

Supplement to the Republic of Zambia Government

Gazette dated the 14th may, 1993

GOVERNMENT OF ZAMBIA

STATUTORY INSTRUMENT No.72 OF 1993

The Environmental Protection and Pollution Control Act, 1990

(No. 12 of 1990)

The Water Pollution Control (Effluent and Waste Water)

Regulations, 1993

IN EXERCISE of the powers contained in sections *twenty-three*, *thirty-four* and *ninety- six* of the Environmental Protection and Pollution Control Act, 1990, and in consultation with the Council, the following Regulations are hereby made:

- | | | |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <p>1.</p> | <p>These Regulations may be cited as the Water Pollution Control (Effluent and Waste Water) Regulations, 1993.</p> | <p>Title</p> |
| <p>2.</p> | <p>In these Regulations unless the context otherwise requires-</p> <p>"aquatic environment" means all surface and groundwaters, but does not include water in installations and facilities for industrial effluent, sewage collection and treatment;</p> <p>"discharge" means spilling, leaking, pumping, pouring, emitting, emptying or dumping;</p> <p>"effluent" means waste water or other fluid of domestic, agricultural, trade or industrial origin, treated or untreated and discharged directly or indirectly into</p> | <p>Interpr
ation</p> |

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;

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

(1) A local authority intending to operate a sewage system or owner or operator of any industry licence or trade which will discharge effluent into the aquatic environment shall apply to the Inspectorate for a licence in Form WPI set out in

3. 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.

- 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 effluent 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 applicant 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 WP4 of the First Schedule if -

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

**Licence to
withdraw
water for
treatment
effluent**

source;

- (b) satisfied that the applicant will treat the effluent in a manner that would have no adverse effect on the aquatic environment;
- (c) the Inspectorate had published the intention to issue the licence by notice in the Gazette, twenty-eighty 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.

Duty to keep records

7. (1) The holder of a licence under these records Regulations shall -

- (a) keep a record of the licensed activities;
- (b) submit the record referred to in paragraph (a) to the Inspectorate every six months from the commencement of the licensed activities;
- (c) report to the Inspectorate abnormal discharge of effluent.

(2) The Inspectorate may order the holder of a licence under these Regulations to install at the expense of the holder of the licence, metering devices and to take samples and analyze them as the Inspectorate may direct.

Sampling of effluent and analysis

8. An Inspector may at any reasonable time enter any premises on which a licensed activity is being conducted and take samples analyze and examine materials used for the licensed activity.

Register of licences

9. 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 to make it acceptable.

Offences

10 Any person who -

(a) operates or owns a sewage system or an industry or trade which discharges effluent into the aquatic environment without a licence;
or

(b) withdraws water from a water course for the purpose of diluting effluent without a licence;
shall be guilty of an offence.

Enforcement notice

11 (1) If the Inspectorate has reasonable cause to believe that a person is contravening any of the provisions of these Regulations or any condition of a licence or is likely to contravene any of the provisions of these Regulations or a condition of licence, the Inspectorate shall serve an enforcement notice on that person;

(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;

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

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

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 the fine of one hundred thousand Kwacha or imprisonment for a period of three years or both.

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,

1993

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)

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.....
.....

Location of Raw water (Lake, river, etc.)

.....
.....

Raw water demand M³/year

..... M³/year max

..... M³/year min

..... M³/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

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

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

Type of Effluent	Discharge	Discharge	Discharge
(cooling, process,	m ³ /year	m ³ /year	m ³ /year
Municipal, etc.,)	min	max	Average

.....
.....

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Point of entry of Effluent into water course/aquatic environment
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.....
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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)µS/cm

B. Bacteriological

9. Total Coliform/100 ml (Membrane Filtration method)
10. Faecal Coliform/100ml (Membrane Filtration method)
11. Algae /100 ml (Colony counter)cells

C. Chemical

12. pH (0-14 scale) (Electro-metric method)
13. Dissolved oxygen mg Oxygen / Litre (Modified
Winkler method and membrane electrode method)mg/L
.....mg/L

14. Chemical Oxygen Demand (COD) (Dichromat method)	
15. Biochemical Oxygen Demand (BOD) (Modified Winkler method and Membrane Electrode method)	.....mg/L
16. Nitrates (NO ₃ as nitrogen) (Spectrophotometric method and electrometric method)	.....mg/L
17. Nitrite (NO ₂ as nitrogen/L Spectrophotometric sulphanilamide)	.....mg/L.....mg/L
18. Organic Nitrogen (Spectro-photometric method N-Kjeldal)	.....mg/L
19. Ammonia and Ammonium (Total) (NH ₃ as N/L) (Nesslerization method and Electrometric method)	.....mg/L.....mg/L.....mg/L
20. Cyanides (Spectrophoto-metric method)	.....mg/L
21. Phosphorous (Total) (PO ₄ as P/L) (Colori-metric method)	.....mg/L
22. Sulphates (Turbidimetric method)	.....mg/L
23. Sulfite (Iodometric method)	.....mg/L
24. Sulphide (Iodometric and electrometric method)	.....mg/L
25. Chlorides Cl/L (Silver nitrate and Mercuric nitrate)	
26. Active chloride Cl ₂ /L (Iodometric method)	
27. Active Bromine (Br ₂ /L)	.....mg/L
28. Fluorides F/L (Electro-metric method and Colori-metric 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 (Spectro photometric method- curcumin method)	.....mg/L
35. Cadmium compounds (Atomic Absorption method)	.....mg/L
36. Chromium Hexavelant, 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

D. Organics

- 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
Spectrophometric)mg/L
- 57. Pesticides and PCB's (Total) (Chromatographic method)mg/L
- 58. Trihaloforms (Chromatographic)mg/L

E. Radioactive Materials

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

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.....

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 receivedFee 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,

1993

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

.....

.....

Indicate source of Raw water (Lake, river, etc.)

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.....

.....

Location of Raw water (Lake, river, etc.)

.....

.....

Raw water demand M^3 /year

..... M^3 /year max

..... M^3 /year min

..... M^3 /hour max

Water-Meter Yes/No

Raw Water Treatment Methods

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.....

Raw water Quality

pH

.....

Total Dissolved Solids mg/L

Total Suspended Solids mg/L

Conductivity US/cm

Type of Effluent	Discharge	Discharge	Discharge
(cooling, process,	m^3 /year	m^3 /year	m^3 /year
Municipal, etc.,)	min	max	Average

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

Point of entry of Effluent into water course/aquatic environment

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.....
.....

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)µS/cm

B. Bacteriological

9. Total Coliform/100 ml (Membrane Filtration method)
10. Faecal Coliform/100ml (Membrane Filtration method)
11. Algae /100 ml (Colony counter)cells

C. Chemical

12. pH (0-14 scale) (Electro-metric method)	
13. Dissolved oxygen mg Oxygen / Litre (Modified	.....mg/L
Winkler method and membrane electrode method)	.....mg/L
14. Chemical Oxygen Demand (COD) (Dichromat method)	
15. Biochemical Oxygen Demand (BOD) (Modified	.....mg/L
Winkler method and Membrane Electrode method)	
16. Nitrates (NO ₃ as nitrogen) (Spectrophotometric method	.....mg/L
and electrometric method)	
17. Nitrite (NO ₂ as nitrogen/L Spectrophotometric	.....mg/L
sulphanilamide)	.....mg/L
18. Organic Nitrogen (Spectro-photometric method N-	.....mg/L
Kjeldal)	
19. Ammonia and Ammonium (Total) (NH ₃ as N/L)	.....mg/L
(Nesslerization method and Electrometric method)	.....mg/L
20. Cyanides (Spectrophoto-metric method)	.....mg/L
21. Phosphorous (Total) (PO ₄ as P/L) (Colori-metric method)	.....mg/L
22. Sulphates (Turbidimetric method)	.....mg/L
23. Sulfite (Iodometric method)	.....mg/L
24. Sulphide (Iodometric and electrometric method)	.....mg/L
25. Chlorides Cl/L (Silver nitrate and Mercuric nitrate)	
26. Active chloride Cl ₂ /L (Iodometric method)	

27. Active Bromine (Br₂/L)mg/L
28. Fluorides F/L (Electro-metric method and Colori-
metric 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 (Spectro photometric method-
curcumin method)mg/L
35. Cadmium compounds (Atomic Absorption method)mg/L
36. Chromium Hexavelant, 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

D. Organics

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 Spectrophometric)	.....mg/L
57. Pesticides and PCB's (Total) (Chromatographic method)	.....mg/L
58. Trihaloforms (Chromatographic)	.....mg/L

E. Radioactive Materials

58. Radioactive materials specified by International	No discharge	Not permitted
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accepted Atomic Energy Agency

accepted

Other specify

.....

Type of Waste Water Treatment Facilities (settling, filtering, Chemical)

.....

Treatment

Efficiency %	Suspended solids	BOD	COD	Phosphate
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No. 1 Method

No. 2 Method

No. 3 Method

Any other information.....

.....

Date Signature

Designation/Title

FOR OFFICE USE ONLY

Application receivedFee Paid

Chief Inspector (Pollution Control)

Environmental Council

Inspectorate

REPUBLIC OF ZAMBIA

Environmental Council

**The Water Pollution Control (Effluent And Waste Water)Regulations,
1993**

APPLICATION TO DISCHARGE EFFLUENT

(Regulation 5)

Licence No.

Name.....

Address.....

You are hereby licensed to Discharge effluent at

.....

The licence is valid from 19

to..... 19

The licence is subject to the following conditions

.....

Date

.....

.....

Chief Inspector (Pollution Control)

Environmental Council

Inspectorate

REPUBLIC OF ZAMBIA

Environmental Council

**The Water Pollution Control (Effluent And Waste Water)Regulations,
1993**

APPLICATION 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.....

The licence is valid from 19

to..... 19

The licence is subject to the following conditions

.....

Date

.....

Chief Inspector (Pollution Control)

Environmental Council

Inspectorate

SECOND SCHEDULE

(Regulation 3 and 4)

PRESCRIBED FEES

Application for licence to Discharge effluent	100,000.00
Application for licence to withdraw water for treatment of effluent	100,000.00

THIRD SCHEDULE

(Regulation 5 (2))

TABLE OF STANDARDS (LIMITS) FOR EFFLUENTS AND WASTE WATER

<i>Column 1</i>	<i>Column 2</i>
PARAMETER	EFFLUENT AND WASTE WATER INTO AQUATIC ENVIRONMENT
A. Physical	
1. Temperature (Thermometer)	40 °C at 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 (Evaporation @ 105 C and Gravimetric method)	3000 mg/L The TDS of waste water must not adversely affect surface water 4300 µS/cm

8. Conductivity (Electrometric method)

B. Bacteriological

2500°

5000°

9. Total Coliform/100 ml (Membrane Filtration method)

1000 cells

10. Faecal Coliform/100ml (Membrane Filtration method)

11. Algae /100 ml (Colony counter)

C. Chemical

6.0 - 9.0

12. pH (0-14 scale) (Electro-metric method)

5 mg/L after complete mixing extreme temperature may result in lower values

13. Dissolved oxygen mg Oxygen / Litre (Modified Winkler method and membrane electrode method)

Column 1

PARAMETER

A. Physical

14. Chemical Oxygen Demand (COD) (Dichromat method)

15. Biochemical Oxygen Demand (BOD) (Modified Winkler method and Membrane Electrode method)

Column 2

EFFLUENT AND WASTE WATER INTO AQUATIC ENVIRONMENT

COD based on the limiting values for organic carbon 90 mg O₂/L average for 24 hours

50 mg O₂/L (mean value over 24 hours period) According to circumstances in relation to the self cleaning capacity of

	waters
	The nitrates burden must be reduced as far as possible according to circumstances: water course 50 mg/L; Lakes 20 mg/L
16. Nitrates (NO ₃ as nitrogen) (Spectrophotometric method and electrometric method)	2.0 mg NO ₂ as N/L
	5.0 mg/L Mean* (* the % of nutrient elements for degradation of BOD should be 0,4 - 1 % for phosphorous (different for processes using algae)
17. Nitrite (NO ₂ as nitrogen/L Spectrophotometric sulphanimide)	
18. Organic Nitrogen (Spectro-photometric method N-Kjeldal)	
	The burden of ammonium salts must be reduced to 10 mg/L (depending upon temperature, pH and salinity)
19. Ammonia and Ammonium (Total) (NH ₃ as N/L) (Nesslerization method and Electrometric method)	0.2 mg/L
	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 (PO ₄ = 6 mg/L
20. Cyanides (Spectrophoto-metric method)	The Sulphate burden must be reduced to 1500 mg/L
21. Phosphorous (Total) (PO ₄ as P/L) (Colori-metric method)	0.1 mg/L (presence of Oxygen changes SO ₃ to SO ₄)
	0.1 mg/L (depending on temperature, pH and dissolved O ₂)
22. Sulphates (Turbidimetric method)	Chloride levels must be 800 mg/L
	0.5 mg/L
23. Sulfite (Iodometric method)	0.1 mg/L
24. Sulphide (Iodometric and electrometric method)	2.0 mg/L
25. Chlorides Cl/L (Silver nitrate and Mercuric nitrate)	

- | | |
|------------------------------------------------------------------------------------------|-----------------------|
| 26. Active chloride Cl ₂ /L (Iodometric method) | |
| 27. Active Bromine (Br ₂ /L) | 2.5 mg/L |
| 28. Fluorides F/L (Electro-metric method and Colori-
metric method with distillation) | 0.5 mg/L
0.05 mg/L |

C. Metals	0.5 mg/L
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- | | |
|----------------------------------------------------------------------------------|----------|
| 29. Aluminium compounds (Atomic Absorption method) | 0.5 mg/L |
| 30. Antimony (Atomic absorption method) | . |
| 31. Arsenic compounds (Atomic Absorption method) | |
| 32. Barium compounds (water soluble concentration)
(Atomic Absorption method) | |
| 33. Beryllium salts and compounds (Atomic Absorption
method) | |

Column 1

PARAMETER

A. Physical

- | | |
|----------------------------------------------------------------------|----------|
| 34. Boron compounds (Spectro photometric method-
curcumin method) | 0.5 mg/L |
| 35. Cadmium compounds (Atomic Absorption method) | 0.5 mg/L |
| 36. Chromium Hexavelant, Trivalent (Atomic absorption
method) | 0.1 mg/L |
| 37. Cobalt compounds (Atomic Absorption method) | 1.0 mg/L |

Column 2

**EFFLUENT AND WASTE WATER
INTO AQUATIC ENVIRONMENT**

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
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
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 mg/L

D. Organics

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)	0.2 mg/L
(Colorimetric method) (Non-steam distilled)	0.05 mg/L
55. Fats and saponifiable oils (Gravimetric method and chromatographic method)	20 mg/L
56. Detergents (Atomic) (Atomic Absorption Spectrophometric)	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

E. Radioactive Materials

58. Radioactive materials specified by International accepted Atomic Energy Agency	No discharge accepted	Not permitted
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