

**SECTIONS 23, 34 AND 96-THE WATER POLLUTION CONTROL (EFFLUENT AND WASTE WATER) REGULATIONS**  
*Regulations by the Minister*

*Statutory Instrument*  
*72 of 1993*  
*177 of 1993*  
*133 of 1996*  
*Act No.*  
*13 of 1994*

1. These Regulations may cited as the Water Pollution Control (Effluent and Waste Water) Regulations.

Title

2. In these Regulations unless the context otherwise requires-

Interpretation

"aquatic environment" means all surface and ground waters, but does not include water in installations and facilities for industrial effluent, sewage collection and treatment;

"discharge" means spilling, leaking, pumping, pouring, emitting, emptying or dumping;

"effluent" means waste water or other fluid of domestic, agricultural, trade or industrial origin, treated or untreated and discharged directly or indirectly into the aquatic environment;

"inspectorate" means the Environmental Inspectorate established under section *eighty-one* of the Act;

"inspector" means a person appointed as such under section *eighty-three*;

"licence" means a licence to discharge effluent issued under section *thirty-one*;

"pollutant" means any substance or energy which if it enters or is discharged into water may cause discomfort to, or endanger the health, safety and welfare of persons, or may cause injury or damage to plant or animal life or property, or which may interfere unreasonably with the normal enjoyment of life or property or use of property or conduct of business, and those objects or substances as may inadvertently obstruct or divert the natural flow of a water course when discharged or dumped into it;

"sewage" means waste water generated by residential and commercial establishments;

"sewage system" includes sewage treatment plants;

"waste water" means water which has been used for domestic, commercial, agricultural, trading or industrial purposes and as a result of such uses may cause water pollution when discharged into the aquatic environment; and

"water pollution" means the introduction, directly or indirectly of pollutants into an aquatic environment.

**3. (1)** A local authority intending to operate a sewage system or owner or operator of any industry or trade which will discharge effluent into the aquatic environment shall apply to the Inspectorate for a licence in Form WP1 set out in the First Schedule and shall pay the appropriate fee set out in the Second Schedule. Application for licence to discharge effluent

(2) A local authority operating a sewage system or owner or operator of any industry or trade discharging effluent into the aquatic environment before the commencement of these Regulations shall apply to the Inspectorate for a licence, referred to in sub-regulation (1) within thirty days from the commencement of these Regulations.

(3) The application referred to in sub-regulation (1) shall contain information relating to the quality and quantity of effluent, its treatment and such other information as the Inspectorate may require.

(As amended by S.I. No. 177 of 1993)

**4.** (1) A person intending to withdraw water from a water course or any other source for the purpose of diluting an effluent shall apply to the Inspectorate for a licence in Form WP2 set out in the First Schedule and shall pay the appropriate fee set out in the Second Schedule.

Application for licence to withdraw water for diluting effluent

(2) A person who has been withdrawing water from a water course or from any other source for the purpose of diluting effluent before the commencement of these Regulations shall apply for a licence referred to in sub-regulation (1) to the Inspectorate within thirty days of the commencement of these Regulations.

(3) The application referred to in sub-regulation (1) shall contain information relating to the amounts of water required, the treatment of effluent and such other information as the Inspector may require.

**5.** (1) The Inspectorate shall issue a licence to discharge effluent in Form WP3 of the First Schedule if-

Licence to discharge effluent

(a) satisfied that the application has adequate and appropriate facilities and equipment for pre-treatment and the effluent will not cause significant damage to the environment;

(b) the Inspectorate had published its intention to issue the licence by notice in the *Gazette*, twenty-eight days before the issue of the licence.

(2) The licence to discharge effluent into the aquatic environment shall-

(a) conform to the conditions and standards for chemical and physical parameters contained in the table of standards for effluent and waste water, set out in the Third Schedule;

(b) be subject to such other conditions as the Inspectorate may determine; and

(c) be valid for thirty-six months and may be renewed for a like period:

Provided that the Inspectorate may limit the validity of the licence for any period less than thirty-six but not less than six months, when necessary.

**6. (1)** The Inspectorate shall issue a licence to withdraw water from a water course or other source for the purpose of diluting effluent in Form WP 4 of the First Schedule if-

Licence to withdraw water for treatment of effluent

(a) satisfied that the water being withdrawn from the water course or source would not significantly affect the life of the water course or source;

(b) satisfied that the applicant will treat the effluent in a manner that would not have any adverse effect on the aquatic environment;

(c) the Inspectorate has published the intention to issue the licence by notice in the *Gazette*, twenty-eight days before the issue of the licence.

(2) The licence to withdraw water from a water course or source for the treatment of effluent shall-

(a) be subject to such conditions as the Inspectorate may determine; and

(b) be valid for thirty-six months and may be renewed for a like period:

Provided that the Inspectorate may limit the validity of the licence for any period less than thirty-six months but not less than six months, when necessary.

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|--|--|
| <p><b>7. (1)</b> The holder of a licence under these Regulations shall-</p> <p>(a) keep a record of the licensed activities;</p> <p>(b) submit the record referred to in paragraph (a) to the Inspectorate every six months from the commencement of the licensed activities; and</p> <p>(c) report to the Inspectorate any abnormal discharge of effluent.</p> <p>(2) The Inspectorate may order the holder of a licence under these Regulations to instal at the expense of the holder of the licence, metering devices and to take samples and analyse them as the Inspectorate may direct.</p> | <p>Duty to keep records</p>              |
| <p><b>8.</b> An Inspectorate may at any reasonable time enter any premises on which a licensed activity is being conducted and take samples and analyse and examine materials used for the licensed activity.</p>  | <p>Sampling of effluent and analysis</p> |
| <p><b>9.</b> The Inspectorate shall maintain a register of holders of licences to discharge effluent into the aquatic environment or to withdraw water from a water course or any other source for the purpose of diluting an effluent.</p>  | <p>Register of licences</p>              |
| <p><b>10.</b> Any person who-</p> <p>(a) operates or owns a sewage system or an industry or trade which discharges effluent into the aquatic environment without a licence; or</p> <p>(b) withdraws water from a water course for the purpose of diluting effluent without a licence;</p> <p>shall be guilty of an offence.</p>  | <p>Offences</p>                          |
| <p><b>11. (1)</b> If the Inspectorate has reasonable cause to believe that a person is contravening any of the provisions of these Regulations or any conditions of a licence or is likely to contravene any of the provisions of these Regulations or a condition of the licence, the Inspectorate shall serve an enforcement notice on that person.</p>  | <p>Enforcement notice</p>                |

(2) An enforcement notice shall-

(a) state the belief regarding the contravention of the Regulations or a condition of the licence and specify the matter constituting the contravention or making it likely that the contravention will arise, as the case may be;

(b) specify the steps that have to be taken to remedy the contravention or avoid the contravention, as the case may be; and

(c) specify the time limit within which the steps described under paragraph (b) have to be taken.

**12.** Any person who contravenes any of the provisions of these Regulations or a condition of the licence after an enforcement notice has been issued under regulation 11- Penalties

(a) shall have the licence revoked; and

(b) shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding two thousand penalty units or imprisonment for a period not exceeding three years or to both.

*(As amended by Act No. 13 of 1994)*

## **FIRST SCHEDULE**

### PRESCRIBED FORMS

*(Regulations 3, 4, 5 and 6)*

REPUBLIC OF ZAMBIA

### **Environmental Council Form WP 1**

### **The Water Pollution Control (Effluent and Waste Water) Regulations**

### APPLICATION TO DISCHARGE EFFLUENT

*(Regulation 3)*

(To be completed in Triplicate)

To: The Chief Inspector (Pollution Control)

Environmental Council

P.O. Box 35131

Lusaka

Name and address of applicant

Location of Plant/Industry

Indicate source of raw water (lake, river, well, common pipe)

Location of raw water (lake, river, etc.)

Raw water demand     $\text{m}^3/\text{year}$   
                                   $\text{m}^3/\text{day max}$   
                                   $\text{m}^3/\text{day min}$   
                                   $\text{m}^3/\text{hour max}$

Water-meter Yes/No

Raw water treatment methods

Raw water quality

pH

Total dissolved solids     $\text{mg/L}$

Total suspended solids             $\text{mg/L}$

Conductivity     $\text{US/cm}$

Is part of raw water used to dilute effluent prior to discharge?

Type of effluent (cooling, process, municipal, etc.)	Discharge m <sup>3</sup> /day min	Discharge m <sup>3</sup> /day max	Discharge m <sup>3</sup> /year average
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Point of entry of effluent into water course/aquatic environment

## WASTE WATER QUALITY

### A. Physical

- |   |             |
|---|-------------|
| 1. Temperature (thermometer)  | C           |
| 2. Colour (hazen units)   | Hazen Units |
| 3. Odour and Taste<br>(threshold odour number)                          |             |
| 4. Turbidity (NTU scale)  | NTU         |
| 5. Total suspended solid<br>(gravimetric method)                        | mg/L        |
| 6. Settleable matter sedimentation<br>in 2 hours (imhoff funnel)        | mg/L        |
| 7. Total dissolved solids (evaporation<br>@105c and gravimetric method) | mg/L        |
| 8. Conductivity (electrometric method)                                  | US/cm       |

### B. Bacteriological

- |  |       |
|--|-------|
| 9. Total coliform/100 ml<br>(membrane filtration method)   |       |
| 10. Faecal coliform/100 ml<br>(membrane filtration method) |       |
| 11. Algae/100 ml<br>(colony counter)                       | cells |

### C. Chemical

- |   |  |
|---|--|
| 12. pH (0-14 scale) (electrometric method)                        |  |
| 13. Dissolved oxygen mg oxygen/Litre<br>(modified winkler method) |  |



and membrane electrode method)	mg/L
14. Chemical oxygen demand (COD) (dichromat method)	mg/L
15. Biochemical oxygen demand (BOD) (modified winkler method and membrane electrode method)	mg/L
16. Nitrates (NO <sub>3</sub> as nitrogen) (spectrophotometric method and electrometric method)	mg/L
17. Nitrate (NO <sub>2</sub> as nitrogen/L) (spectrophotometric sulphanimide)	mg/L
18. Organic nitrogen (spectrophotometric method N-Kjeldal)	mg/L
19. Ammonia and ammonium (total) (NH <sub>3</sub> as N/L) (nesslerization method and electrometric method)	mg/L
20. Cyanides (spectrophotometric method)	mg/L
21. Phosphorous (total)(PO <sub>4</sub> as P/L) (colorimetric method)	mg/L
22. Sulphates (turbidimetric method)	mg/L
23. Sulfito (iodometric method)	mg/L
24. Sulphide (iodometric and electrometric method)	mg/L
25. Chlorides Cl/L (silver nitrate and mercuric nitrate)	mg/L
26. Active chloride Cl <sub>2</sub> /L (iodometric method)	g/L
27. Active bromine (Br <sub>2</sub> /L)	mg/L
28. Fluorides F/L (electrometric method and colorimetric method with distillation)	mg/L

### *C. Metals*

29. Aluminum compounds (atomic absorption method)	mg/L
30. Antimony (atomic absorption method)	mg/L
31. Arsenic compounds (atomic absorption method)	mg/L
32. Barium compounds (water soluble concentration) (atomic	

absorption method)	mg/L	
33. Beryllium salts and compounds (atomic absorption method)	mg/L	
34. Boron compounds (spectrophotometric method)	mg/L	
35. Cadmium compounds (atomic absorption method)	mg/L	
36. Chromium Hexavalent, Trivalent (atomic absorption method)	mg/L	
37. Cobalt compounds (atomic absorption method)	mg/L	
38. Copper compounds (atomic absorption method)	mg/L	
39. Iron compounds (atomic absorption method)	mg/L	
40. Lead compounds (atomic absorption method)	mg/L	
41. Magnesium (atomic absorption method and flame photometric method)	mg/L	
42. Manganese (atomic absorption method)	mg/L	
43. Mercury (atomic absorption method)	mg/L	
44. Molybdenum (atomic absorption method)	mg/L	
45. Nickel (atomic absorption method)	mg/L	
46. Selenium (atomic absorption method)	mg/L	
47. Silver (atomic absorption method)		mg/L
48. Thallium (atomic absorption method)	mg/L	
49. Tin compounds (atomic absorption method)	mg/L	
50. Vanadium compounds (atomic absorption method)	mg/L	
51. Zinc compounds (atomic absorption method)	mg/L	
<i>D. Organics</i>		
52. Total hydrocarbons (chromatographic method)	mg/L	

- 53. Oils (mineral and crude)  
(chromatographic method and gravimetric method) mg/L
- 54. Phenols (steam distillable)  
(non-steam distilled)  
(colorimetric method) mg/L
- 55. Fats and saponifiable oils  
(gravimetric method and chromatography method) mg/L
- 56. Detergents (atomic) (atomic absorption spectrophometric) mg/L
- 57. Pesticides and PCB's (total)  
(chromatographic method) mg/L
- 58. Trihaloforms (chromatographic) mg/L

*E. Radioactive Materials*

- 59. Radioactive materials specified by International Atomic Energy Agency  
Other specify
- |  |                       |               |
|--|-----------------------|---------------|
|  | No discharge accepted | Not permitted |
|--|-----------------------|---------------|

Type of waste water treatment facilities (settling, filtering, chemical)

Treatment efficiency %	suspended solids	BOD	COD	phosphate
No. 1 Method				
No. 2 Method				
No. 3 Method				
Any other information				

Date.....Signature  
 Designation/Title

FOR OFFICE USE ONLY

Application received ..... Fee paid

*Chief Inspector (Pollution Control)*

*Environmental Council  
Inspectorate*

REPUBLIC OF ZAMBIA

**Environmental Council  
Form WP 2**

**The Water Pollution Control (Effluent and Waste Water) Regulations**

APPLICATION TO WITHDRAW WATER FOR TREATMENT OF EFFLUENT

*(Regulation 4)*

(To be completed in Triplicate)

To: The Chief Inspector (Pollution Control)  
Environmental Council  
P.O. Box 35131  
Lusaka

Name and Address of applicant

Location of plant/industry

Location of raw water (lake, river, etc.)

Raw water demand     $m^3$ /year  
                                  $m^3$ /day max  
                                  $m^3$ /day min  
                                  $m^3$ /hour max

Water-meter Yes/No

Raw water treatment methods

Raw water quality

PH

Total dissolved solids mg/L

Total suspended solids mg/L

Conductivity US/cm

Type of Effluent (cooling, process municipal, etc.)	Discharge m <sup>3</sup> /day min	Discharge m <sup>3</sup> /day max	Discharge average
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Point of entry of effluent into watercourse/aquatic environment.....

## WASTE WATER QUALITY

### A. Physical

- |  |             |
|--|-------------|
| 1. Temperature (thermometer)   | C           |
| 2. Colour (hazen units)  | Hazen Units |
| 3. Odour and Taste (threshold odour number)                            |             |
| 4. Turbidity (NTU scale)   | NTU         |
| 5. Total suspended solids (gravimetric method)                         | mg/L        |
| 6. Settleable matter sedimentation in 2 hours (imhoff funnel)          | mg/L        |
| 7. Total dissolved solids (evaporation @ 105 C and gravimetric method) | mg/L        |
| 8. Conductivity (electrometric method)                                 | US/cm       |

### B. Bacteriological

9. Total coliform/100ml (membrane filtration method)
10. Faecal coliform/100 ml
11. Algae/ 100 ml (colony counter)

### C. Chemical

- |  |      |
|--|------|
| 12. pH (0-14 scale) (electrometric method)   |      |
| 13. Dissolved oxygen mg oxygen/litre (modified winkler method and membrane electrode method) | mg/L |
| 14. Chemical oxygen demand (COD) (dichromat method)  | mg/L |
| 15. Biochemical oxygen demand (BOD) (modified winkler method and membrane electrode method)  | mg/L |

- |   |      |
|---|------|
| 16. Nitrates (NO <sub>3</sub> as nitrogen) (spectrophotometric method and electrometric method) | mg/L |
| 17. Nitrite (NO <sub>2</sub> as nitrogen/L spectrophotometric sulphanilamide)                   | mg/L |
| 18. Organic nitrogen (spectrophotometric method N-Kjeldal)                                      | mg/L |
| 19. Ammonia and ammonium (Total) (NH <sub>3</sub> as N/L) (nesslerization method)               | mg/L |

*Chemical*

- |  |      |
|--|------|
| 20. Cyanides (spectrophotometric method)   | mg/L |
| 21. Phosphorous (total) (P <sub>04</sub> as P/L) (colorimetric method)             | mg/L |
| 22. Sulphates (turbidimetric method)   | mg/L |
| 23. Sulfite (iodometric method) and electrometric method)                          | mg/L |
| 24. Sulphide (iodometric and electrometric method)                                 | mg/L |
| 25. Chlorides Cl/L (silver nitrate and mercuric nitrate)                           | mg/L |
| 26. Active chloride C <sub>12</sub> /L (iodometric method)                         | mg/L |
| 27. Active bromine (Br <sub>2</sub> /L)  | mg/L |
| 28. Flourides F/L (electrometric method and colorimetric method with distillation) | mg/L |

*C. Metals*

- |   |      |
|---|------|
| 29. Aluminium compounds (atomic absorption method)                            | mg/L |
| 30. Antimony (atomic absorption method)                                       | mg/L |
| 31. Arsenic compounds (atomic absorption method)                              | mg/L |
| 32. Barium compounds (water soluble concentration) (atomic absorption method) | mg/L |
| 33. Beryllium salts and compounds (atomic absorption method)                  | mg/L |
| 34. Boron compounds (spectrophotometric method-curcumin method)               | mg/L |
| 35. Cadmium compounds (atomic absorption                                      |      |

method)	mg/L	
36. Chromium hexavalent, trivalent (atomic absorption method)	mg/L	
37. Cobalt compounds (atomic absorption method)	mg/L	
38. Copper compounds (atomic absorption method)	mg/L	
39. Iron compounds (atomic absorption method)	mg/L	
40. Lead compounds (atomic absorption method)	mg/L	
41. Magnesium (atomic absorption method and flame photometric method)	mg/L	
42. Manganese (atomic absorption method)	mg/L	
43. Mercury (atomic absorption method)	mg/L	
44. Molybdenum (atomic absorption method)	mg/L	
45. Nickel (atomic absorption method)	mg/L	
46. Selenium (atomic absorption method)	mg/L	
47. Silver (atomic absorption method)	mg/L	
48. Thallium (atomic absorption method)	mg/L	
49. Tin compounds (atomic absorption method)	mg/L	
50. Vanadium compounds (atomic absorption method)	mg/L	
51. Zinc compounds (atomic absorption method)	mg/L	
<i>D. Organic</i>		
52. Total hydrocarbons (chromatographic method)	mg/L	
53. Oils (mineral and crude) (chromatographic method and Gravimetric method)	mg/L	
54. Phenols (steam distillable) (non-steam distilled) (colorimetric method)	mg/L	
55. Fats and Saponifiable oils (gravimetric method and chromatographic method)		mg/L
56. Detergents (atomic) (atomic absorption spectrophotometric method)	mg/L	
57. Pesticides and PCB's (total) (Chromatographic method)	mg/L	



58. Trihaloforms (Chromatographic) mg/L

*E. Radioactive Materials*

59. Radioactive material as specified by International Atomic Energy Agency

No discharge accepted

Not permitted

Other specify

Type of waste water treatment facilities (settling, filtering, chemical)

Treatment

Efficiency %      Suspended solids    BOD      COD      Phosphate

No. 1 Method

No. 2 Method

No. 3 Method

Any other information

Date..... Signature

Designation/Title

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Application received..... Fee Paid .....

*Chief Inspector (Pollution Control)*  
*Environmental Council*  
*Inspectorate*

REPUBLIC OF ZAMBIA

**Environmental Council  
Form WP 3**

**The Water Pollution Control (Effluent and Waste Water) Regulations**

LICENCE TO DISCHARGE EFFLUENT

*(Regulation 5)*

Licence No .....

Name .....

Address .....

You are hereby licensed to discharge effluent at

...

....

The licence is valid from

19.....

The licence is subject to the following conditions

Date:

*Chief Inspector (Pollution Control)  
Environmental Council  
Inspectorate*

REPUBLIC OF ZAMBIA

**Environmental Council  
Form WP 4**

**The Water Pollution Control (Effluent and Waste Water) Regulations**

LICENCE TO WITHDRAW WATER FOR TREATMENT OF EFFLUENT

*(Regulation 6)*

Licence No .....

Name

Address

You are hereby licensed to withdraw water for the treatment of effluent from

quantity

This licence is valid from ..... 19.....

to 19.....

This licence is subject to the following conditions:

Date

*Chief Inspector (Pollution Control)  
Environmental Council  
Inspectorate*

## SECOND SCHEDULE

(Regulations 3 and 4)

### PRESCRIBED FEES

	<i>Fee units</i>
Application for licence to discharge effluent	
(a) city council, municipal councils and industries	555.5
(b) district councils	277.7
Application for licence to withdraw water for treatment of effluent	833.3

(As amended by S.I. No. 133 of 1996)

## THIRD SCHEDULE

(Regulation 5 (2))

### TABLE OF STANDARDS (LIMITS) FOR EFFLUENT AND WASTE WATER

<i>Column 1</i> PARAMETER	<i>Column 2</i> EFFLUENT AND WASTE WATER INTO AQUATIC ENVIRONMENT
<i>A. Physical</i>	
1. Temperature (thermometer)	40 degreesC at the point of entry
2. Colour (hazen units)	20 Hazen units
3. Odour and taste (threshold odour number)	Must not cause any deterioration in taste or odour as compared with natural state
4. Turbidity (NTU scale)	15 Nephelometer turbidity units
5. Total suspended solids (gravimetric method)	100 mg/L Must not cause formation of sludge or scum in receiving water
6. Settleable matter sedimentation in 2 hours (Imhoff funnel)	0.5 mg/L in two hours must not cause formation of sludge in receiving water

- |   |  |
|---|--|
| 7. Total dissolved solids<br>(evaporation < 105°C<br>and gravimetric<br>method) | 3000 mg/L the TDS of waste water<br>must not adversely affect surface<br>water |
| 8. Conductivity<br>(electrometric<br>method)                                    | 4300 US/em   |

*B. Bacteriological*

- |   |            |
|---|------------|
| 9. Total coliform/100 ml<br>(membrane filtration<br>method)   | 25,000     |
| 10. Faecal coliform/100 ml<br>(membrane filtration<br>method) | 5000       |
| 11. Algae/100 ml  | 1000 cells |

*C. Chemical*

- |   |  |
|---|--|
| 12. pH (0-14 scale) (electrometric<br>method)   | 6.0-9.0  |
| 13. Dissolved oxygen mg oxygen/Litre<br>(modified winkler method and<br>membrane electrode method)  | 5 mg/L after complete mixing<br>extreme temperature may<br>result in lower values  |
| 14. Chemical oxygen demand<br>(COD) (dichromat method)  | COD based on the limiting<br>values for organic carbon 90<br>mg O <sub>2</sub> /L average for 24 hours a   |
| 15. Biochemical oxygen demand<br>(BOD) (modified winkler<br>method and membrane<br>electrode method)  | 50 mg/L O <sub>2</sub> (mean value over a<br>24 hour period) According<br>to circumstances in relation to<br>self to the self cleaning<br>capacity of the waters |
| 16. Nitrates NO <sub>3</sub> as nitrogen)<br>(spectrometric method<br>and electrometric method)   | The nitrates burden must be<br>reduced as far as possible<br>according to circumstances ><br>water course 50 mg/L lakes 20 mg/L                                  |
| 17. Nitrite (NO <sub>2</sub> as nitrogen/L<br>spectrophotometric<br>sulphanilamide)   | 2.0 mg N <sub>02</sub> as N/L  |
| 18. Organic nitrogen (spectro<br>photometric method<br>N-Kjeldal) (*the % of<br>nutrient elements for<br>degradation of BOD should<br>be 0.4-1% for phosphorous<br>(different for processes |  |

using algae)	5.0 mg/L Mean*
<i>Column 1</i>	<i>Column 2</i>
PARAMETER	EFFLUENT AND WASTE WATER INTO AQUATIC ENVIRONMENT
19. Ammonia and ammonium (Total) (NH <sub>3</sub> as N/L) (nesslerization method and electrometric method)	The burden of ammonium salts must be reduced to 10 mg/L (depending upon temperature, pH and salinity)
20. Cyanides (spectropho- metric method)	0.2 mg/L
21. Phosphorous (total) (P <sub>04</sub> as P/L) (colorimetric method)	Treatment installation located in the catchment area of lakes: 1.0 mg/L; located outside the catchment area: reduce the load of P as low as possible (P <sub>04</sub> =6 mg/L)
22. Sulphates (turbidimetric method)	The sulphate burden must be reduced to 1500 mg/L
23. Sulphite (iodometric method)	1.0 mg/L (presence of Oxygen Changes S <sub>03</sub> to S <sub>04</sub> )
24. Sulphide (iodometric and electrometric method)	0.1 mg/L (depending on temperature, pH and dissolved O <sub>2</sub> )
25. Chlorides Cl/L (silver nitrates and mercuric nitrate)	800 mg/L
26. Active chloride Cl <sub>2</sub> /L (iodometric method)	0.5 mg/L
27. Active bromine (Br <sub>2</sub> /L)	0.1 mg/L
28. Fluorides F/L (electrometric method and colorimetric method with distillation)	2.0 mg/L
<i>C. Metals</i>	
29. Aluminium compounds (atomic absorption method)	2.5 mg/L
30. Antimony (atomic absorption method)	0.05 mg/L
31. Arsenic compounds (atomic absorption method)	0.5 mg/L
32. Barium compounds (water soluble concentration) (atomic absorption method)	0.5 mg/L
33. Beryllium salts and	

compounds (atomic absorption method)	0.5 mg/L
34. Boron compounds (spectrophotometric method-curcumin method)	0.5 mg/L
35. Cadmium compounds (atomic absorption method)	0.5 mg/L
36. Chromium Hexavalent, trivalent (atomic absorption method)	0.1 mg/L
37. Cobalt compounds (atomic absorption method)	1.0 mg/L
38. Copper compounds (atomic absorption method)	1.5 mg/L
39. Iron compounds (atomic absorption method)	2.0 mg/L
40. Lead compounds (atomic absorption method)	0.5 mg/L
41. Magnesium (atomic absorption method and flame photometric method)	500 mg/L
42. Manganese (atomic absorption method)	1.0 mg/L
43. Mercury (atomic absorption method)	0.002 mg/L

*Column 1*  
PARAMETER

*Column 2*  
EFFLUENT AND WASTE WATER INTO  
AQUATIC ENVIRONMENT

44. Molybdenum (atomic absorption method)	5.0 mg/L
45. Nickel (atomic absorption method)	0.5 mg/L
46. Selenium (atomic absorption method)	0.02 mg/L
47. Silver (atomic absorption method)	0.1 mg/L
48. Thallium (atomic absorption method)	0.5 mg/L

*Metals*

49. Tin compounds (atomic absorption method)	2.0 mg/L
50. Vanadium compounds	

	(atomic absorption method)	1.0 mg/L	
51.	Zinc compounds (atomic absorption method)	10.0 mg/L	
<i>D. Organics</i>			
52.	Total hydrocarbons (chromatographic method)	10.0 mg/L	
53.	Oils (mineral and crude) (chromatographic method and gravimetric method)	5.0 mg/L	
54.	Phenols (steam distillable) (non-steam distilled) (colorimetric method)	0.2 mg/L 0.05 mg/L	
55.	Fats and saponifiable oils (gravimetric method and chromatographic method)	20.0 mg/L	
56.	Detergents (atomic) (atomic absorption spectrophotometric)	2.0 mg/L	(detergents should contain at least biodegradable compounds)
57.	Pesticides and PCB's (total) (chromatographic method)	0.5 mg/L	
58.	Trihaloforms (chromatographic)	0.5 mg/L	
<i>E. Radioactive Materials</i>			
59.	Radioactive materials as specified by international atomic energy agency	No discharge accepted	Not permitted

(As amended by S.I. No. 177 of 1993 and No. 133 of 1996)