



ANNUAL REPORT

2016-17



H.P. STATE POLLUTION CONTROL BOARD

HIM PARIVESH, PHASE-III, NEW SHIMLA

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CHAPTER -1

INTRODUCTION

The Himachal Pradesh State Pollution Control Board was constituted in the year 1974 under the provision of Water (Prevention and Control of Pollution) Act, 1974. Subsequently the implementation of the provision contained in Water (Prevention and Control of Pollution) Cess Act, 1977, Air (Prevention and Control of Pollution) Act, 1981 and Environmental Protection Act, 1986 in addition to Rules framed under these Acts were also entrusted to the State Board. The prime objective of all these Acts is maintaining, restoring and preserving the wholesomeness of quality of environment and prevention of hazards to human beings and terrestrial flora and fauna.

Himachal Pradesh State Pollution Control Board is a nodal agency in the administrative structure of the State Government for planning, coordination, prevention & control of pollution and so also protection of environment in the framework of environmental regulations. The State Board has always endeavoured to strike a rational balance between economic growth and environmental preservation. In the pursuit of attaining the objectives enshrined in the environmental legislations the State Board has followed the principles of sustainable development. Continuous efforts are being made by the board to expand its activities to fulfill the demands of emerging environmental concerns, challenges and new statutes.

The following legislative measures are significant and worth mentioning here vis-à-vis the functions and duties of the State Board.

- **Water (Prevention & Control of Pollution) Act, 1974:** The Parliament in the 25th year of the Republic promulgated this legislation in pursuance to Clause-1 of Article 252 of the Constitution of India, with the objective of prevention and control of water pollution and maintenance and restoration of wholesomeness of water. The H.P. State Pollution Control Board was constituted in 1974 under the provisions of this Act.
- **Water (Prevention & Control of Pollution) Cess Act, 1977:** This Act provides for levy of cess on the water consumed for specific purposes with a view to dissuade wasteful and indiscreet use of water.
- **Air (Prevention & Control of Pollution) Act, 1981:** On the analogy of the Water (Prevention & Control of Pollution) Act, 1974 the Union Government promulgated another identical legislation which was exclusively meant to deal with the problems of air quality and preservation and maintenance thereof.
- **Environment (Protection) Act, 1986:** In order to provide the existing legislation for control of water and air pollution more effectively and to remove the deficiency of these legislations, the Union Government enacted umbrella legislation in 37th Year of Republic. The prime objective of the legislation was to plug the existing statutory gaps whereby tremendous responsibilities by way of

functions have been entrusted to the State Board. The following prominent rules and notifications are significant in context to the role and functions of the H.P. State Pollution Control Board:

- 1) Manufacture, Storage and Import of Hazardous Chemical Rules, 1989.
- 2) The Noise Pollution (Regulation and Control) Rules, 2000.
- 3) The Ozone Depleting Substances (Regulation and Control) Rules, 2000.
- 4) The Batteries (Management & Handling) Rules, 2001.
- 5) The Hazardous and other Waste (Management & Transboundary Movement) Rules, 2016.
- 6) The Bio-medical Wastes Management Rules, 2016.
- 7) Solid Waste Management Rules, 2016.
- 8) The Plastic Waste Management Rules, 2016.
- 9) The E-waste (Management) Rules, 2016.
- 10) The Construction and Demolition Waste Management Rules, 2016.

1.1 OTHER AREAS/ACTS/RULES CONCERNING GENERAL PUBLIC:

The following Rules, which have bearing on, the state of the environment and health of the society are also in existence/enactments. Under these Rules, the H.P. State Pollution Control Board is not the only agency responsible for the implementation of these Rules but nevertheless these Rules and enactments are of great significance. They are as under:

- Public Liability Insurance Act, 1991.
- H.P. Non-Biodegradable Garbage (Control) Act, 1995.
- Motor Vehicle Act, 1988.

1.2 MANDATE OF THE STATE BOARD:

The mandate of the State Board has increased manifold since its constitution. The State Board has adopted a major shift in its policy from purely regulatory set-up to an interactive scientific organization by performing various functions under the domain of pollution control.

- Plan a comprehensive program for prevention, control or abatement of pollution of air, streams, rivers and wells in the state and to secure the execution thereof.
- Advise the state government on any matter concerning the prevention, control or abatement of water and air pollution.
- Collect and disseminate information related to water and air pollution and prevention, control or abatement thereof.
- Lay down or modify standards for quality of air, sewage and trade effluents.
- Inspect any pollution control equipment, sewage or trade effluents, works and plants and takes steps for the prevention.

- Provide technical assistance and guidance in problems related to water and air pollution and control thereof.
- To implement the provision of Environmental Impact Assessment (EIA) notification, 2006 for specified categories of development project listed in its schedule.
- Creating mass-awareness and training programs relating to prevention, control or abatement of environmental pollution.
- Encourage, conduct and participate in investigation and research relating to problems of water & air pollution and prevention, control or abatement.
- To perform such other functions as may be prescribed or as may, from time to time; be entrusted by the Central Board or the State Government.
- Advise the State Government with respect to the location of any industry the carrying of which is likely to pollute stream or well or cause air pollution.
- To make, vary or revoke any order: –
 - i) For the prevention, control or abatement of discharge of waste into the stream or wells.
 - ii) Requiring any person concerned to construct new systems for the disposal of sewage and trade effluents or to modify, alter or extend any such existing system or to adopt such remedial measures as are necessary to prevent, control or abate water pollution etc.
 - iii) To integrate environmental aspects into development planning/activity through spatial environmental planning.
 - iv) To perform such other functions as may be prescribed by the State/Central Governments from time to time.

1.3 ADMINISTRATIVE STRUCTURE:

The Himachal Pradesh State Pollution Control Board as per the provisions of Water Act, 1974 is headed by the Chairman. The executive head of the State Board is Member Secretary. The State Board has ten Regional Offices at Shimla, Parwanoo, Paonta Sahib, Baddi, Una, Rampur, Dharmshala, Chamba, Kullu and Bilaspur and two Sub Regional Offices located at Kala Amb and Nurpur to perform regulatory functions for prevention and control of pollution as prescribed under various environmental legislations. The State Board has one Central Laboratory located at Parwanoo and three Regional Laboratories at Paonta Sahib, Dharmshala and Sunder Nagar for providing scientific support to the regulatory functions. This administrative setup of the State Board caters to the diverse environmental matters in Himachal Pradesh. The Organizational Structure of the State Board is shown in *Annexure-I*.

CHAPTER - 2

CONSTITUTION OF STATE BOARD

The Government of Himachal Pradesh vide Notification No. STE-A (1)-4/2001- Loose File dated 31.12.2012 appointed Shri Kuldeep Singh Pathania as Chairman of the State Pollution Control Board and also nominated the official member of the H.P. State Pollution Control Board for a period of three years vide Notification No. STE-A (1)-4/2001 -I-L dated 03.07.2014 & also appointed non official members for a period of three years vide Notification No. STE-A (1)-4/2001-L dated 03.07.2014 & STE-A (1)-4/2001-Loose File dated 18.10.2016. Following are the members of the Board:-

2.1 OFFICIAL MEMBERS:

- | | |
|--|--------|
| 1) The Principal Secretary (Env. &ST) to the Govt. of H.P. | Member |
| 2) The Principal Secretary (Finance) to the Govt. of H.P. | Member |
| 3) The Principal Secretary (MPP & Power) Govt. of H.P. | Member |
| 4) The Principal Secretary (UD), Govt. of H.P | Member |
| 5) The Principal Secretary (Industries) Govt. of H.P. | Member |
| 6) The Managing Director (HRTC), Shimla. | Member |
| 7) The Chief Executive Officer (HIMURJA), Shimla | Member |

2.2 NON-OFFICIAL MEMBERS:

- | | |
|---|--------|
| 1) Sh. Deepak Sood, Vice President, M.C. Rampur, Distt. Shimla | Member |
| 2) Smt. Krishna Mahajan, President, M.C. Nurpur, Distt. Kangra. | Member |
| 3) Sh. Amarjot Singh Bedi, President, M.C. Una, Distt. Una, H.P | Member |
| 4) Sh. Ishwar Dass Choowaru, Village, Diswani, P.O. Kaloti, Tehsil- Chirgaon, Distt. Shimla, H.P. | Member |
| 5) Sh. Arvind Gupta, Shobha House, Solan, H.P. | Member |
| 6) Sh. Brij Mohan Soni, VPO Nadaun, Distt. Hamirpur, H.P. | Member |
| 7) Sh. Munish Sharma, Ex-Vice President, M.C. Kullu, H.P
(Special Invitee) | Member |

CHAPTER - 3

MEETINGS OF THE BOARD

The following major decisions were taken by the State Board in its 75th& 76th meetings and in the meetings of the Sub Committee on Service Matters during the year 2016-2017:

- One post of Senior Environmental Engineer upgraded to the post of Principal Senior Environmental Engineer in the pay band of Rs. 37,400-67,000/- + GP Rs. 8,900/- as a special measure to Sh. D.K. Sharma till his retirement by the Service Committee in its 19th meeting held on 06.05.2016. The committee has also created 01 post of Environmental Engineer, 03 posts of Assistant Environmental Engineer and 04 posts of Junior Environmental Engineer.
- One post of Scientific Officer, One Junior Scientific Officer, One Laboratory Assistant, One Data Entry Operator, One post of Peon and one post of Helper has been created by the Service Committee in its 20th meeting held on 10.01.2017 for the newly established Regional Laboratory at Shimla. All these posts will be filled up on contract basis except peon and helper. The posts of peon & helper will be filled up on daily base basis.
- The post of Law Officer as Senior Law Officer as a measure personal to the present incumbent in his present pay scale has been redesignated by the Service Committee.
- The Service Committee has approved up-gradation of the post of System Officer to the post of System Manager.
- The Service Committee has regularised the services of employees engaged in EMPs of various hydroelectric projects / CPCB funded project who were appointed after following the due recruitment process against vacant posts on establishment of the State Board in the light of order passed by the Hon'ble Administrative Tribunal.
- Ad-hoc Services of Sh. Shashi Shekhar as Environmental Planner regularized w.e.f. 01.10.2008 instead of 14.10.2013.
- Services of 09 contractual appointees of the State Board were regularized after completion of five years service as per instructions of the H.P. Govt.
- Services of 03 daily wages workers of the State Board were regularized after completion of seven years service as per instructions of the H.P. Govt.

CHAPTER - 4

STATUS OF AMBIENT AIR & RIVER WATER QUALITY IN HIMACHAL PRADESH

AMBIENT AIR QUALITY MONITORING:

The monitoring of Ambient Air Quality was started in 1986-87 under the **National Ambient Air Quality Monitoring Programme (NAMP)** with the objective to find the current status of pollution and to study the trends as a result of increasing industrialization. The general objectives of the programme are:

1. To evaluate the general air quality conditions in the cities and to provide the basis for analyzing long term trends of pollution concentrations.
2. To provide the data for subsequent development of air quality standards and pollution prevention and control programme for the cities.

The Respirable Suspended Particulate Matter (RSPM) is monitored with the help of Respirable Dust Sampler on the basis of three days per station per week for 24 hours at 12 Towns/Cities covering 26 nos. of locations in the State.

National ambient air quality standards (NAAQS) as notified in 18th November 2009 are given in Table-I

Sr. No.	Pollutant	Time Weighted Average	Concentration in Ambient air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (Notified by Central Govt.)	Method of Measurement
1	Sulphur Dioxide	Annual*	50 µg/m ³	20 µg/m ³	-Improved West and Gaeke -Ultraviolet fluorescence
		24hours**	80 µg/m ³	80 µg/m ³	
2	Nitrogen Dioxide	Annual*	40 µg/m ³	30 µg/m ³	-Modified Jacob and Hochheiser (Na-Arsenite) -Chemiluminescence
		24hours**	80 µg/m ³	80 µg/m ³	
3	Particulate Matter (PM ₁₀) (size less than 10 micron)	Annual*	60 µg/m ³	60 µg/m ³	-Gravimetric -TOEM -Beta attenuation
		24hours**	100 µg/m ³	100 µg/m ³	
4	Particulate Matter (PM _{2.5}) (size less than 2.5 micron)	Annual*	40 µg/m ³	40 µg/m ³	-Gravimetric -TOEM -Beta attenuation
		24hours**	60 µg/m ³	60 µg/m ³	
5	Ozone (O ₃)	8 hours**	100 µg/m ³	100 µg/m ³	-UV photometric -Chemiluminescence -Chemical method

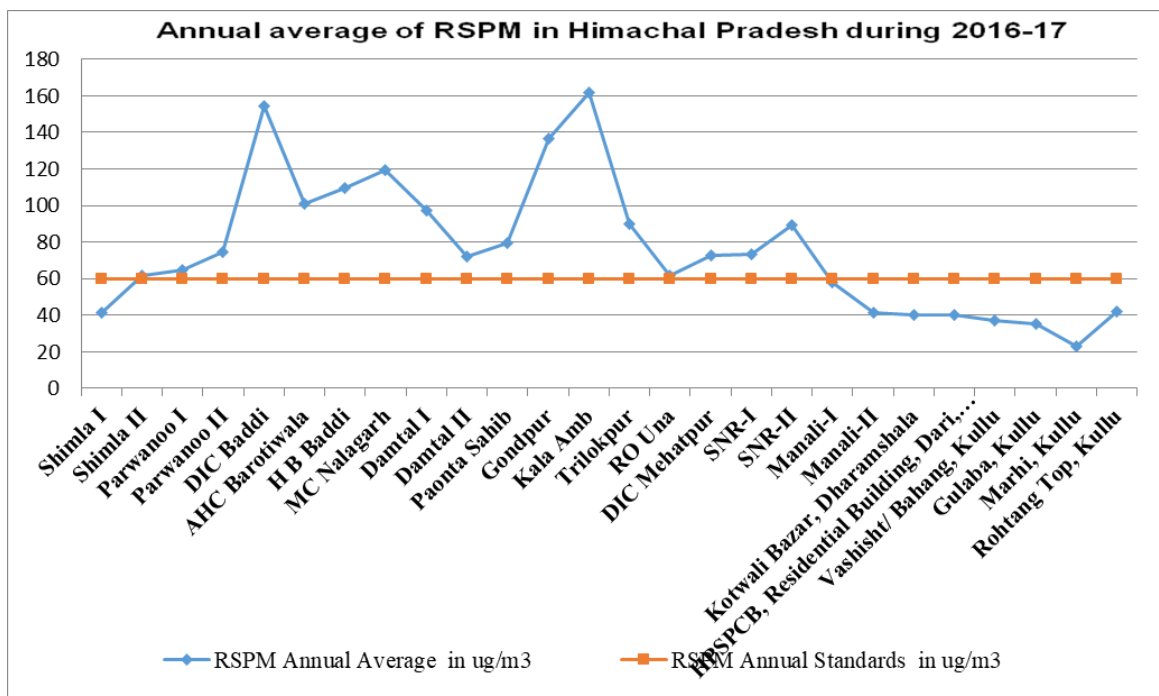
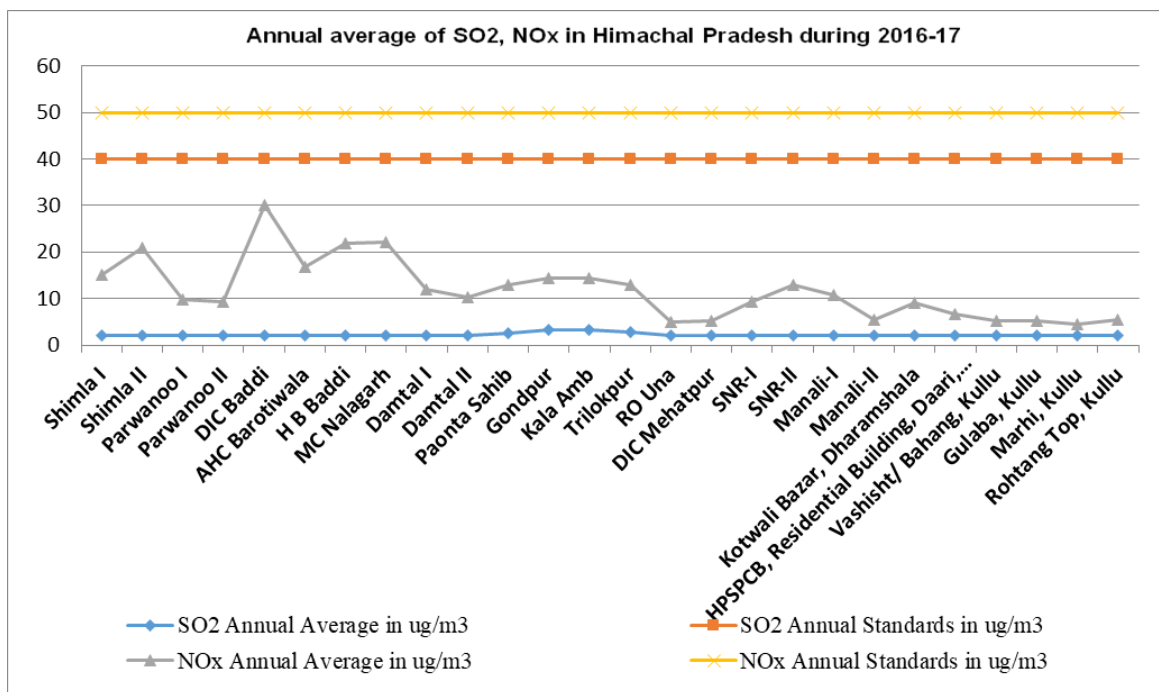
6	Lead (Pb)	Annual*	0.50 µg/m ³	0.50 µg/m ³	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
		24hours**	1.0 µg/m ³	1.0 µg/m ³	
7	Carbon Monoxide (CO)	8 hours	2.0 mg/m ³	2.0 mg/m ³	-Non Dispersive Infra Red (NDIR) Spectroscopy
		1 hour	4.0 mg/m ³	4.0 mg/m ³	
8	Ammonia (NH ₃)	Annual*	100 µg/m ³	100 µg/m ³	-Chemiluminescence -Indophenol blue method
		24hours**	400 µg/m ³	400 µg/m ³	
9	Benzene (C ₆ H ₆)	Annual*	5.0 µg/m ³	5.0 µg/m ³	-Gas Chromatography based continuous analyzer -Adsorption and desorption followed By GC analysis
10	Benzo(a) Pyrene (BaP)- Particulate phase only	Annual*	1.0 ng/m ³	1.0 ng/m ³	-Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As)	Annual*	6.0 ng/m ³	6.0 ng/m ³	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni)	Annual*	20.0 ng/m ³	20.0 ng/m ³	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum of 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be compiled with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

(A) AMBIENT AIR QUALITY STATUS IN HIMACHAL PRADESH

Ambient air quality is being monitored in 12 towns/cities at Shimla, Parwanoo, Damtal, Paonta Sahib, Kala Amb, Baddi, Nalagarh, Sunder Nagar, Manali, Una, Dharamshala, Kullu & Rohtang area under National Ambient Air Quality Monitoring Program. Air quality standards fixed for 24 hour average is 100 µg/m³ for RSPM and 80 µg/m³ for SO₂ & NO₂ and annual average standard is 60 µg/m³ for RSPM, 50 µg/m³ for SO₂ & 40 µg/m³ for NO₂. The data collected of all the stations for the year 2016-17 scrutinized for the annual average and peak values for 26 locations and trends of annual average of SO₂, NO₂ and RSPM are shown below:



CONCLUSION:

Annual average values of SO₂ and NO_x at all the NAMP stations were observed well below the permissible limit for the annual average. The peak value of SO₂ was observed as high as 19.0 µg/m³ at Tekka Bench, Shimla NAMP station and peak value of NO_x was observed 78.4 µg/m³ at Housing Board, Baddi NAMP Station.

The annual average values of RSPM at NAMP Station Tekka Bench Shimla, at both the NAMP stations at Manali & Dharamshala and at NAMP Stations Vashisht/Bahang, Gulaba, Marhi and Rohtang Top in Kullu District were observed well below the permissible limits for the annual average. While for other station at NAMP Station Bus Stand Shimla and at both the NAMP Stations at Parwanoo, Baddi,

Damtal, Paonta Sahib, Kala Amb, Una and Sunder Nagar was observed above the permissible limit for the annual average.

At the NAMP stations at Tekka Bench Shimla, NAMP Station-I & II Parwanoo, DIC Baddi, MC Nalagarh, H.B. Baddi, Station-I Damtal, Kala Amb, Trilokpur, Station-I & II Manali and Station-I Dharamshala in comparison to previous year's data, there is increase in the level of RSPM has been observed, however at NAMP stations Bus Stand Shimla, AHC Barotiwala, Station-II Damtal, Paonta Sahib, Gondpur, RO Una. DIC Mehatpur, Station-I & II Sunder Nagar and Station-II Dharamshala, there is decrease in the level of RSPM has been observed in comparison to previous year's data.

Annual average of SO₂ and NO_x of all the NAMP Stations, H.P for the year 2016-17.

Table-I

Stations	SO ₂ Annual Average	NO _x Annual Average
Shimla I	2.0	15.0
Shimla II	2.0	20.9
Parwanoo I	2.0	9.9
Parwanoo II	2.0	9.3
DIC Baddi	2.0	30.2
AHC Barotiwala	2.0	16.8
H B Baddi	2.0	21.9
MC Nalagarh	2.0	22.0
Damtal I	2.0	12.0
Damtal II	2.0	10.2
Paonta Sahib	2.6	12.9
Gondpur	3.2	14.4
Kala Amb	3.3	14.5
Trilokpur	2.7	13.0
RO Una	2.1	5.0
DIC Mehatpur	2.1	5.3
SNR-I	2.0	9.4
SNR-II	2.0	12.9
Manali-I	2.0	10.8
Manali-II	2.0	5.4
Kotwali Bazar, Dharamshala	2.0	9.0
HPSPCB, Residential Building, Daari, Dharamshala	2.0	6.7
Vashisht/ Bahang, Kullu	2.0	5.3
Gulaba, Kullu	2.0	5.1
Marhi, Kullu	2.0	4.6
Rohtang Top, Kullu	2.0	5.5

Annual average of RSPM of all the NAMP Stations, H.P for the year 2016-17.

Table-II

Stations	RSPM Annual Average
Shimla I	41.5
Shimla II	61.9
Parwanoo I	64.6
Parwanoo II	74.5
DIC Baddi	154.6
AHC Barotiwala	101.0
H B Baddi	109.8
MC Nalagarh	119.7
Damtal I	97.3
Damtal II	72.1
Paonta Sahib	79.6
Gondpur	136.4
Kala Amb	161.6
Trilokpur	90.2
RO Una	61.8
DIC Mehatpur	72.7
SNR-I	73.2
SNR-II	89.6
Manali-I	58.0
Manali-II	41.5
Kotwali Bazar, Dharamshala	40.3
HPSPCB, Residential Building, Dari, Dharamshala	40.4
Vashisht/ Bahang, Kullu	37.3
Gulaba, Kullu	35.0
Marhi, Kullu	22.9
Rohtang Top, Kullu	42.3

STATUS OF RIVER WATER QUALITY:

Assessment of the status of water quality of the natural water bodies is one of the most important activities of the Pollution Control Board. Water quality data not only help to ascertain the nature and extent of the requirement for pollution control measures but also indicates its impact on water quality. The Central Pollution Control Board under the National Programme Monitoring of National Aquatic Resources (MINARS) is sponsoring the water quality monitoring of major rivers of the State. The monitoring has been carried out on monthly basis. In all 290 points have been selected on major rivers Satluj, Beas, Ravi, Yamuna, Parvati, Sirsa, Markanda & Sukhna and their tributaries in the State.

The Samples are being analyzed for physico-chemical and bacteriological contents. The results are shown below:

TABLE B: PRIMARY WATER QUALITY CRITERIA		
Designated Best Use	Class of Water	Criteria
Drinking water source without conventional treatment but after disinfection.	A	1. Total Coliform organism MPN/100ml. shall be 50 or less. 2. pH between 6.5 and 8.5. 3. Dissolved Oxygen 6 mg/l or more. 4. Biochemical Oxygen Demand 5 days 20°C 2 mg/l or less.
Outdoor bathing (Organized)	B	1. Total Coliform organism MPN/100ml. shall be 500 or less. 2. pH between 6.5 and 8.5. 3. Dissolved Oxygen 5 mg/l or more. 4. Biochemical Oxygen Demand 5 days 20°C 3 mg/l or less.
Drinking Water Source after conventional treatment and disinfection	C	1. Total Coliform organism MPN/100ml. shall be 5000 or less. 2. pH between 6 and 9. 3. Dissolved Oxygen 4 mg/l or more. 4. Biochemical Oxygen Demand 5 days 20°C 3 mg/l or less.
Propagation of Wild Life & Fisheries	D	1. pH between 6.5 and 8.5. 2. Dissolved Oxygen 4 mg/l or more. 3. Free Ammonia (as N) 1.2 mg/l or less.
Irrigation, Industrial Cooling Controlled Waste Disposal	E	1. pH between 6.5 and 8.5. 2. Electrical Conductivity at 25°C micro mhos /cm max. 2250. 3. Sodium absorption ratio Max. 26. 4. Boron Max 2 mg/l.

If three parameters falls in category 'A' but fourth parameter falls in category C. The overall quality of river will fall under Class 'C'.

A: WATER QUALITY OF MAJOR RIVERS IN HIMACHAL PARDESH MONITORED UNDER MINARS PROGRAMME DURING 2016-17

Results of Major Rivers (MINARS) Points from April 2016 to March 2017:

Name of location	Parameters	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
River Pabbar U/s Dhambari	pH	7.35	7.24	8.03	6.76	7.34	7.51	7.70	8.24	6.76	Sample not received	6.94	7.95
	D.O. mg/l	9.1	9.5	8.6	8.9	8.5	8.6	8.8	8.8	8.4		8.7	8.5
	BOD mg/l	0.1	0.1	0.6	0.2	0.8	1.4	0.2	0.2	0.1		4.0	2.0
	TC	5.6	10	8.2	9	4.0	26	21	27	24		6	10.0
River Pabbar U/s Rohru	pH	7.56	7.74	7.93	6.52	7.19	7.20	7.45	8.14	6.88	Sample not received	7.02	7.69
	D.O. mg/l	8.8	9.0	8.5	9.2	8.6	8.3	8.7	8.7	8.6		8.4	8.2
	BOD mg/l	0.1	0.1	0.4	0.4	1.2	1.0	0.1	0.2	0.1		2.8	1.0
	TC	12	8.1	6.1	12	6.0	22	21	21	26		4	8.1
River Pabbar at Snail D/s of TRT of Swara Kuddu	pH	7.58	8.09	7.63	6.97	7.05	6.85	7.56	7.39	7.08	Sample not received	7.30	7.40
	D.O. mg/l	8.8	8.7	9.0	9.5	8.8	9.1	8.6	8.6	8.9		8.8	8.4
	BOD mg/l	0.1	0.1	1.0	0.1	1.8	1.8	0.1	0.1	0.1		3.0	0.8
	TC	15	6.1	8.1	12	3.7	32	10	17	17		<1.8	6.0
River Tons at H.P. Boundary	pH	7.53	7.66	7.79	6.27	6.85	6.89	7.35	7.50	7.18	Sample not received	7.40	7.29
	D.O. mg/l	8.8	8.8	8.9	9.4	8.8	8.9	8.9	8.7	8.8		8.9	9.2
	BOD mg/l	0.1	0.1	0.4	0.2	1.2	0.8	0.1	0.1	0.1		2.4	0.8
	TC	6.1	14	12	15	6.1	12	14	26	25		4.0	4
Ashwani khad U/s Yashwant Nagar	pH	8.53	8.08	8.56	8.09	7.88	7.71	8.26	8.21	7.60	Sample not received	Sample not received	8.24
	D.O. mg/l	8.0	8.4	8.0	7.6	7.8	7.6	8.0	7.5	7.4			7.8
	BOD mg/l	0.8	0.3	0.2	0.1	1.0	1.0	0.2	2.0	1.0			2.4
	TC	21	14	9.3	25	6.1	12	32	38.0	31			20
Giri river D/s Yashwant Nagar	pH	8.00	8.18	8.35	7.92	7.79	8.23	8.30	8.26	7.86	Sample not received	Sample not received	8.46
	D.O. mg/l	8.4	8.6	8.1	7.8	8.2	7.9	8.1	8.0	7.9			7.6

River Sukhna at Parwano	BOD mg/l	0.4	0.1	0.3	0.4	1.2	1.4	0.2	3.0	1.8	Sample not received	Sample not received	2.0
	TC	17	11	6.8	14	10	10	24	40.0	26			17
	pH	8.07	8.11	8.79	7.05	7.03	7.39	7.81	8.22	7.84			7.82
	D.O. mg/l	2.5	3.0	2.5	2.1	2.6	2.4	2.6	2.8	3.0			3.1
	BOD mg/l	14	4.4	3.6	10.0	8.0	12.0	6.0	5.8	6.0			10.0
TC	>1600	540	220	350	220	170	920	1600	220	170			
Lift Nala D/s MSW Processing Site, Shimla	pH	7.75	8.38	8.11	6.99	7.31	7.09	6.83	7.45	7.12	6.84	6.48	7.21
	D.O. mg/l	6.5	8.4	4.0	4.7	4.4	4.3	4.8	4.5	4.1	6.2	4.2	3.2
	BOD mg/l	8.0	3.4	10.0	2.8	4.4	18	2.6	3.6	4.0	16.0	6.0	16.0
	TC	22	40	220	84	70	84	47	58	94	120	26	350
River Sirsa U/s Sitomajri Nallah	pH	8.09	8.22	7.21	7.19	7.89	7.31	7.27	8.24	7.94	7.52	7.24	7.40
	D.O. mg/l	6.1	5.5	6.9	5.2	7.6	6.1	7.8	7.2	6.6	5.8	6.6	6.2
	BOD mg/l	0.8	3.0	0.4	1.0	1.1	1.6	2.0	1.8	2.0	1.2	8	2.2
	TC	84	38	24	31	47	94	24	39	40	20	21	25
River Sirsa D/s Nalagarh Bridge	pH	8.18	7.78	7.61	7.28	7.43	8.26	7.97	8.49	8.19	7.73	6.20	7.48
	D.O. mg/l	5.3	4.1	5.5	5.8	6.6	5.5	6.8	8.5	5.9	5.8	8.6	6.7
	BOD mg/l	3.2	3.2	2.2	1.8	2.8	2.0	2.8	2.8	3.0	8.0	16.0	8.0
	TC	70	33	48	38	94	120	47	47	63	130	58	63
River Sirsa D/s Nalagarh Town	pH	8.51	7.79	7.58	7.36	7.32	8.23	8.32	8.51	8.09	7.76	7.56	7.72
	D.O. mg/l	5.3	4.3	5.7	5.1	6.9	5.8	5.8	8.8	5.1	5.1	8.2	7.0
	BOD mg/l	3.0	4.0	2.8	3.4	8.0	2.4	3.0	3.0	2.0	6.0	12.0	6.4
	TC	94	47	32	24	140	210	63	43	70	58	40	58
IPH Water Intake point below MSW dump site at Salogra	pH	8.55	8.40	7.42	7.81	7.95	8.36	8.31	8.24	8.15	Sample not received	Sample not received	8.92
	D.O. mg/l	8.8	9	8.9	8.6	8.6	8.8	8.8	9.0	8.5			8.6
	BOD mg/l	0.2	0.1	0.1	0.2	0.2	0.4	0.1	0.8	0.1			0.4
	TC	12	3.6	1.8	12	3.7	8.1	5.5	26	14			2
River Yamuna U/s Paonta Sahib	pH	7.98	7.73	7.56	7.62	8.18	7.94	8.15	7.89	8.00	7.93	7.28	8.2
	DO	7.8	8.4	7.5	6.8	6.7	7.2	7.8	7.9	6.8	6.9	7.8	7.7
	BOD	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.1
	TC	25.0	24.0	24.0	26.0	25.0	22.0	21.0	20.0	24.0	20.0	15.0	10.0

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River Yamuna D/s Paonta Sahib	pH	7.73	8.03	7.62	7.65	8.08	7.8	8.28	8.03	7.89	7.98	7.98	8.08
	DO	7.5	7.9	7.3	6.2	6.3	6.7	6.9	7.4	6.2	6.7	7.6	7.5
	BOD	0.4	0.2	0.2	0.4	0.4	0.3	0.6	0.3	0.2	0.4	0.2	0.2
	TC	27.0	26.0	27.0	27.0	27.0	25.0	26.0	25.0	31.0	24.0	20.0	24.0
River Bata U/s Kala Amb	pH	7.95	8.05	7.56	7.54	8.1	7.65	8.10	8.15	7.66	8.00	8.04	8.00
	DO	7.8	8.1	6.8	6.6	7.0	6.8	7.4	7.6	7	7.5	7.8	7.9
	BOD	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
	TC	17.0	20.0	21.0	22.0	21.0	15.0	17.0	14.0	14.0	12.0	14.0	10.0
River Bata at D/s of Kala Amb	pH	7.94	8.08	7.50	7.63	8.15	7.8	8.3	7.61	7.74	7.9	8.3	8.11
	DO	7.5	8.1	6.6	6.2	6.5	6.4	7.7	7.5	6.5	6.8	7.7	7.7
	BOD	0.2	0.2	0.2	0.3	0.3	0.2	0.4	0.2	0.2	0.3	0.2	0.1
	TC	20.0	22.0	20.0	24.0	25.0	20.0	17.0	15.0	15.0	15.0	12.0	10.0
River markand at Paonta Sahib	pH	7.24	7.82	7.75	8.07	8.01	7.76	8	7.63	7.53	7.46	8.19	8.25
	DO	7.3	7.1	7.2	6.4	6.5	6.8	7.4	7.3	7.03	7.5	7.9	7.6
	BOD	0.2	0.4	0.2	0.4	0.4	0.3	0.5	0.3	0.2	0.2	0.3	0.2
	TC	2.7	33.0	31.0	33.0	34.0	33.0	26.0	20.0	20.0	25.0	24.0	25.0
River Markand a U/s Kala Amb	pH	8.36	8.18	7.98	8.02	7.96	7.88	8.01	7.8	7.03	8.07	7.7	7.8
	DO	7.4	8.2	7	6.6	7.7	6.5	7.1	7.6	8.2	7.4	7.7	7.4
	BOD	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2
	TC	26.0	27.0	26.0	27.0	26.0	25.0	25.0	26.0	15.0	31.0	31.0	21.0
River Markand a D/s Kala amb	pH	7.75	8.22	7.95	8.1	8.02	8.05	8.13	7.36	7.86	7.98	7.91	8.2
	DO	7.3	7.8	6.8	6.2	7.2	6.3	8.4	7.3	8	7.3	7.6	7.2
	BOD	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3
	TC	27.0	31.0	33.0	31.0	33.0	39.0	27.0	33.0	25.0	39.0	40.0	79.0
River Giri U/s of CCI Mines	pH	8.28	8.28	8.01	7.93	8.2	8.27	8.07	7.56	7.56	7.6	8.17	8.15
	DO	7.4	8.4	7.6	6.8	7.5	7.3	7.9	8.0	9.2	7.8	8.1	7.3
	BOD	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.1	0.2	0.1	0.1
	TC	17.0	17.0	17.0	14.0	17.0	13.0	17.0	<1.8	<1.8	12.0	10.0	10.0
River Giri D/s of Sataun	pH	7.88	7.89	8.00	8.06	8.26	7.73	8.01	7.95	7.6	7.67	8.32	8.21
	DO	7.1	8.2	7.2	6.5	7.0	7.1	6.8	7.8	8.8	7.5	7.8	7.1
	BOD	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.1	0.2	0.2	0.1

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	TC	17.0	17.0	17.0	14.0	15.0	15.0	21.0	<1.8	<1.8	15.0	14.0	15.0
Renuka Lake	pH	8.16	8.15	8.05	8.25	8.18	8.03	8.21	7.21	7.07	7.18	7.44	7.6
	DO	6.5	5.9	5.7	6.6	6.4	6.7	6.9	4.9	6.4	5.3	6.5	6.6
	BOD	1.2	2.0	2	1.2	1	1	1.8	2.2	1.8	2.6	2	1.8
	TC	46.0	49.0	49.0	40.0	43.0	41.0	41.0	49.0	47.0	47.0	41.0	47.0
U/S Slapper, River Satluj	pH	7.47	7.67	7.66	7.71	7.69	6.85	7.74	6.59	8.21	7.94	7.99	7.79
	DO	9.7	9.8	9.0	8.7	8.9	8.0	8.9	8.8	9.1	8.9	8.8	8.9
	BOD	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	210	280	240	140	170	140	240	130	110	170	120	180
D/S Slapper, Satluj River after Conf. with River Beas	pH	7.76	7.76	7.72	7.88	7.58	7.05	7.85	7.57	7.6	7.98	7.93	7.8
	DO	9.4	9.7	9.5	8.7	8.9	8.6	8.9	8.5	9.0	8.9	9.0	9.0
	BOD	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.1	0.2	0.1	0.1
	TC	350	350	350	170	350	210	350	170	140	180	170	240
Exit of Dehar Power House, Beas River	pH	7.83	7.7	7.63	7.89	7.15	7.21	7.84	6.64	7.35	8.05	7.9	7.82
	DO	8.7	8.5	9.2	8.9	8.8	8.0	9.1	8.7	8.8	8.3	9.0	9.3
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
	TC	280	280	280	220	280	170	280	140	130	180	140	220
D/s Bilaspur at Govindsa gar	pH	7.8	7.71	7.56	7.87	7.69	7.24	7.84	6.37	7.16	7.92	7.98	7.95
	DO	8.9	9.9	8.5	8.9	8.8	8.5	8.8	8.3	8.8	8.2	8.9	8.5
	BOD	0.4	0.4	0.2	0.4	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.2
	TC	920	1600	540	430	920	430	540	280	350	540	430	540
U/s Mandi, Beas River)	pH	7.66	7.79	7.26	7.63	7.43	7.79	7.2	7.3	7.59	7.5	7.78	7.88
	DO	7.9	7.6	8.3	8.7	9.3	8.5	9.0	9.5	10.8	10.4	10.5	10.0
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	210	210	170	110	140	130	180	94	94	110	110	130
D/s Mandi, Beas River	pH	7.72	7.72	7.17	7.55	7.21	7.62	7.27	7.43	8.16	8.18	7.82	7.58
	DO	7.5	8.4	8.4	8.3	9.1	9.5	9.0	10.9	10.6	9.2	10.9	10.6
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2
	TC	350	350	280	170	350	540	350	130	170	170	220	170

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Rewalsar Lake	pH	7.18	7.36	7.09	7.06	6.48	7.48	7.74	6.56	7.84	7.15	8.05	7.66
	DO	3.6	3.8	6.3	6.4	5.5	7.0	4.0	6.1	7.2	6.8	5.1	9.2
	BOD	6.0	9.0	11.0	11.5	0.5	2.0	8.0	12.0	22.0	22.0	13.0	20.0
	TC	540	540	1600	920	1600	920	1600	920	1600	920	1600	1600
D/s Mandi, Suketi Khudd (2607)	pH	7.89	7.58	7.64	7.59	7.06	7.55	7.41	7.49	7.51	7.56	8.08	7.78
	DO	8.1	7.2	6.7	7.4	7.0	7.3	8.4	10.0	10.8	9.3	9.4	9.9
	BOD	0.1	0.3	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2
	TC	540	920	920	280	540	350	920	350	280	280	430	280
R.Beas, U/s Pandoh Dam	pH	7.76	8.13	6.82	7.71	6.46	8.02	7.21	7.26	8.26	7.92	7.67	7.94
	DO	7.1	9.1	8.9	9.8	9.9	9.5	8.9	10.0	10.5	9.4	10.1	10.0
	BOD	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	280	170	210	150	130	120	280	110	170	130	120	130
R.Beas, D/s Pandoh Dam	pH	7.79	7.72	6.87	7.7	6.50	7.83	7.16	7.07	8.34	8.16	7.75	7.89
	DO	7.7	8.2	8.1	7.8	8.8	9.0	8.6	10.9	10.3	10.8	10.7	10.5
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	240	240	280	220	170	220	240	140	180	140	150	140
R.Beas, D/s Aut	pH	7.71	7.98	7.17	7.81	7.36	7.96	6.65	7.94	6.91	7.0	7.48	8.02
	DO	8.0	8.7	9.1	9.5	7.4	8.0	8.9	9.0	7.9	8.7	8.8	8.9
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	210	280	170	130	180	130	180	130	79	170	130	220
R.Sainj, D/s Largi	pH	7.75	7.88	7.15	7.62	7.53	7.91	6.79	8.28	6.7	7.01	7.58	7.83
	DO	8.2	8.9	8.3	9.8	7.0	8.1	8.8	8.8	7.7	8.6	8.9	9.0
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	240	240	220	140	220	150	140	170	70	140	210	180
River Parvati, U/s Manikaran	pH	6.72	7.70	6.78	7.26	7.32	6.4	7.89	8.16	7.41	6.69	7.56	7.88
	DO	9.1	8.8	8.2	10.2	7.9	8.9	8.9	9.3	10.3	8.9	9.0	9.2
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	120	110	130	94	94	110	63	63	43	63	110	94
River Parvati, D/s	pH	7.11	7.75	6.86	7.57	7.61	6.83	7.64	8.01	7.06	6.66	7.49	6.45
	DO	9.1	8.7	8.2	10.2	7.9	8.9	8.9	9.2	10.2	8.9	8.9	9.1

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Manikaran	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	170	170	210	120	130	140	94	79	63	94	140	130
River Beas, U/s Manali	pH	7.87	7.7	7.56	7.55	7.73	7.72	7.37	8.39	6.72	7.32	7.75	8.1
	DO	10.2	8.8	8.9	9.0	7.7	9.3	9.2	9.2	8.5	8.9	9.0	9.0
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	110	120	150	79	180	120	49	49	49	79	110	130
River Beas, D/s Manali	pH	7.61	7.89	7.50	7.61	7.72	7.74	7.75	7.02	7.42	7.43	7.66	7.98
	DO	10.1	8.6	8.6	9.0	7.6	9.2	9.1	9.2	8.5	8.8	8.9	8.9
	BOD	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.1	0.2	0.1
	TC	220	280	220	210	220	170	110	70	79	220	170	220
River Beas, U/s Kullu	pH	7.52	8.2	7.36	6.84	7.76	7.77	8.05	8.01	8.32	8.1	8.05	8.06
	DO	9.4	9.2	9.5	8.9	7.7	9.0	8.9	9.1	8.4	8.8	9.0	8.9
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	280	280	280	170	280	210	130	110	94	130	150	180
River Beas, D/s Kullu	pH	7.57	8.07	7.30	7.56	7.65	7.75	7.89	7.06	8.36	7.16	7.97	6.65
	DO	9.3	9.1	9.4	8.9	7.4	9.0	8.8	9.0	8.4	8.7	8.9	8.8
	BOD	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.1	0.1	0.2	0.2
	TC	350	430	350	240	350	280	180	140	130	240	280	280
Parvati River, before confluence to R. Beas at Bhunter	pH	7.02	7.37	6.84	7.52	7.59	7.04	7.59	8.26	7.27	6.62	7.54	6.66
	DO	8.8	8.5	8.2	10.1	7.8	8.8	8.8	8.9	10.0	8.7	8.8	8.9
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	140	220	170	170	110	220	140	94	110	140	210	170
River Satluj U/s Tattapani	pH	7.81	7.18	7.66	7.7	7.09	7.68	6.03	8.01	8.06	7.06	7.83	7.59
	DO	8.7	8.5	8.4	8.6	8.5	8.9	9.1	8.9	8.9	8.9	8.8	8.7
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Satluj U/s Rampur	pH	7.95	7.56	7.64	7.72	7.37	7.69	6.96	7.96	7.18	7.35	7.9	7.87
	DO	9.1	8.9	8.7	8.9	8.9	9.1	9.1	9.2	9.1	9.2	9.0	8.9
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Satluj D/s Rampur	pH	7.81	7.61	7.73	7.89	7.48	7.74	6.5	7.98	7.02	7.04	7.95	7.89

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	DO	8.9	8.8	8.6	8.7	8.9	9.1	9.0	9.2	9.1	9.2	9.0	8.8
	BOD	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
	TC	---	---	---	---	---	---	---	---	---	---	---	---
Wangtu Bridge (Satluj at Nathpa Jhakri)	pH	7.16	7.62	7.87	7.9	7.6	7.72	6.71	7.95	7.41	6.98	7.94	7.79
	DO	9.4	9.1	9.2	9.4	9.2	9.4	9.6	9.4	9.4	9.6	9.4	9.3
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Baspa U/s reservoir at Kuppa	pH	7.48	7.23	7.72	7.99	7.79	7.81	6.95	7.92	7.5	6.89	7.83	7.62
	DO	9.4	9.0	8.9	9.3	9.1	9.3	9.6	9.5	9.6	9.5	9.6	9.5
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Satluj before conf. with River Spiti at Khab	pH	7.65	7.58	7.69	7.74	7.7	7.76	7.0	7.79	7.38	6.78	7.86	7.68
	DO	9.8	9.6	9.5	9.8	9.7	9.9	10.0	10.1	10.0	10.1	9.8	9.8
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Spiti before conf. with River Satluj at Khab	pH	7.58	7.6	7.91	8.06	7.76	8.13	6.57	7.99	6.91	6.98	7.87	7.21
	DO	9.7	9.5	9.4	9.7	9.6	9.8	9.9	9.8	9.7	9.8	9.7	9.7
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Satluj after conf. with River Spiti at Khab	pH	7.67	7.59	7.48	7.72	7.63	7.88	6.18	7.89	7.29	6.94	7.83	7.62
	DO	9.9	9.6	9.6	9.8	9.7	9.9	10.1	10.1	9.9	10.0	9.8	9.8
	BOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TC	---	---	---	---	---	---	---	---	---	---	---	---
River Ravi D/S Chamba	pH	6.85	---	---	7.28	---	---	7.49	---	---	6.12	---	---
	DO	---	---	---	--	---	---	--	---	---	--	---	---
	BOD	NIL	---	---	NIL	---	---	NIL	---	---	NIL	---	---
	TC	<1.8	---	---	<1.8	---	---	<1.8	---	---	<1.8	---	---
River Ravi U/S Chamba	pH	7.83	---	---	7.28	---	---	7.43	---	---	---	---	---
	DO	---	---	---	--	---	---	--	---	---	---	---	---
	BOD	NIL	---	---	NIL	---	---	NIL	---	---	---	---	---
	TC	<1.8	---	---	<1.8	---	---	<1.8	---	---	---	---	---
River Siul	pH	Sampl e not	---	---	---	---	---	Samp	---	---	---	---	

D/S Surgani	DO	received	---	---	---	---	---	le not received	---	---	---	---	---
	BOD		---	---	---	---	---		---	---	---	---	---
	TC		---	---	---	---	---		---	---	---	---	---
River Ravi at Chamera Reservoir (2614)	pH	Sample not received	---	---	7.76	---	---	6.83	---	---	---	---	---
	DO		---	---	--	---	---	--	---	---	---	---	---
	BOD		---	---	NIL	---	---	NIL	---	---	---	---	---
	TC		---	---	---	---	---	---	---	---	---	---	---
Madhoper Head Works River Ravi	pH	Sample not received	---	---	---	---	---	Sample not received	---	---	---	---	---
	DO		---	---	---	---	---		---	---	---	---	---
	BOD		---	---	---	---	---		---	---	---	---	---
	TC		---	---	---	---	---		---	---	---	---	---
Khajiar Lake	pH	Sample not received	---	---	---	---	---	Sample not received	---	---	---	---	---
	DO		---	---	---	---	---		---	---	---	---	---
	BOD		---	---	---	---	---		---	---	---	---	---
	TC		---	---	---	---	---		---	---	---	---	---
Pong Dam Lake at Pong Village	pH	Sample not received	---	---	---	---	---	7.88	---	---	---	---	---
	DO		---	---	---	---	---	--	---	---	---	---	---
	BOD		---	---	---	---	---	NIL	---	---	---	---	---
	TC		---	---	---	---	---	<1.8	---	---	---	---	---
D/S Pong Dam R. Beas	pH	7.6	7.64	7.52	7.7	7.45	7.82	7.65	8.08	7.58	7.02	7.63	7.55
	DO	8.5	8.7	8.5	8.7	8.7	8.7	8.6	8.8	8.8	8.3	8.6	8.6
	BOD	0.2	0.4	0.4	0.6	0.3	0.2	1.0	0.2	0.9	0.2	0.2	0.2
	TC	120.0	170	220	210	150	150	210		170	170	210	220
D/S Dehra River Beas	pH	8.1	7.61	7.35	7.65	7.39	7.85	7.68	7.93	7.45	7.07	7.21	7.07
	DO	8.6	8.6	8.6	8.6	8.6	8.6	8.7	8.7	8.7	8.4	8.7	8.7
	BOD	0.2	0.5	1.0	1.0	0.5	0.4	1.2	0.4	0.7	0.2	0.5	0.3
	TC	100.0	110	150	240	170	170	170		210	140	170	170
D/S Jaisingpur River	pH	7.7	7.2	8.26	7.78	7.68	7.75	7.81	7.98	7.18	7.68	7.58	7.59
	DO	8.7	8.7	8.7	8.8	8.8	8.7	8.6	8.8	8.8	8.7	8.8	8.8

CHAPTER -4
STATUS OF AMBIENT AIR AND RIVER WATER QUALITY IN HIMACHAL PRADESH

Beas	BOD	0.2	0.3	0.2	0.8	0.4	0.2	0.2	0.3	0.5	0.4	0.1	0.6
	TC	120.0	94	150	170	210	150		150			140	240
D/S Alampur River Beas	pH	7.7	7.26	8.12	7.86	8.14	7.94	7.9	7.52	7.31	7.76	7.64	7.63
	DO	8.8	8.6	8.5	8.4	8.6	8.6	8.6	8.5	8.7	8.7	8.7	8.7
	BOD	0.3	0.2	0.3	0.5	0.3	0.2	0.3	0.3	0.4	0.5	0.3	0.5
	TC	210.0	120	170	280	170	140	240	210		210	170	170
D/S Thural Neugal Khad	pH	7.7	7.45	7.63	7.62	7.76	7.88	8.41	7.72	7.24	7.16	6.89	6.89
	DO	7.9	8.4	8.1	6.2	7.3	7.2	8.7	7.8	8.4	6.8	7.1	7.3
	BOD	0.1	0.2	0.3	0.8	0.4	0.1	0.4	0.2	0.8	0.4	0.2	0.1
	TC			170						170			
D/S Binwa Baijnath Paprola	pH	7.5	7.65	7.24	7.72	6.62	6.76	7.32	7.62	7.17	Sample not collected due to snow fall	6.8	6.84
	DO	6.3	6.1	7.1	7.4	6.3	6.1	6.1	6.0	6.0		5.9	6.3
	BOD	90.0	3.4	50.0	24.0	16.0	26.0	18.0	22.0	2.6		3.0	6.0
	TC	1600.0	920	1600	920	540	920	920		540		540	920
River Satluj D/s Bhakhra	pH	8.2	8.26	8.27	8.36	8.16	8.72	8.12	7.62	7.83	8.35	7.82	7.38
	DO	7.8	7.6	7.7	8.3	7.2	7.6	7.4	7.9	6.9	6.3	8.3	7.1
	BOD	0.2	0.4	0.4	0.4	0.4	0.2	0.5	0.8	1.0	0.3	0.3	0.8
	TC				350				240			240	
River Swan D/s Santokhgarh	pH	7.6	8.18	7.84	7.92	7.98	7.82	8.47	7.57	7.73	7.78	7.77	7.43
	DO	7.9	8.4	8.2	8.7	6.9	7.2	6.9	8.2	6.7	6.4	8.6	7.3
	BOD	0.2	0.2	0.3	0.3	0.3	0.1	0.4	0.3	0.5	0.2	0.2	0.5
	TC				280				210			210	
River Ravi D/S proposed dam of Chamera-III HEP	pH	8.2	8.26	7.52	7.41	8.11	8.1	8.06	8.14	7.8	7.67	7.36	7.38
	DO	7.1	8.2	7.9	8.4	8.1	8.4	8.4	8.4	8.3	8.2	8.1	8.3
	BOD	1.0	0.5	0.4	1.0	0.8	0.4	0.5	0.6	1.3	0.3	0.3	0.5
	TC						350			220	220		220

Name of location	Parameters	Apr-16	Oct-16
Well at Kala Amb	pH	7.43	7.58
	DO	-	-
	BOD	0.1	0.1
	TC	3.7	<1.8
Well at Paonta Sahib	pH	7.07	7.73
	DO	-	-
	BOD	0.1	0.1
	TC	3.6	<1.8
Well at Industrial Area Kala Amb	pH	7.48	7.67
	DO	-	-
	BOD	0.1	0.1
	TC	4.0	18.0
Well at Industrial Area Paonta Sahib	pH	7.73	7.76
	DO	-	-
	BOD	0.1	0.1
	TC	4.0	<1.8
Hand Pump at Nahan	pH	8.01	7.88
	DO	-	-
	BOD	0.1	0.2
	TC	4.0	<1.8
Hand Pump at Kala Amb	pH	7.99	7.74
	DO	-	-
	BOD	0.1	0.6
	TC	6.0	<1.8

Results of State Water Quality Monitoring Points from April 2016 to March 2017:

Location	Parameter	Apr-16	Jul-16	Oct-16	Jan-17
Lift Nallah D/s Hotel Combermere, Shimla	pH	7.91	--	6.78	7.0
	DO	7.5		5.3	6.5
	BOD	0.6		1.2	22.0
	TC	17		26	170.0
Lift Nallah U/s Bridge at Bye Pass Road Near MC Waste Processing Site	pH	7.96	--	6.81	7.0
	DO	6.8		5.1	6.2
	BOD	6.2		1.0	24.0
	TC	12		14	220.0
U/s Lift Nallah before conf. to Ashwani Khad	pH	7.11	--	7.18	6.6
	DO	8.8		8.6	8.4
	BOD	0.1		0.1	3.4
	TC	20		22	21.0
D/s Ashwani Khad	pH	7.33	--	7.24	6.5
	DO	8.6		7.7	7.9
	BOD	6.0		0.4	3.0
	TC	20		6.1	39.0
River Pabbar D/s Chirgaon	pH	8.25	--	7.56	7.2
	DO	9.0		8.8	8.6
	BOD	0.1		0.1	1.2
	TC	17		12	1.8
River Pabbar D/s Rohroo	pH	7.37	--	8.16	7.2
	DO	8.6		8.7	8.4
	BOD	0.3		0.2	0.4
	TC	20		8.1	10.0
River Pabbar U/s Hatkoti	pH	7.46	--	7.96	7.1
	DO	8.7		8.6	8.7
	BOD	0.4		0.1	0.1
	TC	17		8.2	2.0
River Pabbar D/s Hatkoti	pH	7.54	--	7.68	7.2
	DO	8.7		8.4	8.5
	BOD	0.6		0.4	0.1
	TC	14		6.0	1.8
River Pabbar U/s Chailla	pH	8.00	--	7.46	7.22
	DO	8.5		8.5	7.5
	BOD	0.2		0.2	0.1
	TC	8		9.2	1.8
River Sirsa D/s Sitomajri Nallah	pH	7.84	7.02	7.62	7.34
	DO	4.6	5.0	6.5	5.0
	BOD	1.0	2.4	3.8	2.8
	TC	40	40	39	21
River Sirsa U/s Sandholi Nallah	pH	7.95	6.70	8.10	7.52
	DO	5.1	4.5	5.8	5.9
	BOD	8.0	2.8	18.0	16.0

	TC	70	26	28	70
Sandholi Nallah	pH	7.66	6.71	7.80	6.96
	DO	0.0	1.0	0.0	0.0
	BOD	22.0	24.0	50.0	264.0
	TC	>1600	>1600	>1600	>1600
River Sirsa D/s Sandholi Nallah	pH	8.15	7.49	8.01	7.08
	DO	4.6	4.0	5.7	4.8
	BOD	12.0	3.8	35.0	32.0
	TC	>1600	>1600	1600	350
River Sirsa U/s Housing Board Nalla	pH	8.04	7.29	7.85	7.42
	DO	4.8	3.8	2.8	2.2
	BOD	2.0	3.2	2.8	3.6
	TC	32	38	40	120
Housing Board Nallah	pH	8.07	6.88	8.26	7.39
	DO	2.1	2.0	0.3	0.0
	BOD	8.0	14.0	14.4	18.0
	TC	120	210	140	>1600
River Sirsa D/s Housing Board Nalla	pH	8.10	6.97	7.80	7.36
	DO	4.1	3.6	4.2	3.4
	BOD	3.6	5.0	3.8	10.0
	TC	63	94	120	280
River Sirsa U/s River Ratta	pH	7.93	6.91	8.10	7.18
	DO	4.9	5.4	6.2	4.9
	BOD	0.6	2.4	1.8	9.0
	TC	32	48	25	38
River Ratta Before Conf. to River Sirsa	pH	7.94	7.19	6.81	6.84
	DO	4.2	4.8	6.8	5.3
	BOD	1.0	1.2	2.8	20.0
	TC	40	33	32.0	170
River Sirsa D/s River Ratta	pH	8.03	7.46	8.24	7.47
	DO	6.2	4.8	5.9	5.1
	BOD	0.8	4.0	2.2	13.0
	TC	40	47	48	220
River Bald U/s Land fill site at Baddi	pH	8.04	6.70	8.46	6.89
	DO	2.0	4.5	4.9	4.0
	BOD	3.6	2.8	2.0	2.0
	TC	58	26	39	32
River Bald D/s Landfill site at Baddi	pH	7.31	6.73	8.31	7.21
	DO	1.1	3.8	6.5	4.2
	BOD	12.0	3.2	4.0	4.0
	TC	140	70	31	40
Gullerwala Nallah	pH	7.53	6.77	8.52	7.74
	DO	6.2	1.2	5.9	8.2
	BOD	0.1	1.8	0.4	0.2
	TC	20	120	<1.8	<1.8
River Sirsa U/s Khera Nallah	pH	7.94	6.98	5.50	7.66
	DO	5.3	4.8	8.3	4.8

	BOD	1.0	4.8	14.0	8.0
	TC	84	17	170	48
Khera Nallah	pH	Source Dry	7.54	Source Dry	7.86
	DO		4.1		1.2
	BOD		4.4		10.0
	TC		17		63.0
River Sirsa D/s Khera Nallah	pH	Source Dry	7.34	7.75	7.77
	DO		6.0	6.1	6.0
	BOD		3.2	22.0	11.0
	TC		40	220	220
U/S Manpura Nallah	pH	8.15	7.36	8.52	7.31
	DO	5.5	4.3	6.6	4.3
	BOD	0.2	2.8	4.4	8.2
	TC	38	22	38	9
Manpura Nallah	pH	7.62	7.03	8.69	7.10
	DO	3.3	3.5	7.8	0.9
	BOD	0.4	8.0	5.6	16.0
	TC	47	31	170	46
River Sirsa D/s Manpura Nallah	pH	80.90	6.91	7.17	7.59
	DO	5.0	4.3	7.9	4.5
	BOD	0.8	5.0	5.0	12.0
	TC	94	21	47	27
Kaushlya River U/s Parwanoo Town	pH	Sample Not Received	--	8.20	--
	DO			7.6	
	BOD			0.8	
	TC			4.0	
Kaushlya River D/s Intake Channel of WSS	pH	Sample Not Received	--	8.17	--
	DO			6.9	
	BOD			1.2	
	TC			9.2	
Sukhana Nallah U/s WSS Sector -4, Parwanoo	pH	Sample Not Received	--	8.27	--
	DO			8.5	
	BOD			0.6	
	TC			3.6	
Sukhana Nallah U/S Sukhana Nallah Sec- V Parwanoo (Land fillsite)	pH	Sample Not Received	--	8.16	--
	DO			6.4	
	BOD			0.2	
	TC			6.0	
Sukhana Nallah D/S Sukhana Nallah Sec- V Parwanoo (Land fillsite)	pH	Sample Not Received	--	6.90	--
	DO			5.7	
	BOD			5.8	
	TC			58	
Masulkhana Nallah U/s Morepan Lab	pH	Sample Not Received	--	8.01	--
	DO			6.8	
	BOD			0.1	
	TC			<1.8	
Masulkhana Nallah	pH	Sample	--	8.30	--

D/s Morepan Lab	DO	Not Received		6.3	
	BOD			2.2	
	TC			63	
Sukhana Nallah D/S WSS Kalka	pH	Sample Not Received	--	--	--
	DO				
	BOD				
	TC				
U/s TSDF Site at Majra (Well)	pH	8.09	--	7.40	7.76
	DO	5.0		-	7.8
	BOD	0.1		0.1	0.2
	TC	4		<1.8	<1.8
D/s TSDF Site at Majra (Well)	pH	Source Dry	--	8.47	7.58
	DO			-	5.5
	BOD			0.1	0.8
	TC			<1.8	<1.8
Well at house of Sh Gurudyal	pH	7.93	--	8.35	Sample not received
	DO	5.7		-	
	BOD	0.1		0.1	
	TC	<1.8		<1.8	
Well at house of Sh Rana	pH	7.75	--	8.10	7.83
	DO	5.2		-	6.2
	BOD	0.1		0.1	0.1
	TC	<1.8		<1.8	<1.8
Well of Sh Gurubaskh Vill Majra	pH	7.92	--	7.98	8.01
	DO	5.2		-	6.5
	BOD	0.1		0.1	0.1
	TC	<1.8		<1.8	<1.8
Groundwater at Totu	pH	8.21	--	7.15	7.02
	DO	4.5		-	4.0
	BOD	0.1		0.1	0.1
	TC	<1.8		<1.8	1.8
Handpump Near Dhaggar, Market	pH	Sample not received	--	--	--
	DO				
	BOD				
	TC				
Handpump near Total Health Care, Parwanoo	pH	Sample not received	--	--	--
	DO				
	BOD				
	TC				

Handpump Sec-1 Near Shivalik Hotel	pH	Sample not received	--	8.05	--
	DO			8.0	
	BOD			0.1	
	TC			<1.8	
D/s ACC Barmana, Satluj River	pH	8.04	7.87	7.82	8.1
	DO	9.3	9.0	9.0	8.7
	BOD	0.1	0.1	0.1	0.1
	TC	240	150	140	170
R. Suketi U/s of conf. of dragger outfall of SNR Balancing reservoir	pH	7.9	7.83	8.04	7.66
	DO	7.5	7.1	8.2	8.9
	BOD	0.1	0.1	0.1	0.1
	TC	170	130	130	180
River Suketi at Dadour bridge	pH	8.03	7.72	7.76	7.84
	DO	8.6	7.1	8.5	9.9
	BOD	0.3	0.2	0.3	0.2
	TC	430	430	350	540
U/s Mandi, Suketi Khudd	pH	7.78	7.51	7.57	7.32
	DO	6.6	7.2	7.7	9.4
	BOD	0.1	0.1	0.1	0.1
	TC	280	120	170	140
U/s Darang, Salt Mine	pH	7.94	7.82	6.3	7.9
	DO	7.5	7.1	7.5	8.3
	BOD	0.1	0.1	0.1	0.1
	TC	94	58	70	70
D/s Darang, Salt Mine	pH	8.08	7.84	7.37	7.35
	DO	7.0	7.0	7.9	8.8
	BOD	0.1	0.1	0.1	0.1
	TC	120	63	79	79
River Beas, U/s of conf. of envisaged TRT of UHL-III	pH	7.81	7.71	7.36	8.83
	DO	10.2	8.2	8.4	11.5
	BOD	0.1	0.1	0.1	0.1
	TC	210	170	110	130
River Beas, D/s of conf. of envisaged TRT of UHL-III	pH	7.38	7.58	7.38	8.18
	DO	10.7	7.1	9.3	11.8
	BOD	0.1	0.1	0.1	0.1
	TC	240	210	140	140
R.Beas, D/s of conf.of TRT of Largi HEP power house.	pH	7.69	7.49	6.29	6.05
	DO	9	9.4	9.3	9
	BOD	0.1	0.1	0.1	0.1
	TC	220	220	180	180
River Beas, U/s Fermenta Biodil.	pH	7.56	7.20	7.83	7.05
	DO	9.2	8.9	8.9	8.6
	BOD	0.1	0.1	0.1	0.1
	TC	280	170	170	220
River Beas, D/s Fermenta Biodil.	pH	7.58	7.66	7.86	7.06
	DO	9.1	8.8	8.8	8.5

	BOD	0.2	0.2	0.2	0.2
	TC	430	280	280	280
R. Parvati U/s of Dam site of Parvati-II at Pulga	pH	7.15	7.50	7.16	6.73
	DO	9.4	10.4	9	9
	BOD	0.1	0.1	0.1	0.1
	TC	70	63	46	79
	pH	7.05	7.53	7.57	6.67
R. Parvati D/s of Dam site of Parvati-II at	DO	9.3	10.4	9	9
	BOD	0.1	0.1	0.1	0.1
	TC	120	84	63	94
Pulga					
R.Beas, U/s Waste processing facility, Manali.	pH	7.99	7.69	6.63	7.66
	DO	9.8	8.9	9.1	8.8
	BOD	0.1	0.1	0.1	0.1
	TC	140	220	130	130
R.Beas, D/s Waste processing facility, Manali.	pH	7.47	7.57	7.44	7.57
	DO	9.8	8.8	9	8.7
	BOD	0.2	0.2	0.3	0.2
	TC	350	350	180	180
R.Beas, D/s of confluence with Allaign Nalla.	pH	7.4	7.23	7.53	7.54
	DO	9.8	8.8	9	8.7
	BOD	0.1	0.1	0.1	0.1
	TC	130	170	170	94
Allaign Nalla before confluence with R.Beas	pH	8.31	7.48	7.6	7.53
	DO	10.3	9.2	9.3	8.9
	BOD	0.1	0.1	0.1	0.1
	TC	110	70	94	63
R.Beas, D/s confluence with Duhangan Nalla.	pH	7.35	7.27	7.61	7.63
	DO	9.8	8.8	9	8.7
	BOD	0.1	0.1	0.1	0.1
	TC	170	150	180	70
Duhangan Nalla before confluence with R.Beas	pH	7.52	7.37	7.52	7.79
	DO	10.4	9.2	9.3	8.9
	BOD	0.1	0.1	0.1	0.1
	TC	11	63	79	49
R.Beas, U/s of confluence of R.Parvati	pH	7.52	7.36	6.26	7.27
	DO	9.2	8.8	8.8	8.6
	BOD	0.1	0.1	0.1	0.1
	TC	150	170	180	110
R.Beas, D/s of confluence of R.Parvati	pH	7.48	7.42	6.44	7.87
	DO	9.2	8.9	8.9	8.8
	BOD	0.1	0.1	0.1	0.1
	TC	170	220	220	130
R.Beas, U/s Waste processing facility Kullu.	pH	7.55	7.08	6.04	6.26
	DO	9.3	8.9	8.9	8.7
	BOD	0.1	0.1	0.2	0.1
	TC	280	240	240	170
R.Beas, D/s Waste	pH	7.53	7.35	6.89	6.73

processing facility Kullu.	DO	9.2	8.8	8.8	8.6
	BOD	0.2	0.2	0.3	0.3
	TC	540	430	350	180
R.Sainj, U/s envisaged power house site of Parvati-II.	pH	7.78	7.47	6.64	7.02
	DO	9.6	9.9	9.2	8.9
	BOD	0.1	0.1	0.1	0.1
R.Sainj, D/s envisaged power house site of Parvati-II.	TC	130	110	140	63
	pH	7.69	7.43	6.46	7.01
	DO	9.6	9.9	9.2	8.9
R.Sainj, D/s envisaged power house site of Parvati-II.	BOD	0.1	0.1	0.1	0.1
	TC	170	130	170	94
	pH	7.52	7.41	6.49	6.97
R.Sainj, U/s envisaged power house site of Parvati - III.	DO	9.5	9.8	9.1	8.8
	BOD	0.1	0.1	0.1	0.1
	TC	140	140	220	70
R.Sainj,, D/s envisaged power house site of Parvati - III.	pH	7.58	7.67	6.02	7
	DO	9.5	9.8	9.1	8.8
	BOD	0.1	0.1	0.1	0.1
* River Satluj U/s Landfill Site Rampur	TC	220	170	240	130
	pH	7.75	7.82	6.41	7.19
	DO	9.1	8.9	9.1	9.3
* River Satluj D/s Landfill Site Rampur	BOD	0.1	0.2	0.1	0.1
	TC	--	--	--	--
	pH	7.78	7.78	6.37	7.27
* R. Satluj D/s Duttnagar, D/s envisaged conf. of TRT of RHEP	DO	9.1	8.9	9.1	9.3
	BOD	0.2	0.2	0.1	0.3
	TC	--	--	--	--
* R. Satluj D/s Duttnagar, D/s envisaged conf. of TRT of RHEP	pH	7.84	7.87	7.37	7.09
	DO	9	8.8	9.1	9.1
	BOD	0.1	0.1	0.1	0.1
* River Satluj U/s TRT of Nathpa Jhakri Project	TC	---	--	---	---
	pH	7.73	7.84	6.59	7.15
	DO	9.3	9	9.2	9.3
* River Satluj D/s TRT of Nathpa Jhakri Project	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
	pH	7.65	7.92	6.74	7.18
* River Satluj D/s TRT of Nathpa Jhakri Project	DO	9.3	9.1	9.2	9.3
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Satluj U/s confluence with Ganvi Khad	pH	7.09	8.14	6.63	7.25
	DO	9.4	9.2	9.3	9.4
	BOD	0.1	0.1	0.1	0.1
* River Satluj U/s confluence with Ganvi Khad	TC	---	---	---	---
	pH	7.18	7.93	6.84	7.3
	DO	9.4	9.2	9.3	9.4
* River Satluj D/s confluence with Ganvi Khad	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
	pH	7.18	7.93	6.84	7.3
* River Satluj D/s confluence with Ganvi Khad	DO	9.4	9.2	9.3	9.4
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---

* Ganvi Khad before confluence to River Satluj	pH	7.14	8.19	6.72	7.27
	DO	9.3	9.1	9.3	9.2
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Satluj D/s NJPC Dam Nathpa	pH	7.58	7.9	6.91	7.02
	DO	9.4	9.1	9.4	9.5
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Satluj U/s confluence with Sorang Khad	pH	7.29	7.68	6.71	7.17
	DO	9.4	9.2	9.4	9.4
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Satluj D/s confluence with Sorang Khad	pH	7.49	7.81	6.79	7.09
	DO	9.4	9.2	9.3	9.4
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Sorang before confluence to River Satluj	pH	7.38	7.82	6.97	6.93
	DO	9.6	9.1	9.3	9.3
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
River Satluj U/s Baspa TRT	pH				
	DO				
	BOD				
	TC				
* Karcham Dam	pH	7.47	7.95	6.62	6.82
	DO	9.3	9.3	9.4	9.5
	BOD	0.2	0.1	0.2	0.1
	TC	---	---	---	---
* Baspa River Baspa Project	pH	7.44	7.89	6.86	7
	DO	9.3	9.2	9.5	9.4
	BOD	0.1	0.1	0.1	0.1
	TC	--	---	---	---
* River Baspa D/s reservoir at Kuppa	pH	7.09	7.89	6.87	7.04
	DO	9.4	9.3	9.6	9.5
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Tidong before conf. to River Satluj	pH	7.87	7.67	6.98	6.91
	DO	9.5	9.5	9.6	9.4
	BOD	0.1	0.1	0.1	0.1
	TC		---	---	---
* River Satluj U/s conf. with River Tidong	pH	7.83	7.68	7.2	6.66
	DO	9.7	9.6	9.8	9.6
	BOD	0.1	0.1	0.1	0.1
	TC	---	---	---	---
* River Satluj D/s conf. with River Tidong	pH	7.82	7.83	7.62	6.85
	DO	9.7	9.5	9.8	9.6
	BOD	0.1	0.1	0.1	0.1

	TC	---	---	---	---
Swan River D/S I.A. Gagret	pH	7.81	7.44	8.09	8.06
	DO	---	---	---	---
	BOD	0.1	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
Swan River U/S I.A. Gagret	pH	7.35	7.36	7.79	8.26
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
River Ravi U/S Land Fill Site Chamba	pH	7.87	7.73	7.27	7.93
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
River Ravi D/S Land Fill Site Chamba	pH	7.88	7.52	7.43	8.15
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
River Ravi before conf. with River Baira	pH	7.72	7.28	7.09	7.98
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
Bhiral Khad D/S STP Palampur	pH	7.75	7.41	6.23	7.4
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
Bhiral Khad U/S STP Palampur	pH	7.11	7.56	6.98	7.43
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
River Ravi after conf. with Baira River	pH	7.78	7.54	6.45	8.24
	DO	---	---	---	---
	BOD	NIL	NIL	NIL	NIL
	TC	<1.8	<1.8	<1.8	<1.8
River Ravi D/S Dam of Chamera-I HEP	pH	8.38	8.18	8.29	7.76
	DO	6.00	6.4		5.3
	BOD	0.30	1.2	0.5	0.2
	TC	220.00	280	280	280
River Ravi D/S TRT Power House -I HEP	pH	8.35	8.14	7.62	7.37
	DO	6.10	6.5		5.4
	BOD	2.00	1.4	0.2	1
	TC	210.00	240	240	240
River Baira before conf. with River Ravi	pH	7.83	7.63	8.04	7.09
	DO	8.60	8.6	8.7	8.3
	BOD	0.20	0.3	0.4	0.2
	TC	120.00	150	240	170
Chouch Khad D/s Ind. Area Bain	pH	7.94	7.55	8.06	7.26
	DO	8.70	8.5	8.5	8.2

Attarian	BOD	0.20	0.3	0.6	0.2
	TC	170.00	220	170	150
Chouch Khad U/s Ind. Area Bain Attarian	pH	7.54	7.62	7.98	7.33
	DO	8.70	8.5	8.6	8.5
	BOD	0.30	0.4	0.4	0.1
	TC	150.00	210	170	170
River Satluj U/S Bhakhra	pH	7.55	7.06	7.34	7.2
	DO	8.20	7.4	7.6	7.6
	BOD	0.40	2	0.4	0.4
	TC				220
River Swan U/S MSW landfill Santokhgarh	pH	7.52	6.91	7.22	7.23
	DO	7.90	7.3	7.9	7.9
	BOD	0.30	1	0.3	0.2
	TC				
River Swan D/S MSW land fill Santokhgarh	pH	7.64	7.69	8.26	7.71
	DO	8.70	8.6	8.7	8.6
	BOD	0.20	0.4	0.2	0.4
	TC	120.00	240	210	170
River Baira U/S of Dam on Baira siul HEP	pH	7.53	7.69	8.28	7.74
	DO	8.60	8.6	8.6	8.6
	BOD	0.10	0.4	0.2	0.3
	TC	170.00	210	170	170
River Baira D/S Dam on Bairasiul HEP	pH	7.78	7.74	8.12	7.71
	DO	8.80	8.5	8.7	8.8
	BOD	0.10	0.4	0.1	0.2
	TC	120.00	280	220	170
River Siul U/S Dam of Siul for BSHEP	pH	7.71	7.86	8.17	7.91
	DO	8.60	9.4	8.6	8.6
	BOD	0.20	1	0.3	0.3
	TC	170.00	140	170	170
River Siul D/S Dam of Siul for BSHEP	pH		8.12	8.38	7.74
	DO	Source Dry	6.9	7.1	6.1
	BOD		2	0.8	3
	TC				
Baled Khad U/S of Dam on Baled for BSHEP	pH		8.06	8.18	7.62
	DO	Source Dry	6.7	7	6.3
	BOD		1	0.5	0.3
	TC				
Baled Khad D/S Dam on Baled for BSHEP	pH	7.62	7.68	7.86	7.22
	DO	6.50	6.1	7.1	6.8
	BOD	0.10	0.2	0.3	0.2
	TC	170.00	240	240	220
River Baira before conf. of TRT of BSHEP	pH	8.02	8.09	8.28	7.27
	DO	5.70	5.8	6.5	5.3
	BOD	0.20	0.8	0.2	0.2
	TC	220.00	350	220	280
River Baira after	pH	8.19	8.16	8.33	7.32

conf. of TRT of BSHEP	DO	5.50	5.8	6.4	5.1
	BOD	0.30	0.8	0.5	1
	TC	240.00	280	240	280
River Ravi U/S Chamera -II	pH	7.52	7.69	8.18	Sample not collected due to snow fall
	DO	8.70	9.1	8.8	
	BOD	0.10	1	0	
	TC	110.00	210	140	
River Ravi D/S Chamera -II	pH	7.58	7.92	8.36	Sample not collected due to snow fall
	DO	8.80	9.3	8.7	
	BOD	0.20	0.5	0.3	
	TC	120.00	170	170	
River Ravi U/S of Conf. of Budhil Nallah	pH	7.71	7.79	8.06	Sample not collected due to snow fall
	DO	8.80	9	8.8	
	BOD	0.20	1	0.3	
	TC	150.00	220	140	
Budhil Nallah U/S Dam of Budhil HEP	pH	7.48	7.94	8.12	Sample not collected due to snow fall
	DO	8.80	9.2	8.8	
	BOD	0.10	1	0.2	
	TC	120.00	210	150	
Budhil Nallah D/S Dam of Budhil HEP	pH	7.74	7.92	8.28	7.75
	DO	8.70	8.8	8.8	8.7
	BOD	0.20	0.8	0.3	0.2
	TC	140.00	220	210	210
River Ravi D/S TRT of proposed Budhil HEP	pH	7.82	7.93	8.42	7.87
	DO	8.70	8.9	8.8	8.8
	BOD	0.20	0.5	0.4	0.2
	TC	150.00	240	210	170
River Beas U/S Pong Dam	pH	7.72	7.73	8.23	7.76
	DO	8.70	9.5	8.6	8.6
	BOD	0.20	1	0.1	0.2
	TC	170.00	150	140	
U/S Swan Khad IA Sansarpur Terrace	pH	7.54	7.82	8.3	7.8
	DO	8.80	9.4	8.7	8.7
	BOD	0.20	1	0.3	0.2
	TC	140.00	210	170	--
D/S Swan Khad IA Sansarpur Terrace	pH	7.63	7.68	7.84	7.01
	DO	8.60	8.7	8.7	8.5
	BOD	0.30	0.2	1	0.1
	TC	150.00	220	210	140
Luhad Khad U/s STP Jawalamukhi	pH	7.74	7.86	8.02	7.24
	DO	8.50	8.6	8.8	8.6
	BOD	0.20	0.4	0.8	0.1
	TC	170.00	280	240	170
Luhad Khad D/s STP Jawalamukhi	pH	7.89	7.85	7.93	7.17
	DO	8.60	8.6	8.8	8.6
	BOD	0.40	0.5	0.3	0.1

	TC	110.00	240	210	170
Baner Khad U/s STP TMC	pH	7.65	7.74	8.08	Sample not collected due to snow fall
	DO	8.80	8.4	8.7	
	BOD	0.30	0.5	0.3	
	TC	130.00	120	170	
Baner Khad D/s STP TMC	pH	7.77	7.82	8.17	Sample not collected due to snow fall
	DO	8.70	8.6	8.7	
	BOD	0.20	0.4	0.3	
	TC	140.00	170	210	
Charan Khad U/S STP Dharamshala	pH	7.52	7.74	8.07	7.34
	DO	8.70	8.7	8.8	8.6
	BOD	0.20	0.4	0.3	0.2
	TC	120.00	130		130
Charan Khad D/S STP Dharamshala	pH	7.65	8.15	7.82	7.69
	DO	7.80	8.4	7.4	8.6
	BOD	0.30	0.2	0.4	0.4
	TC		240		
Dal Lake Naddi	pH	Source Dry	7.25	8.15	Source Dry
	DO		7.8	7.6	
	BOD		24	0.4	
	TC		430		
River Yamuna U/S of Ranbaxy Paonta Sahib	pH	8.20	7.31	8.13	7.43
	DO	7.20	7.4	7.3	7.5
	BOD	0.40	22	0.4	0.5
	TC		540		
River Yamuna D/S of Ranbaxy Paonta Sahib	pH	8.21	7.62	Sample not collected	7.92
	DO	6.80	7.1		7.6
	BOD	2.00	1		0.3
	TC				
River Yamuna U/S of landfill site Paonta Sahib	pH	7.92	7.43	Sample not collected	7.68
	DO	7.30	6.8		7.4
	BOD	1.00	1		0.5
	TC				
River Yamuna D/S of landfill site Paonta Sahib	pH	7.50	6.92	8.14	7.39
	DO	7.60		8.1	7.5
	BOD	0.20	1	0.3	0.3
	TC				
River Markanda U/S of Markanda Bridge Kala Amb	pH	7.71	7.05	8.48	7.07
	DO	7.80		8	7.3
	BOD	0.40	2	0.4	0.3
	TC				
River Markanda U/S of Jattanwala Nallah	pH	7.46	7.51	7.92	7.72
	DO	7.20	6.9	7.9	7.9
	BOD	0.20	0.4	0.3	0.2
	TC				
Jattanwala Nallah	pH	7.58	7.33	7.87	7.63

	DO	7.40	6.8	7.6	7.8
	BOD	0.50	1	0.3	0.2
	TC				
D/S Jattanwala Nallah	pH	8.18	Sample not collected	7.55	7.39
	DO	8.90			7.1
	BOD	2.00		0.5	0.4
	TC				

Following conclusion were drawn from the above studies:

In case of major rivers on the basis of Primary Water Quality Criteria, it can be concluded that water quality of rivers fall under 'A' category of water with respect to pH, DO and BOD in general. The critical parameters observed is Total Coliform according to which category of river comes down to either category 'B' if the Total Coliform are more than 50 MPN/ 100 ml or category 'C' if the Total Coliform are more than 500 MPN/100ml.

SAMPLES ANALYSIS IN THE STATE BOARD LABORATORIES:

The State board has 4 laboratories for carrying out analysis of water, waste water, solid waste, air and bio-monitoring samples collected by the Board's officers. One small laboratory for analysis of only SO₂, NO_x & RSPM in ambient air is at Shimla. The detail of samples analyzed by the laboratories during the year 2016-17 is as follows:

Type of Samples	Number of Samples Analyzed in State Boards NAMP Laboratories			
	Shimla	Baddi	Manali	Una
Ambient Air Monitoring under NAMP project	SO₂ - 1398	SO₂ - 1670	SO₂ - 1295	SO₂ - 1552
	NO_x - 1398	NO_x - 1670	NO_x - 1295	NO_x - 1552
	SPM - 710	SPM - 852	SPM - 675	SPM - 775
	RSPM - 710	RSPM - 852	RSPM - 675	RSPM - 775

Sr. No.	Type of Samples	Number of Samples Analyzed in State Boards Laboratories			
		Parwanoo	Paonta Sahib	Dharamshala	Sunder Nagar
1.	Water & Waste Water	390	384	823	178
	Trade Effluent RM/GW / Study etc. water samples				
2.	Soil/Solid Waste	3	3	11	1
3.	Air Monitoring	149	90	80	285
4.	Commercial	--	--	--	54
5.	Complaint	47	--	--	1
6.	Bio-Monitoring	--	--	--	--
7.	Noise Monitoring	--	--	--	100

8.	Ambient Air Monitoring under NAMP project	SO₂ - 1582	SO₂ - 3066	SO₂ - 2526	SO₂ - 1431
		NO_x - 1582	NO_x -3066	NO_x -2526	NO_x - 1431
		SPM - 798	SPM -1565	SPM -1295	SPM - 726
		RSPM - 798	RSPM - 1565	RSPM - 1295	RSPM - 726

BIO-MEDICAL WASTE MANAGEMENT RULES:

Till 31st March 2017, the State Board has inventoried and covered 764 Health Care Facilities under Biomedical Waste Management Rules. During 2016-17, 125 nos. of health care facilities have been granted authorization/renewal of authorization for the block year 2014-17

HAZARDOUS WASTE (MANAGEMENT, HANDLING & TRANSBOUNDARY MOVEMENT) RULES, 2016.

Till the year 31st March, 2017, the Board has identified about **2960** units generating hazardous waste. Out of which 2650 are operational as on 31st March, 2017 and responsible for generating Hazardous waste under Hazardous and other Waste (Management, Handling & Transboundary Movement) Rules, 2016 and all such units are required to obtain authorization under the said rules. The Board has granted authorization to 2650 units. The Common Treatment, Storage, Disposal Facility (TSDF) at Village Majra, Tehsil, Nalagarh, district Solan is operational since June, 2008 and is being used for scientific disposal of landfillable hazardous waste generated by the industries. A total of **127799 MT** of landfillable hazardous waste has been disposed off in TSDF by various landfillable hazardous waste generating industries in the State till date and **17802.881 MT** of landfillable hazardous waste has been disposed off in TSDF during the year 2016-17.

CHAPTER-5

POLLUTION CONTROL, SURVEILLANCE & MONITORING

The objectives and functions of the Board are defined in under section 17 of the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981. In order to achieve the larger objectives of the aforesaid acts and yet maintain the pace of sustainable growth, the State Board ensures that development takes place in harmony with the environment. The State Board has a field network of Regional Offices to exercise regular checks on the sources of pollution and regulation of the conditions of consent granted to the industries with the prime objective of controlling pollution at source.

5.1 CONSENT MECHANISM:

According to the provisions of the aforesaid Acts, Consent of the State Board is required by the development projects, the industrial units, tourism projects, Hydel projects, mining units and sewage treatment systems.

The consent mechanism mandates the above mentioned development projects to obtain prior consent Under provisions of sections 25 and/or 21 of the Water (Prevention & Control of Pollution) Act, 1974 and/or Air (Prevention & Control of Pollution) Act, 1981 respectively, as may be applicable to

- a) Establish or take any steps to establish any industry, operation or process, or any treatment and disposal system or an extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land (such discharge being hereafter in this section referred to as discharge of sewage); or
- b) Bring into use any new or altered outlets for the discharge of sewage; or
- c) Begin to make any new discharge of sewage;
- d) Establish or operate any industrial plant in an air pollution control area

The different stages of the consent mechanism concurrent to the implementation of the projects are briefly discussed below:

Consent to Establish is granted to the industry after evaluation of the potential environmental pollution and after the examination of the engineering design and details of the systems proposed for controlling the pollution. The conditions consistent to pollution control requirements are incorporated in Consent to Establish. These conditions are reviewed in terms of their compliance and 'Consent to Establish' is converted to 'Consent to Operate' after ensuring that the engineering systems for control of water and air pollution are fully implemented. The 'Consent to Establish' is usually valid for one year which is also granted subject to the condition that the control systems shall be so operated and maintained as to

ensure compliance to the standards prescribed for emissions and/or effluents as the case may be. Consent to operate initially granted for financial year and performance of the pollution control systems is regularly monitored. Actions are taken against the non-complying cases by issuing directions for suspension of production and disconnection of power supply till the unit improves the functioning of pollution control systems to comply norms. Depending upon the performance of the pollution control systems, further renewal of consent is granted.

The achievements made during 2016-17 in discharge of regulatory functions under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, and Air (Prevention and Control of Pollution) Act, 1981 are given hereunder:

Table: 5.1
CONSENT MANAGEMENT AT A GLANCE
(2016-17)

S. NO.	PARTICULARS	GRANTED DURING THE YEAR 2016-17		REFUSED DURING THE YEAR 2016-17		CUMULATIVE AS ON 31.03.17	
		At HQ	At ROS	At HQ	At ROS		
1.	Consent to Establish						
	(a) Water Act, 1974	12	174	0	3	2636	
	(b) Air Act, 1981	1	29	0	1	1029	
	(c) Both Acts	229	362	4	0	9387	
2.	Consent to Operate						
	(a) Water Act, 1974	2	94	0	0	2396	
	(b) Air Act, 1981	1	16	1	0	889	
	(c) Both Acts	114	189	0	1	8046	
3.	No objections to non-polluting / exempted categories of industries	0	26	-	-	1164	
4.	Renewal of Consent						
	(a) Water Act, 1974	17	369	0	0		
	(b) Air Act, 1981	4	72	0	2	NA	NA
	(c) Both Act	453	563	8	0	NA	NA
5.	Consent Fees (in Rs.)	*15,85,81,329/-					
6.	Samples of industrial wastes, solid wastes, and stack/dust emissions, ground	No. of Samples Collected					
		WATER / EFFLUENTS	AIR / EMISSIONS	SOLID WASTES	VEHICLES CHECKED		

	and surface water other than those under MINARS and NAAQM collected during the year.	3233	2543	3	1793
7.	Surveillance and Inspections under Water & Air Acts & Hazardous Wastes (Management & Handling) Rules, 1998/2003.	Number of Industries		Actual Inspections done	
		10912		9221	
8.	Public complaints/representations	Received		Attended	
		320		301	
9.	Notices & Directions:	Issued		Implemented/Complied	
	(i) Number of Notices issued.	157		157	
	(ii) Number of directions issued U/S 33-A and 31 A of Water & Air Acts respectively.	100		100	
10.	Number of Industries which filed Environment Audit Reports	1065			

***Provisional subject to reconciliation after Audit.**

5.2 SURVEILLANCE & MONITORING:

The evaluation of operational and qualitative efficiency of the pollution control devices installed in different industries largely depends on regular surveillance and monitoring of the pollution control equipment. State Board has also taken initiative to start online real-time monitoring in the Cement Plants.

5.2.1 MONITORING OF INDUSTRIAL POLLUTION:

This activity is presently being conducted by a network of 10 Regional Offices of the Board headed by Sr. Environmental Engineers, Environmental Engineers and Assistant Environmental Engineers. During the year 2016-17, the surveillance and monitoring was carried out and the salient achievements in the context are presented below:-

(i)	Number of Water Pollution Control Systems (Cumulative):	3348
(ii)	Number of Air Pollution Control System (Cumulative):	3017
(iii)	Number of Inspections conducted in 2016-17:	9221
(iv)	Number of Samples of Water, Waste Water and emission including ambient air & noise in 2016-17:	5779
(v)	Number of vehicles checked:	1793

5.2.2. MONITORING OF HYDEL PROJECTS:

State Board has continued the photo monitoring of the Hydel Projects for reviewing and making required interventions in the management of muck. State Board has also initiated the process to get the Real time on-line Continuous Flow Measurement & Data logging device installed for flow measurement to monitor the mandatory 15 % release of water the operational hydel projects. Some projects have already installed the device and the others are being directed through persuasion by the State Board.

5.3 POLLUTION PREVENTION & CONTROL:

Consequent to regular surveillance & monitoring activities, constant pressure is maintained on the polluting industries for operation and maintenance of the pollution control equipment. During the year 124 new pollution control systems were got installed in the new industries to whom consents to operate were granted during the year. In addition to the three stages conventional treatment comprising of physico-chemical and biological treatment, State Board has also taken initiative to introduce tertiary level of treatment in the industrial units particularly those in Baddi-Barotiwala area.

Improvements in the already existing control systems in respect of 113 industries were also got incorporated including those, which were ordered disconnection of power due to non-performance of the pollution control systems. In addition smooth functioning of the pollution control systems installed in the existing industries was ensured by exercising regular checks by the Regional Offices.

5.4 ENVIRONMENTAL IMPACT ASSESSMENT:

Although the potential environmental impacts due to any proposed developmental activity are evaluated and the environmental management plans are got formulated and implemented while processing the cases for consent to establish/operate or renewal thereof under the provisions of the Water Act, 1974 and /or Air Act, 1986, the Government of India has specifically made Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP) mandatory in respect of categories of projects specified in the Schedule of EIA Notification, 2006 issued by the Ministry of Environment and Forests, Government of India vide No.SO-1533(E) dated 14-09-2006 . Role of the State Board under this notification is

to conduct the Public Hearing as part of the public consultation mechanism prescribed by the Government of India.

During the year 2016-17, the State Board granted 807 Consent to establish and 416 consent to operate including expansion under Water and Air Acts to the new units after due examination of environmental impacts and management plans under Water and Air Acts.

5.5 ENVIRONMENTAL MONITORING OF HYDEL PROJECTS:

In view of the amount of work involved in the Environmental Monitoring of Hydroelectric Projects, the State Board has been finding it increasingly difficult to conduct the proper surveillance and monitoring of Hydroelectric Projects from its own resources in terms of manpower and mobility. At the same time in view of the public concerns and the requirement of mandatory provisions of the Water Act, 1974, Air Act, 1981 and Environmental Clearance; it is essential that the periodic monitoring is conducted and regular checks are exercised on the activities of Hydel Projects which have adverse impacts from Water & Air besides muck/debris management. In this regard the State Board at the time of evaluating the EIA/EMP of the proposed projects ensures that costs in respect of monitoring of Environmental Management Plan with reference to checking of muck management, restoration plan, water and air quality monitoring are in-built in the EIA/EMP.

At present thirty projects have been approved namely: 1. Parbati (Stage-II) Hydroelectric Project, Distt. Kullu; H.P. 2. Kol Dam Hydroelectric Project, Distt. Bilaspur; H.P. 3. Chamera (Stage-III) Hydroelectric Project, Distt. Chamba; H.P. 4. Karcham Wangtu Hydroelectric Project, Distt. Kinnaur; H.P. 5 Rampur Hydel Project, Distt. Shimla/Kullu; H.P. 6 M/s Budhil Hydroelectric Project, Chamba; H.P. 7. Sawda-Kuddu Hydroelectric Project, Distt. Shimla, H.P. 8. M/s Sorang Hydroelectric Project, Distt. Kinnaur; H.P. 9. M/s Tidong Hydroelectric Project, Kinnaur H.P. 10. M/s Uhl Stage-III Hydroelectric Project, Distt. Mandi. H.P. 11. Tangnu Romai-I HEP, Rohroo, Distt. Shimla H.P. 12. Sainj HEP, Distt. Kullu H.P. 13. Kut HEP, Rampur, Distt. Shimla. H.P. 14. Baragaon HEP, Distt. Kullu. H.P. 15. Integrated Kashang, HEP, Distt. Kinnaur H.P. 16. Shongtong Karcham, HEP, Distt. Kinnaur. H.P. 17. Upper Nanti HEP, Distt. Shimla 18. Dhamwari Sunda HEP, Distt. Shimla. H.P. 19. Paudital Lassa HEP, Distt. Shimla. H.P. 20. Lower Nanti HEP, Distt. Shimla. H.P. 21. Sumez HEP, Distt. Shimla. H.P. 22. Jogini HEP, Distt. Shimla. H.P. 23. Roura HEP, Distt. Kinnaur. H.P. 24. Selti Musrang, Distt. Kinnaur. H.P. 25. Wanger Homte HEP, Distt. Kinnaur. H.P. 26. Chanju-I HEP, Distt. Chamba. H.P. 27. Bajoli Holi, HEP, Distt. Chamba. H.P. 28. Upper Joiner HEP, Distt. Chamba. H.P. 29. Lambadug, HEP, Distt. Chamba. H.P. and 30. Renuka Dam Project, HEP, Sirmour.

5.6 PUBLIC COMPLAINTS / REPRESENTATIONS:

To maintain a constant vigil on the environmental quality and impact thereof on the people the Regional Offices of the State Board are engaged not only in the activities of surveillance and monitoring of the industries, keep liaison with the people but also take prompt action for mitigation of the public grievances. During the year 2016-17, the State Board took remedial action on 301 public complaints/representations that were received during the year.

5.7 MANAGEMENT OF WATER CESS:

The Water (Prevention & Control of Pollution) Cess Act, 1977 provides for levy and collection of Cess from the specified categories of projects based upon the water consumption. Although in Himachal Pradesh, the number of water intensive industries is far too less in comparison to the industrially developed states, the State Board has been enforcing this Act since its enactment by the Union Government. The main achievements of the Board with respect to this legislation in 2016-17 are as under *Table 5.2*:

TABLE-5.2

Number of Assesses (Cumulative)		
1	Industrial	1088
2	Local Bodies	56
3	Total	1032

Number of Assesses (Cumulative)

Category	Value
Industrial	1088
Local Bodies	56
Total	1032

No. of Notices issued Under Water Cess Act 1977 During 2016-17		
1	Industrial/Local Bodies	137
2	Compliance Reported to Industrial/Local Bodies	55

No. of Notices issued Under Water Cess Act 1977 during 2016-17

Category	Value
Industrial/Local Bodies	137
Compliance Reported to Industrial/Local Bodies	55

Amount of Cess Assessed & Collected During 2016-17(In Rs.)			
1	Assessed	1,09,14,622/-	<p style="text-align: center;">Amount of Cess Assessed & Collected During 2016-17 (In Rs.)</p> <p style="text-align: center;">80,66,107 0 0 1,09,14,622</p> <ul style="list-style-type: none"> ■ Assessed ■ Collected ■ Transferred to Govt. of India ■ Reimbursement Received from Govt. of India
2	Collected	80,66,107/-*	
3	Transferred to Govt. of India	Nil	
4	Reimbursement Received from Govt. of India	Nil	

* Provisional subject to reconciliation after Audit.

5.8 MANAGEMENT OF SOLID WASTE UNDER THE ENVIRONMENT (PROTECTION) ACT, 1986:

5.8.1 BIO-MEDICAL WASTE (MANGEMENT & HANDLING) RULES:

Till 31st March 2017, the State Board has inventoried and covered 764 Health Care Facilities under Biomedical Waste Management Rules. During 2016-17, 125 nos. of health care facilities have been granted authorization/renewal of authorization for the block year 2014-17.

5.8.2 HAZARDOUS WASTE (MANAGEMENT, HANDLING & TRANSBOUNDARY MOVEMENT) RULES, 2016.

Till the year 31st March, 2017, the Board has identified about **2960** units generating hazardous waste. Out of which 2650 are operational as on 31st March, 2017 and responsible for generating Hazardous waste under Hazardous and other Waste (Management, Handling & Transboundary Movement) Rules, 2016 and all such units are required to obtain authorization under the said rules. The Board has granted authorization to 2650 units. The Common Treatment, Storage, Disposal Facility (TSDF) at Village Majra, Tehsil, Nalagarh, district Solan is operational since June, 2008 and is being used for scientific disposal of landfillable hazardous waste generated by the industries. A total of **127799 MT** of landfillable hazardous waste has been disposed off in TSDF by various landfillable hazardous waste generating industries in the State till date and **17802.881** MT of landfillable hazardous waste has been disposed off in TSDF during the year 2016-17.

5.8.3 IMPLEMENTATION STATUS OF MUNICIPAL SOLID WASTE MANAGEMENT RULES, 2016

As required under the provisions of Solid Waste Management Rules, 2016, the State Board performed all its functions and ensured compliance of all the provisions entrusted to it under the said Rules. The compliance w.r.t collection /

segregation / storage / transportation by all the 61 numbers of Municipal Authorities in the State of Himachal Pradesh were found partial. Although ten number of municipal authorities (covering 12 Municipal Authorities) namely Shimla, Solan, Nahan, Kullu/Bhunter, Manali, Una, Kangra,/Nagrota, Hamirpur, Dharamshala and Chamba had installed Waste Processing Facilities but the performance of these treatment facilities was also not found satisfactory.

The State Board had apprised concerned higher authorities like Pr. Secretary (Urban Development), Director, Urban Development, about the status of implementation of Solid Waste Management Rules, 2016 for their intervention. Besides this, the State Board is regularly issuing directions to Urban Local Bodies to comply with the provisions of these Rules.

During the period 2016-17 the State Board received 3 numbers of applications for setting up and operation of waste processing facility/disposal facility. The State Board processed all the applications received from various municipal authorities and granted all 3 numbers of Authorizations for setting up and operation of waste processing facility and disposal facility. The Authorization status for the year 2016-17 is detailed in Table-5.3.

Table -5.3

Authorization Status for 2016-17	
Applied for Waste Processing and Disposal facility	Granted for Waste Processing and Disposal facility
Mandi, Jogindernagar, Ghumarwin	Mandi, Jogindernagar, Ghumarwin
Total-3	Total-3

The remaining municipal authorities could not obtain authorization due to non-submission of Authorization.

Implementation of the provisions of the Water (Prevention and Control of Pollution) Act, 1974

Water (Prevention & Control of Pollution) Act, 1974 provides for prevention & control of water pollution and maintaining or restoring wholesomeness of water thus requiring provision of pollution control measures i.e. sewerage schemes and sewage treatment plants so as to check the entry of raw sewage in to recipient water bodies. As per Section 25/26 of the aforesaid Act, it is mandatory to obtain prior Consent of the Board to discharge Sewage/trade effluent.

Provision of sewage management system is the fundamental responsibility Urban Development Department and I & PH Deptt. The State Board has only regulatory function with regard to monitoring the performance of operational STPs as well as sewage management systems. The concerned departments are required to obtain consent to establish/operate and renewal thereof prior to establishing/operating STPs/ Sewage management systems.

The State Board processed all the of cases received for Consent to Establish/ Consent to Operate/Renewal of Sewage Treatment Plants owned by I&PH Department and granted consents to 16 number of STPs. Besides this, the consent under the provisions of Water Act had also been granted to 11 Urban Local Bodies. The detail of Sewage Treatment Plants in H.P. is given in Table 5.4.

Table-5.4

Names of STPs in operation		Names of STPs (Proposed or under construction)		Left out Areas	
With Consent	Without Consent	Without Consent/ NO COP	With Consent	Shimla	Chopal Jatog
Badah (Kullu) 2018	Arki	Sarkaghat	Suni	Bilaspur	Talai
BhootNath, Kullu 2018	Palampur	Nagrota	Rewalsar	Solan	Baddi
Zone-I, Sujanpur 2020	Reckong-Peo	Zone-I, Kangra	Zone-D,Una		Nalagarh
Dharamsala 2018	Zone- III, Hamirpur	Zone II, Kangra	STP THEOG		Parwanoo
Nadaun 2020	Shitla Bridge, Chamba	Zone III, Kangra	Narkanda		Kasauli
Joginder Nagar -2020	Barga, Chamba	Dehra	Kunihar		Subathu
Lanka Bekar, Kullu-2018	Tanda Medical College	STP Gagret	Shah talai		Dagshai
Jawalamukhi 2018	Jard Kullu	Zone-III, Paonta	Sarkaghat Zone-B-17		Sirmour
Manali-2021	Bhagot Chamba	Nurpur	(STP Zone-I) at Nari Chintpurni	Rajgarh	
Sundernagar 2019	Naina Devi	Zone-II Sujanpur	(STP Zone-II) Moin Gangot, Chintpurni	Kullu	Banjar
Rampur (Khopri) 2019	NIT Hamirpur	Zone-II, Santokhgarh	(STP one-III) village Dalwart Chintpurni	Chamba	Chowari

Rampur (Chhuabha)	Zone-I, Hamirpur-	Zone-I, Kotkhai			Bakloh
Ragunat ka Padhar-	Zone- II, Hamirpur-	Zone-II, Kotkhai			Bhota
Khaliar-2021	Zone-B, Solan	Bhagsunag		Hamirpur	Yol
Zone- A&B, Una	Rohroo Stage -I-	Mehatpur ABC		Kangra	Daulatpur
Zone-C, Una-2019 Septic	Jubbal -	Zone-I, Santokhgarh Septic			CB Dalhousie
Ghumarwin	Mela ground, Bhunter	Zone-I, Keylong Septic		Chamba	Dalhousie
	Sharabhai, Bhunter-	Zone-II, Keylong Septic			STP Dalhouji
	Sanjauli-	Zone-III, Keylong Septic			STP Jhakri
	Lalpani-				
	North Disposal-				
	Dhalli-				
	Snowden-				
	Summer Hill-				
	Septic tank Bilaspur				
	Mehatpur D Septic				
	Zone-I, Paonta				
	Zone-II, Paonta				

Water samples were collected from final outlets of the operational Sewage Treatment Plants during the year 2016-17. Notices have been issued to I& PH Department to bring the effluent quality of the concerned STPs within the prescribed limits and to comply with all the provisions of Water (Prevention & Control of Pollution) Act, 1974. The results of the STPs are regularly updated on the

website of HPPCB for public domain. The district wise details of STPs results are given below.

- 1 In Kullu district there are 7 operational STPs i.e Bhootnath, Lanka Baker, Manali, Jard, Sharabhai Melaground, Badah. In 2016-17, HP State Pollution Control Board took **286** samples from the outlet of aforesaid STPs. Out of which **22** samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Bhootnath	41	2
2	Lanka Baker	41	1
3	Manali	43	4
4	Jard	41	7
5	Sharabhai	40	0
6	Melaground,	39	8
7	Badah	41	0
Total		286	22

- 2 In Mandi district there are 5 operational STPs i.e. Khaliar, Raghunath Ka Padahar, Sundernagar, Jogindernagar, Sarkaghat Zone-B. In 2016-17, HP State Pollution Control Board took 177 samples from the outlet of aforesaid STPs. Out of which 28 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Khaliar	37	7
2	Raghunath Ka Padahar	40	10
3	Sundernagar	33	3
4	Jogindernagar	31	3
5	Sarkaghat Zone-B	36	5
Total		177	28

- 3 In Bilaspur district there are 2 operational STPs i.e. Ghumarwin and Naina Devi Ji. In 2016-17, HP State Pollution Control Board took 77 samples from the outlet of aforesaid STPs. Out of which 31 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Ghumarwin	33	12
2	Naina Devi Ji.	44	19
Total		77	31

- 4 In Shimla district there are 10 operational STPs i.e. Sanjauli-Malyana, Dhalli, Lalpani, North Disposal, Summer hill, Snowden, Rohroo, Jubbal, Rampur Khopri, Rampur Chuhabag. In 2016-17, HP State Pollution Control Board took 393 samples from the outlet of aforesaid STPs. Out of which 180 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Sanjauli Malyana	56	52
2	Dhalli	46	37
3	Lalpani	46	36
4	North Disposal	42	19
5	Summer hill	36	4
6	Snowden	35	2
7	Rohroo	37	14
8	Jubbal	35	8
9	Rampur Khopri	30	4
10	Rampur Chuhabag	30	4
Total		393	180

- 5 In Kangra district there are 6 operational STPs i.e. Palmpur, Jwalamukhi, Dharamshala, Nagrota, Old Kangra, Tanda Medical College. In 2016-17, HP State Pollution Control Board took 174 samples from the outlet of aforesaid STPs. Out of which 19 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Palmpur	34	9
2	Jwalamukhi,	26	5
3	Dharamshala,	27	0
4	Nagrota	31	1
5	Old Kangra	28	3
6	Tanda Medical College	28	1

- 6 In Chamba district there are 3 operational STPs i.e. Sheetla Bridge, Barga, Bhagot. In 2016-17, HP State Pollution Control Board took 90 samples from the outlet of aforesaid STPs. Out of which 14 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Sheetla Bridge	30	6
2	Barga,	29	1
3	Bhagot	31	7
Total		90	14

- 7 In Hamirpur district there are 6 operational STPs i.e. Hamirpur Zone-I, Hamirpur Zone-II, Hamirpur Zone-III, NIT Hamirpur, Sujanpur, Nadaun. In 2016-17, HP State Pollution Control Board took 210 samples from the outlet of aforesaid STPs. Out of which 81 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Hamirpur Zone-I,	52	0
2	Hamirpur Zone-II	42	24
3	Hamirpur Zone-III	49	17
4	NIT Hamirpur	44	38
5	Sujanpur	17	0
6	Nadaun	6	2
Total		210	81

- 8 In Solan district there are 3 operational STPs i.e. Solan Zone-B, Kunihar, Arki. In 2016-17, HP State Pollution Control Board took 82 samples from the outlet of aforesaid STPs. Out of which 10 samples were not achieving the prescribed standards.

Sr. No.	Name OF STP	Total Samples Taken	Samples Failed
1	Solan Zone-B	23	2
2	Kunihar	31	5
3	Arki	28	3
Total		82	10

- 9 In Sirmour district there is 1 operational STPs i.e. Paonta Zone-I. In 2016-17, HP State Pollution Control Board took 23 samples from the outlet of aforesaid STP. Out of which 1 sample were not achieving the prescribed standards.
- 10 In Kinnaur district there is 1 operational STPs i.e. Recokngpeo. In 2016-17, HP State Pollution Control Board took 45 samples from the outlet of aforesaid STP. Out of which 24 sample were not achieving the prescribed standards.

CHAPTER-6

LITIGATION RELATED TO ENVIRONMENTAL POLLUTION AND ACHIEVEMENTS

The H.P. State Pollution Control Board has a Legal Wing comprising of one Sr. Law Officer, one Asstt-Law Officer, Sr. Assistant and one Data Entry Operator to cater the legal problems/litigation (spread throughout Himachal in various districts) of the State Board having its Head Office at Shimla and 10 Regional Offices. Standing Counsels have been engaged in High Court, HP Administrative Tribunal, District Courts, Supreme Court and NGT for representing the Board's cases and counsel fee are paid as per schedule approved by the Board in its 60th Board meeting and revised in 76th Board meeting held on 26-12-2016. It has been proposed to strengthen the in house staff of legal wing in view of increasing environmental litigation.

All type of assistance is rendered to Standing Counsels from time to time for preparing replies/written statements and to produce evidence/record as and when required in the cases. Where necessary, in important matters, cases are also attended in the courts by Legal staff. Besides this, follow up action for taking information from field/labs or seeking compliance to Courts order is taken. Legal notices/directions are drafted and vetted under the Pollution Control Acts to facilitate the concerned branches. Legal opinion/advice is rendered to the Regional Officers on the clearance of cases/matters involving legal implications.

Compliance from Industry has been sought through persuasive and regulatory action under Water /Air Acts and consultative approach with encouraging results thereby, saving time, cost and efforts and legal compliance has increased significantly through these efforts from the industries. However, with increasing awareness about environment and people's right to clean air and water, the total workload has increased on account of increasing incidence of public interest litigation and judicial activism.

Regular notices are issued to the offenders and regulatory action is taken under pollution control laws. Upon failure of samples or failure to comply the Board's direction or as and when violation is observed, power connection of offenders is got disconnected rather than immediate resort to filing of cases. For resolution of conflicts and enviro-legal action, the State Board has resorted to innovative approach, which includes opportunity of hearing through mediation of Board official. The success rates of compliance have been phenomenal and resolutions have been possible in most of the cases.

Apart from this, the legal wing also provides information/ comments to the State Government in Court cases involving environmental matters. Statistical indicators of court cases during 2016-17 are as listed below:-

Statistical Indicators of Court cases for the year -2016-17 (up to 31-3-2017)

Courts	Pending as on 31-3-16	New cases initiated during the year 2016-17	Total cases in the Year 2016-17	Decided during the year 2016-17 (1-4-16 to 31-3-17)	Total/ Cumulative pending cases in the Year 2016-17 up to 31-03-2017
Supreme Court	27	4	31	1	30
National Green Tribunal (Delhi)	11	24	35	8	27
National Green Tribunal Circuit Bench at Shimla	30	17	47	11	36
High Court Cases	48	16	64	17	47
Appellate Tribunal For Electricity (APTEL) at Delhi	1	0	1	0	1
District Courts	10	5	15	2	13
Service matters / cases in High Court/HPAT	18	2	20	8	12

CHAPTER -7

FINANCE AND ACCOUNT OF THE STATE BOARD FOR THE YEAR 2016-17

- ❖ The accounting structure of H. P. State Pollution Control Board is fully streamlined to the extent that the books of accounts shows position of cash, bank and short/long- term deposit, balance on day to day basis.
- ❖ The Audit account for the financial year 2014-15 has already been laid in budget session before the State Legislature on 07/04/2016 and the accounts for the year 2015-16 have been prepared and got audited from the Statutory Audit which will be laid before the State Legislature in its next session. The accounts for the F.Y. 2016-17 are under compilation by the Internal Auditors.
- ❖ The total expenditure of the Board during 2016-17 based upon unaudited accounts was Rs. 2596.26 Lakhs (Including Projects & Income Tax Paid) as against the receipts of Rs. 2637.76 Lakhs (Including Projects, Advance Receipts & Tax Refund) as detailed below:

	(Rs. In Lakhs)
Opening Balance	11641.02
Receipts (Board)	2516.55
Receipts (Projects)	79.71
Income Tax Refund	0.00
Net Amount Available	14237.28
Less Expenditure (Board) during this year	1889.86
Less Expenditure (Projects) during the year	49.13
Less Income Tax Paid	698.77
Closing Balance	11599.52

The above figures have been worked out on the basis of un-audited accounts. Figures are provisional and subject to change after Statutory audit.

CHAPTER -8

ANY OTHER IMPORTANT MATTER DEALT WITH BY THE STATE BOARD

8.1 ENVIRONMENTAL TRAINING & CAPACITY BUILDING:

Trainings/ Workshops Attended by the Officers/Officials of the Board during 2016-17

Sr. No.	Training Title	Duration	Training Institute	Trainee
1.	Hands on Advanced Instruments of Water Quality Monitoring and Testing.	5 days	National Institute of Hydrology, Roorkee.	Dr. R.K. Awasthi, Scientific Officer HPSPCB, Regional Laboratory, Dharamshala. Sh. Chaman Thakur, Scientific Officer HPSPCB Regional Laboratory, Paonta Sahib
2.	Risk Management in Chemical Industries-Hands-on-Training	3 days	DMI Bhopal	Sh. Pawan Sharma, JEE HPSPCB, Paonta Sahib.
3.	Monitoring Industrial Emissions and Ambient Air Quality” during July 7 th - 9 th , 2016 at Barmana (Gagal Cement Works) in Himachal Pradesh.	4 days	Barmana (Gagal Cement Works) in Himachal Pradesh.	Sh. Atul Parmar, AEE HPSPCB, Baddi.
4.	Water & Air Quality Monitoring Sampling Analysis and Data Management- Hands-on-Training.	5 days	NEERI, Nagpur	Ms. Satvinder Kaur, JSO HPSPCB, Central Lab Parwanoo.
5.	Environmental Water Quality Data Entry System (EWQDES)- Interaction Meet – cum-Training	1 day	CPCB, Delhi	Sh. Anoop Vaidya, SSO HPSPCB, Regional Lab, Sunder Nagar, Sh. Prakash Sharma, SSO HPSPCB, Regional Lab, Paonta Sahib Sh. Sanjeev Sharma, SSO HPSPCB, Central Lab, Parwanoo Dr.R.K. Awasthi, SO HPSPCB, Regional Lab, Dharamshala
6.	Advanced Instrumentation	3 days	NIH, Roorkee	Sh. Chaman Thakur, SO HPSPCB Regional Lab,

	Techniques-Hands-on-Training			Paonta Sahib
7.	Laboratory Quality Management System and Internal Audit as per ISO/IEC 17025:2005/Updated Version and NABL Requirements.	3 days	NIOH, Ahmedabad	Sh. Hitender Sharma, SSO HPSPCB, Head Office, Shimla.
8.	Hands-on-Training on Sophisticated Instruments and GC/GC-MS Operation	3 days	NGRI, Hyderabad	Sh. Prakash Sharma, SSO HPSPCB, Regional Lab, Paonta Sahib
9.	Environment Management for Power Plants, Use and Disposal of fly Ash- New Avenues, Opportunities, Constraints and Challenges	3 days	CIMFR, Dhanbad	Sh. Lalit Kumar, AEE HPSPCB, Regional Office, Rampur. Sh. Deepak Dogra, HPSPCB, Regional Office, Bilaspur.
10.	Identification of Contaminated Sites and its Treatment Technologies, Interferences and Data Management using GIS-Hands-on-Training	5 days	IIT, Roorkee	Sh. Pradeep Moudgil, AEE HPSPCB, Kala Amb, Sirmour.
11.	New Development in Pollution Control Technologies (Water & Air)-Adequacy and Efficiency (with field visits)	3 days	NSI, Kanpur	Sh. S.K. Shandil, EE HPSPCB, Regional Office, Shimla
12.	Environmental Data, Interpretation, Compilation, Analysis Presentation and Reporting-Hands-on-Training-and Case Studies.	5 days	ISI, Delhi	Smt. Renu Bala, JSA HPSPCB, Regional Lab, Sunder Nagar
13.	Environmental Pollution and its Health Impacts- Practical Sessions	3 days	TERI, Delhi	Sh. Avinash Sharda, EE HPSPCB, Paonta Sahib
14.	Occupational Health & Safety Management System (OHSMS)18001 2007/Updated Version and OHSAS	5 days	NIOH, Ahmedabad	Sh. S. K. Dhiman, EE HPSPCB, Chamba
15.	Preparing Consent & Inspection Checklist	5 days	CSE, Delhi	Er. Pawan Sharma, JEE HPSPCB, Regional Office, Paonta Sahib.

16.	Preparing Consent & Inspection Checklist	5 days	CSE, Delhi	Er. Vinay Dhiman, JEE HPSPCB, Regional Office, Dharamshala
17.	Consultative symposium on Capacity Building Program on Waste Management Rules on 31st March, 2017- regarding	1 day	New Delhi	Sh. Sanjeev Sharma, SSO HPSPCB, Central Laboratory, Parwanoo
				Sh. S.K. Shandil, EE HPSPCB, Regional Office, Shimla (Head Office) and Regional Officer HPSPCB, Parwanoo, Distt. Solan, HP
18.	Compliance Monitoring & Enforcement.	12 days	CSE, New Delhi	Er.Pawan Chauhan, JEE, HPSPCB, Baddi, Distt.Solan,HP.
19.	Computer Course on Manav Sampada	2 days	HIPA, Shimla	Ms. Pratibha, Data Entry Operator HPSPCB, Head Office Shimla
20.	Continuous Emission Monitoring System	5 days	CSE, New Delhi	Sh. Anil Kumar, JEE HPSPCB, Regional Office, Parwanoo

8.2 ENVIRONMENTAL AWARENESS:

a) Environment Campaign by the State Board:

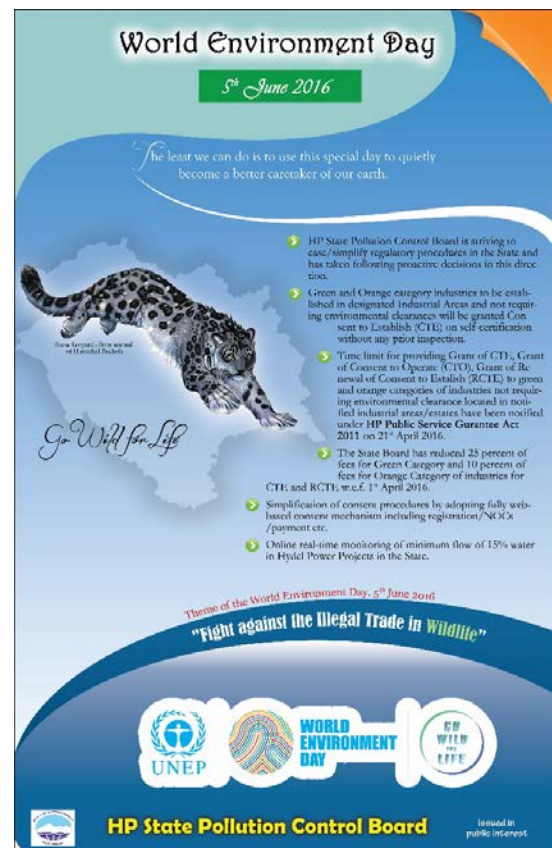
The first step towards change is awareness. Keeping this in mind, the State Board undertakes environmental campaign at field level such as Regional Office/Laboratory to create awareness among public especially students. Mass awareness activity has become an important tool for the State Board to achieve effective compliance of various pollution control norms, which are expanding like never before. The following mechanisms can be fruitful to promote environmental awareness:

- a) Generating public awareness and environmental education, particularly among targeted groups, about relevant laws, regulations and about their rights, interests, duties and responsibilities, as well as about the social, environmental and economic consequences of non-compliance.
- b) Promoting responsible action in the community through the media by involving key public players, decision-makers and opinion-builders in such campaigns.
- c) Organizing campaigns for fostering environmental awareness among communities, non-government organizations, the private sector and industrial and trade associations.
- d) Inclusion of awareness and environment education programmes in schools and other educational establishments as part of education.

In Himachal Pradesh, considering the facts above, the State Board with active cooperation of various stakeholders of the state government had initiated various types of environmental awareness programmes targeting the people of all walks of life.

In order to make the general masses aware of the environmental issues the following activities were carried out during the year:

- I. Display advertisements in newspapers, magazines and souvenirs on regular basis and particularly on important occasion such as World Environment Day & Diwali;
- II. Audio- advertisements released in favour of M/s Radio Mirchi FM & All India radio FM to disseminate the rules with respect to Solid Waste Management 2016 and Noise Pollution;
- III. Workshops/seminars organized on waste management rules for the users by MSW Division.



b) Celebration of World Environment Day on 5th June, 2016:

World Environment Day (WED) is celebrated every year on 5 June to raise global awareness to take positive environmental action to protect nature and the planet Earth. The State Board celebrated World Environment Day 2016 by organizing various activities to spread the message and create awareness on environment protection among the public. It also aims to identify issues related to environment and take corrective action.

The theme for World Environment Day 2016 was **"Go Wild for Life – Fight against the Illegal Trade in Wildlife."**

The State Board through its field offices such as Regional Offices & Laboratories observed the day with great enthusiasm by organizing scores of activities with the support of schools and individuals. The programmes share the ideas to tackle environmental challenges that include natural disasters, global warming and toxic substances.

Display advertisement in newspapers on the eve of WED-2016

- (i) School level declamation contests were organized at Regional Office level in different schools on 5th June 2016.
- (ii) Vehicular monitoring in the major towns of the State.

- (iii) Activities like drawing competition, slogan writing and debates were organized for the school students.
- (iv) Environmental rallies were taken out by the school children carrying banners and signboards on environmental slogans at Regional Office/Laboratory level.
- (v) Distribution of pamphlets on vehicular pollution, air pollution and noise pollution amongst general public and students.

Environmental campaigns at field level



Tree Plantation at Bilaspur



Env. Rally at Sundernagar



Env. Rally at Rampur



Children taking out Environmental Rally in front of newly inaugurated Regional Office/Laboratory Dharamshala



Declamation contest at Una



Student's activity at Baddi



Mass awareness rally at Paonta Sahib

Painting competition at Parwanoo

b) Advertisement and Publicity: During the year 2016-17, the State Board intensified mass awareness campaign through publication of matter concerning environmental issues in the leading national, local newspapers, weekly & quarterly magazines.

Exposure visit	Display advertisement
 <p>Sr. Scientific Officer, Central Laboratory HPSPCB, Parwanoo took the M.Sc (Env) students to various industries to apprise them about the process of waste water treatment through Effluent Treatment Plant cum Sewage Treatment Plant (ETP cum STP) and component of waste water treatment plants. Students were apprised about different type of waste generated i.e solid waste, hazardous waste, e-waste, plastic waste etc from industries and its segregation process for re-cycling/disposal. In addition, awarness programs were also conducted for the proper management of Bio-medical wastes in various places.</p>	 <p>ATTENTION SOLID WASTE GENERATORS</p> <p>THE NEW RULES namely Solid Waste Management Rules (SWM), 2016 (notified on 01 April 2016, replacing the Municipal Solid Wastes (Management and Handling) Rules, 2000).</p> <p>The rules are now applicable beyond Municipal areas and extend to urban agglomerations, census towns, notified industrial townships, areas under the control of Indian Railways, airports, airbase, port and harbour, defence establishments, special economic zones, State and Central government organisations, places of pilgrims, religious & historical importance.</p> <p>Salient Features on SWM 2016</p> <ul style="list-style-type: none"> Waste generators would now have to segregate waste into three streams - Biodegradable (like, Dry (Plastic, Paper, metal, Wood, etc.) and Domestic Hazardous waste (glass, needles, syringas, repellents, cleaning agents, etc.) before handing it over to the collector. Institutional generators, market associations, event organisers and hotels and restaurants have been directly made responsible for segregation and sending the waste and manage in partnership with local bodies. All hotels and restaurants will also be required to segregate biodegradable waste and set up a system of collection to ensure that such food waste is utilised for composting / bioconversion. The manufacturers or brand owners of sanitary napkins are responsible for awareness for proper disposal of such waste by the producer and shall provide a pouch or wrap per for disposal of each napkin or diapers along with the packet of their sanitary products. The rules also stipulate zero tolerance for throwing, burning, or burying the solid waste generated on streets, open public spaces outside the generator's premises, or in the drain, or water bodies. The SWM Rules, 2016 emphasise promotion of waste to energy plants. An event, or gathering organised by more than 100 persons or any licensed/unlicensed place, should ensure segregation of waste at source and handing over to segregated waste to waste collector or agency, as specified by local authority. As per the new rules, construction of landfills on hills shall be avoided. High caloric wastes shall be used for co-processing in cement or thermal power plants. Construction and demolition waste should be stored, separately disposed off, as per the Construction and Demolition Waste Management Rules, 2016. <p>For detailed information visit : http://hpcb.nic.in</p> <p>H.P. STATE POLLUTION CONTROL BOARD Issued in public interest...</p>

c) Control of Noise Pollution: Campaign against noise pollution due to firecrackers was also launched on the eve of Diwali festivals throughout the State by way of noise monitoring and advertisements in the newspapers.

ORGANIZATION STRUCTURE

