WATER QUALITY REGULATIONS

LICENCE APPLICATION AND RENEWAL AS PER LEGAL NOTICE 120

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LEGAL NOTICE NO. 120

ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (WATER QUALITY) REGULATIONS, 2006

ARRANGEMENT OF REGULATIONS

IN EXERCISE of the powers conferred by Section 147 of the Environmental Management and Coordination Act, (1999), the Minister for Environment and Natural Resources in consultation with the relevant lead agencies makes the following Regulations:

PART 1: PRELIMINARY

Citation

1. These Regulations may be cited as the Environmental Management and Coordination, (Water Quality) Regulations 2006.

Application of Regulations

2. These Regulations shall apply to drinking water, water used for industrial purposes, water used for agricultural purposes, water used for recreational purposes, water used for fisheries and wildlife, and water used for any other purposes.

Interpretation

3. In these Regulations unless the context otherwise requires:

"Act" means the Environmental Management and Co-ordination Act No. 8 of 1999;

"**Authority**" means the National Environment Management Authority established under section 7 of the Act;

,

"Buffer Zone" means distinct or established areas that separate potentially competing users and that serves to lessen the danger of potential conflicts;

"Environmental Management Plan" means the plan referred to under Section 42 (3) of the Act;

"Designated Representative" means any person authorized by the Authority to act on its behalf.

"**Ground water**" means the water of underground streams, channels, artesian basins, reservoirs, lakes and other bodies of water in the ground, and includes water in interstices below the water table;

"Minister" means the Minister for the time being responsible for matters relating to the environment.

"Natural water body" means any river, stream, spring, lake, swamp, pond, estuary, coastal or other water source in a natural water course;

"pH" means the negative base 10 logarithm of the hydrogen ion concentration;

"**Point Sources**" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, conduit, tunnel, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft from which pollutants are or may be discharged;

"Resource Quality" in relation to a water resource, means the quality of all the aspects of a water resource including:

(a) the character and condition of the in-stream and riparian habitat;
(b) the characteristics, condition and distribution of the aquatic biota;
(c) the physical, chemical and biological characteristics of the water;

(d) the quantity, pattern, timing, water level and assurance of in-stream flow; and

(e) the water quality stipulated for the reserves.

PART II: PROTECTION OF SOURCES OF WATER

Prevention of Water Pollution

4. (1) Every person shall refrain from any act which directly or indirectly causes, or may cause immediate or subsequent water pollution, and it shall be immaterial whether or not the water resource was polluted before the enactment of the Act.

(2) No person shall throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution.

Standards for Sources of Domestic water

5. All sources of water for domestic uses shall comply with the standards set out in First Schedule of these Regulations.

Protection of Lakes, Rivers, Streams, Springs, Wells and other water sources

6. No person shall:

(a) discharge, any effluent from sewage treatment works, industry or other point sources into the aquatic environment without a valid effluent discharge license issued in accordance with the provisions of the Act.

(b) abstract ground water or carry out any activity near any lakes, rivers, streams, springs and wells that is likely to have any adverse impact on the quantity and quality of the water, without an Environmental Impact Assessment license issued in accordance with the provisions of the Act; or

(c) cultivate or undertake any development activity within a minimum of six meters and a maximum of thirty meters from the highest ever recorded flood level, on either side of a river or stream, and as may be determined by the Authority from time to time.

Bans, Restrictions, etc on use of Water Sources

7. The Authority in consultation with the relevant lead agency may impose bans and restrictions and other measures on the use of sources of water for domestic use in order to prevent and control their degradation.

Compliance with Water Quality Standards

8. All operators and suppliers of treated water, containerized water and all water vendors shall comply with the relevant quality standards in force as promulgated by the relevant lead agencies.

Water Quality Monitoring

9. The Authority in consultation with the relevant lead agency, shall maintain water quality monitoring records for sources of domestic water at least twice every calendar year and such monitoring records shall be in the prescribed form as set out in the Second Schedule to these Regulations.

PART III: WATER FOR INDUSTRIAL USE AND EFFLUENT

DISCHARGE

Water for Industrial Use and Compliance with Industrial Standards

10. (1) No person shall use water for trade or industrial undertaking unless such person complies with the standards established by the competent lead agency in regard to that particular activity.

(2) The Authority in consultation with the relevant lead agencies shall take measures to ensure compliance with the said standards by the owner or operator of the facility.

Discharge into Aquatic Environment

11. No person shall discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit any person to dump or discharge such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards set out in the Third Schedule of these Regulations.

Discharge into the Environment

12. (1) Every local authority or person operating a sewage system or owner or operator of any trade or industrial undertaking issued with an effluent discharge licence as stipulated under the Act shall comply with the standards set out in Third Schedule to these Regulations.

(2) Every local authority or person operating a sewage system or owner or operator of any trade or industrial undertaking shall be guided by the monitoring guide for discharge into the environment as set out in the Fourth Schedule to these Regulations or as the Authority may prescribe.

Discharge into Public Sewers

13. (1) Every owner or operator of a trade or industrial undertaking issued with a licence by a local authority or sewerage service provider to discharge effluent into any existing sewerage systems shall comply with the standards set out in the Fifth Schedule to these Regulations.

Discharge Monitoring

14. (1) Every person who generates and discharges effluent into the environment under a licence issued under the Act shall carry out effluent discharge quality and quantity monitoring in accordance with methods and procedures of sampling and analysis prescribed by the Authority, and shall submit quarterly records of such monitoring to the Authority or its designated representative.

(2) Such discharge monitoring record shall be in the prescribed form as set out in Sixth Schedule to these Regulations.

Review of Records

15. The Authority shall review monitoring records in order to verify compliance with these Regulations.

Application for Effluent Discharge Licence

16. (1) An application for an effluent discharge licence under the Act shall be in Form A of Seventh Schedule and accompanied by the prescribed fee as set out in Eleventh Schedule to these Regulations.

(2) The decision of the Authority together with the reasons thereof

shall be communicated to the applicant within thirty working days from the date of submission of the duly completed application.

(3) Where the Authority approves an application for the grant of an effluent discharge licence it shall issue an effluent discharge licence within twenty-one days.

Effluent Discharge Licence

17. (1) An effluent discharge licence issued under the Act shall be in Form B set out in the Seventh Schedule to these Regulations and shall be valid for such period of time as may be determined by the Authority.

(2) The Authority shall maintain a register for effluent discharge licences as prescribed in Form C of the Seventh Schedule.

Licence not Transferable

18. An effluent discharge licence issued under the Act shall not be transferable.

PART IV: WATER FOR AGRICULTURAL USE

Use of Wastewater for Irrigation

19. No person shall be permitted to use wastewater for irrigation purposes unless such water complies with the quality guidelines set out under the Eighth Schedule to these Regulations.

Abstraction from a Water Body Under Environmental Management Plan

20. Where the Minister, in exercise of his powers conferred under Section 42 (3) has issued an order for the management of a natural water body, no person shall abstract water from such body for irrigational purposes unless such water meets the standards set out in the Ninth Schedule to these Regulations.

Creation of Buffer zone for Irrigation Scheme

21. Any owner or operator of an irrigation scheme shall create a buffer zone of at least 50 meters in width between the irrigation scheme and the natural water body into which such irrigation scheme discharges its waters.

Transitional Provision

22. All owners or operators of existing irrigation schemes shall within ninety days upon the coming into force of these Regulations take necessary steps to comply with these Regulations.

Compliance with Regulations

23. The Authority in consultation with the relevant lead agency shall take measures to ensure compliance with these Regulations by the owner or operator of such irrigation schemes.

PART V: OTHER USES

Water Pollution Prohibition

24. No person shall discharge or apply any poison, toxic, noxious or obstructing matter, radioactive wastes, or other pollutants or permit any person to dump or discharge any such matter into water meant for fisheries, wildlife, recreational purposes or any other uses unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards set out in the Third Schedule to these Regulations.

Recreational Uses

25. No person shall use or allow to be used any natural water body for recreational purposes unless the water body meets the quality standards for recreational standards as set out in Tenth Schedule to these Regulations.

PART VI: MISCELLANEOUS PROVISIONS

Inventory of Water Bodies

26. Within three years from the date of commencement of these Regulations, the Authority shall prepare and maintain an inventory of all natural water bodies and take measures including the development of environmental management plans, to prevent and control degradation of such sources.

Offences

27. (1) Any person who contravenes any of these Regulations commits an offence and shall be liable on conviction to a fine not exceeding five hundred thousand shillings.

(2) In addition to the above, the court may give such other orders as provided for by the Act.

Fees

28. All applications and licences shall be accompanied by the prescribed fees as set out in the Eleventh Schedule to these Regulations.

(r. 5)

FIRST SCHEDULE

QUALITY STANDARDS FOR SOURCES OF DOMESTIC WATER

Parameter	**Guide Value (max allowable)**
pH	6.5 – 8.5
Suspended solids	30 (mg/L)
Nitrate-NO_3	10 (mg/L)
Ammonia –NH_3	0.5 (mg/L)
Nitrite –NO_2	3 (mg/L)
Total Dissolved Solids	1200 (mg/L)
Scientific name *(E.coli)*	Nil/100 ml
Fluoride	1.5 (mg/L)
Phenols	Nil (mg/L)
Arsenic	0.01 (mg/L)
Cadmium	0.01 (mg/L)
Lead	0.05 (mg/L)
Selenium	0.01 (mg/L)
Copper	0.05 (mg/L)
Zinc	1.5 (mg/L)
Alkyl benzyl sulphonates	0.5 (mg/L)
Permanganate value (PV)	1.0 (mg/L)

Nil means less than limit of detection using prescribed sampling and analytical methods and equipment as determined by the Authority.

And any other parameters as may be prescribed by the Authority from time to time

SECOND SCHEDULE

WATER QUALITY MONITORING FOR SOURCES OF DOMESTIC WATER

Name of Water Source ……...……...

Sample No …….

Description of sample (untreated)…….....

Date and time sample received in lab ……

Date and time sample was examined …….

Parameter	**RESULTS**	
	Observed value	Guide value (max allowable)
pH		6.5 -8.5
Suspended solids		30 (mg/L)
Nitrate-NO_3		10 (mg/L)
Ammonia –NH_3		0.5 (mg/L)
Nitrite –NO_2		3 (mg/L)
Total Dissolved Solids		1200 (mg/L)
(*E.coli)*		Nil/100 ml
Fluoride		1.5 (mg/L)
Phenols		Nil (mg/L)
Arsenic		0.01 (mg/L)
Cadmium		0.01 (mg/L)
Lead		0.05 (mg/L)
Selenium		0.01 (mg/L)
Copper		0.05 (mg/L)
Zinc		1.5 (mg/L)
Alkyl benzyl sulphonates		0.5 (mg/L)
Permanganate value		1.0 (mg/L)

And any other parameters as may be prescribed by the Authority from time to time

Remarks

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(r. 11)

THIRD SCHEDULE

STANDARDS FOR EFFLUENT DISCHARGE INTO THE ENVIRONMENT

Parameter	Max Allowable(Limits)
1,1,1-trichloroethane (mg/l)	3
1,1,2-trichloethane (mg/l)	0.06
1,1-dichloroethylene	0.2
1,2-dichloroethane	0.04
1,3-dichloropropene (mg/l)	0.02
Alkyl Mercury compounds	Nd
Ammonia, ammonium compounds, NO_3 compounds and NO_2 compounds (Sum total of ammonia-N times 4 plus nitrate-N and Nitrite-N) (mg/l)	100
Arsenic (mg/l)	0.02
Arsenic and its compounds (mg/l)	0.1
Benzene (mg/l)	0.1
Biochemical Oxygen Demand (BOD 5days at 20 ^oC) (mg/l)	30
Boron (mg/l)	1.0
Boron and its compounds – non marine (mg/l)	10
Boron and its compounds –marine (mg/l)	30
Cadmium (mg/l)	0.01
Cadmium and its compounds (mg/l)	0.1
Carbon tetrachloride	0.02
Chemical Oxygen Demand (COD (mg/l)	50
Chromium VI (mg/l)	0.05
Chloride (mg/l)	250
Chlorine free residue	0.10
Chromium total	2
cis –1,2- dichloro ethylene	0.4
Copper (mg/l)	1.0
Dichloromethane (mg/l)	0.2
Dissolved iron (mg/l)	10
Dissolved Manganese(mg/l)	10
E.coli (Counts / 100 ml)	Nil
Fluoride (mg/l)	1.5
Fluoride and its compounds (marine and non-marine) (mg/l)	8
Lead (mg/l)	0.01
Lead and its compounds (mg/l)	0.1
n-Hexane extracts (animal and vegetable fats) (mg/l)	30
n-Hexane extracts (mineral oil) (mg/l)	5
Oil and grease	Nil
Organo-Phosphorus compounds (parathion,methyl parathion,methyl demeton and Ethyl parantrophenyl phenylphosphorothroate, EPN only) (mg/l)	1.0
Polychlorinated biphenyls, PCBs (mg/l)	0.003
pH (Hydrogen ion activity----marine)	5.0-9.0
pH (Hydrogen ion activity--non marine)	6.5-8.5
Phenols (mg/l)	0.001
Selenium (mg/l)	0.01
Selenium and its compounds (mg/l)	0.1
Hexavalent Chromium VI compounds (mg/l)	0.5
Sulphide (mg/l)	0.1
Simazine (mg/l)	0.03
Total Suspended Solids, (mg/l)	30
Tetrachloroethylene (mg/l)	0.1
Thiobencarb (mg/l)	0.1
Temperature (in degrees celious) based on ambient temperature	± 3
Thiram (mg/l)	0.06
Total coliforms (counts /100 ml)	30
Total Cyanogen (mg/l)	Nd
Total Nickel (mg/l)	0.3
Total Dissolved solids (mg/l)	1200
Colour in Hazen Units (H.U)	15
Detergents (mg/l)	Nil
Total mercury (mg/l)	0.005
Trichloroethylene (mg/l)	0.3
Zinc (mg/l)	0.5
Whole effluent toxicity	
Total Phosphorus (mg/l)	2 Guideline value
Total Nitrogen	2 Guideline value

And any other parameters as may be prescribed by the Authority from time to time

Remarks

Standard values are daily/monthly average discharge values. Not detectable (nd) means that the pollution status is below the detectable level by the measurement methods established by the Authority.

FOURTH SCHEDULE

MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT (r.12 (2))

DISCHARGING FACILITY	Gas and Oil =	Dairy Products	Grain Mills	Canned Fruits & Vegetables	Canned & Preserved Sea Foods	Sugar Processing	Textiles	Cement	Feedlots	Electroplating	Organic Chemicals	Inorganic Chemicals	Plastics & Synthetics	Soap & Detergents	Fertiliser Manufacturing	Petroleum Refining	Iron & Steel Manufacturing	Non Ferrous	Phosphate Manufacturing	Steam Electric Power Generating
Water quality parameters																				
Biochemical Oxygen Demand, BOD	x	x	x	x	x	x	x		x		x	x	x	x	x	x				
Total Suspended Solids	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease	x				x		x				x			x		x	x	x	x	x
Temperature	x	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x	x	x
Chemical Oxygen Demand, COD						x	x				x	x	x	x		x		x		
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus																			x	
Total Phosphorus						x				x					x				x	x
Ammonia (as N)												x			x	x	x	x		
Organic Nitrogen as N						x									x					
Nitrate						x									x		x			
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols							x				x		x			x	x			
Sulphide							x									x	x			
Total Chromium							x			x		x				x				
Chromium VI										x		x				x				x
Chrome																				
Copper										x		x	x							x
Nickel										x		x								
Zinc										x			x				x			x
Zinc												x								
Cn total										x		x								
Cyanide A										x		x								
Fluorine										x		x	x					x	x	
Free Available Chlorine																				
Residual Chlorine	x																			x
Cadmium										x		x					x			
Lead										x		x					x	x		
Iron										x										
Tin										x		x								x
Silver										x										
Gold										x										
Iridium										x										
Palladium										x										
Rhodium										x										
Ruthenium										x										
Mercury (total)												x								
Total Organic Carbon												x					x			
Aluminium												x					x			
Arsenic												x					x		x	
Selenium												x								
Barium																				
Manganese																	x			
Tannin																				
Oil																				
Settleable Solids																				
Surfactants																				

FOURTH SCHEDULE MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT

DISCHARGING FACILITY	Fero Alloy manufacturing	Leather tanning & finishing	Glass	Asbestos manufacturing	Rubber processing	Timber products	Pulp, Paper & paperboard	Builders paper & paperboard mills	Meat products	Paving and roofing materials	Intensive chemical agriculture farm	Edible vegetable oils and fats	Hotels, Restaurants and Game Lodges
Water quality parameters													
BOD		x	x		x	x	x	x	x	x		x	x
TSS	x	x	x	x	x	x	x	x	x	x			x
pH	x	x	x	x	x	x	x	x	x	x	X	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease		x			x	x	x	x	x	x		x	x
Temperature	x	x	x	x	x	x	x	x	x	x		x	x
COD			x	x	x							x	
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus							x				x		
Total Phosphorus			x								x		x
Ammonia (as N)	x		x						x		x		x
Organic Nitrogen as N											x		x
Nitrate													
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols	x		x			x							
Sulphide													
Total Chromium	x	x			x								
Chromium VI	x												
Chrome		x											
Copper													
Nickel													
Zinc					x								
Zinc													
Cyanide total	x												
Cn													
Fluorine			x		x								
Free Available Chlorine							x	x					
Residual Chlorine													
Cadmium													
Lead													
Iron			x										
Tin													
Silver													
Gold													
Iridium													
Palladium													
Rhodium													
Ruthenium													
Mercury (total)													
Total Organic Carbon													
Aluminium													
Arsenic													
Selenium													
Barium													
Manganese	x												
Tannin		x											
Oil		x											
Settleable Solids								x					
Surfactants											x	x	

FOURTH SCHEDULE (Contd) MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT

DISCHARGING FACILITY	Bakeries & wheat confectioneries	Breweries (malt)	Soft drinks and carbonated waters	Sugar confectionery	Tobacco processing	Distilling & blending of spirits	Motor vehicle assembly	Paints, varnishes & lacquers	Batteries manufacture	Cosmetics	Printing, publishing &allied industry	Domestic sewage system	Pharmaceutical industries	Tea/Coffee Industries	Slaughter Houses	Combined sewage (Domestic+ and Industrial effluent)
Water quality parameters																
BOD	x	x	x	x	x	x	x	x			x	x	x	x	x	x
TSS	x	x	x	x				x	x			x	x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Faecal Coliforms/Ecoli.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease					x		x	x			x	x			x	x
Temperature	x	x	x	x	x	x	x	x	x	x	x				x	
COD		x	x	x		x	x	x	x	x	x	x	x	x	x	x
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus																
Total Phosphorus				x								x			x	x
Ammonia (as N)								x				x			x	x
Organic Nitrogen as N				x										x	x	x
Nitrate																x
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols																x
Sulphide/Sulphur				x							x					x
Total Chromium								x								x
Chromium VI																x
Chrome																x
Copper												x		x		x
Nickel													x			x
Zinc								x	x				x	x		x
Zinc A																
Cn total																x
Cn A																
Fluorine																x
Free Available Chlorine									x		x	x				x
Cadmium													x			x
Lead							x	x	x		x		x			x
Iron							x	x	x		x					x
Tin																x
Silver																x
Gold							x				x					x
Iridium																x
Palladium																x
Rhodium																x
Ruthenium																x
Mercury							x			x	x					x
Total Organic Carbon, TOC																
Aluminium																x
Arsenic																x
Selenium																x
Barium																x
Manganese																x
Tannin																x
Oil										x						x
Settleable Solids							x				x					
Surfactants								x						x		x

X Means parameters to be monitored

And any other parameters and/or discharging facilities as may be prescribed by the Authority from time to time.

(r. 13)

FIFTH SCHEDULE

STANDARDS FOR EFFLUENT DISCHARGE INTO PUBLIC SEWERS

1 PARAMETER	**Maximum levels permissible**
Suspended solids (mg/L)	250
Total dissolved solids (mg/L)	2000
Temperature ^{0}C	20 - 35
pH	6-9
Oil and Grease (mg/L) -where conventional treatment shall be used	10
Oil and Grease (mg/L)- where ponds is a final treatment method	5
Ammonia Nitrogen (mg/L)	20
Substances with an obnoxious smell	Shall not be discharged into the sewers
Biological Oxygen Demand BOD_5 days at 20 ^{o}C (mg/L)	500
Chemical Oxygen Demand COD (mg/L)	1000
Arsenic (mg/L)	0.02
Mercury (mg/L)	0.05
Lead (mg/L)	1.0
Cadmium (mg/L)	0.5
Chromium VI (mg/L)	0.05
Chromium (Total) (mg/L)	2.0
Copper (mg/L)	1.0
Zinc (mg/L)	5.0
Selenium (mg/L)	0.2
Nickel (mg/L)	3.0
Nitrates (mg/L)	20
Phosphates (mg/L)	30
Cyanide Total (mg/L)	2
Sulphide (mg/L)	2
Phenols (mg/L)	10
Detergents (mg/L)	15
Colour	Less than 40 Hazen units
Alkyl Mercury	Not Detectable (nd)
Free and saline Ammonia as N (mg/L)	4.0
Calcium Carbide	Nil
Chloroform	Nil
Inflammable solvents	Nil
Radioactive residues	Nil
Degreasing solvents of mono-di-trichloroethylene type	Nil

And any other parameter as the Authority and the sewerage service provider may prescribe.

(r. 14)

SIXTH SCHEDULE

MONITORING FOR DISCHARGE OF TREATED EFFLUENT INTO THE ENVIRONMENT

Lead Agency: ……..

Name of organization ……

Nature of work ……...

Sample No ……

Description of sample ……

Date and time sample received in lab ……

Date and time sample was examined …….

Average* Flow Rate (m^3/day)

Parameter	**RESULTS**				
	Sample upstream	Sample at discharge point	Sample downstream	Guide value	Remark
pH				6.5-8.5	
Biological Oxygen Demand (5 days at 20 ^oC)				30 (mg/L) max	
Chemical Oxygen Demand				50 (mg/L) max	
Suspended solids				30 (mg/L) max	
Ammonia –NH_4 + Nitrate-$N0_3$ + Nitrite –$N0_2$				100 (mg/L) max	
Total Dissolved Solids				1200 (mg/L) max	
E.Coli				Nil/100 ml	
Total coliform				1000/100 ml	

***Based on sampling analysis monitoring frequency. (daily/weekly/monthly/quarterly)**

Others

1. ……..
2. ……..
3. ……..
4. ……..

As guided by the Fourth Schedule or as may be directed by the Authority

(r. 16)

SEVENTH SCHEDULE

FORM A:

APPLICATION FOR EFFLUENT DISCHARGE INTO AQUATIC ENVIRONMENT

PART A: DETAILS OF APPLICANT

A1. Name of applicant:

…….

A2. Personal Identification Number

……..

A3. Address: ……..

…….

A4. Name of contact person: ……..

……..

……..

A5. Telephone No. ……..……

A6. Fax No. ……

A7. E-mail ……

A8. Previous Licence Number …….

PART B: DETAILS OF DISCHARGING FACILITY

B1. Location of discharging facility:

……..

B2. Activity of discharging facility (e.g. coffee factory, sewage plant, tea factory)

……

B3. Nature and composition of effluent:

……

B4. Does the facility have effluent treatment plant (Yes or No)

……

B5. Maximum quantity of effluent which is proposed to discharge on any one day (in M^3/day)

……

B6. The highest rate at which it proposes to discharge the effluent (in M^3/hr.)

……

B7. Source of processing water to the facility

……

B8. Does the facility have access to a Laboratory for monitoring the quality of discharged effluent?

(Yes or No)……..

B9. Description of the activities of the facility

……

……

……

B10. Point of discharge:

……

1.1.1 PART C: DECLARATION BY APPLICANT

I hereby certify that the information given above is correct and true to the best of my knowledge:

…….
Signature of Application

……..
Full Names in Block letters

……
Position

On behalf of: …….
(Firm name and seal)

Date: …….

PART D: FOR OFFICIAL USE

Approved/Not Approved

……

COMMENTS

……

……

……..

Official Signature……..……

Date ……

Important Notes: Please submit the following: (a) Application form in triplicate and (b) Prescribed fee to:

Director General
The National Environment Management Authority (NEMA)
Kapiti Road, South C,
P. O. Box 67839-00200, Nairobi, Kenya
Tel. 254-02-605522/6/7, or 601945
Fax: 254-02-608997
Email: dgnema@swiftkenya.com

(r. 17 (1))

THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT

EFFLUENT DISCHARGE LICENCE

Form B

Application Reference No. ……..

Licence No. …….....

FOR OFFICIAL USE

This is to certify that the application for discharge to aquatic Environment received from ……. (name of applicant) of …….. …(address) to the National Environment Management Authority in accordance with Water Quality Regulations for …….. (facility) located at ……. (locality and district) to discharge effluent to ……. has been evaluated and a licence is hereby issued for discharge, subject to the attached conditions.

Dated this ……..…….. day of……. 20..

Signature: ……

(Official Stamp)

Director General
The National Environment Management Authority

Conditions of Licence

1. This Licence is valid for a period of ……. from the date hereof.
2. Frequency of Monitoring (Daily/Weekly/Monthly/Quarterly) ……..
3. ……
4. ……
5. ……

(r. 17 (2))

FORM C: REGISTER FOR EFFLUENT DISCHARGE LICENCE INTO THE ENVIRONMENT

Name of discharging facility	Location of facility	Licence No.	Date of issue	Expiry Date	Conditions of Licence	Discharging into	Date and name of Filing officer	Date	Remarks/ Status

Status of Licence

1. New
2. Cancelled
3. Variation

(r. 19)

EIGHTH SCHEDULE

Microbiological quality guidelines for wastewater use in irrigation

Reuse conditions	**Exposed group**	**Intestinal nematodes (MPN/L)***	**Coliforms (MPN/100 ml)**
Unrestricted irrigation (crops likely to be eaten uncooked, sports fields, public parks)	Workers, consumers, public	<1	<1000**
Restricted irrigation (cereal crops, industrial crops, fodder crops, pasture and trees***	Workers	<1	No standard recommended

* *Ascaris lumbricoides, Trichuris trichiura* and human hookworms.

** A more stringent guideline (<200 coliform group of bacteria per 100 ml) is appropriate for public lawns, such as hotel lawns, with which the public may come into direct contact.

*** In the case of fruit trees, irrigation should cease two weeks before fruit is picked and fruit should be picked off the ground. overhead irrigation should not be used.

(r. 20)

NINTH SCHEDULE

STANDARDS FOR IRRIGATION WATER

Parameter	**Permissible Level**
pH	6.5-8.5
Aluminium	5 (mg/L)
Arsenic	0.1 (mg/L)
Boron	0.1 (mg/L)
Cadmium	0.5 (mg/L)
Chloride	0.01 (mg/L)
Chromium	1.5 (mg/L)
Cobalt	0.1 (mg/L)
Copper	0.05 (mg/L)
E.coli	Nil/100 ml
Fluoride	1.0 (mg/L)
Iron	1 (mg/L)
Lead	5 (mg/L)
Selenium	0.19 (mg/L)
Sodium Absorption Ratio (SAR)	6 (mg/L)
Total Dissolved Solids	1200 (mg/L)
Zinc	2 (mg/L)

And any other parameters as may be prescribed by the Authority from time to time

(r. 25)

TENTH SCHEDULE

QUALITY STANDARDS FOR RECREATIONAL WATERS

PARAMETER	**MAXIMUM PERMISSIBLE LEVEL**
Arsenic (mg/l)	0.05
Fecal coliform (Counts/100 ml)	Nil
Total coliform (Counts/100 ml)	500
Cadmium	0.01
Chromium	0.1
Colour (True Colour Units)	100
Light Penetration (meters)	1.2
Mercury (mg/L)	0.001
Odour (Threshold Odour Number, TON)	16
Oil and Grease (mg/L)	5
pH	6 – 9
Radiation, Total (Bq/L)	0.37
Surfactant, MBAs (mg/L)	2
Temperature (^{0}C)	30
Turbidity (NTU)	50

And any other parameters as may be prescribed by the Authority from time to time

(r. 28)

ELEVENTH SCHEDULE

FEES

The fees chargeable under these Regulations shall be as specified hereafter.

(a) Application for discharge of effluent into the Environment

(i) Sewerage service providers KShs.5,000/=

(ii) Discharging facility in Schedule 4 other than (i) above KShs.5,000/=

(iii) Institution KShs.5,000/=

(b) Annual Licence fee for discharge of effluent into the environment

(i) Sewerage service providers KShs.500,000/=

(ii) Discharging facility in Schedule 6 other than (i) above KShs.100,000/=

(iii) Institutions KShs.20,000/=

(iv) Others KShs.10,000/=

(c) Inspection of records/effluent register KShs.200/=

(d) Variation of effluent discharge Licence is 10% of the Annual Licence fee

MADE ON: ……2006

HONOURABLE KIVUTHA KIBWANA
MINISTER FOR ENVIRONMENT AND NATURAL RESOURCES

1. Guidelines to proponents for effluent discharge Licence application
2. Application for effluent Discharge into aquatic environment
3. Guidance pack for effluent discharge application
4. Standards for effluent third schedule
5. Monitoring discharge sixth schedule

GUIDELINES TO PROPONENTS FOR EFFLUENT DISCHARGE LICENCE APPLICATION

Guidance Notes to applicants on completing the application form.

A1. ***Name of applicant***: - should be the name of the legal entity under which the license will be issued.

A2. ***Personal Identification Number*** - to include PIN and I.D. (attach copy to each application). Firms to give number of Certificate of Registration and attach copy to each application.

A3. ***Address*** – to include Postal and Physical address.

A4. ***Name of contact person***: Contact person should be someone legally authorised to speak on behalf of the company and a person who can access the company records at all times.

A5. ***Telephone No***. Include a landline and mobile for the contact person.

A6 ***Fax***

A7 ***e-mail, website***

A8. ***Previous Licence Number*** – For new application give the Environmental Audit NEMA reference number. Include Environmental Impact Assessment (EIA) Licence No. where applicable. For renewal of licence, provide previous effluent discharge licence number.

B1. ***Location of discharging facility*** – Include District / Location, L.R. number and Street No. where applicable. Provide a location plan and attach Survey of Kenya grid referenced A4 size site plan that shows the extent of the installation covered by this license application clearly defining the site boundaries. Indicate points of routine sampling, monitoring and discharge on the site plan. Also indicate the Water Service and Sanitation Board and/or Local Authority under which you are licensed with details of the license.

B2. ***Activity of discharging facility*** *(e.g. coffee factory, sewage plant, tea factory)*

B3. ***Nature and composition of effluent*** – Use fourth schedule in the regulations (attached Annex 1) as a guide. Nature and composition of effluent to be supported with a report from NEMA registered laboratories.

B4. ***Does the facility have effluent treatment plant*** - Give details on the type of treatment plant and maximum flow received at the treatment plant.

B7. ***Source of processing water to the facility*** - Whether borehole, municipal etc and the amount i.e. consumption per day M^3/day.

B8. ***Does the facility have access to a Laboratory for monitoring the quality of discharged effluent?*** - If yes, give details on what parameters are measured with regard to quality and quantity.

B9. ***Description of the activities of the facility*** –

All activities in the project to be listed. Give details of the process and type of raw materials used as well as source of energy; include also sub-tenant or non-process activities and their licensing status. Include any conformance to EMS.

B10. ***Points of discharge –*** provide a site plan on A4 showing points of routine sampling, monitoring and inspection before discharge into the receiving environment. **Describe the receiving environment e.g. land, river, borehole, coastal, stream, lake, pond, canal etc.** If already discharging in to the land attach percolation tests for soak area.

PART C: DECLARATION BY APPLICANT

- Declaration to be done by the applicant
- Indicate position if signing on behalf of the proponent
- Partnership – include names of partners and trading names
- Sole trader – indicate if self or signing on behalf
- Firm – indicate whether Limited company

OTHER INFORMATION

- Payment of the application fee to be made to:

  Kenya Commercial Bank

  Branch: _____

  Account Number _____

- Submit filled in application form in **triplicate** to the District Environment Office. Attach the bank depository slip to the application form.

MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT
(r. 12 (2))
FOURTH SCHEDULE

DISCHARGING FACILITY	Gas and Oil	Dairy Products	Grain Mills	Canned Fruits & Vegetables	Preserved Sea	Sugar Processing	Textiles	Cement	Feedlots	Electroplating	Organic Chemicals	Inorganic Chemicals	Plastics & Synthetics	Soap & Detergents	Fertiliser Manufacturing	Petroleum Refining	Iron & Steel Manufacturing	Non Ferrous	Phosphate Manufacturing	Steam Electric Power Generating
Water quality parameters																				
Biochemical Oxygen Demand, BOD	x	x	x	x	x	x	x		x		x	x	x	x	x	x				
Total Suspended Solids	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease	x				x		x				x			x		x	x	x	x	x
Temperature	x	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x	x	x
Chemical Oxygen Demand, COD						x	x				x	x	x	x		x		x		
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus																			x	
Total Phosphorus						x				x					x				x	x
Ammonia (as N)												x			x	x	x	x		
Organic Nitrogen as N						x									x					
Nitrate						x									x		x			
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols							x				x		x			x	x			
Sulphide							x									x	x			
Total Chromium							x			x		x				x				
Chromium VI										x		x				x				x
Chrome																				
Copper										x		x	x							x
Nickel										x		x								
Zinc										x			x				x			x
Zinc												x								
Cn total Cyanide A										x x		x x								
Fluorine										x		x	x					x	x	
Free Available Chlorine																				

Residual Chlorine	x																		x
Cadmium										x		x					x			
Lead										x		x					x	x		
Iron										x										
Tin										x		x								x
Silver										x										
Gold										x										
Iridium										x										
Palladium										x										
Rhodium										x										
Ruthenium										x										
Mercury (total)												x								
Total Organic Carbon												x					x			
Aluminium												x					x			
Arsenic												x					x		x	
Selenium												x								
Barium																				
Manganese																	x			
Tannin																				
Oil																				
Settleable Solids																				
Surfactants																				

FOURTH SCHEDULE CONTINUED

DISCHARGING FACILITY	Fero Alloy manufacturing	Leather tanning & finishing	Glass	Asbestos manufacturing	Rubber processing	Timber products	Pulp, Paper & paperboard	Builders paper & paperboard mills	Meat products	Paving and roofing materials	Intensive chemical agriculture farm	Edible vegetable oils and fats	Hotels, Restaurants and Game Lodges
Water quality parameters													
BOD		x	x		x	x	x	x	x	x		x	x
TSS	x	x	x	x	x	x	x	x	x	x			x
pH	x	x	x	x	x	x	x	x	x	x	X	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease		x			x	x	x	x	x	x		x	x
Temperature	x	x	x	x	x	x	x	x	x	x		x	x
COD			x	x	x							x	
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus							x				x		
Total Phosphorus			x								x		x
Ammonia (as N)	x		x						x		x		x
Organic Nitrogen as N											x		x
Nitrate													
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols	x		x			x							
Sulphide													
Total Chromium	x	x			x								
Chromium VI	x												
Chrome		x											
Copper													
Nickel													
Zinc					x								
Zinc													
Cyanide total	x												
Cn													
Fluorine			x		x								
Free Available Chlorine							x	x					
Residual Chlorine													
Cadmium													
Lead													
Iron			x										
Tin													
Silver													

Gold													
Iridium													
Palladium													
Rhodium													
Ruthenium													
Mercury (total)													
Total Organic Carbon													
Aluminium													
Arsenic													
Selenium													
Barium													
Manganese	x												
Tannin		x											
Oil		x											
Settleable Solids								x					
Surfactants											x	x	

FOURTH SCHEDULE CONTINUED

DISCHARGING FACILITY	Bakeries & wheat confectioneries	Breweries (malt)	Soft drinks and carbonated waters	Sugar confectionery	Tobacco processing	Distilling & blending of spirits	Motor vehicle assembly	Paints, varnishes & lacquers	Batteries manufacture	Cosmetics	Printing, publishing &allied industry	Domestic sewage system	Pharmaceutical industries	Tea/Coffee Industries	Slaughter Houses	Combined sewage (Domestic+ and Industrial effluent)
Water quality parameters																
BOD	x	x	x	x	x	x	x	x			x	x	x	x	x	x
TSS	x	x	x	x				x	x			x	x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Faecal Coliforms/Ecoli.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease					x		x	x			x	x			x	x
Temperature	x	x	x	x	x	x	x	x	x	x	x				x	
COD		x	x	x		x	x	x	x	x	x	x	x	x	x	x
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus																
Total Phosphorus				x								x			x	x
Ammonia (as N)								x				x			x	x
Organic Nitrogen as N				x										x	x	x
Nitrate																x
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols																x
Sulphide/Sulphur				x							x					x
Total Chromium								x								x
Chromium VI																x
Chrome																x
Copper												x		x		x
Nickel													x			x
Zinc								x	x				x	x		x
Zinc A																
Cn total																x
Cn A																
Fluorine																x
Free Available Chlorine									x		x	x				x
Cadmium													x			x
Lead							x	x	x		x		x			x
Iron							x	x	x		x					x
Tin																x
Silver																x
Gold							x				x					x

Iridium																x
Palladium																x
Rhodium																x
Ruthenium																x
Mercury							x			x	x					x
Total Organic Carbon, TOC																
Aluminium																x
Arsenic																x
Selenium																x
Barium																x
Manganese																x
Tannin																x
Oil										x						x
Settleable Solids							x				x					
Surfactants								x						x		x

(r. 16)

SEVENTH SCHEDULE

FORM A:

APPLICATION FOR EFFLUENT DISCHARGE INTO AQUATIC ENVIRONMENT

PART A: DETAILS OF APPLICANT

A1. Name of applicant:
……

A2. Personal Identification Number
……

A3. Address: ……..
……
……

A4. Name of contact person:
……
……

A5. Telephone No.
……
……

A6. Fax No.
……
……

A7. E-mail
……

A8. Previous License Number
……

PART B: DETAILS OF DISCHARGING FACILITY

B1. Location of discharging facility:……...
……
……

B2. Activity of discharging facility (e.g. coffee factory, sewage plant, tea factory)
……
……

B3. Nature and composition of effluent:
……
……

B4. Does the facility have effluent treatment plant (Yes or No)
……

B5. Maximum quantity of effluent which is proposed to discharge on any one day (in M^3/day)
……

B6. The highest rate at which it proposes to discharge the effluent (in M^3/hr.)
……

B7. Source of processing water to the facility
……

B8. Does the facility have access to a Laboratory for monitoring the quality of discharged effluent?
……

B9. Description of the activities of the facility
……
……
……
……
……
……

B10. Point of discharge:

……

PART C: DECLARATION BY APPLICANT

I hereby certify that the information given above is correct and true to the best of my knowledge:

…….
Signature of Application

…….
Full Names in Block letters

…….
Position

On behalf of: ……

(Firm name and seal)

Date: …….

PART D: FOR OFFICIAL USE

Approved/Not Approved

…….

…….

COMMENTS

…….

…….

…….

…….

Official Signature……..……

Date ……

Important Notes: Please submit the following: (a) Application form in **triplicate** and (b) Prescribed fee to:

Director General
The National Environment Management Authority (NEMA)
Kapiti Road, South C,
P. O. Box 67839-00200, Nairobi, Kenya
Tel. 254-02-605522/6/7, or 601945
Fax: 254-02-608997
Email: dgnema@swiftkenya.com

(r. 11)

THIRD SCHEDULE

STANDARDS FOR EFFLUENT DISCHARGE INTO THE ENVIRONMENT

Parameter	**Max Allowable(Limits)**
1,1,1-trichloroethane (mg/l)	3
1,1,2-trichloethane (mg/l)	0.06
1,1-dichloroethylene	0.2
1,2-dichloroethane	0.04
1,3-dichloropropene (mg/l)	0.02
Alkyl Mercury compounds	Nd
Ammonia, ammonium compounds, NO_3 compounds and NO_2 compounds (Sum total of ammonia-N times 4 plus nitrate-N and Nitrite-N) (mg/l)	100
Arsenic (mg/l)	0.02
Arsenic and its compounds (mg/l)	0.1
Benzene (mg/l)	0.1
Biochemical Oxygen Demand (BOD 5days at 20 ^oC) (mg/l)	30
Boron (mg/l)	1.0
Boron and its compounds – non marine (mg/l)	10
Boron and its compounds –marine (mg/l)	30
Cadmium (mg/l)	0.01
Cadmium and its compounds (mg/l)	0.1
Carbon tetrachloride	0.02
Chemical Oxygen Demand (COD (mg/l)	50
Chromium VI (mg/l)	0.05
Chloride (mg/l)	250
Chlorine free residue	0.10
Chromium total	2
cis –1,2- dichloro ethylene	0.4
Copper (mg/l)	1.0
Dichloromethane (mg/l)	0.2
Dissolved iron (mg/l)	10
Dissolved Manganese(mg/l)	10
E.coli (Counts / 100 ml)	Nil
Fluoride (mg/l)	1.5
Fluoride and its compounds (marine and non-marine) (mg/l)	8
Lead (mg/l)	0.01
Lead and its compounds (mg/l)	0.1
n-Hexane extracts (animal and vegetable fats) (mg/l)	30
n-Hexane extracts (mineral oil) (mg/l)	5
Oil and grease	Nil
Organo-Phosphorus compounds (parathion,methyl parathion,methyl demeton and Ethyl parantrophenyl phenylphosphorothroate, EPN only) (mg/l)	1.0
Polychlorinated biphenyls, PCBs (mg/l)	0.003
pH (Hydrogen ion activity----marine)	5.0-9.0
pH (Hydrogen ion activity--non marine)	6.5-8.5
Phenols (mg/l)	0.001
Selenium (mg/l)	0.01
Selenium and its compounds (mg/l)	0.1
Hexavalent Chromium VI compounds (mg/l)	0.5

Sulphide (mg/l)	0.1
Simazine (mg/l)	0.03
Total Suspended Solids, (mg/l)	30
Tetrachloroethylene (mg/l)	0.1
Thiobencarb (mg/l)	0.1
Temperature (in degrees celious) based on ambient temperature	± 3
Thiram (mg/l)	0.06
Total coliforms (counts /100 ml)	30
Total Cyanogen (mg/l)	Nd
Total Nickel (mg/l)	0.3
Total Dissolved solids (mg/l)	1200
Colour in Hazen Units (H.U)	15
Detergents (mg/l)	Nil
Total mercury (mg/l)	0.005
Trichloroethylene (mg/l)	0.3
Zinc (mg/l)	0.5
Whole effluent toxicity	
Total Phosphorus (mg/l)	2 Guideline value
Total Nitrogen	2 Guideline value

And any other parameters as may be prescribed by the Authority from time to time

Remarks

Standard values are daily/monthly average discharge values. Not detectable (nd) means that the pollution status is below the detectable level by the measurement methods established by the Authority.

(r. 14)

SIXTH SCHEDULE

MONITORING FOR DISCHARGE OF TREATED EFFLUENT INTO THE ENVIRONMENT

Lead Agency: ……

Name of organization ……

Nature of work ……

Sample No ……

Description of sample ……

Date and time sample received in lab ……

Date and time sample was examined ……

Average* Flow Rate (m^3/day)

Parameter	**RESULTS**				
	Sample upstream	Sample at discharge point	Sample downstream	Guide value	Remark
pH				6.5-8.5	
Biological Oxygen Demand (5 days at 20 °C)				30 (mg/L) max	
Chemical Oxygen Demand				50 (mg/L) max	
Suspended solids				30 (mg/L) max	
Ammonia $-NH_4$ + Nitrate-$N0_3$ + Nitrite $-N0_2$				100 (mg/L) max	
Total Dissolved Solids				1200 (mg/L) max	
E.Coli				Nil/100 ml	
Total coliform				1000/100 ml	

***Based on sampling analysis monitoring frequency. (daily/weekly/monthly/quarterly)**

Others

1. ……
2. ……
3. ……
4. ……

As guided by the Fourth Schedule or as may be directed by the Authority