Extraordinary

# FEDERAL REPUBLIC OF NIGERIA

# OFFICIAL GAZETTE

**N0.68** **Abuja – 20th October, 2009** **Vol.96**

Government Notice No. 289

The following is published as Supplement to this Gazette:



Printed and Published by The Federal Government Printer, Lagos, Nigeria

FGP 109/102009/1,000 (0L 62)

# NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) ACT, 2007

# NATIONAL ENVIRONMENTAL (CHEMICAL, PHARMACEUTICAL, SOAP AND DETERGENT MANUFACTURING INDUSTRIES) REGULATIONS 2009


**ARRANGEMENT OF REGULATIONS**

## PART 1

**REGULATIONS**

# NATIONAL ENVIRONMENTAL (CHEMICAL, PHARMACEUTICAL, SOAP AND DETERGENT MANUFACTURING INDUSTRIES) REGULATIONS 2009

[30th September, 2009]

In exercise of the powers conferred on me by Section 34 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007, and all other powers enabling me in that behalf, I, John Odey, Minister of Environment, hereby make the following Regulations:

1. The purpose of these Regulations is to prevent and minimize pollution from all operations and ancillary activities from the Sector in the Nigerian Environment.
2. (1) Every facility shall submit to the Agency –
   a) the environmental Impact Statement (EIS) for new industries and major developmental projects before commencement of operations as issued by the Federal Ministry of Environment;
   b) the Environmental Audit Report (EAR) for existing industries every 3 years;
   c) without prejudice to sub-regulation (1)(b) of this regulation, where a facility is to be decommissioned, transferred or alienated for any reason whatsoever, an EAR must first be conducted and submitted to the Agency by the owner for verification and approval;
   d) an Environmental Management Plan (EMP) as specified in Schedule IX to these Regulations.

   (2) New facilities and investments in the sector shall apply cost effective up-to-date, efficient 'cleaner production' technologies to minimize pollution to the highest degree practicable.

   (3) The National Standards for Effluent or Emission limitations represent minimum standards and different standards shall be required based on the condition of the receiving medium.

   (4) Industries' emphasis on environmental planning shall be to prevent, reduce or eliminate pollutants at source and less emphasis shall be placed only on external hardware which are end-of-pipe mechanisms.

   (5) Every facility shall reduce the amount of packaging material used and the use of the three 'Rs' namely Reuse, Recover and Recycle shall be encouraged to ensure full compliance.

3. (1) Every facility shall plan and set up machinery for combating pollution hazards and maintain equipment in the vent of an emergency.

(2) Every facility shall for the purposes of sub-regulations I of this regulation, have an emergency plan and a stock of pollution response equipment which shall be readily accessible and available to combat pollution hazards in the event of accidents such as accidental discharges specified in Schedule VIII to these regulations.

(3) The owner or operator of a facility shall prepare an emergency response plan that describes the measures to be taken in respect of an accidental discharge of deleterious substance to prevent any deposit or discharges out of the normal course of events of such a substance and to mitigate the effects of such as deposit or discharges and the emergency procedures shall include such details as specified in Schedule VIII to these Regulations.

4. (1) Every facility shall install anti-pollution equipment or process for the detoxification or treatment of effluent, emission and chemical discharges emanating from the facility so as to meet the prescribed effluent and emission standards.

   (2) The installation of anti-pollution equipment and or process made pursuant to sub-regulation I of this regulation shall be based on the Best Available Technology (BAT) or the Nest Practicable Technology (BPT).

5. (1) The Polluter-Pays-Principle shall apply to every facility that pollutes.

   (2) The collection, treatment, transportation and final disposal of wastes shall be the responsibility of the facility generating the wastes within the specified standards and guidelines.

   (3) In the event of an incident resulting in an adverse impact on the environment whether socio-economically or health wise, the facility shall be responsible for –

   a) the cost of damage assessment, control and clean-up;
   b) remediation;
   c) reclamation or restoration;
   d) compensation to affected parties; and
   e) cost of damage assessment and control.

6. (1) Implementation of cleaner production processes and pollution prevention measures must be employed to yield economic, social and environmental benefits as specified in Schedule VI to these Regulations.

   (2) Pollution prevention programs shall focus on reduction of use of water and on more efficient use of process chemicals.

(3) All recyclable, damage and disused packaging materials such as glass, plastics, metal, paper, wood, nylon, etc shall be recycled.

(4) Every facility shall implement programs on best practices as specified in Schedule VI to these Regulations or assign the responsibility for pollution control to a person or body corporate accredited by the Agency.

(5) Every facility shall ensure that mo employee is exposed to any hazardous conditions in his place of work.

7. Facilities shall conform to minimal waste generation guideline as specified in Schedules III and IV to these Regulations.
8. (1) e ach Facility shall put in place organizational system for pollution control which shall assign environmental Pollution Control Manger (PCM) who oversees pollution control and prevention duties and the organizational system shall be as specified in Schedule XII to these Regulations.

   (2) In addition capacity building schedules including lecture course and assessments shall be conducted to help environmental pollution control managers and operators to obtain required qualifications and certification by the Agency as specified in Schedule XII to these Regulations.
9. (1)All manufactures and importers of various brands of products shall establish a Buy Back Program as specified in Schedule X to these Regulations.

   (2) The Agency will work with the sector to achieve and Buy Back Program within the period of three years.
10. (1) Every facility shall submit to the nearest office of the Agency –
    a) a list of the chemicals used in the manufacture of its products including their Material Safety Data Sheet (MSDS);
    b) details of stored chemicals and storage conditions;
    c) where chemicals are bought, sold or obtained, the name of secondary buyer;
    d) a list of obsolete or a abandoned chemicals and the proposed plan for their environmentally sound management.

    (2) Every facility shall ensure that use of –
        a) organic solvents is minimized;
        b) ozone-depleting substances is in accordance with the provisions of the Montreal Protocol.

11. Use of Banned or Restricted chemicals must be with a permit from the Agency in accordance with the provisions of relevant international conventions such as the Rotterdam, Vienna, Stockholm Conventions, etc as specified in Schedule VII to these Regulations.
12. (1) All permits such as notices, order, consent or demand shall be in writing.

    (2) No facility shall –

    a) Discharge or cause to be discharged any effluent, or oil in any form into water system, public drains, or underground injection and land without a permit from the Agency;
    b) Use Chlorine gas-based chemical in the production process without a permit;
    c) Use Alkyl phenol ethoxylates or discharge effluent containing alkyl phenol ethoxylates into the environment without a permit from the Agency.
    d) Release hazardous or toxic substances into the water or land or air of Nigeria's ecosystem beyond the permissible limits as specified in Schedule I to these Regulations;
    e) Release Persistent Organic Pollution (POPs) into the ambient air without a permit;
    f) Engage in the operation of listed activities in Schedule XI without a permit;

    (3) Application for a permit is as set out in Part 3 to these Regulations.
13. (1) There shall not be contamination arising from leakage of surface or underground oil or fuel, or chemicals storage tank likely to cause pollution of the environment including surface water and groundwater.

    (2) A facility shall have an impermeable base for any ancillary equipment and provided an appropriate bund wall in the event of any unanticipated discharge or spillage.
14. Every facility shall be given equal treatment without preference as far as inspection and enforcement of relevant laws are concerned.
15. Every facility shall have a sustainable community relations program.

EFFLUENT LIMITATION

16. (1) The National Environmental Standards ion relation to effluent limitations for the sector shall as set out in Schedule I to these Regulations.

    (2) Any effluent shall be deemed to be non-compliant and polluted if –

    a) the concentration of any of its parameters exceeds the permissible limits as specified in the first column of Schedule I to these Regulations;
    b) it does not comply with the corresponding limit specified in the second or third column of Schedule I to these Regulations as the case may be; and

c) it is discharged from a facility without pre-treatment.

(3) Such an effluent as described in sub-regulation (1) of this regulation shall not be discharged from a facility, without pre-treatment to national standard set out in Schedule I to these Regulations.

17. (1) No Facility shall discharge effluent onto land, into a water-course or into a water body unless the facility ensures that the parameters of the effluent do not exceed the permissible limits specified in Schedule I to these Regulations.

(2) Notwithstanding sub-regulation (1) of this regulation, no facility shall discharge or cause to be discharged any effluent into a water system used or earmarked as source of potable water supply.

(3) Notwithstanding sub-regulation (1) of this regulation any facility using an influent, the limits of concentration or value of any of the parameters of which exceeds the permissible limit for that parameter specified in Schedule I to these Regulations shall ensure that the concentration or value of the parameters of the effluent conforms to the prescribed standard.

(4) Disposal of hazardous waste on water is prohibited without prior treatment.

(5) Land filling is permitted according to Guidelines approved by the Agency.

(6) Generators or hazardous waste for land filling must provide notification of such to the Agency.

(7) Generators of such treated waste, subject to the Land Disposal Requirement, must provide notification of such to the Agency.

18. (1) Facilities that discharge effluent into the environment shall treat the effluent to the permissible level as specified in Schedule I to these Regulations, to ensure assimilation by the receiving medium.

(2) Every facility shall –

a) carry out effective treatment, all the time that the plant or unit is operating;

b) ensure the Environmentally sound Management of sludge containing heavy metals or other toxics and dispose same in a landfill or designated disposal site approved by the Agency;

c) ensure the treatment of toxic organics contained in both effluent and sludge as approved by the Agency; and

d) ensure that effluent is not diluted to achieve the standards contained in Schedule I to these Regulations.

(3) Wastes that contain toxic organics shall be subjected to thermal treatment to effectively destroy or remove over 99.9% of toxic organics. The resulting residue shall be disposed of in an environmentally sound manner as prescribed by the Agency.

19. (1) No facility shall discharged sludge directly into any water body. Any discharge to any part of the environment is prohibited except under a sludge disposal licence.

(2) Sludge disposed of onto land shall be classified and none of its components shall exceed the prescribed limit specified in Schedule II to these Regulations.

(3) Any other sludge beside purely domestic (organic) sludge and purely agricultural (Organic) sludge will be treated as hazardous waste if it contains hazardous substances.

(4) Hazardous Sludge shall be treated and disposed off in a secure landfill approved by the Agency.

**EMISSIONS**

20. (1) Every facility shall comply with the prescribed Emission Standards specified in Schedule III to these Regulations.

(2) The facility shall be required to quantify and report sources and emissions data and also undertake emission reduction and implementation plan which shall be reviewed every three years by the Agency.

21. (1) A facility with any source or potential source may be required, to measure the emission of every priority air pollutant emitted therefrom and to develop and implement a plan to control such emission in accordance with the Standards as prescribed in Schedule III to these Regulations.

(2) Any facility that causes or allows the generation of any odour from any source, that unreasonably interferes, or is likely to unreasonably interfere, with any other person's lawful use of enjoyment of his property shall use recognized best practices and procedures to reduce such odour to a reasonable minimum level, including any method for reducing odour as may be specified by the Agency.

(3) No facility shall burn, or permit to be burned, light fuel oil containing over 0.5 per cent Sulphur by weight as fired in an existing source or in a new source.

(4) No facility shall burn, or permit to be burned, medium fuel oil containing over 1.1 per cent Sulphur by weight as fired.

(5) Notwithstanding, heavy fuel oil with no more than 3 per cent sulphur may be burned at a new or existing fuel combustion sources or a combination of new and existing fuel combustion sources or a combination of new and existing fuel combustion sources if –

a) one or more of such sources operate so that Sulphur dioxide is absorbed by virtue of coming in contact with a product or with a scrubbing device or other material; and
b) the actual total Sulphur dioxide emissions from the entire facility are less than the allowable Sulphur dioxide emissions.

22. (1) A facility which discharges gaseous emission shall treat it to the permissible level as prescribed in Schedule III to these Regulations.

(2) Treatment can be achieved through the use of appropriate treatment technologies for minimizing the release of significant pollutants to the air; these include –

a) Stack gas scrubbing, carbon absorption or combustion (for toxic organics);
b) Bag houses (for particulate matter removal);
c) Biological filters;
d) Cyclone, or any other appropriate technology;
e) Electrostatic Precipitator (ESP) for removing dust.

23. (1) The activities listed in Schedule XI to these Regulations require atmospheric emission licences to operate.

(2) The Agency may, by notice in the gazette when necessary, amend the list by –

a) Adding to the list of activities in addition to those specified in Schedule XI to these Regulations;
b) Removing activities from the list; or
c) Making changes to particulars on the list.

24. Every Facility shall evaluate its installations and ensure that routine controls are sufficient to prevent risks of noise pollution.

25. Noise abatement measures shall be in place to achieve either the levels prescribed in Schedule V to these Regulations or a maximum increase in background levels of 3 decibels (measured on the A scale) dB(A)].

26. (1) Every facility shall administer a continuing, effective hearing conservation program, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 90 decibels measured on the A scale (slow response) or, equivalent to a dose of fifty per cent.

    (2) For purposes of the hearing conservation program, employee noise exposures shall be computed, regardless of the provision and the use of Personal Protective Equipment.

    (3) An 8-hour time-weighted average of 90 decibels shall be referred to as the action level.

27. Monitoring shall be repeated whenever a change in production process, equipment or control, increases noise exposures to the extent that –

    a) additional employees may be subjected to risk at the action level; or

    b) the attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet requirements of regulation 26(1) to these Regulations.

**PART II – SAMPLING PROCEDURES**

28. For the purposes of determining license classification and licence classification and licence compliance, the facility shall analyse samples according to standard analytical methods in a laboratory accredited by NESREA, Federal Ministry of Environment.

29. (1) A spot sample for the purpose of analysis for all the tests including oil and grease, dissolved oxygen, pH, chlorine and sulphide shall be take as follows –

    a) the whole sample volume is to be taken at one time, at the point of discharge or, if the discharge has stopped, at the nearest practicable point within one kilometer upstream and downstream of the point of discharge;

    b) the sample shall be analysed immediately after collection where possible but not later than 24 hours after taking the sample and the whole sample volume shall be used;

    c) all samples collected shall be preserved to avoid contamination or decomposition;

    d) sampling points shall be geo-referenced.

30. (1) A composite sample for the purpose of analysis for all tests other than those for temperature and pH shall be taken by combining individual samples as follows –

    a) a minimum of five samples of equal volume of not less than 500 ml each shall be taken at the point of discharge or, if the discharge has stopped, at the nearest practicable point within one kilometer upstream and downstream of the point of discharge, at

approximately equal intervals of time over a minimum period of four hours within any 24 hours period;

b) two of the composite samples, collected when the discharge has been stopped, will be used to prove the source and extent of pollution;

c) the samples shall be kept as cool as at site conditions licence. Sample analysis shall commence not later than 24 hours after taking the last sample;

d) where the discharge has stopped or is intermittent, two grab samples shall be collected at the nearest practicable point within one kilometer upstream and downstream each of the point of discharge.

31. The whole volume of spot sample and for further laboratory analysis shall be taken at one time at the point of discharge.

32. (1) If full laboratory facilities do not exist on the site or in the absence of a calibrated Dissolved Oxygen (DO) meter, the oxygen in the sample may be "fixed" at the time of sampling by adding any of the following reagents; 1 ml of manganese (II) sulphate followed by 1 ml of alkali-iodide-azide solution, or any other approved scientific method,

Provided that –

a) the stopper of the sample container shall be replaced and the solution shall be well mixed by shaking; and

b) the remaining steps shall be carried out later in the laboratory.

(2) The sample volume per ml of manganese (II) sulphate should be between 500ml to 1 litre.

33. (1) When a number of samples for different purposes are to be taken from the same sampling point, the following precautions are to be observed –

a) the sample for bacteriological examination shall be collected first unless special investigations are necessary;

b) samples for bacteriological examination shall be kept strictly separate from all others to avoid contamination;

c) boxes for the transportation of samples shall be made of materials that can be disinfected regularly, and they shall not be used for carrying anything other than samples of water for bacteriological examination.

(2) Sterile bottles used exclusively for bacteriological purposes that are fir for immediate use shall be provided by the laboratory performing the examination.

(3) Officers must en sure that the volume of each sample is at least 500 ml, and that at least one sample is taken at each sampling point.

34. (1) Measurements of air quality parameters shall take palace at any facility, downwind and upwind at listed below –

    a) measurement of total suspended particulate shall be by gravimetric method using air sampler or by any other recommended scientific method;

    b) a minimum of two sampling periods (both 1-hour and 8-hours) shall be adopted;

    c) the heavy metals level of total suspended particulate shall be determined using atomic absorption spectrometer or any referenced standard method.

    (2) Gaseous pollutants shall be measured by passive sampling, active sampling or continuous sampling.

    (3) Passive sampling method shall require the submission of analysis certificate along with results. A minimum of three sampling periods (1-hour, 24-hours and 30- days) shall be adopted.

    (4) Active sampling for $NO_x$ shall use the Saltzman or any other recommended standard method.

    (5) Active sampling for $SO_2$ s hall use the West-Gaeke, hydrogen peroxide or conductimetry or any other recommended standard method.

    (6) Active sampling for hydrocarbons shall use the absorption on activated charcoal method.

    (7) Continuous sampling of any gaseous air pollutant shall use instrument with detection range accommodating the maximum allowable limit of measured parameter. Measurement shall last for at least 2 hour in every sampling location.

35. (1) Noise levels shall be measured with instrument having both A and C weighting, a resolution not more than 0.1dB and fast or slow responses.

    (2) Measurement shall be taken at least 3m from any barrier or other sound reflecting sources, at about 1.2-1.5m above ground level or working platform and shall last for at least 10 seconds.

    (3) Daytime (07:00-22:00) and night time (22:00-7:00) measurements shall be taken at the fence line of any facility.

**PART III – PERMITS (GENERAL PROVISION)**

36. Procedures for application for permit including revocation of such permit when it had already been issued, are as contained in the National Environmental (Permitting and Licensing System) Regulations 2009.

37. (1) The Permit holder subject to categorical standards shall comply with reporting requirements under the Agency's Permit including Incidence Report and Monthly effluent or Emission Data Sheet by submitting these documents to the Agency's Field Offices.

(2) The Permit holder must submit to the Agency, at least quarterly, on dates specified, a description of the nature, concentration and flow of the pollutants in the Monthly Effluent Data Sheet required to be reported.

(3) The report shall be based on sampling analysis performed in the period covered by the report. All reporting shall be in compliance with the format as specified in Schedule XIV to these Regulations.

(4) The Permit holder shall report all sample results for parameters listed on the Monitoring Requirement, on the Industrial or Commercial Effluent or Emission Discharge Monitoring Report forms as specified in Schedule XIV to these Regulations.

(5) The Permit holder shall install at its own cost monitoring equipment approved by the Agency to facilitate the accurate observation, sampling and measurement of the quality of waste discharges as required by the permit.

(6) Such equipment shall be in working order and kept safe and accessible at all times. Whether owned by public or private organization, such monitoring equipment shall be according to the specifications given by the Agency and other applicable standards.

(7) Plans and specifications for such work shall be submitted to the Agency, for review and comments before construction.

(8) A Permit holder who discharges effluents must have in place –

* Flow meters
* Point Inspector Chambers
* Recording Apparatus
* Sampling Test Points or Points of Inspection

(9) The Permit holder discharging or proposing to discharge effluent to a general sewer or treatment plants shall maintain the following –

a) records or production;
b) water consumption and discharge flow records;
c) complete monitoring records as specified in these Regulations;
d) Process monitoring records;

e) Incident reports;

f) Waste handling records, and any other records necessary to demonstrate compliance with these Regulations.

(10) The Permit holder shall be required to file reports with the Agency if the Permit holder –

a) In any month commits a serious violation or fails to submit a completed Monthly Effluent Data Sheet;

b) Exceeds an effluent limitation for the same pollutant at the same discharge point source by any amount for four out of six consecutive months; and

c) Has any discharges that could cause problems to the Environment, including any sludge loadings

38. (1) The Permit holder shall sign the report and attach a copy of the Certificate of analysis from the Agency's accredited laboratory.

(2) Each report must be signed by a responsible corporate officer, if the Permit holder submitting the reports is a corporation.

(3) All reports shall include the following certification statement;

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted, the information herein submitted is, to the best of my knowledge and belief, true, accurate, and complete"

39. Such records shall be made available to the Agency, and shall be retained for a minimum of five (5) years.

40. (1) The Agency shall adopt charges and fees that shall include –

a) Fees for processing application for permit;

b) Fees for reviewing procedures for accidental discharges, and prevention procedures and construction;

c) Other fees as the Agency may deem necessary to carry out the requirements contained herein which may include emergency incident response and cost of personnel and equipment.

(2) These fees relate only to the matters covered by these Regulations and are separate from all other fees chargeable by the Agency and subject to review.

41. Public access shall also be governed by the Act, however Effluent constituents and characteristics shall not be recognized as confidential information to the Agency.

**PART V – ENFORCEMENT**

42. (1) The Agency has the primary responsibility of enforcing all applicable pre-treatment standards and requirements and may, on the basis of any information available to it, enforce at any time as appropriate any applicable pre-treatment standards and requirement.

    (2) While a permit is in force it shall be the duty of the Agency to take such action under these Regulations as may be necessary for the purpose of ensuring that the conditions of the permit are complied with.

43. (1) If the Agency is of the opinion that an operator has contravened, is contravening or is likely to contravene any condition of the permit, the Agency shall serve it an enforcement notice.

    (2) An enforcement notice shall –

    a) specify the matters constituting the contravention or the matters making it likely that the contravention will arise, as the case may be;

    b) specify the steps that must be taken to remedy the contravention or to remedy the matters making it likely that the contravention will arise, as the case may be; and

    c) specify the period within which those steps must be taken.

    (3) Sub-regulation (2) of this regulation shall apply whether or not the particular manner of operating the facility in question, is regulated by or contravenes a condition of the permit.

44. (1) Failure to comply with the specified period stipulated in the notice issued pursuant regulation 43(2)(c) to these Regulations will occasion the service of a second notice.

    (2) Failure to comply with the second notice (reminder) within the specified time limit will lead to the issuance of a suspension notice or any other punitive action as may be necessary.

    (3) Enforcement notice shall be delivered by hand, registered post or courier, newspaper publication and pasting at the facility or registered premises of the organization.

45. (1) Where a suspension notice is served under these Regulations the permit shall, on the service of such notice, cease to have effect as stated in the notice.

    (2) The Agency may withdraw a suspension notice after compliance.

**PART VI – OFFENCES**

46. It shall be an offence if a facility –

    a) fails to comply with or contravenes a condition of a permit;

b) fails to comply with the requirements of an enforcement notice, or a closure notice under these Regulations;

c) fails without reasonable excuse, to comply with any requirement imposed by a notice served by the Agency.

47. (1) IT shall be an offence for a facility to make a statement which is known to be false or misleading particularly, where the statement is made –

a) In purported compliance with a requirement to furnish any information imposed by or under any provision of these Regulations;

b) For the purpose of obtaining a permit for the facility for variation, transfer or surrender of a permit;

c) To intentionally make a false entry in any record pertaining to the permit; or

d) With intent to deceive, to forge or use a document issued or authorized to be issued under a condition of the permit;

(2) It shall be an offence to make a statement or have in possession a document that is likely to mislead or deceive the Agency.

48. (1) It shall be an offence if a facility fails to –

a) take reasonable measures to remove or treat and dispose of any effluent to minimize adverse effects;

b) take measures required by the Agency after unauthorized release of effluent;

c) remediate the environment to the standard prescribed by the Agency;

d) furnish all information to the inspector;

e) remove equipment or contain materials which causes release into the environment when requested by inspector;

f) produce document when requested by the inspector;

g) comply with guidelines with respect to the handling, storage and transport of any hazardous material;

h) ensure that the PPE supplied by the permit holder should be in accordance with the requirements of the materials safety data sheet of the chemicals in use and the occupational health and safety requirements of the facility.

(2) It shall be an offence if a facility –

i) handles effluent in a manner which causes adverse effect to human and the environment;

ii) dispose of industrial or factory effluent treated with pesticides contrary to these Regulations;

iii) knowingly obstructs the inspectors from performing their duties;

iv) dismisses, suspends or sanctions an employee who reports contravention of the Act;

v) impose penalty on an employee who reports cases of contravention of the Regulations;

vi) transports any effluent and sludge which is not covered by a manifest;

vii) transports effluent and sludge which is not completely enclosed, covered and secured;

viii) transports effluent and sludge in bulk without prior authorization from Agency.

49. It shall be an offence if a facility fails to –

a) maintain records of all discharges;

b) file quarterly and annual reports of all discharges;

c) submit record of receipt of or removal of effluent and sludge within the time frame prescribed by these Regulations;

d) submit an atmospheric pollution prevention plan or Air quality impact report arising from its operations.

50. (1) It shall be an offence if a facility –

a) releases effluent and sludge into the environment in excess of permissible level in these Regulations.

b) Fails to report release of effluent and sludge into the environment in excess of permissible level as specified in Schedules I and II to these Regulations.

c) Fails to take reasonable measures to prevent, reduce or remedy the adverse effect of effluent, sludge and emissions into the environment.

**PART VII – PENALTY**

51. (1) Any person who violates any of the provisions of regulations 46 to 50 of these Regulations commits an offence and shall on conviction, be liable to a fine not exceeding N200,000:00 or to imprisonment for a term not exceeding two years or to both such fine and imprisonment and an additional fine of N5,000:00 for every day the offence subsists.

(2) Where an offence under sub-regulation (1) of this regulation is commented by any facility, it shall on conviction, be liable to a fine not exceeding N1,000,000:00 and an additional fine of N50,000:00 for every day the offence subsists.

52. Without prejudice to the provisions of these Regulations, the Agency shall have the power to enter and seal any facility contravening the provision of these Regulations.

**PART VIII – INCENTIVES**

53. (1) Each Facility Organization that demonstrates environmental leadership, adopt environmentally responsible practices, demonstrate commitment to environment quality and maintain exemplary environmental compliance records shall be recognized and encouraged by the Agency.

(2) The environmental performance requirements shall be based upon agreed criteria and rating for each sector as specified in Schedule XIII to these Regulations.

(3) The Agency shall recognize environmental compliance in five categories and reward deserving facilities as specified in Schedule XIII to these Regulations.

(4) The Agency shall annually institute and certify the best environmentally performing facility and organization with the NESREA Green Mark (✓).

(5) The Logo of the NESREA Green Mark (✓) shall be as approved by the Agency and shall only be used by facilities and organizations certified and duly recognized by the Agency.

54. In these Regulations unless the context otherwise requires –

"Act" means the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007;

"Agency" means the National Environmental Standards and Regulations Environment Agency (NESREA) established under section 1 of the Act;

"BAT" (Best Available Technology) means an emission limitation based on the maximum degree of emission reduction which (consisting energy, environmental and economic impact and other costs) is achievable trough application of production processes and available methods systems, and techniques;

"BPT" (Best Practicable Technology) means non-governmental standard based on cost, environmental and engineering factors;

"Composite Sample" means representative mixture of several different samples (usually bulk sample);

"Designed Officer" means a person who has been appointed by the Agency to be responsible for processing applications with respect to activities designated under these regulations, and includes an acting officer;

"Director-General and Chief Executive Officer (DG and CEO)" means the Director General of the National Environmental Standards and Regulations Enforcement Agency (NESREA);

"Effluent" means waste water treated or untreated: - that flows out of a treatment plant, sewer, or industrial outfall resulting from the commercial or industrial use of water, generally refers to waters discharged into surface waters;

"EIA" (Environmental Impact Assessment) means the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposal prior to major decisions being taken and commitments made;

"Emission" means the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in a facility into the air water or land;

"Emission limit" means the mass, expressed in terms of specific parameters, concentration or level of an emission which may not be exceeded during one or more periods of time;

"Extension" means an increase in size, volume or other physical dimensions of an activity such that the increase may cause an adverse effect if not properly mitigated;

"Facility" means Chemicals, Pharmaceuticals, Soap and Detergent Industry;

"Flow weighted Sample" mans a composite sample consisting of a mixture of aliquots collected at a constant time interval where the volume of each aliquot is proportional to the rate of flow;

"Grab Sample" means a single or measurement taken at a specific time or over a short period of time a feasible;

"Hazardous waste" may be solid waste if it exhibits one or more of the following characteristics –

- Ignitable
- Corrosive
- Reactive
- Toxic

Or – Listed (see V for listed hazardous wastes).

"Influent water" means either processed waste water or raw water from a river, stream, spring or canal, or water abstracted from underground and used by a facility;

"Inspection Officer or Inspector" means a provincial officer who has the legal authority to enter facility to conduct an inspection under Environmental Legislation (Acts), Guidelines and Regulations";

"Minister" means the Minister responsible for Environment or the appropriate government structure operating at that time;

"Modification" means a change in any activity that may cause an adverse effect if not properly mitigated and includes, but not limited to, the expansion of the same process, addition or product lines and replacement of equipment with different technology other than that presently in use;

"Other facility wastewater" means effluent originating from the washing and general maintenance of a facility;

"Permit" means an official document, authorization, license, or equivalent control document issued by the Agency to implement the requirement of these regulations to discharge effluent especially for a limited period of time;

"Permit holder" means an individual or group of individuals or organization or facility that have been empowered by the permit to discharge effluent;

"Person" means a natural or juristic personality (including 'facility');

"Process" means an activity undertaken by industries to detoxify effluent or emission;

"Responsible corporate officer" means Chief Executive Managing Director, or Chairman, of the corporation in charge of a principal business function, or any designated person who performs similar policy or decision making functions for the corporation;

"Sample" means a small part of something intended as a representative of the whole;

"Standards" means a consensus document with limits;

"Time Weighted Sample" means a composite sample consisting of equal volume aliquot collected at a constant time interval;

"Water bodies" means underground water, river, stream, spring, canal, reservoir, well, lake, lagoon, ocean etc;

"Water Efficient Device" means any device that minimizes the use of water in the production process;

"Wastewater system" means –

a) a sewer, conduct, pump, engine or other appliance used or intended to be used for the reception, conveyance, removal, treatment and disposal of effluent but does not include house sewers;

"Watercourse" means any natural or artificial channel, pipe or conduit, excluding the sewerage system, carrying, or that may carrying, and is discharging water directly or indirectly into a water body;

55. These Regulations may be cited as National Environmental (Chemical, Pharmaceuticals, Soap and Detergent Manufacturing Industries) Regulations 2009.

SCHEDULE I

Regulations 12(2)(d), 16, 17, 18, 50(b)

**EFFLUENT LIMITATION STANDARDS**

(for Chemicals, Pharmaceuticals, Soaps & Detergent Sector)

| Parameter | Unit | Maximum permissible limit |
|---|---|---|
| Appearance | | Colourless and odourless |
| | | Not objectionable |
| Temperature increase | $^0$C | <3[a] |
| pH | - | 6-9 |
| Chloride | mg/l | 100 |
| Sodium | mg/l | 200 |
| Total Suspended Solids (TSS) | mg/l | 10 |
| Total oil & grease | mg/l | 10 |
| Sulphate | mg/l | 100 |
| Total nitrogen N | mg/l | 10 |
| Chemical Oxygen Demand (COD) | mg/l | 40 |
| Biochemical Oxygen Demand (BOD5) | mg/l | 20 |
| Sulphide | mg/l | 0.2 |
| Ammonia as Nitrogen | mg/l | 0.50$^0$ |
| Fluoride | L | 1.0 |
| Free Chlorine | mg/l | 0.5 |
| Total Phosphorus | mg/l | |
| Phenol | | 0.10 |
| Total pesticides | mg/l | <0.0.05[b] |
| Ketones | mg/l | 0.2 |
| Acetonitrite | mg/l | 10.2 |
| Acetates | mg/l | 0.5 |
| Benzene | mg/l | 0.02 |
| Chlorobenzene | mg/l | 0.06 |
| n-Heptane | mg/l | 0.02 |

| | | |
|---|---|---|
| n-Hexane | mg/l | 0.02 |
| Isopropanol | mg/l | 1.6 |
| Toluene | mg/l | 0.02 |
| Xylene | mg/l | 0.01 |
| METALS (mg/L) | | |
| Aluminium?? | mg/l | |
| Arsenic | mg/l | 0.1 |
| Cadmium | mg/l | 0.1 |
| Cobalt | mg/l | 0.5 |
| Copper | mg/l | 1.0 |
| Iron | mg/l | 2.0 |
| Lead | mg/l | 0.1 |
| Molybdenum | mg/l | 0.01 |
| Manganese | mg/l | 1.0 |
| Mercury | mg/l | 0.01 |
| Nickel | mg/l | 0.1 |
| Total Chromium | mg/l | 0.5 |
| Zinc | mg/l | 5.0 |
| Chromium (vi) | mg/l | 0.01 |
| Detergent as LAS (Linear Alkyl benzene Sulphonate) | mg/l | 15 |
| MICROBIOLOGICAL ANALYSIS | | |
| Total Plate Count (cfu/ml) | MPN/100ml | 10 |
| E.Coli (cfu/100ml) | MPN/100ml | 0 |

a) At the edge of scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity, the effluent should result in a temperature increase of no more than $3^{O}C$ at the edge of the zone where initial mixing and dilution takes place. Where the zone is not defined, use 100 meters from the point of discharge.

b) 0.05 mg/l for total pesticides (organo phosphorous pesticides excludes); 0.10mg/l for organo phosphorus pesticides.

Note: Effluent requirements are for direct discharge to surface water. The liquid effluent should not be coloured.

## SCHEDULE 1A

| Draft Effluent Standards for Pharmaceuticals Manufacturing Pollutant | Units | Standards Value |
|---|---|---|
| pH | mg/l | 6 – 9 |
| BOD5 | mg/l | 40 |
| COD | mg/l | 80 |
| TSS | mg/l | 10 |
| Total Oil & grease | mg/l | 10 |
| Phenol | mg/l | 0.5 |
| Arsenic | mg/l | 0.1 |
| Cadmium | mg/l | 0.1 |
| Chromium (vi) | mg/l | 0.1 |
| Active ingredient (each) | mg/l | 0.1 |
| Ammonia | mg/l | 30 |
| Total nitrogen | mg/l | 10 |
| Total phosphorus | mg/l | 2 |
| Benzene | mg/l | 0.02 |
| Chlorobenzene | mg/l | 0.06 |
| Chloroform | mg/l | 0.013 |
| Amines (each) | mg/l | 102 |
| n-Hexane | mg/l | 0.02 |
| n-Heptane | mg/l | 0.02 |
| Isoproppanol | mg/l | 1.6 |
| Toluene | mg/l | 0.02 |
| Xylene | mg/l | 0.01 |

**SCHEDULE 1B**

Draft Effluent Standards for Petroleum Based and Allied Chemical Industries

| Pollutant | Units | Standard Value |
|---|---|---|
| pH | mg/ | 6 – 9 |
| Temperature increase | $^{O}C$ | < 3 |
| BOD | mg/l | 25 |
| COD | mg/l | 90 |
| Oil & grease | mg/l | 10 |
| Phenol | mg/l | 0.5 |
| TSS | mg/l | 25 |
| Cadmium | mg/l | 0.5 |
| Chromium (hexavalent) | mg/l | 0.1 |
| Sulphide | mg/l | 1 |
| Copper | mg/l | 0.5 |
| Total nitrogen | mg/l | 10 |
| Total Phosphorus | mg/l | 2 |
| Benzene | mg/l | 0.05 |
| Copper | mg/l | 0.5 |
| Zinc | mg/l | 2 |
| Lead | mg/l | 0.5 |
| Nickel | mg/l | 0.5 |
| Mercury | mg/l | 0.01 |
| Vinyl chloride | mg/l | 0.05 |
| Absorbable organic halogens | mg/l | 0.3 |

## SCHEDULE II

Regulations 19(2), 50(1)(b)

SLUDGE DISPOSAL PERMISSIBLE LIMIT

| Dry Sludge Generation From Wastewater Treatment | |
|---|---|
| Parameters | Sludge Production Kg DS/ tone |
| Sludge (total) | 200 |
| Primary Treatment | |
| Mixing-sedimentation | 80 |
| Mixing-Chemical Treatment + sedimentation | 150-200 |
| Mixing chemical treatment + Flotation | 150-200 |

## SCHEDULE III

Regulations 7, 20(1), 21(1), 22(1)

GASEOUS EMISSION

Industry-specific pollutants that may be emitted from point or fugitive sources during routine operations consist of numerous organic and inorganic compounds, including sulphur oxides (SOX), ammonia ($NH_3$), ethylene, propylene, aromatics, alcohols, oxides, acids, chlorine, EDC, VCM, dioxins and furans, formaldehyde, acrylonitrite, hydrogen cyanide, caprolactam, and other volatile organic compounds (VOCs) and semi volatile organic compounds (SVOCs).

a) Emissions from Pharmaceutical Manufacturing

| Parameter | Maximum value ($mg/Nm^3$) |
|---|---|
| Active ingredient (each) | 0.15 |
| PM | 20 |
| Total Class Ab | 20 |
| Total Class Bc | 80 |
| Benzene, vinyl chloride, dichloroethane (each) | 3 |
| Volatile organic compounds (VOCs) | 20-150 |
| Bromides as (HBr) | 3 $mg/Sm^3$ |
| Chlorides as (HCl) | 30 $mg/Sm^3$ |

| | |
|---|---|
| Ammonia | 30 mg/$Sm^3$ |
| Arsenic | 0.05 mg/$Sm^3$ |
| Ethylene oxide | 0.5 mg/$Sm^3$ |
| Total organic carbon | 50 |

a) Releases below these mass emissions limits may not be trivial and may still require controls and setting of appropriate release limits.
b) Applicable when total Class A compounds (see Annex 5) exceed 100g/hr.
c) Applicable when total Class B compounds (see Annex 5), expressed as toluene, exceed the lower of 5 t/year or 2 kg/hr.

Source: World Bank

b) Air Emission Guidelines (Petroleum based and chemical industries)

| Pollutant | Guideline value mg/$Nm^3$ |
|---|---|
| Particulate Matter (PM) | 20 |
| Nitrogen Oxides | 300 |
| Hydrogen Chlordie 10 | 10 |
| Sulphur Oxides | 500 |
| Benzene | 5 |
| 1,2-Dichloroethane | 5 |
| Vinyl Chloride (VCM) | 5 for emissions and 0.4 ppb at plant fence |
| Acrylonitrite | 0.5 (incineration)<br>2 (scrubbing) |
| Ammonia | 15 |
| VOCs | 20 |
| Heavy Metals (total) | 1.5 |
| Mercury and Compound | 0.2 |
| Ethylene | 150 |
| Ethylene Oxide | 2 |
| Hydrogen Cyanide | 2 |

| | |
|---|---|
| Hydrogen Sulfide | 5 |
| Nitrobenzene | 5 for emissions and 0.1 ppb at plant fence |
| Organic Sulfide and Mercaptans | 2 |
| Phenols, Cresols and Xylols (as Phenol) | 10 |
| Caprolactam | 0.1 |
| Dioxins/furans | 0.1 ng TEQ/$Nm^3$ |

a) Dry, 273K ($0^OC$), 101.3kPa (1 atmosphere), 6% $O_2$ for solid fuels; 3% $O_2$ for liquid and gaseous fuels.

World Bank: April 2007

c) Emission guideline for Inorganic chemical industries

| Pollutant | Guideline value ($mg/Nm^3$) |
|---|---|
| NH3 | 50 |
| NOX | 300 |
| Particulate Matter | 50 |
| Nitric Acid Plants | |
| NOX | 300 |
| $N_2O$ | 800 |
| NH3 | 10 |
| $SO_2$ | 450 |
| | (2kg/t acid) |
| SO3 | 60 |
| | (0.075 kg/t acid) |
| $H_2S$ | 5 |
| NOX | 200 |
| Fluorides (gaseous) as HF | 5 |
| Particulate Matter /$CaF_2$ | 50 |
| | (0.10 kg/t phosphate rock) |
| | 1(partial liquefaction) |
| $Cl_2$ | 3 (complete liquefaction 20 ppmv |

| | |
|---|---|
| HCI | 0.2 (annual average emission of 1 g/t chlorine) |
| NH3 | 50 |
| H2S | 5 |
| NOx | 200 |
| Particulate Matter | 50 |
| SO2850 | |
| NOX | 600 |
| CO | 500 |
| Particulate Matter | 30 |
| VOC | 50 |
| Tar fumes | 10 |
| VOC | 50 |
| Particulate Matter | 50 |

## SCHEDULE IV

Regulation 7

SOIL QUALITY STANDARDS

(for chemicals, Pharmaceuticals, Soaps and Detergents Sector)

During routine operations of these industry specific, there may be soil contamination and the need to preserve the environment. The soil quality levels listed below must not be exceeded within the facility.

| Parameter | Guideline value (mg/kg dry weight) |
|---|---|
| Aluminium?? | |
| Arsenic | 20 |
| Barium | 400 |
| Cadmium | 3 |
| Chlomium ($Cr+^{6}$) | 100 |
| Cobalt | 50 |
| Copper | 100 |
| Lead | 164 |

| | |
|---|---|
| Mercury | 4 |
| Molybdenum | 40 |
| Nickel | 70 |
| Tin | 50 |
| Zinc | 421 |
| Benzene | 0.1 |
| Toluene | 0.1 |
| Xylene | 0.1 |
| Strene | 0.1 |
| Hexane | 0.5 |
| Heptanes | 0.5 |
| Fluorine | 100 |
| Cyanide | 5 |
| Phenol | 10 |

## SCHEDULE V

Regulation 7

**NOISE STANDARDS**

Maximum Permissible Noise Levels (Continuous or intermittent noise from a Factory or Workshop

| Column 1 | Column 2 | Column 3 |
|---|---|---|
| Leq dB (A) | Duration (Daily) | Duration (Weekly) |
| 85 | 8 Hours | 40 Hours |
| 88 | 4 Hours | 20 Hours |
| 91 | 2 Hours | 10 Hours |
| 94 | 1 hour | 5 Hours |
| 97 | 30 minutes | 2.5 Hours |
| 100 | 15 minutes | 1.25 Hours |
| 106 | 7.5 minutes | 37.5 minutes |
| 109 | 1.875 minutes | 9.375 minutes |

Noise Levels shall not exceed a Leq of

i) Factory/Workshops 85 dB (A)

ii) Offices 50 dB (A)

iii) Factory/Workshop Compound 75 dB (A)

Note: Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

## SCHEDULE VI

Regulations 6

BEST PRACTICES

a) Embracing cleaner production with emphasis on water reuse and recycling;

b) Encourage more efficient use of process chemicals;

c) Recovering and reusing process chemicals and dye solution;

d) Substituting less-toxic dye carriers wherever possible and avoid carriers containing chlorine;

e) Using peroxide-based bleaches instead of sulphur and chlorine-based bleaches, where feasible;

f) Adopting counter-current rinsing and improved cleaning and housekeeping

g) Install vapour recovery systems to control air emissions to prevent the release of toxic organics into air.

h) Replace highly toxic and persistent ingredients with less toxic degradable ones.

i) Control loss and wastage of active ingredients.

j) Return packaging for refilling.

k) Recover solvents and reduce to the bearest minimum the use of halogenated solvents.

l) Use equipment wash down waters as makeup solutions for subsequent batches.

m) Minimize wastage by inventory control, and find used for off-specification products.

n) Control of Fugitive Emissions mostly Volatile Organic Compounds (VOCs) emission associated with handling of chemicals in open vasts and mixing processes. The prevention and control techniques recommended include the following;

- Substitution of less volatile substances, such as aqueous solvents;
- Collection of vapours through air extractors and subsequent treatment of gas stream by removing VOCs with control devices such as condensers or activated carbon absorption;

- Collection of vapours through air extractors and subsequent treatment with destructive control devices such as Catalytic Incinerators. Thermal Incinerators, Enclosed Oxidizing Flares, etc.
- Use of floating roofs on storage tanks to reduce the opportunity for volatilization.

## SCHEDULE VII

Regulation 11

**BANNED/RESTRICTED CHEMICALS**

TABLE 1: BANNED CHEMICALS

1. 2,4,5 – T (??)
2. Aldrin
3. Binapacryl.
4. Captafol
5. Chlordane
6. Chlodimedorm
7. Chlorodenzilate
8. DDT
9. Diedrin
10. Dinoseb & dinoseb salts
11. DNOC and its salts (such as ammonium salt, potassium salt and sodium slat)
12. EDB (1,2 dibromoethane)
13. Ethylene dichloride
14. Ethylene oxide
15. Fluoroacetamide
16. HCH (mixed isomers)
17. Heptachlor
18. Hexachlorobenzene
19. Monocrotophos
20. Parathion (all formulations – aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) – of this substance are included, except capsule suspensions (CS)).

21. Pentachlorophenol
22. Dustable powder formulations containing a combination of benomyl at or above 7%, carbofuran at or above 10% and thiran at or above 15%.
23. Methamidophos (Soluble liquid formulations of the substance that exceed 600g active ingredient/l).
24. Methyl-parathion (emulsifiable concentrates (EC) with 19.5%, 40%, 50%, 60% active ingredient and dusts containing 1.5%, 2% and 3% active ingredient).
25. Phosphamidon (Soluble liquid formulations of the substance that exceed 1000g active ingredient/l).
26. Crocidolite.
27. Tris (2,3 dibromopropyl) phosphate.

TABLE 2: RESTRICTED CHEMICALS

(To be used with permit from NESREA)

1. Actinolite asbestos.
2. Amosite, asbestos
3. Polybrominated Biphenyls (PBBs)
4. Polybrominated Biphenyls (PCBs)
5. Polybrominated Terphenyls (PCTs)
6. Tetraethyl lead.
7. Tetramethyl lead
8. Tremolite
9. Arsenic
10. Mercury
11. Alkyl-phenol-ethoxylate

## SCHEDULE VIII

Regulations 3(2)

DRAFT GUIDE TEMPLATE FOR EMERGENCY PROCEDURES IN INDUSTRY

Contents

STEP 1: ESTABLISH A PLANNING TEAM

There must be an individual or group in charge of developing the emergency management plan.

1. Forum the Team
2. Establish Authority
3. Issue a Mission Statement
4. Establish a Schedule and Budget

STEP 2: ANALYSE CAPABILITIES AND HAZARDS

This step entails gathering information about current capabilities and about possible hazards and emergencies and then conducting a vulnerability analysis to determine the facility's capabilities for handling emergencies.

- Where Do You Stand Right Now?
- Meet with Outside Groups
- Identify Codes and Regulations
- Identify Critical Products, Services and Operations
- Identify Internal Resources and Capabilities
- Identify External Resources
- Do an Insurance Review
- Conduct a Vulnerability Analysis
- List Potential Emergenices
- Estimate Probability
- Assess the Potential Human impact
- Assess the Potential Business Impact
- Assess the Potential Property Impact
- Assess Internal and External Resources
- Add the Columns

STEP 3: DEVELOP THE PLAN

Emergency Planning must become part of the corporate culture.

Look for opportunities to build awareness; to educate and train personnel; to test procedures; to involve all levels of management, all departments and the community in the planning process; and to make emergency management part of what personnel do on a day-to-day basis.

- Plan Components
- The Development Process

STEP 4: IMPLEMENT THE PLAN

Implementation means more than simply exercising the plan during an emergency. It means acting on recommendations made during the vulnerability analysis, integrating the plan into company operations, training employees and evaluating the plan.

Integrate the Plan into Company Operations

Conduct Training, Drills and Exercises

Source: www.fema.gov/about/index.shtm

## SCHEDULE IX

Regulation 2(1)(d)

### GUIDELINE FOR PREPARING ENVIRONMENTAL MANAGEMENT PLAN (EMP)

An Environmental Management Plan (EMP) describes the process that an organization will follow to maximize its compliance and minimize harm to the environment. This plan also helps an organization map its progress toward achieving continual improvements.

Regardless of the organization's situation, all environmental plans must include the following elements:

- Policy;
- Planning;
- Implementation and Operation;
- Checking and Corrective Action;
- Management Review and Commitment.

POLICY

Policy statements are important to an organization because they help anchor the organization on a core set of beliefs. These environmental guiding principles will enable all members of an organization to focus on the same objective. They provide an opportunity for outside interests to understand the operation of the organization. The policy should be focused, concise and easy to read. The environmental policy should address the following:

- Compliance with legal requirements and voluntary commitments;
- Minimizing waste and preventing pollution;
- Continual improvement in environmental performance, including areas not subject to regulations;
- Sharing information on environmental performance with the community.

PLANNING

The planning should define the organization's environmental footprints and set goals. Goals and objectives should focus on maximising their positive impacts on the environment. When evaluating, the following elements should be considered:

- Impacts on the environment through its activities, products and services;
- Legal requirements associated with protecting the environment;
- Meaningful and focused environmental objectives and targets.

IMPLEMENTATION AND OPERATION

Implementation and operation should define the activities that the organization will perform to meet its environmental objectives and targets. This section should identify the activity each person is responsible for, ensure completion and set targets for each of the identified activity. In addition, this area should specify employee training, communication and outreach activities that are necessary to ensure successful implementation of the plan.

CHECKING AND CORRECTIVE ACTION

The EMP should describe the process that will be followed to verify proper implementation and how problems will be corrected in a timely manner. Routine evaluation and continual improvement of the process is necessary to make sure that the plan successfully leads towards the completion of environmental objectives and targets.

MANAGEMENT REVIEW AND COMMITMENT TO IMPROVEMENT

Routine review and support by management is a necessary and meaningful tool for the organization. This should identify the improvement that will be carried out to ensure that the plan is appropriately implemented to meet its environmental objectives.

## SCHEDULE X

Regulation 9(1)

GUIDELINES FOR CONSUMER PRODUCTS STEWARDSHIP PROGRAMME

As part of the Strategic Alliance Programme of the Agency, all manufacturers and importers of chemicals, pharmaceuticals, cosmetics, battery and paint products shall partner with the Agency to establish an effective consumer product Stewardship Programme.

The manufactures and importers shall submit a proposal for a consumer products stewardship program to the Agency for approval. Such a proposal shall include elements for successful implementation of the scheme as follows;

a) establish a process for the collection, handling, transportation and final treatment of post-consumer products, regardless of who the original brand owner is;
b) incorporate the principles of a pollution prevention hierarchy by moving progressively from disposal to reduction, reuse, recycling and recovery of post-consumer products;
c) submit on or before June 30 in each year to the Agency, an annual report on their consumer products stewardship program during the previous fiscal year including, but not limited to, information with respect to –
    i) the total amount of consumer chemicals, pharmaceuticals, cosmetics, batteries, paints, and other related products sold and post-consumer products collected;
    ii) the total amount of post-consumer chemicals, pharmaceuticals, cosmetics, batteries, paints and other related products processed or ion storage;
    iii) the percentage of post-consumer chemicals, pharmaceuticals, cosmetics, batteries, paints and other related products that were treated or contained, reduced, reused, recycled or recovered;
    iv) efforts taken through consumer chemicals, pharmaceuticals, cosmetics, batteries, paints and other related products marketing strategies to reduce post-consumer products and packaging waste;
    v) the types of processes used to reduce, re-use, recycle or recover post-consumer chemicals, pharmaceuticals, cosmetics, batteries, paints and other related products, including but not limited to details of efforts to incorporate the priorities of a pollution prevention hierarchy

by moving progressively from disposal to reduction, reuse, recycling and recovery of post-consumer products;

vi) the location of return collection facilities or depots;

vii) the location of any long-term containment or final treatment and processing facilities for post-consumer products and packaging waste;

viii) the types of educational information and programs provided;

ix) the process of internal accountability used to monitor environmental effectiveness; and

x) any other information requested by the Agency.

## SCHEDULE XI

Regulations 12(2)(f), 23(1), (2)(a)

ACTIVITIES REQUIRING ATMOSPHERIC EMISSION LICENCE

Based on precautionary consideration to safeguard public health and the environment, the following activities shall require Atmospheric Emission Licence.

1) Use of solvents in activities.
2) Processes including the use of ammonia, formaldehyde, methanols and other alcohols, esters, aliphatic hydrocarbons and several monomers.
3) The use of perchloroethylene
4) Any other activity whose process may result in atmospheric emission.

**SCHEDULE XII**

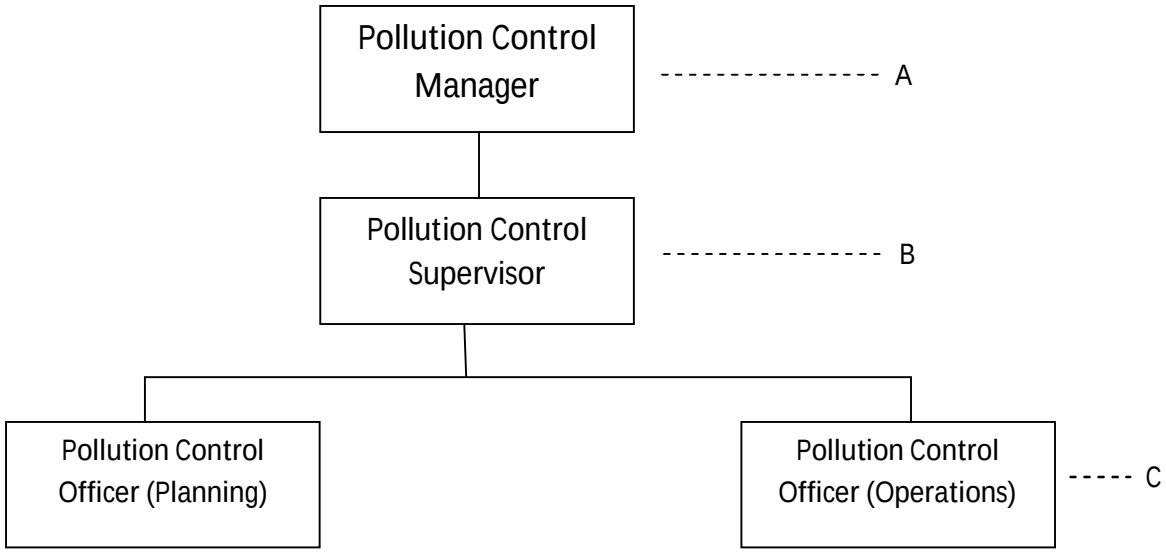
Regulation 8(1)(2)

ORGANIZATIONAL SYSTEM FOR POLLUTION CONTROL

Each facility shall be mandated by the Agency to have an organizational system that will carry out Internal Environmental Auditing of the facility as well as liaise with NESREA and other Government Authorities.

The Organizational system shall appoint Pollution Control Manager, pollution Control Supervisor and Pollution Control Officers with relevant scientific background as minimum qualification. These shall be certificated by the Agency.

ORGANIZATION FOR POLLUTION PREVENTION




Functions:

a) Manages the pollution control issues of the facility.
b) Assists the Manager and directs the Officers (only applicable in facilities where large amount of smoke and sewage is generated).
c) Deals with technical matters like inspection of the facility and raw materials.

Note: C depends on the size of the facility; for a large facility there shall be PCM for Air, Land and Water.

SPECIFIC DUTIES OF THE POLLUTION CONTROL MANAGER (PCM)

The specific duties of the PCMs are:

- To ensure that the responsibilities are very clear for all the staff involved in pollution control;
- To ensure that daily pollution control practices are complied with; and
- To maintain smooth and proper environmental and safety communications within the facility and the regulatory authorities as well as the host community.

CONCRETE POLICIES CONCERNING INDUSTRIES' POLLUTION CONTROL

1. Management Concerning Pollution Control at Facilities
    - improvement and operation of effective environmental management system
    - communication with NESREA's headquarters;
    - ability to know when a system is malfunctioning;
    - documentation of the environmental management procedure and control of the records and documents;
    - cooperation with interest parties such as other related companies, regulations.
2. Addressing Corporate-wide Environmental Measures
    - recognition of the business risk relative to the environmental management system;
    - resource management including maintenance of human resource for pollution control and their competency;
    - establishing a corporate-wide environmental management system including risk information feed-back system;
    - establishing a redundant monitoring, assessment and self-improvement system;
    - establishing a contingency plan and its verification.

## SCHEDULE XIII

Regulation 52(2) and (3)

NESREA COMPLIANCE FLAG AWARDS

In order to encourage voluntary compliance by the regulated community, the Agency has established NESREA compliance Flag Awards as an incentive-based pollution mechanism. The awards will be given on the basis of environmental performance rating to deserving facilities who comply with regulations, guidelines and standards.

The environmental performance ratings will be disseminated to the public through the media and it is expected to significantly reduce environmental abuse and neglect. This rating will range from outstanding to non-compliant using five colour codes.

2. Green Flag represents the best performing company. The criteria for the NESREA Compliance Flag awards are as follows:

| | | |
|---|---|---|
| THE FIVE LEVEL NESREA COMPLIANCE AWARDS | Above 75% | Level 1 – Outstanding – Green |
| | 50% to 75% | Level 2 – Good – Blue |
| | 35% to 49.9% | Level 3 – Average – Yellow |
| | 25% to 34.9% | Level 4 – Poor – Red |
| | 15% to 24.9% | Level 5 0 Non compliant - Black |

For a facility to be adjudged as having achieved 'excellent compliance', management commitment must have been demonstrated in addition to developing sustainable production technologies that can deliver environmental, economic and social benefits, good – in-house keeping, robust waste management system, etc.

3. Major Criteria

3.1 Criteria for raw material sourcing and processing

3.2 Criteria for production plant level environmental performance

* Input Management;

* Process Management;

* Waste Management;

3.3 Criteria for product-use performance

3.4 Criteria for waste handling and disposal performance

3.5 Criteria for corporate environmental policy and management system.

* Corporate policy related to environment;

* Procurement policy and supply chain management;

* Status of corporate environmental management and environmental management systems;

* Research and development;
* Health and Safety;
* Transparency;

3.6 Criteria for community and regulatory perception and compliance status.

* Compliance with NESREA pollution control regulations and perception of NESREA Officials;
* Perception of local community;
* Perception of Local NGOs and Media;
* Perception of Agencies Officials

4. Scoring System

Scores are assigned to the various criteria based on their environmental impacts during the entire life cycle. Thus, though the broader criteria remain the same, the score vary substantially between sectors. This scoring scale is aimed at encouraging facilities to perform better than what is currently required by the regulations.

## SCHEDULE XIV

Regulation 37(3) and (4)

MONTHLY DISCHARGE MONITORING REPORT (MDMR) [NESREA DISCHARGE MONITORING REPORT]

Please Complete and Submit One Copy Each Month.

This Report must be Postmarked No 28th of the following month.

Each Month

Facility Name And Address:

Facility e-mail address

Mail To: National Environmental Standards and Regulations Enforcement Agency (NESREA), No. 4 Oro-Ago Cresent, Garki II, Abuja.

| | | | |
|---|---|---|---|
| | | | |

MONTH YEAR

Sampling point location: ……

Sampling Dates and Time: ……

| TYPE OF SAMPLING | | | | | | | |
|---|---|---|---|---|---|---|---|
| PARAMETERS | | WEEKLY RESULTS | | | | | NESREA's Regulatory Limits |
| PHYSICAL | Units | 1st | 2nd | 3rd | 4th | Average | |
| Appearance | | | | | | | |
| Odour | | | | | | | |
| Temperature | $^{O}C$ | | | | | | |
| pH | | | | | | | |
| Conductivity | us/cm | | | | | | |
| Turbidity | NTU | | | | | | |
| Dissolved Oxygen (DO) | mg/l | | | | | | |
| Total Suspended Solids (TSS) | mg/l | | | | | | |
| Total Dissolved Solids (TDS) | mg/l | | | | | | |
| BOD | mg/l | | | | | | |
| COD | mg/l | | | | | | |
| INORGANIC: | | | | | | | |
| Chloride | mg/l | | | | | | |
| Nitrate | mg/l | | | | | | |
| Sulphate | mg/l | | | | | | |
| Sulphite | mg/l | | | | | | |
| Cyanide | mg/l | | | | | | |
| Nitrates | mg/l | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Chromium (hexa-valent) | mg/l | | | | | | |
| Copper | mg/l | | | | | | |
| Zinc | mg/l | | | | | | |
| Lead | mg/l | | | | | | |
| Cadmium | mg/l | | | | | | |
| Manganese | mg/l | | | | | | |
| Silver | mg/l | | | | | | |
| Mercury | mg/l | | | | | | |
| Arsenic | mg/l | | | | | | |
| ORGANICS: | | | | | | | |
| Phenols | mg/l | | | | | | |
| Oli & Grease | mg/l | | | | | | |
| MICRO-BIOLOGICAL | | | | | | | |
| Feacal coli form | mg/l | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOCATIONS | | | | | | NOISE MEASUREMENTS<br>NOISE LEVELS | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | Signature with date of principal executive Officer or authorized agent; | | | I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel property gather and evaluable the information submitted. | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

| Signature of Certified Operator | Date (Month, day, year) | Date: |
|---|---|---|
| | | Signature: |

**FORM 2**

NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS

ENFORCEMENT AGENCY (NESREA)

This report is to be completed when accidental discharge, occupational illness or incident occurs. If an employee is injured or develops gradually a job-related illness as a result of his/her employment at the facility. He/She must complete and submit the “incident Report”. If the employee is unable to complete

the form, the supervisor must complete on his/her behalf.

Incident reporting ensures there is a record on file with the employer. In no way does this walve the employee's right to worker's compensation benefits. If an injury occurs, first aid may be appropriate treatment.

All accidental discharges or emergencies or accidents should be reported to NESREA within 48 hours.

1. Facility:

   Name & Address of Facility ……

   ……

   ……

   No. of Employees ……

   Department where the discharge occurred ……

   ……

   Place of the accidental discharge……

2. Discharge:

   Cause(s) of discharge:

   Did the discharge occur as a result of mechanical or technical or unskilled application?

   Please specify.

   ……

   Was the discharge gaseous, liquid or solid? Please specify.

   ……

   What was the nature of discharge, sludge, effluent or influent? Please specify.

   ……

   Into which medium was it discharge to i.e. water body, land, or air? Please specify.

   ……

   - If water body, specify type of water; pond, stream, lake, river, etc.

   ……

   - If land;

     Name and location (Geo-reference) of the land where discharge occurred.

   ……

……

- Ways of disposing of discharge; i.e. burying, burning, etc. Please specify.

……

Was there any previous accidental discharge of this kind? Yes ☐ or No ☐

If yes, when? ……

How? ……

……

Who was or were the victim(s)? ……

……

Dated at Abuja this 30th day of September, 2009

Mr John Odey
Honourable Minister
Ministry of Environment