUGUST, 1994	26.8	28.0	BDL	BDL	BDL	BDL
SEPTEMBER, 1994	20.8	23.6	BDL	BDL	BDL	BDL
OCTOBER, 1994	22.2	24.3	BDL	BDL	BDL	BDL
NOVEMBER, 1994	25.7	29.2	BDL	BDL	BDL	BDL
DECEMBER, 1994	25.7	29.2	BDL	BDL	BDL	BDL
JANUARY, 1995	39.13	40.6	BDL	BDL	BDL	BDL
FEBRUARY, 1995	39.9	40.6	BDL	BDL	BDL	BDL
MARCH, 1995	33.3	36.2	BDL	BDL	BDL	BDL

\* BDL:: Below Detectable Limits

*(b) Assessment of Vehicular Pollution*

Vehicular exhaust emissions are the main source of air pollution in Meghalaya because the per capita vehicular density in the State is very high. The Meghalaya State Pollution Control Board has been conducting vehicular emissions testing surveys in co-operation with the office of the Commissioner of Transport, Meghalaya. The Board has a Vehicle emission testing Centre inside its office premises at Lumpyngngad, Shillong which has been functioning since January 1994. This Centre provides emission-testing facility to Commercial petrol driven light vehicles only. The office of the Commissioner of Transport Meghalaya, Shillong issued instructions that the renewal of permits for Taxis would be allowed only after obtaining the “Green Certificate” from the Board. During 1994-1995, a total no of 1683 commercial petrol driven vehicles were tested. Out of these, 260 vehicles were issued “Red Certificates” and the remaining 1423 Vehicles were issued “Green Certificates”.

## ***5.2 Monitoring of Water quality in the State.***

One of the major objectives of the Board as per the Water(Prevention and Control of Pollution)Act, 1974 is to promote cleanliness of Water bodies . To achieve this objective, the Board has carried out monitoring of major rivers, lakes and springs in the state under the following programmes.

### ***(a) Monitoring of Natural Water Bodies***

During the year, the Board monitored the water quality of the following rivers:

- (i) River Umiam, Mawphlang
- (ii) River Myntdu, Jowai
- (iii) River Wahjalnoh, Shillong
- (iv) River Umsohlang, Shillong

The water quality of these water bodies are as given in Table-I.

### ***(b) Monitoring of Natural Water Bodies under MINARS programme.***

Under the MINARS programme, there are 5 (five) stations, one for each of the five water bodies viz Umiam Lake, Umtrew River, Wards Lake, Thadlaskein Lake and Kyrhohkhla river.

The water quality of these water bodies was being monitored on quarterly basis since 1990. The analysis results obtained during 1994-1995 are presented in Table 2,3,4,5 & 6.

From the above-mentioned tables, it may be noted that River Umtrew and Thadlaskein Lake have a pristine status of water quality. River Kyrhuhkhla which flows through the coal mining areas of Jaintia Hills District shows less pH values which is indicative of water pollution due to Coal mining activities. Wards Lake in Shillong and Umiam Lake, which is not far from Shillong receive most of the waste water and solid waste generated in the City and as such the Water quality of these lakes shows the presence of high content of total and faecal coliforms, which is clear sign of organic pollution.

*(c) Analysis of Water Samples of other agencies.*

The Board analyses the water samples collected by it and those received from various Govt. and Semi-Govt organizations. During the year 1994-1995, the Board analysed 193 such water samples belonging to the following agencies:

(i) P.H.E. Deptt. Samples	-	82 Nos
(ii) Other Govt./Semi Govt. Organisation	-	45 Nos
(iii) Samples collected by the Board	-	28 Nos
(iv) Samples Collected Under MINARS programme-		20 Nos
(v) Samples collected & brought by Private individuals/groups	-	18 Nos.

As most of these water samples were received from the Public Health Engineering Department Govt. of Meghalaya, the Board possessed the information about the drinking water quality of various water sources in the State.

**6. PRESENT STATE OF ENVIRONMENTAL PROBLEM AND COUNTER MEASURES.**

Meghalaya is a hill State located in the North-Eastern region of the Country. It covers an area of about 22,429 sq.kms. and its population as per 1991 census is 17,74,778. Due to certain factors, the industrial development in the State has been slow and as such, the environmental pollution from industrial sources is not that significant. In the recent past, the State has been experiencing rapid population growth and fast Urbanization. Therefore, it is estimated that about 80% of the pollution may be attributed to indiscriminate discharge or disposal of domestic sewage, trade effluents, urban solid wastes, Bio-Medical Wastes, domestic fuel burning and vehicular exhaust emissions. However, exhaust emission from vehicles is a major contributor to air pollution since road transport is the only mean of transport in the State. The State is rich in mineral resources and the main minerals are coal and limestone which are found in almost the entire southern belt. Mining activities are mostly in private hands and coal and limestone are being exploited in an unscientific and unplanned manner without any measures for reclamation of the already mined areas. This has been causing severe Water pollution and environmental degradation.

As per information from the Directorate of Industries, Meghalaya there are 1,100 industrial units/establishments in the State. Many of these are small and tiny units which are non-polluting in nature. However, 250 of these are regarded as polluting units and one of them is a Cement Plant under Large-

Scale Industry Sector which also falls under the 17 category of highly-polluting industries. The others are medium and small scale Cement plants, lime calcinations plants, stone crushing units and auto workshop and servicing units. Most of the lime calcinations units are Coal fired traditional type which do not have even hood and chimney for discharge of smoke. So far, no cost effective pollution control system could be suggested for such units due to peculiar nature of the kiln structures.

The Board is regulating the discharge of effluents and air emissions from industries through the issuance of Consents under Water & Air Acts. While issuing Consents, conditions are being imposed regarding the effluent standards and also emission standards to which industries have to comply with. Conditions are also stipulated to install effluent treatment and/or air pollution systems whenever there is a necessity. The Officials of the Board are involved in periodical collection and analysis of samples for verification regarding compliance to Consent conditions. The industries are also instructed to ensure that pollution control systems, wherever necessary, are installed and commissioned within a stipulated time. In respect of new Projects, Consents to Establish are issued only after examining the suitability of the sites and scrutiny of the pollution control proposals. Besides, the Board is encouraging the industries to adopt cleaner production techniques based on re-cycle re-use and recover concepts.

The names of industries/firms which applied for Consent to Establish during the year 1994-1995 are as given at Annexure-V. Those industries which were granted Consent to Establish during the year are as indicated at Annexure-VI. The industries which applied for Consent to Operate and those which were granted the Consent to Operate are as mentioned at Annexure VII & VIII respectively. Further, the industries which were granted the Renewal of the Consent to Establish/operate are as indicated at Annexure-IX.

## **7. ENVIRONMENTAL RESEARCH**

During the year 1994-95, the Board did not take up any new study project due to financial limitations.

## **8. ENVIRONMENTAL TRAINING**

The Ministry of Environment and Forests, Govt of India Organised a number of training Programmes under World Bank aided Project. The Board's Official attended many of these trainings during the year. The list of the officials who attended these training Programmes is as appended at Annexure-X

## **9. ENVIRONMENTAL AWARENESS AND PUBLIC PARTICIPATION**

The Board Participated in various Public meetings, Seminars etc. organized by different Organisations for Environmental awareness in the State. The Board also took part in the State level Science Exhibition and propagated the message of Environmental protection through talks to the School Children and distribution of posters and pamphlets prepared on Environmental Themes to various Govt. Deptts, Schools and Colleges.

## **10. ENVIRONMENTAL STANDARDS INCLUDING THE TIME SCHEDULE FOR THEIR ENFORCEMENT.**

The Board adopts the Standards prescribed by the Central Pollution Control Board and Ministry of Environment and Forests, Govt. of India New Delhi. In Case, the Standards of the said organizations are not available, the standards prescribed by the Indian Standards Institutions are being followed. The Board maintain the enforcement Schedule prescribed by the Central pollution Control Board and Ministry of Environment and Forests Govt. of India, New Delhi in respect of 17 Category of Industries. It has its own enforcement schedule for the other types of industries which are specified at the time of granting of "Consent to Establish" and "Consent to Operate" Certificates.

## **11. PROSECUTION AND CONVICTIONS FOR ENVIRONMENTAL CONTROL**

No prosecutions were launched against any industry for non-Compliance of the Standards during the year 1994-1995.

### ***11.1 Closure of Industrial Polluting Unit.***

The Board did not issue closure notice to any industry during the year 1994-1995

## **12. FINANCE AND ACCOUNTS.**

The annual accounts and expenditure details of the Board for the financial year 1994-1995 are appended at Annexure-XI(A) and XI(B).

**ANNEXURE-I**

**STAFF POSITION OF THE MEGHALAYA STATE POLLUTION CONTROL BOARD  
AS ON 31<sup>ST</sup> MARCH,1995**

SL. NO.	ADMINISTRATIVE & ACCOUNTS STAFF	SANCTIONED STRENGTH	WORKING STRENGTH	VACANCY
1.	Administrative Officer	1	-	1
2.	Private Secretary to Chairman	1	-	1
3.	Scientist 'B'(Economics & Statistic)	1	-	1
4.	Legal Officer	1	-	1
5.	Senior Accountant	1	1	-
6.	Establishment officer	1	-	1
7.	Stenographer Grade II	1	-	1
8.	Statistical Assistant	1	-	1
9.	U.D.A	4	1	3
10.	L.D.A.	7	2	5
11.	L.D.A. Cum-Typist	5	2	3
12.	Typist	4	1	3
13.	Library Asstt.	1	-	1
14.	Driver	4	3	1
15.	Duftry	1	1	-
16.	Peon/Plumber/Mali	14	4	10
17.	Chowkidar	3	2	1
<b>TECHNICAL STAFF</b>				
1.	Environmental Engineer	2	1	1
2.	Asstt.Environmental Engr.	4	1	3
3.	Senior Draftman	1	-	1
4.	Junior Draftman	2	-	2
5.	Tracer	2	-	2
<b>SCIENTIFIC STAFF</b>				
1.	Chief Chemist	1	1	-
2.	Scientist "B"	3	2	1
3.	Senior Scientific Assistant	1	-	1
4.	Junior Scientific Asstt.	5	2	3
5.	Junior Laboratory Asstt.	2	-	2
6.	Store Keeper	1	-	1
7.	Sample Collector	5	1	4
8.	Laboratory Attendant (Peon)	2	2	-
	<b>TOTAL</b>	<b>82</b>	<b>27</b>	<b>55</b>

**Organisation Chart**



**LIST OF MEMBERS FOR THE PERIOD 1994-1995**

1. Chairman Meghalaya state Pollution Control Board, Shillong	Chairman
2. Chief Engineer Public Health Engineering, Meghalaya or his nominee	Member
3. Director General of Police, Meghalaya or his nominee	Member
4. Director of Industries, Meghalaya or his nominee	Member
5. Director of Health Services (Research, etc), Meghalaya or his nominee	Member
6. Director, Urban Affairs, Meghalaya or his nominee	Member
7. Chief Conservator of Forests (Social Forestry & Environment), Meghalaya or his nominee	Member
8. Chief Executive Member, Khasi Hills Autonomous District Council Or his nominee	Member
9. Chief Executive Member, Jaintia Hills Autonomous District Council Or his nominee	Member
10. Chief Executive Member, Garo Hills Autonomous District Council Or his nominee	Member
11. Chairman, Shillong Municipal Board or his nominee	Member
12. Managing Director, Meghalaya Industrial Development Corporation or his nominee	Member
13. Managing Director, Mineral Development Corporation or his nominee	Member
14. Managing Director, Meghalaya Forest Development Corporation, or his nominee	Member
15. Shri Friday Lyngdoh, Ex-MLA, Mawkhar, Shillong	Member
16. Shri Diverland Lyngdoh, Mawkyrwat, West Khasi Hills District	Member
17. Shri Winseng Sangma, MDC, Bajengdoba, East Garo Hills District	Member
18. Shri Robin Marak, Tura, West Garo Hills District	Member
19. Shri Herbert Suchiang, Ex-MLA, Risa Colony, Shillong	Member
20. Member Secretary, Meghalaya State Pollution Control Board	Member Secretary

**MEMBERS OF THE CONSENT COMMITTEE**

- |  |                  |
|--|------------------|
| 1. Chief Conservator of Forests, Social Forestry & Environment, Meghalaya, Shillong. | Chairman         |
| 2. Director, Forensic Science Laboratory, Meghalaya, Shillong or his nominee         | Member           |
| 3. Director, Mineral Resources, Meghalaya, Shillong or his nominee                   | Member           |
| 4. Director, Urban affairs, Meghalaya, Shillong or his Nominee                       | Member           |
| 5. Director, Soil Conservation, Meghalaya Shillong, or his nominee                   | Member           |
| 6. Zonal Officer, NEZO, CPCB, Shillong   | Member           |
| 7. Director of Industries, Meghalaya, Shillong or his nominee.                       | Member           |
| 8. Shri.H.G.D.Sanderson  | Member           |
| 9. Member Secretary, MSPCB, Shillong.  | Member Convener. |

**LIST OF INDUSTRIES WHICH HAVE APPLIED FOR CONSENT TO ESTABLISH  
DURING 1994-1995.**

Sl.No.	NAME AND ADDRESS OF INDUSTRY	TYPE OF INDUSTRY
1.	M/S EASTERN PETRO CHEMICALS PVT. LTD, Pyllun Village, Ri-Bhoi District	LPG Bottling Plant
2.	M/S MEGHALAYA ALLOYS PVT. LTD, BYRNIHAT, Ri-Bhoi District	Mini Steel Plant
3.	M/S O.Nongbri SLAUGHTER HOUSE, Pdengshnong, Cherrapunjee.	Slaughter House
4.	M/S MEGHALAYA MUSHROOM PVT. LTD. Oakland, road, Laitumkrah, Shillong.	Mushroom Production Unit.

**LIST OF INDUSTRIES GRANTED 'CONSENT TO ESTABLISH' DURING 1994-1995.**

Sl.No.	NAME AND ADDRESS OF INDUSTRY	TYPE OF INDUSTRY
1.	M/S MEGHALAYA LEATHER GOODS INDUSTRY, Mawlai, Shillong	Leather goods manufacturing
2.	M/S LAITKYNSEW LIME AND CHEMICALS, Laitkynsew, East Khasi Hills	Lime kiln.

ANNEXURE-VII**LIST OF INDUSTRIES WHICH APPLIED FOR 'CONSENT TO OPERATE'  
DURING 1994-1995.**

Sl.No.	NAME AND ADDRESS OF INDUSTRY	TYPE OF INDUSTRY
1.	M/S DEVORAH LIME INDUSTRY, Maw ki Shiem, Sohra East Khasi Hills District.	Lime Kiln
2.	M/S SHULLAI LIME INDUSTRY, Mawlong, East Khasi Hills	Lime Kiln.

ANNEXURE-VIII**LIST OF INDUSTRIES GRANTED 'CONSENT TO OPERATE' DURING 1994-1995**

SL.No.	NAME AND ADDRESS OF INDUSTRY	TYPE OF INDUSTRY
1.	M/S DEVORAH LIME INDUSTRY, MawkiSyiem Sohra.	Lime kiln.
2.	M/S MEGHA POLLYCON 9 POLTD, Byrnihat Industrial Area, Ri-Bhoi District.	MDPE/LLPE Water Storage tank Manufacturing Unit.
3.	M/S BLAH AND BLAH, Pynursla, East Khasi Hills	Lime Kiln
4.	M/S CHAWNTHU CEMENTS 9 POLTD, Lumshnong, Jaintia Hills District.	Clinker grinding unit.

**RENEWALS OF CONSENT ISSUED DURING 1994-1995**

Sl. No.	NAME AND ADDRESS OF INDUSTRY	TYPE OF INDUSTRY
1.	M/s Mawmluh Cherra Cements Ltd. Cherrapunjee, East Khasi Hills	Cement
2.	M/S Associates Beverages (P)Ltd., Byrnihat, Ri-Bhoi District	Soft Drink
3.	M/S Mawsyiem Lime Works, Nongthymmai, Umsning, Ri-Bhoi District	Lime Kiln
4.	MS. Jaintia Cements (P) Ltd., Sutnga, Jaintia Hills District	Cement
5.	M/S Komarrah Limestone Mining Co., Komarrah Ichamati, East Khasi Hills	Lime Stone Mine.
6.	Govt. Fruit Preservation Factory, Shillong East Khasi Hills.	Fruit Canning
7.	M/S Meghalaya Bamboo Chips Ltd., Nongchram, East Garo Hills District.	Bamboo Chips
8.	M/S Mawbyinna Tanning Industry, Mawlai, Shillong.	Tannery
9.	M/S Umiam Calcimates(P)Ltd, Barapani Industrial area, Ri-Bhoi District.	Lime Kiln.
10.	Bethesda Nursing Home, Kenches Trace, Shillong.	Nursing Home.

**TRAINING/WORKSHOPS/SEMINARS ATTENDED BY SCIENTIFIC/TECHNICAL STAFF  
DURING 1994 – 1995.**

<i>SL.NO.</i>	<i>NAME &amp; DESIGNATION</i>	<i>NAME &amp; TRAINING</i>	<i>PLACE OF TRAINING</i>	<i>PERIOD OF TRAINING</i>
1.	Shri. W.R.Kharkrang	National Course on use of NICNET for environmental research.	Bakoli, Alipour, Delhi	5 <sup>th</sup> to 9 <sup>th</sup> Dec.1994
2.	Shri Kunal Sen, Chairman.  Shri S.C.Katiyar, Chief Chemist	Course of Environmental Management	Hyderabad, Andhra Pradesh	9 <sup>th</sup> to 14 <sup>th</sup> Jan 1995
3.	Shri. J.H.Nengnong	Training in Environmental Management	Adelaide South Australia	February, 1995 for 5 months
4.	Ms. B.Nongbri, Scientist B	Training Course on Air Quality Monitoring	Nagpur, Maharashtra	20 <sup>th</sup> to 24 <sup>th</sup> March 1995.



ANNEXURE-XI (A)**RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR 1994-1995****RECEIPTS****Opening Balances of :**

• Cash in hand	:	4300.65	
• Cash at bank:			
In Savings bank Account			
With Indian Overseas Bank,			
Shillong,(3488)	:	110220.58	
Indian Overseas Bank,			
Shillong(6757)	:	2354406.03	
Indian Bank ,Shillong	:	285365.40	
Bank of India,			
Shillong	:	1511000.00	
State Bank of India, Laituumkhrah			
Shillong	:	683.29	
Vijaya Bank, Laitumkhrah, Shillong	:	15362.00	
Bank of Baroda, Shillong	:	122229.65	
• <b>In Fixed Deposit:</b>			
With Indian Overseas Bank,Shillong	:	1000000.00	
Bank of Baroda, Shillong	:	<u>300000.00</u>	57,03,567.60
• <b>Grant received from:</b>			
Ministry of Environment and Forests, Govt.	:	41660.00	
Of India,			
Department of Public Health Engineering,			
Govt. Of Meghalaya	:	<u>4225000.00</u>	42,66,660.00
Fees	:	275990.10	
• Interest on investments	:	262152.40	
• Miscellaneous Receipts	:	17332.00	
• Deposits	:	<u>53072.00</u>	<u>6,08,546.50</u>
<b>TOTAL</b>	<b>Rupees :</b>		<b><u>1,05,78,774.10</u></b>

*N.B: Receipts & Payments Accounts for the year 1994-1995 are unaudited.*

**RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR 1994-1995**  
**EXPENDITURE**

• Fixed Assets	:	32026.85	
• Other Assets	:		
Scientific Instruments and Office Appliances	:	342735.70	
Tools and Plants	:	<u>9482.00</u>	3,84,244.55
• <b>Revenue Expenditure:</b>			
Administration:			
Pay & Allowances to Officers and Staff			
Contribution	:	1205152.41	
• Leave Salary and Pension	:	2935.30	
• Contingent Expenditure	:	<u>200142.16</u>	14,08,229.87
• Board Laboratory			2,13,155.74
• Running and Maintenance of vehicles			86,507.08
• Consultancy fee			
• Repairs and maintenance			18,502.90
• Legal Charges			11,000.00
• Advances			16,014.00
• Deposits			36,404.00
• Miscellaneous			2,061.62
<b>CLOSING BALANCES OF:</b>			
• Cash in hand	:	3595.26	
• <b>Cash at Bank:</b>			
In Savings Bank Account	:		
With Indian Overseas Bank, Shillong(3488)	:	64997.55	
Indian Overseas bank, Shillong(6757)	:	2184383.83	
Indian Bank Shillong	:	299252.40	
Bank of India, Shillong	:	2586131.36	
State Bank of India, Laitumkhrah, Shillong	:	683.29	
Vijaya Bank, Laitumkhrah, Shillong	:	10297.00	
Bank of Baroda, Shillong	:	128313.65	
• <b>In Fixed Deposit Account:</b>			
With Indian Overseas Bank, Shillong	:	1000000.00	
Bank of Baroda, Shillong	:	300000.00	
State Bank of India, Shillong	:	<u>1825000.00</u>	84,02,654.34
<b>TOTAL Rupees :</b>			<u><b>1,05,78,774.10</b></u>

N.B: Receipts & Payments Accounts for the year 1994-1995 are unaudited.

**TABLE – 1**  
**WATER QUALITY DATA OF SOME OF THE MAJOR RIVERS, 1994-1995.**

PARAMETER S TESTED	NAME OF STATIONS			
	RIVER UMIAM	RIVER MYNTDU	RIVER JALNOH	RIVER UMSOHLANG
pH	6	7.4	6.6	6.0
Conductivity ( $\mu$ mho/cm)	23.00	21.00	17.0	66.0
Turbidity (N.T.U)	31.2	5.2	1.2	32.0
Cl (mg/l)	27.4	43.9	14.1	32.9
Total Hardness (mg/l)	Nil	Nil	Nil	10.0
Alkalinity mg/l	74.8	20.0	6.0	13.4
NO <sub>2</sub> (mg/l)	B.D.L	0.02	0.025	0.03
Fe (mg/l)	11.0	0.3	1.0	0.34
Bacteria Total Coliform ( MPN/100ml)	33	26	22	-

T.S	:	Total Solids
T.D.S	:	Total Dissolved Solids
NO <sub>2</sub> - N	:	Nitrite Nitrogen
SO <sub>4</sub>	:	Sulphate
PO <sub>4</sub>	:	Phosphate
NH <sub>3</sub> -N	:	Ammonia Nitrogen
K-N	:	Kjeldahl Nitrogen
Alk	:	Alkalinity
Cl	:	Chloride
Fe	:	Iron
D.O.	:	Dissolved Oxygen
B.O.D.	:	Biochemical Oxygen Demand
C.O.D.	:	Chemical Oxygen Demand
TC	:	Total Coliform
FC	:	Faecal Coliform

**TABLE – 2**  
**WATER QUALITY OF UMIAM LAKE DURING 1994-1995**

<b>SL. NO.</b>	<b>PARAMETERS</b>	<b>APRIL '94</b>	<b>JULY '94</b>	<b>NOV '94</b>	<b>MARCH '95</b>
1.	pH	7.4	7.5	7.5	7.3
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	78.0	76.0	109.4	135.6
3.	Turbidity (NTU)	2.4	10.0	11.2	6.8
4.	Total Dissolved Solids (mg/l)	55.0	55.0	87.5	108.5
5.	Chloride (mg/l)	20.1	22.0	12.4	17.8
6.	Hardness (mg/l)	18.0	14.0	26.0	22.0
7.	Alkalinity (mg / l)	19.5	25.3	25.3	27.0
8.	Sulphate (mg / l)	BDL	1.6	1.2	2.0
9.	Phosphate (mg/l)	0.03	0.025	BDL	BDL
10.	Nitrite (mg/l)	0.03	NIL	BDL	0.04
11.	Ammonical Nitrogen (mg/l)	0.2	0.4	0.4	2.8
12.	Kjeldahl Nitrogen (mg/l)	5.2	4.5	3.0	3.0
13.	Dissolved Oxygen (mg / l)	9.6	9.9	8.2	10.2
14.	Biochemical Oxygen Demand (mg / l)	4.7	5.5	12.2	12.5
15.	Chemical Oxygen Demand (mg / l)	7.6	10.6	15.3	15.7
16.	Total Coliform (MPN / 100 ml)	280	220	240	2400
17.	Faecal Coliform (MPN/100 ml)	110	94	100	1600

TABLE – 3

## WATER QUALITY OF UMTREW RIVER DURING THE YEAR 1994-1995

SL. NO.	PARAMETERS	APRIL '94	JULY '94	NOV '94	MARCH '95
1.	pH	7.6	7.0	7.3	7.4
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	45.0	40.0	91.6	105.2
3.	Turbidity (NTU)	10.0	16.0	4.4	28.0
4.	Total Dissolved Solids (mg/l)	40.0	30.0	73.3	84.2
5.	Chloride (mg/l)	40.0	30.0	73.3	84.2
6.	Hardness (mg/l)	16.0	8.0	18.0	10.0
7.	Alkalinity (mg / l)	34.1	19.5	19.5	23.4
8.	Sulphate (mg / l)	6.5	9.2	8.0	8.5
9.	Phosphate (mg/l)	BDL	BDL	BDL	BDL
10.	Nitrite (mg/l)	NIL	NIL	BDL	BDL
11.	Ammonical Nitrogen (mg/l)	0.9	0.8	0.25	1.8
12.	Kjeldahl Nitrogen (mg/l)	2.9	2.5	1.9	2.6
13.	Dissolved Oxygen (mg / l)	9.8	8.2	5.0	11.8
14.	Biochemical Oxygen Demand (mg / l)	4.2	1.5	4.6	6.0
15.	Chemical Oxygen Demand (mg / l)	7.6	3.8	5.8	7.4
16.	Total Coliform (MPN / 100 ml)	9	8	8	12
17.	Faecal Coliform (MPN/100 ml)	2	2	2	4

TABLE – 4

## WATER QUALITY OF WARDS LAKE DURING 1994-1995

SL. NO.	PARAMETERS	APRIL '94	JULY '94	NOV '94	MARCH '95
1.	pH	6.5	7.2	7.3	7.5
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	100	97.0	150.1	170.5
3.	Turbidity (NTU)	18.0	8.8	8.5	5.4
4.	Total Dissolved Solids (mg/l)	75.0	70	120.0	136.4
5.	Chloride (mg/l)	35.4	32.5	24.0	34.2
6.	Hardness (mg/l)	28.0	30	44.0	28.5
7.	Alkalinity (mg / l)	33.1	37.0	33.1	29.2
8.	Sulphate (mg / l)	5.2	3.2	4.0	2.5
9.	Phosphate (mg/l)	BDL	BDL	BDL	BDL
10.	Nitrite (mg/l)	NIL	NIL	BDL	BDL
11.	Ammonical Nitrogen (mg/l)	0.4	0.6	0.35	2.2
12.	Kjeldahl Nitrogen (mg/l)	4.0	3.0	3.0	3.5
13.	Dissolved Oxygen (mg / l)	9.8	11.6	10.4	10.0
14.	Biochemical Oxygen Demand (mg / l)	3.8	4.0	6.4	13.0
15.	Chemical Oxygen Demand (mg / l)	7.6	9.8	8.0	17.4
16.	Total Coliform (MPN / 100 ml)	140	170	180	2400
17.	Faecal Coliform (MPN/100 ml)	65	63	63	1400

TABLE – 5

## WATER QUALITY OF THADLASKEIN LAKE DURING 1994-1995

SL. NO.	PARAMETERS	APRIL '94	JULY '94	NOV '94	MARCH '95
1.	pH	7.4	7.0	7.2	7.3
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	38.0	36.0	75.0	77.5
3.	Turbidity (NTU)	11.2	8.4	5.4	4.4
4.	Total Dissolved Solids (mg/l)	30.0	26.0	60.2	62.0
5.	Chloride (mg/l)	20.0	24.8	22.5	19.3
6.	Hardness (mg/l)	15.0	14.0	12.0	15.6
7.	Alkalinity (mg / l)	13.6	7.8	11.7	-
8.	Sulphate (mg / l)	0	BDL	BDL	BDL
9.	Phosphate (mg/l)	BDL	BDL	BDL	1.6
10.	Nitrite (mg/l)	NIL	-	BDL	BDL
11.	Ammonical Nitrogen (mg/l)	1.1	1.8	1.9	1.0
12.	Kjeldahl Nitrogen (mg/l)	4.0	2.5	3.0	-
13.	Dissolved Oxygen (mg / l)	9.8	14.1	11.7	6.0
14.	Biochemical Oxygen Demand (mg / l)	3.4	2.4	3.4	7.8
15.	Chemical Oxygen Demand (mg / l)	7.6	7.6	5.0	0.7
16.	Total Coliform (MPN / 100 ml)	8	8	8	11
17.	Faecal Coliform (MPN/100 ml)	2	2	2	4

TABLE-6

## WATER QUALITY OF KYRHOKKLA RIVER DURING 1994-1995

SL. NO.	PARAMETERS	APRIL '94	JULY '94	NOV '94	MARCH '95
1.	pH	3.4	3.8	3.8	3.6
2.	Conductivity ( $\mu\text{mho}/\text{cm}^2$ )	450.0	180.0	224.8	225.0
3.	Turbidity (NTU)	9.2	9.2	6.8	2.4
4.	Total Dissolved Solids (mg/l)	165.0	135.0	180.0	180.5
5.	Chloride (mg/l)	20.5	44.0	13.4	15.8
6.	Hardness (mg/l)	20.0	10.0	9.0	11.5
7.	Acidity (mg / l)	18.0	15.0	40	50.0
8.	Sulphate (mg / l)	140.0	88.0	105.0	75.0
9.	Phosphate (mg/l)	BDL	BDL	BDL	BDL
10.	Nitrite (mg/l)	NiL	NiL	BDL	BDL
11.	Ammonical Nitrogen (mg/l)	0.4	0.14	0.4	0.2
12.	Kjeldahl Nitrogen (mg/l)	1.0	0.30	1.2	1.2
13.	Dissolved Oxygen (mg / l)	7.8	7.0	7.2	7.0
14.	Biochemical Oxygen Demand (mg / l)	2.8	1.3	4.4	9.8
15.	Chemical Oxygen Demand (mg / l)	7.6	5.0	5.5	11.5
16.	Total Coliform (MPN / 100 ml)	7	8	9	0
17.	Faecal Coliform (MPN/100 ml)	2	0	2	0



