

# **Waste Water (Standards for Discharge of Industrial Effluent into a Waste Water System) Regulations 2004**

**GN No. 182 of 2004**

## **THE WASTE WATER MANAGEMENT AUTHORITY ACT**

### **Regulations made by the Minister under section 47 of the Waste Water Management Authority Act**

1. These regulations may be cited as the **Waste Water (Standards for Discharge of Industrial Effluent into a Waste Water System) Regulations 2004**.

2. In these regulations-

"licence" means a licence issued under regulation 3;

"licensee" means the holder of a licence;

"pollutant" means any matter, whether in solid, liquid or gaseous state, that alters the quality of water with which the matter gets into contact and includes any substance from which a pollutant is derived.

3. (1) No person shall discharge or cause to be discharged industrial effluent into a waste water system unless he holds a licence under these regulations.
- (2) (a) An application for a licence shall be made in the form specified in the First Schedule.
- (b) An applicant shall provide the Authority with any further information the Authority may require for the purpose of the application.
- (3) The Authority may, subject to such conditions as it thinks fit, and on payment of a fee of 500 rupees, issue a licence.
- (4) A licence issued under paragraph (3) shall be valid for a period of 3 years and may be renewed for a further period of 3 years on payment of a fee of 200 rupees.
- (5) An application for the renewal of a licence shall be made -
- (a) within 3 months before the expiry of the licence; and
- (b) in the form specified in the First Schedule.

- (6) Where the Authority has reason to believe that the licensee has failed to comply with a condition of his licence he may, after having given the licensee an opportunity to show cause in writing within a period of 30 days why his licence should not be revoked, revoke the licence.
4. (1) Any measuring device used by the licensee and any procedure for the regular calibration and maintenance of the device shall be approved by the Authority.
    - (2) A licensee shall record the daily volume of water consumed and the daily flow of industrial effluent discharged into a waste water system and shall submit to the Authority a monthly report on the daily consumption of water and the daily flow of industrial effluent discharged.
5. (1) A licensee shall -
    - (a) take composite sample of industrial effluent at intervals specified in the Second Schedule;
    - (b) analyse the composite sample of industrial effluent for the purpose of determining the level of pollutant specified in the Third Schedule; and
    - (c) submit a monthly report of the result of the analysis to the Authority.
    - (2) Any composite sample of industrial effluent shall be collected at an hourly interval over a continuous period of 24 hours on the basis of an average production and water used.
    - (3) Any device used by the licensee to take composite sample shall be approved by the Authority.
    - (4) Where it is not feasible for a licensee to collect composite sample of industrial effluent, the Authority may allow for collection of grab samples at intervals to be determined by the Authority.
    - (5) Any cost incurred in relation to the collection and analysis of the sample of industrial effluent shall be at the expense of the licensee.
6. (1) The permissible limit of pollutant to be discharged as industrial effluent into a waste water system shall be as specified in the Fourth Schedule.
    - (2) A licensee shall install such pre-treatment system, as approved by the Authority to ensure that any discharge of industrial effluent is in compliance with the permissible limit of pollutant as specified in the Fourth Schedule.

- (3) Where it is found that industrial effluent discharged into a waste water system contains pollutant with concentration or load exceeding the permissible limit as specified in the Fourth Schedule, the licensee shall pay a penalty in respect of each pollutant as specified in the Fifth Schedule.
7. Where a licensee fails to submit a monthly report as provided under regulation 5, the maximum water consumption as specified in the First Schedule and the maximum concentration level of pollutant shall be determined by the Authority on the basis of any past record or typical values reported for similar type of activity and shall apply for the reported calculation of the penalty.
8. (1) The licensee shall forthwith notify the Authority of any accident or spill resulting in an increase in the concentration or load of pollutants contained in the industrial effluent.
- (2) The licensee shall take immediate corrective action to lower the level of pollutant in order to comply with the permissible limit as specified in the Fourth Schedule.
- (3) The Authority may instruct the licensee to take any corrective action as appropriate and the licensee shall comply with such instructions as determined by the Authority.
- (4) Any cost incurred in relation to any instruction given pursuant to paragraph (3) shall be borne by the licensee.
9. The Authority shall, at any time, have access to the licensee's premises for the purpose of-
- (a) inspecting and maintaining any public waste water network;
- (b) inspecting and verifying any meter and sampling device used; and
- (c) collecting samples for the analysis of industrial effluent discharged.
10. Any person who -
- (a) unlawfully discharges industrial effluent into a waste water system without a valid licence;
- (b) fails to comply with any of the conditions of the licence,

shall commit an offence and shall, on conviction, be liable to a fine not exceeding 10,000 rupees and to imprisonment for a term not exceeding 12 months.

11. These regulations shall come into operation on 1st January, 2005.

**FIRST SCHEDULE**

(regulation 3)

**Application for a licence/Renewal of a licence to discharge industrial effluent into a waste water system**

**1. Description of the industry**

- (a) Name and address of the industry:.....  
.....
- (b) Location:.....  
.....
- (c) Approximate number of employees:.....
- (d) Brief description of the production process and product(s):.....  
.....
- (e) Total production:.....
- (f) Authorised person in the organisation responsible for water supply and effluent disposal:  
  
Name:.....  
Position:.....  
Address:.....  
Phone No./Fax No.:.....  
Fax No.:.....  
e-mailAddress:.....
- (g) Water Source (e.g. CWA, private boreholes, etc) and description of metering device (annex description where necessary):  
.....  
.....

**2 Water consumption of the industry**

- (a) Average daily water consumption (m<sup>3</sup>):.....
- (b) Maximum daily water consumption (m<sup>3</sup>):.....

**3. Location of effluent discharge point(s)**

.....

**4. Volume of effluent to be discharged**

(a) Average daily discharge (m<sup>3</sup>):.....

(b) Maximum daily discharge (m<sup>3</sup>):.....

(c) Maximum instantaneous discharge (m<sup>3</sup>/sec):.....

**5. Description of existing effluent meters**

.....  
.....

(annex description where necessary).

**6. Location of sampling point(s) and description of existing effluent sampling devices** (annex description and location map if necessary):.....

.....

(annex description and location respectively where necessary)

**7. Characteristics and quality of the waste water to be discharged**

.....  
.....  
.....

(annex analysis certificate where appropriate)

**8.** I/we request that I/we may be granted an industrial discharge licence in accordance with the particulars given above.

Delete if not applicable

**9.** I/we request for the renewal of the industrial effluent discharge licence in accordance with the particulars given above.

Delete if not applicable

.....  
(Name of applicant)

.....  
(Signature of applicant)

Date .....

.....  
(Position)

## SECOND SCHEDULE

(regulation 5(1) (a))

### Monitoring interval of industrial effluent

Parameter	Monitoring interval in days when total daily COO-loads are		
	<300kg	between 300kg and 600gk	>600kg
Cadmium	30	30	30
Chloride	60	30	30
Chromium	30	30	30
Cobalt	30	30	30
COD	30	30	15
Colour	90	90	30
Conductivity	1	1	1
Iron	30	30	30
Lead	30	30	30
Manganese	30	30	30
Mercury	30	30	30
Nickel	30	30	30
Oil & Grease	60	60	30
pH	1	1	1
Settleable Solids	1	1	1
Sodium	60	30	30
Solvents	30	30	30
Sulphate	60	30	30
Sulphide	90	60	30
Temperature	1	1	1
TKN	90	30	30
Total Phosphorus	90	60	30

TSS	60	30	15
Zinc	30	30	30

**Monitoring interval of effluent containing toxic compounds or other prohibited pollutants**

Parameter	Monitoring Frequency in days
Heavy Metals	30
Phenols	30
Pesticides	30
Cyanide	30
Total Organic Halides	30

Abbreviations:

COD	: Chemical Oxygen Demand
TSS	: Total Suspended Solids
TKN	: Total kjeldahl Nitrogen

**THIRD SCHEDULE**

[regulation 5(1) (b)]

**List of pollutant in respect of each industrial activity**

**1. Textile**

**1.1 Dye House**

- (a) Using raw materials of cotton and wool Temperature, colour, oil and grease, pH, zinc, chromium, nickel, cobalt, conductivity, COD, sulphate, chloride, sodium, total suspended solids, total organic halides and total phosphorus.
- (b) Others  
Temperature, colour, oil and grease, pH, zinc; chromium, nickel; cobalt, conductivity, COD, sulphate, sulphide, chloride, sodium, total suspended solids, halogenated total organic halides and total phosphorus.

**2. Metal Plating and Galvanising Plant**

Temperature, lead, chromium, zinc, cyanide, iron, nickel, pH, total suspended solids, conductivity ,total organic halides and total phosphorus.

**3. Slaughterhouse**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids and total phosphorus.

**4. Fish Canning Plant**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids, conductivity and total phosphorus.

**5. Meat Canning Plant**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids, sodium and total phosphorus.

**6. Vegetable and Fruit Canning Plant**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids, sodium and total phosphorus.

**7. Soft Drink Bottling Plant**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids, sodium and total phosphorus.

**8. Brewery and Distillery**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids, sodium and total phosphorus.

**9. Soap and Detergent Manufacturer**

Temperature, COD, BOD, TKN, pH, oil and grease, total suspended solids, settleable solids, sodium, total organic halides and total phosphorus.

**10. Chemical Conditioning Plant**

Temperature, COD, BOD, TKN, phosphorus, solvents, pH, total suspended solids, total pesticides, lead, zinc, chromium, nickel, manganese, settleable solids, conductivity, phenols, total organic halides and total phosphorus.

**11. Mechanical Workshop**

COD, BOD, TKN, pH, total suspended solids, lead, zinc, chromium, cadmium, nickel, manganese, mercury, total organic halides and total phosphorus.

**12. Paint Manufacturer**

Colour, temperature, COD, BOD, TKN, solvents, pH, total suspended solids, lead, zinc, chromium, cadmium, nickel, manganese, mercury, total organic halides and total phosphorus.

**13. Dairy Processing Plant**

Temperature, COD, BOD, TKN, pH, total suspended solids, settleable solids, oil & grease sodium and total phosphorus.

**14. Edible Oil Refinery and Manufacturer of Edible Oil Product**

Temperature, COD, BOD, TKN, pH, total suspended solids, settleable solids, oil and grease and total phosphorus.

**15. Laundry and Dry Cleaner**

Temperature, COD, BOD, TKN, total phosphorus, pH, total suspended solids, settleable solids, total organic halides and total phosphorus.

**16. Tannery**

Temperature, pH, colour, oil & grease, zinc, chromium, nickel, cobalt, mercury, conductivity, COD, sulphate, sulphide, chloride, sodium, total suspended solids, total organic halides and total phosphorus.

**17. Pharmaceutical Industry**

Temperature, oil & grease, pH, conductivity, COD, sulphide, phenols, total suspended solids and total phosphorus.

Abbreviations:

BOD: Biochemical Oxygen Demand

COD: Chemical Oxygen Demand

TKN: Total Kjeldahl Nitrogen

**FOURTH SCHEDULE**

(regulations 6 and 8)

**Permissible limits of pollutants to be discharged as industrial effluent into a waste water system**

<b>Parameter</b>	<b>Unit</b>	<b>Maximum Permissible Concentration</b>
<b>Heavy Metals</b>		
Arsenic	mg/l	1
Boron	mg/l	5
Cadmium	mg/l	0.05
Chromium (total)	mg/l	1
Cobalt	mg/l	0.5
Copper	mg/l	2
Iron	mg/l	5
Lead	mg/l	1
Manganese	mg/l	2
Mercury	mg/l	0.1
Nickel	mg/l	2
Zinc	mg/l	2
<b>Miscellaneous Parameters</b>		
Chemical Oxygen Demand	mg/l	1,500
Chloride (as Cl <sup>-</sup> ) and Sulphate (as SO <sub>4</sub> <sup>2-</sup> ), combined	mg/l	1,500
Electrical Conductivity	mS/cm	3,500
Oil & grease	mg/l	150
PH	Range	5 – 9
Phenols (as Phenol)	mg/l	5
Settleable Solids	mg/l	10
Sodium (as Na) or SAR)	mg/l	300 (10)
Sulphides (as S <sup>2-</sup> )	mg/l	1
Temperature	°Celsius	<40

Total Dissolved Solids	Mg/1	2,000
Total Kjeldahl Nitrogen	mg/1	80
Total Organic Halides	mg/1	1
Total Phosphorus	mg/1	50
Total Suspended Solids	Mg/1	400

Abbreviation:

SAR - Sodium Adsorption Ratio:  $N_2 / [1/2 (Ca + Mg)]^{1/2}$

Na - sodium, Ca - calcium, Mg - Magnesium

Special Limitations:

- No radioactive wastes or isotopes.
- No cyanides or related compounds capable of liberating HCN gas or cyanogens.
- No degreasing solvents, petroleum spirit, volatile flammable solvents or any substance that yields a flammable vapour at ambient temperature.
- No hydrocarbons or derivatives of hydrocarbons.
- No pesticides or insecticides.
- Notwithstanding the above specified permissible limits, the total concentration of heavy metals and metalloids shall not exceed 10 mg/1 at any time.

**FIFTH SCHEDULE**

(regulation 6(3))

Parameter	Permissible Limits, mg/1	Penalty, Rs/kg							
		1 <sup>st</sup> Year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year	6 <sup>th</sup> year	7 <sup>th</sup> year	8 <sup>th</sup> year
Arsenic	1	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Boron	5	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Cadmium	0.05	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Chemical Oxygen Demand (COD)	1,500	5	5	5	5	18	18	20	20
Chromium (total)	1	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Cobalt	0.5	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Copper	2	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Iron	5	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Lead	1	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Manganese	2	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Mercury	0.1	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Nickel	2	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000
Oil & Grease	150	5	5	5	5	18	18	20	20
Settleable Solids	10	5	5	5	5	18	18	20	20

Total Kjeldhal Nitrogen (TKN)	80	5	5	5	5	18	18	20	20
Total Organic Halides	1	0	0	2,000	2,500	3,000	3,000	3,000	3,000
Total Phosphorous	50	5	5	5	5	18	18	20	20
Total Suspended Solids (TSS)	400	5	5	5	5	18	18	20	20
Zinc	2	1,500	1,500	2,000	2,500	3,000	3,000	3,000	3,000

**Note:**

Monthly penalty payable by the licensee for the discharge of any pollutant with concentrations in excess of the permissible limit as specified in the Fourth Schedule quoted in the second column is calculated as the amount of the pollutant discharged per month times the penalty in Rs/kg provided in the 3<sup>rd</sup> to 10<sup>th</sup> columns.