

Extraordinary



Federal Republic of Nigeria Official Gazette

No. 97

Lagos - 30th October, 2013

Vol. 100

Government Notice No. 213

The following is published as Supplement to this *Gazette* :

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Printed and Published by The Federal Government Printer, Lagos, Nigeria
FGP 8/22014/1,200(OL 96)

Annual Subscription from 1st January, 2014 is Local : ₦25,500.00 Overseas : ₦37,500 [Surface Mail] ₦49,500.00 [Second Class Air Mail]. Present issue ₦1,000.00 per copy. Subscribers who wish to obtain *Gazette* after 1st January should apply to the Federal Government Printer, Lagos for amended Subscriptions.

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

NATIONAL ENVIRONMENTAL (QUARRYING AND BLASTING
OPERATIONS) REGULATIONS, 2013



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S.I. No. 33 of 2013

NATIONAL ENVIRONMENTAL (QUARRYING AND BLASTING OPERATIONS) REGULATIONS, 2013

[29th October, 2013]

Commencement.

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 powers enabling me on that behalf, I, ARC. DARIUS DICKSON ISHAKU, fnia, Minister of Environment, hereby make the following Regulations :

PART I—GENERAL PROVISIONS

1. These Regulations shall apply to all Quarrying and Blasting Operations in Nigeria. Application.
2. The objective of these Regulations is to control the effects of quarrying and blasting operations on the environment and human health and specifically, the Regulations aim to : Objective.
- (a) prevent environmental degradation ;
 - (b) ensure the use of environment-friendly technologies in quarrying operations ;
 - (c) sustain the carrying capacity of the Nigerian land in particular and the environment in general ;
 - (d) prevent the contamination of both surface and ground water ;
 - (e) encourage the wise use and exploitation of natural resources and the protection of the ecosystem ;
 - (f) prevent air and noise pollution ;
 - (g) ensure control and the safe use of commercial (blasting) explosives ;
 - (h) avoid any interference or obstruction of the natural drainage channel ;
- and
- (i) ensure the safety of workers in the quarry and the public in general.
3. The principles listed in these Regulations shall be observed in regulating all Quarrying and Blasting Operations : Principles.
- (1) The precautionary principle shall be observed - where there are threats of serious or irreversible damage, the absence of scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation ;
 - (2) The “polluter-pays-principle” shall be applied to discourage air, water and land pollution.
 - (3) Quarrying and blasting operations shall be conducted using the best available technologies that are environment-friendly.

(4) Extraction of rocks shall be carried out with adequate protection of the environment, the plant, man, animal and the general ecosystem.

(5) Quarry resources shall be sustainably extracted.

(6) Statutory national and international quarrying and mining bodies shall cooperate in building better practice management through sharing of information, technology and professional expertise.

(7) Adequate access to information and opportunity shall be provided for meaningful participation in planning, monitoring, ensuring compliance and encouraging best practices in quarrying operations.

(8) Post-quarrying, mine closure, land rehabilitation, resuscitation and remediation plans shall form an integral part of the pre-conditional requirements for approval to operate a quarry, the provisions of which shall be enforced by the Agency.

Environmental
Impact
Assessment
and
Environmental
Audit.

4.—(1) Environmental Impact Assessment (EIA) shall be conducted for all new quarries before the commencement of operations as required by the EIA Act of 1992 and Environmental Impact Statement (EIS) submitted to the Agency.

(2) Environmental Audit (EA) shall be conducted on all existing quarries every three (3) years.

Inventory
of Quarries.

5.—(1) The Agency shall collaborate with relevant Ministries, Departments, Agencies (MDAs), States and Local Governments, and all stakeholders to compile an inventory of all quarries and mines for the purpose of environmental compliance monitoring.

(2) The Agency shall collaborate with the relevant MDAs to periodically update the inventory of quarries in Nigeria.

PART II—QUARRYING OPERATION PLAN

Quarrying
Operation
Plan.

6. The Quarrying Operation Plan shall be an integral part of EIA and shall form a framework of action which sets out the approaches and parameters for monitoring and protection of the environment and social aspects of the quarry project from design to construction and operational stages of the project.

Scope of
the Plan.

7. the scope of the plan shall include :

- (a) Environmental Monitoring Guidelines ;
- (b) Construction Guidelines ;
- (c) Waste Management Plan ;
- (d) Traffic Management Plan ;
- (e) Health and Safety Plan ;

- (f) Emergency Response Plan ; and
- (g) Decommissioning Plan.

8. Mitigation measures shall form an integral part of the Quarrying Operation Plan and such measures shall include information specified in Schedule VII. Mitigation Measures.

PART III—GUIDELINES FOR QUARRYING OPERATION

9. It shall be the duty of quarry operators to pay compensation for ecological destruction as specified and as valued by the appropriate authority. Compensation for Ecological Destruction.

10. Quarrying, blasting, haulage, crushing and processing operations shall not be carried out in areas prescribed in Schedule III as Ecologically Sensitive Areas (ESAs) and Sites of Special Scientific Importance (SSSI) unless they are at least 1000m away from the quarrying and blasting areas. Ecologically Sensitive Areas (ESAs).

11. A quarry operator shall ensure :

- (a) that all field workers are equipped with Personnel Protective Equipment (PPE) for safety ;
- (b) the provision of a designated muster point located at a strategic position ;
- (c) the provision of functional fire hydrant ;
- (d) the availability of health, safety and environment personnel ;
- (e) the provision of a well-stocked first aid box ;
- (f) the provision of standby and functioning ambulance ;
- (g) the identification and establishment of retainership with a medical facility ;
- (h) restriction of access to the pit or quarry ;
- (i) the provision of safety and warning signs including speed limits not exceeding 40km/h for on-site vehicles ; and
- (j) other safety measures.

Health and Safety.

12. Dust and Particulate Matters (PM) emitted from all operations in the quarry shall be abated and suppressed using the best available technologies. Air Pollution.

13. Noise pollution emanating from all operations in the quarry shall not exceed the maximum acceptable limit of 114 dB as set out in the National Environmental (Noise Standards and Control) Regulations, S. I. No 35 of 2009. Noise Pollution.

14. The quarry operator shall ensure that :

- (a) all underground storage tanks are to have concrete lining before insertion of the tanks and all surface tanks are to have adequate bund-walls ;
- (b) bund-walls shall be applied at all areas where operations are likely to give rise to spills ; and
- (c) equipment shall be properly maintained and be in good working condition to minimize potential leaks from hydraulic hoses and other working components.

Spill and Leak Control.

Environmental
Management
Plan.

15.—(1) The impact emanating from quarry operations shall be minimized to as low as reasonably possible or eliminated by the implementation of appropriate mitigation measures in the Environmental Management Plan (EMP).

(2) The EMP shall :

(a) guide the management of quarry facilities in identifying and evaluating the environmental, health and safety issues associated with their quarrying operations ;

(b) be used throughout the lifespan of the quarry project ;

(c) be regularly reviewed after every three (3) years ;

(d) be used as a tool by which compliance with national and international Regulations can be ensured ; and

(e) provide the quarry management with precedence for further environmental audits.

(3) The Management plan shall ensure that implementation of mitigation measures are efficiently monitored and evaluated.

Vehicular
Emission
Plan for
Quarry
Operations.

16. The quarry operator shall ensure that vehicles and other heavy duty equipment used on site are :

(a) equipped, maintained and inspected regularly to manage the risk of emissions ;

(b) in sound mechanical condition and repair ; and

(c) in accordance with the set standards of the National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, S.I. No. 20 of 2011 and with the provision of the National Environmental (Permitting and Licensing System) Regulations, S.I. No 29 of 2009.

PART IV—BLASTING OPERATION PLAN

Blasting
Operation
Plan.

17.—(1) A person intending to embark on blasting shall prepare a Blasting Operation Plan.

(2) The Blasting Operation Plan referred to in sub regulation (1) of this regulation shall contain information on the :

(a) limitation the operator will meet with regard to ground vibration and air blast ;

(b) basis for those limitations ; and

(c) method to be applied in controlling the adverse effect of the blasting operations, including blast monitoring system in accordance with guidelines set in Schedule VI.

Blasting
Below
Ground
Level.

18. A person shall not carry out quarrying or blasting of rocks below ground level unless with a permit duly obtained from the relevant authority.

PART V—OPERATING MECHANISMS AND GUIDELINES FOR BLASTING

19. Every quarry and blasting operation shall register with the Agency in line with Schedule I, upon the commencement of these Regulations. Registration with the Agency.
20. A person shall not locate a quarry or engage in blasting within three kilometers (3km) of any existing residential, commercial or industrial area. Minimum Safe Distance from Residence.
21. A person shall not carry out blasting, haulage, crushing, and processing or felling of any rock, outcrop or whatever name called, for any purpose, without approval or a permit from the relevant authority. Prohibition of Blasting or Felling of Rock.
- 22.—(1) A person shall not blast in such a way that the impact of such blast will cause any form of discomfort or nuisance to the public and residents within 1,000 meters from the epicenter of the site or users of the roads thereof. Act of Blasting or Felling.
- (2) Subject to the provisions of these Regulations, the act of blasting shall be complete, whether or not the alleged act is preceded or accompanied with vibration, noise, air over pressure, fly rock, dust, fumes, or that the impact is felt within 1,000 meters from the site or epicenter of the blasting.
23. Any person carrying out the act of blasting shall comply with the guidelines listed in this regulation. Blasting Guidelines.
- (1) All relevant existing guidelines including the Explosives Act and Regulations made thereunder shall be adhered to.
- (2) Blasting operations shall not be carried out at the rush hours of 7am – 10am, and 5pm and beyond.
- (3) A person shall not engage in blasting during weekends, except for incidental blasting.
- (4) Charge Loading Density (CLD) of explosives shall not exceed 35 kilogrammes per hole and 3 metric tons per blast.
- (5) The depth and space of blasting (Blast Design Parameters) shall comply with :
- (a) the depth of :
- (i) 8m-10m, for commercial blasting, and
- (ii) 8m, for outcrop blasting ;
- (b) spacing- where the distance between the drill-holes or charges in the same row shall not exceed 1.5m.

(6) The adjoining community shall be initially informed at least 48 hours prior to any type of blasting operation through the mass media and augmented locally by the use of siren, announcement, letters, warning signs and other means deemed appropriate to convey an impending operation.

(7) Relay delays shall be used to control the vibration as well as limiting the transmission of energy below the damaging levels at any existing structure.

(8) The delay pattern shall be created to provide the energy relief immediately down the ditch in preference to a horizontal direction.

(9) The main type of delays shall be 17 milliseconds or 42 milliseconds and shall be environment-friendly .

(10) The amount of explosives used in each hole shall be limited to the manufacturer's recommendations and specifications, taking into account sub-regulation (4) of this regulation.

(11) Down hole delays shall be used where they are needed to meet specifications on maximum kilogram per delay allowed.

PART VI—POST QUARRYING PLAN

Post
Quarrying
Plan.

24.—(1) The quarry operator shall design the Post Quarrying Plan concurrently with reclamation such as post quarrying surface topography using available overburden rock mass, including sub-soil and top-soils.

(2) The Post Mining and Quarrying Remediation Planning shall form an integral part of the Quarry Plan before any EIA Certification.

Post Closure
Ecological
Management
Plan.

25. A Post Closure Ecological Management Plan shall be developed by the operator containing information specified in Schedule V.

Decommi-
ssioning
Plan.

26. A Decommissioning Plan of a quarry facility shall ensure that :

(a) all equipment in the quarry, serviceable and unserviceable, are withdrawn safely and their withdrawal is sequential without any disturbance ;

(b) surface water bodies are protected during the process of reclamation to prevent pollution of such water ;

(c) underground water bodies are regenerated properly to facilitate reactivation of aquifers and water table ; and

(d) the entire process of decommissioning shall be aimed at facilitating the ecological restoration and utilization of land in the post quarrying period.

Perimeter
Fencing of
Closed
Quarry.

27. At the closure of the quarry operations, the Operator shall fence the site using wire gauze and the area put under lock.

28.—(1) A preliminary closure and restoration plan shall be developed by quarries subject to review by the relevant regulatory bodies.

Closure and
Restoration
Plan.

(2) The plan shall consider all technically feasible options for restoration, decommissioning and closure, including alternative uses for assets and be in compliance with Government Regulations.

(3) The considerations referred to in sub-regulation (2) of this regulation shall include :

- (a) restoration of land to conditions capable of prior land use, equivalent uses or environmentally-acceptable uses ;
- (b) use of overburden and topsoil for reclamation ;
- (c) re-contouring of slopes of more than 300 meters long to minimize run-offs ;
- (d) contouring of slopes to minimize erosion and run-offs ; and
- (e) planting of vegetation to prevent erosion and encourage self-sustaining development of a productive ecosystem on the reclaimed land.

29.—(1) A quarry operator shall adopt the following measures to control stagnant water :

Control of
Stagnant
Water
Pools.

- (a) de-watering process ;
- (b) diversion system ;
- (c) containment ponds ;
- (d) groundwater pumping systems ;
- (e) surface drainage systems ; and
- (f) surface barriers.

(2) Collection, recycling and treatment of stagnant water for various uses shall form part of the Environmental Management Plan.

30. The Quarry Rehabilitation Plan shall address all the social and environmental issues, which may arise as a result of the impacts of quarrying and other associated activities, and as specified in Schedule IV of these Regulations.

Rehabilita-
tion Plan.

31. The quarry operator shall ensure that the Rehabilitation Plan takes cognizance of the following :

Socio-
Economic
and
Ecological
Responsibi-
lities.

(a) societal issues such as displacement, loss of livelihood, disparity in income, quality of life and development of basic facilities and their availability to the people ;

(b) management of soils and overburden which shall be used for backfilling during reclamation and rehabilitation ;

(c) the design, planning and management of pit slopes in the quarries shall be used for safety and conservation of land and economics of the quarrying activities ;

(d) development of post mining land uses for forest land, agricultural land and land for other uses ;

(e) converting impacts and quarrying remnants into resources for development of surface water bodies, improvement in surface drainage and wise use of the soils in the quarried area ;

(f) decommissioning of quarrying activities ; and

(g) proper management and handling of hazardous materials and waste such as rocks, old conveyor belts, used tyres, scraps of equipment and machines, batteries, among others, as stated in the National Environmental (Sanitation and Waste Control) Regulations, S.I. No. 28 of 2009.

Restoration.

32. A quarry operator shall provide a guarantee to the relevant regulatory body to restore the degraded areas in respect of which quarry operation has been, is being, or is to be carried out.

Reclamation.

33. A quarry operator shall carry out land reclamation on all mined out areas that have been exploited as a result of the quarrying operations, as specified in Schedule IV of these Regulations.

Specific
Action for
Reclamation
and
Rehabilita-
tion.

34. A quarry operator shall put in place Specific Action for Reclamation and Rehabilitation as specified in Schedule IV to these Regulations.

PART VII—MISCELLANEOUS RULES

Permit.

35.—(1) All applications for permits including revocation of such permits after issuance, shall comply with the procedures provided under the provision of the National Environmental (Permitting and Licensing System) Regulations, S.I. No. 29 of 2009.

(2) No later than six (6) months after the commencement of these Regulations, all quarries shall apply to the Agency and obtain permit as in Schedule II to these Regulations for the following :

(a) air quality ;

(b) hazardous chemicals and substances ; and

(c) waste or stagnant water effluent.

Enforcement
Notice.

36.—(1) An enforcement notice shall be served on an operator where the Agency is of the opinion that the operator has contravened, is contravening or is likely to contravene any condition of the permit.

(2) An enforcement notice shall specify the :

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

(b) 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) 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.

37.—(1) Any operator who fails to comply with the terms of the enforcement notice issued pursuant to regulation 36 of these Regulations shall attract the service of a second notice. Enforcement Notice Reminder.

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

38. Mode of delivery of the enforcement notice shall be by hand, registered post or courier, electronic transmission, or be pasted at the facility or registered premises of the organization. Mode of Delivery.

39.—(1) Where a suspension notice is served under these Regulations, the permit shall upon the service of such notice, cease to have effect as stated in the notice. Suspension of Permit.

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

40. Every facility shall be given equal treatment without preference as far as inspection and enforcement of relevant laws are concerned. Equity.

41. Contravention or failure to comply with any of the provisions in these Regulations shall constitute an offence. Offences.

42.—(1) Any person convicted of an offence under these Regulations shall be liable to a fine of not less than One Million Naira (₦1,000,000.00) or imprisonment for a term not exceeding two years or to both such fine and imprisonment and an additional fine of Twenty Thousand Naira (₦20,000.00) for every day the offence subsists. Penalties.

(2) Where an offence is committed by a Body Corporate, it shall upon conviction, be liable to a fine not less than Ten Million Naira (₦10,000,000.00) and an additional fine of Two Hundred Thousand Naira (₦200,000.00) for every day the offence subsists.

(3) Blasting of rock outcrop in excess of one (1) metre below ground level shall attract penalty as provided in sub-regulations (1) and (2) of this regulation as appropriate, including payment of Five Hundred Thousand Naira (₦500,000.00) per cubic metre below the specified depth.

(4) Blasting of rock mass occurring below the earth surface in excess of three (3) metres shall attract penalty as provided in sub-regulations (1) and (2)

of this regulation as appropriate, including payment of Five Hundred Thousand Naira only (₦500,000.00) per cubic metre below the specified depth.

PART VIII—INTERPRETATION

Interpreta-
tion.

43. In these Regulations, unless the context otherwise indicates, a word or expression to which a meaning has been assigned in these Regulations has the same meaning :

“*act of blasting*” means carry out blasting or felling of any structure if the person uses or causes to be used, any explosive or chemical/mechanical device, to crush, implode, explode or disintegrate any rock, outcrop or structure of similar character or design, whether natural or man-made ;

“*adjoining community*” means host community next to or sharing common boundary with a quarry ;

“*Agency*” means National Environmental Standards and Regulations Enforcement Agency ;

“*appropriate*” means suitable for the occasion or circumstance ;

“*animal*” means living organism that is distinguished from plant by independent movement and responsive sense organs ;

“*authority*” means an official body set up by government to administer mining permits, approval, determine mining policies ;

“*blast*” means a sudden rush of air caused by an explosion to disintegrate rock ;

“*body corporate*” means group of people legally recognised to act as one body ;

“*borehole*” means hole drilled into the rock to charge with explosives ;

“*carrying capacity*” means sustaining the ecological function of the environment ;

“*charge load density*” (CLD) means the amount of detonator charge per hole ;

“*closure plan*” means quarry management plan for ensuring ecological restoration at the closure of the quarry ;

“*crush*” means to grind rock into smaller aggregates ;

“*commercial blasting*” means blasting in large quantities ;

“*commercial explosives*” means industrial explosive other than for military use ;

“*construction*” means building of structures such as houses, bridges, roads or malls ;

“*conservation*” means preservation, protection or restoration of the natural environment, natural ecosystems, vegetation, or wildlife ;

“*decommissioning plan*” means quarry management plan for removal of quarry equipment from site after quarry closure ;

“*detonator*” means an initiator for explosives that contains a charge of high explosive fired by means of a flame, spark, electric current or shock tube ;

“*disintegrate*” means breaking into fragment or smaller pieces ;

“*ecosystem*” means plants, animals and other organisms interacting with each other and with their environment in such a way as to perpetuate them more or less indefinitely ;

“*Ecological Sensitive Areas (ESAs)*” means an area identified, designated or protected by law or body as ecologically significant or important or which needs special protection because of its landscape, wildlife or historical values ;

“*ecological disturbance*” means disturbance, displacement or endangering living organism and their interaction with the natural or development environment ;

“*effluent*” means liquid waste discharge from quarry facility ;

“*environment-friendly technology*” means technology designed to minimise harm to the environment and human health ;

“*excavation*” means any place at the quarry where minerals are or have been extracted and includes the ground, faces or sides of the quarry ;

“*explosives*” means explosive articles or explosive substances ;

“*extraction*” means process of removing rock mineral from the earth ;

“*emission*” means releasing of harmful substance into the atmosphere ;

“*enforcement notice*” means letters of compliance concerns or abatement notices informing the quarry management of observed violations and the need to remedy same with time limit, failure of which, the quarry shall be sanctioned as provided in these Regulations ;

“*environmental degradation*” means the deterioration of the environment through degradation and contamination of resources, such as air, water, land and vegetation ;

“*Environmental Audit (EA)*” means an assessment of facilities’ compliance with environmental laws and regulations ;

“*Environmental Impact Assessment (EIA)*” means a formal procedure through which decision makers gather environmental information about a project and take this information into account in decision making. The EIA gives the likely impacts of the project on the environment and proposed mitigation measures to reduce the significance of those impacts ;

“*Environmental Management Plan (EMP)*” means quarry management guide in identifying and evaluating the environment, health and safety issues associated with quarry operation ;

“*epicentre*” means the exact location on the earth surface, directly above the focus of an earthquake or explosion ;

“*fauna*” means group of animals found in a particular ecosystem ;

“*flora*” means group of plants found in a particular ecosystem ;

“*fume*” means unpleasant or harmful smoke, gas, or vapour ;

“*hazard*” in relation to an excavation or tip means having the potential to cause harm to the health and safety of any person ;

“*hillock*” means small hill or mound ;

“*implode*” means collapse inward with force as a result of external pressure ;

“*incidental blasting*” means blasting of any rock/outcrop that was encountered in the process of construction activities ;

“*land degradation*” means loss or decline in the quality of land and its productivity caused by soil erosion, deforestation, desertification, flooding etc ;

“*landscape*” means the visible features of an area of land, including physical elements, such as landforms and living elements of fauna and flora ;

“*landslide*” means the movement of soil and bedrock downhill in response to gravity ;

“*overburden*” means top soils removed in order to access mineral body ;

“*pollution*” means undesirable state of the environment being contaminated with harmful substances as a consequence of human activities ;

“*particulate*” means a substance that consists of separate particles especially airborne pollution ;

“*polluter-pays-principle*” means principle that a company or person that causes pollution should pay for the cost of removing it or provide compensation to those who have been affected by it ;

“*personnel protective equipment*” means safety materials such as boots, eye and ear protectors, hand gloves, coveralls etc used by workers during operation to protect them from injury ;

“*public road*” means a highway maintainable at public expense ;

“*quarry*” means :

(1) an excavation or a system of excavations made for the purpose of or in connection with, the extraction of minerals, or

(2) any reclamation site from which minerals are being extracted for sale or further use and for the purpose of these Regulations, the following shall be deemed to form part of a quarry :

(a) so much of the surface (including buildings, structures and works thereon) surrounding or adjacent to the quarry, which is occupied for the purpose of, or in connection with :

(i) the working of the quarry,

(ii) the consumption, use, storage, preparation for sale of minerals or products for sale of the minerals or products thereof extracted from the quarry, or

(iii) the removal from the quarry of any substance extracted from the quarry ; and

(b) any trip used in conjunction or connection with the operation of the quarry, or situated on the premises occupied by the operator of the quarry ;

“*quarry*” does not include an excavation or system of excavation made for the purpose of or in connection with the extraction of such minerals or products of minerals where the exclusive purpose of that extraction to enable the minerals or products of minerals so extracted is to be used for the purpose of carrying out any building, civil engineering or engineering construction work on the site at which the extraction has taken place ;

“*quarry operation*” means the operations and work carried out in the course of rock exploitation or any form of activities for the extraction of mineral resources for construction ;

“*quarry operator*” means the person in overall control of the working of the quarry or an owner or licensed owner of the quarry, which is an individual or body corporate or the manager of the quarry ;

“*reclamation site*” means a site where the extraction of minerals forms part of the process whereby that site is restored for agricultural, industrial or domestic use from which minerals are being extracted for sale or further use ;

“*rehabilitation*” means restoration of mined site to its former good condition ;

“*rehabilitation plan*” means a quarry management plan to restore mine site to its former good condition ;

“*restoration*” means repair of quarried area to its earlier or better condition ;

“*resuscitate*” means to revive the mined land to its original status through re-vegetation and reforestation ;

“*remediation*” means to reverse environmental damage caused by quarrying operation ;

“*rock*” means a large stone or boulder forming a heap of consolidated or unconsolidated materials such as granite, sandstone etc ;

“*Site of Special Scientific Importance*” means an area designated for scientific studies or a preserved site for heritage ;

“*solid waste*” means unwanted solid material within a quarry site ;

“*statutory*” means established laws or regulations guiding quarry and quarrying operations ;

“*stone*” means small pieces of rock of any shape ;

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“*sustainable use*” means the present use which does not compromise the right to use the same resource by future generations ;

“*unauthorized*” means not permitted to carry out or to do something or be somewhere by law ;

“*vehicle*” means any mechanically propelled vehicle (including mechanically propelled plant) ;

“*vehicular emission*” means harmful exhaust of gases from vehicles and other heavy duty equipment in the quarry site ;

“*vibration*” means the process of moving back and forth very rapidly during quarrying operations ;

“*water body*” means any watery environment including ocean, marine, estuary, wetlands, rivers, dams, lakes, ponds and mine pits ;

Citation.

44. These Regulations may be cited as National Environmental (Quarrying and Blasting Operations) Regulations, 2013.

SCHEDULE I

APPLICATION FORM FOR REGISTRATION OF QUARRYING OPERATIONS

(Tick where applicable)

Permitted Use [] Regulated Use [] Special Exception []

1. APPLICANT :

Name

Signature.....

Address.....

City.....

State

Local Government Area.....

Zip Code.....

Telephone No : [] Home [] Work.....

2. PROPERTY OWNER(S) :

Name.....

Signature.....

Address.....

City.....

State.....

Local Government Area.....

Zip

Telephone No.: [] Home..... [] Work.....

3. GENERAL INFORMATION ABOUT THE FACILITY :

Address.....

Location (GPS) : Lat.....Long.....

Assessor's Map No.....

Assessor's Lot No(s).. ..

Street of Access.....

Name of Watercourse or Water Body.....

Total Area of Lot(s).....

4. PROJECT DESCRIPTION :

Land use for which the applicant is seeking a permit (Tick one)

a. Permitted Use

b. Regulated Use

c. Special Exception

Describe the proposed activity and its purpose.....

Proposed encroachment of Built-up Area (in metres) :.....

Proposed encroachment of Farm Settlement Area (in metres) :.....

Proposed encroachment of other facilities (in metres) :

(i).....

(ii).....

Proposed encroachment of Regulated Special Area (in metres) :.....

Proposed alteration of Watercourse (in hectares) :.....

Air pollution control techniques proposed :.....

Soil conservation techniques proposed :.....

Disturbance of designated Watershed No Yes

A. BLAST-INDUCED HAZARDS

1. Number of complainant(s) Male Female

2. Ground vibration Yes No

3. Noise overpressure Yes No

4. Air overpressure Yes No

B. DAMAGE CRITERIA

1. No appreciable damage Yes No

2. Threshold damage Yes No

3. Minor damage Yes No

4. Major damage Yes No

C. TYPES OF ROCK

1.

2.

3.

4.

4. PROJECT DESCRIPTION :

Land use for which the applicant is seeking a permit (Tick one)

- a. Permitted Use
- b. Regulated Use
- c. Special Exception

Describe the proposed activity and its purpose.....

.....

.....

Proposed encroachment of Built-up Area (in metres) :.....

Proposed encroachment of Farm Settlement Area (in metres) :.....

Proposed encroachment of other facilities (in metres) :

(i).....

(ii).....

Proposed encroachment of Regulated Special Area (in metres) :.....

Proposed alteration of Watercourse (in hectares) :.....

Air pollution control techniques proposed :.....

Soil conservation techniques proposed :.....

Disturbance of designated Watershed No Yes

A. BLAST-INDUCED HAZARDS

- | | | |
|-----------------------------|-------------------------------|---------------------------------|
| 1. Number of complainant(s) | Male <input type="checkbox"/> | Female <input type="checkbox"/> |
| 2. Ground vibration | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3. Noise overpressure | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4. Air overpressure | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

B. DAMAGE CRITERIA

- | | | |
|--------------------------|------------------------------|-----------------------------|
| 1. No appreciable damage | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 2. Threshold damage | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3. Minor damage | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4. Major damage | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

C. TYPES OF ROCK

1.
2.
3.
4.

D. QUANTITY OF TONS PER DAY..... (Tonne)
 E. Distance to the nearest settlement in (metres)
 F. Types of detonator being used : Electric [] Non-Electric []
 Permit Number.....
 Date applied for.....
 Disposition.....

 Application No.....
 Date Filed.....
 Approved.....
 Denied.....

SCHEDULE II

PERMIT TO DISCHARGE EFFLUENTS, OTHER WASTES AND BIODIVERSITY DISTURBANCES :

1. Permit to discharge waste : Yes [] No []
2. Permit for Water/Air Pollution : Yes [] No []
3. Permit for Biodiversity Disturbances : Yes [] No []

Permit No.....

Name.....

Address.....

Having Satisfied all the requirements on the Application Form and with other relevant permits, you are hereby permitted to carry out.....

Activities on this..... (in metres or hectares) of Land.

Located at.....

This permit is granted valid from (date) to.....and subjected to the following conditions :

(i).....

(ii).....

(iii).....

(iv).....

(v).....

Date.....

Name/Signature.....

SCHEDULE III

ECOLOGICALLY SENSITIVE AREAS (ESAs)

1. Valleys of National Importance.
2. Hills of National Importance.
3. Lagoon, Sea and Ocean Coast.
4. Lake and Bay Shoreline.
5. Marshes and Swampy Land.
6. Mountain Peak.
7. Wetlands of National Importance.
8. River Banks.
9. Estuaries (Sparsely vegetated-beach/Spit).
10. Wildlife Value (National Parks and Wildlife Sensitive Areas).
11. Dam Areas.
12. Sanctuaries.
13. Heritage Sites.
14. Any designated area by the Agency and which needs special protection because of its landscape, wildlife or historical importance.

SCHEDULE IV

SPECIFIC ACTION FOR RECLAMATION AND REHABILITATION

- (1) Back filling of burrow pits with quantity of overburden and top soil.
- (2) Assessment of post mining land use for bringing the land back to primary uses.
- (3) Mining activities are to be designed in a manner to minimize erosion potential.
- (4) Replant the trees and other plants to the extent possible to minimize loss of vegetation.
- (5) Re-vegetation plan should address the local species including grasses, shrubs and spacing of trees.

SCHEDULE V

ECOLOGICAL MANAGEMENT PLAN

- (1) An inventory of fauna and flora existing in the Quarry areas through survey and consultation with the local community .
- (2) Development of flora bank for replanting after closure.
- (3) Conservation of wildlife for their protection, preservation and perpetuation of species, especially endangered and rare ones, in their natural habitats.

SCHEDULE VI

GUIDELINES FOR PREPARATION OF BLASTING PLAN

1. The guidelines are in accordance with the provisions of regulation 16 of these Regulations, and a person shall :
 - (a) conduct risk management process before the use of explosives, to identify the hazards that may arise or interact ;
 - (b) put in place written procedures for the blasting to include :
 - (i) maintenance of equipment used for charging and firing ;
 - (ii) cleaning of blast holes before charging ;
 - (iii) adherence to specific blasting times ;
 - (iv) adequate warning and restriction of persons to safe areas during blasting ;
 - (v) a safe distance between the position where the firing is done and the location of the effect of the blasts not less than 200m ;
 - (vi) whether it is safe to re-enter the blasted area ;
 - (vii) examination of the blasted area and blast hole remnants ; and
 - (viii) communication in-between shifts on information about charging and blasted locations.
2. A person blasting shall ensure that :
 - (a) no blasting is done within 10 metres of existing pipelines or other structures ;
 - (b) all blasts located along adjacent power line rights-of-way are conducted in a manner that will not cause damage to the power company's property and other facilities ;
 - (c) the blast area is backfilled or covered by blasting mats and/or other materials as required to protect nearby existing facilities, structures, highways, railroads or significant natural resources from thrown rock fragments ; and
 - (d) a medical personnel and medical kits should be on-site as part of blasting preparation in case of emergency.

3. All Quarries shall ensure that warning signs indicating the blast area are erected and maintained at all approaches to the blast area.

4. Warning sign letterings shall be a minimum of 10cm in height on a contrasting background.

5. Warning signs shall comply with the requirements of the Local Government Area Authority (LGA) where the quarrying is located.

6. Flaggers shall be stationed on all roadways passing within 300m of the blast area and be responsible to stop all traffic during blasting operations.

7. All personnel not involved in the actual blast shall maintain a distance of at least 300m and workers involved in the actual blast 200m from the time the blast signal is given until the "All Clear Signals" has been sounded.

8. An audible blasting signal (air horn or siren) shall be used.

9. The following blast signals will be used during blasting :

(a) Warning Signal: A one minute series of long horn or siren sounds will be made 5 minutes prior to the blast ;

(b) Blast Signal: A series of short horn or siren sounds will be made one (1) minute prior to the blast ; and

(c) All Clear Signal: A prolonged horn or siren sound following the inspection of the blast area.

10. The plan set out hereunder shall be observed in controlling fly rock during blasting :

(a) all shots/holes loading activities shall be carefully designed and supervised by a Licensed Blaster to control fly rock.

(b) the Blaster shall communicate with the drillers to obtain geological information for each shot.

(c) matting and/or padding shall be utilized at the discretion of the Blaster.

(d) a good quality, non-bridging stemming material that completely fills any void in the drill hole shall also be used to reduce the amount of fly rock.

(e) a minus 2.42cm crushed rock shall be used in conformity with international best practices.

11. All quarrying and blasting operations shall be conducted in a manner that :

(a) all residents within 1000m of the blast are notified (24 hours) before the blast day ;

(b) all residents within 200m of the blasting operation shall be given five days' notice of the operation and be reminded to evacuate their residence an hour before loading and blasting and one hour following the blast ;

(c) necessary measures are taken to exclude livestock from the blasting area ; and

(d) during the normal safety check prior to blasting, the area shall be checked for both livestock and wildlife.

SCHEDULE VII

MITIGATION MEASURES FOR QUARRYING PLAN

- (1) Compensation of affected persons in land acquisition.
- (2) Stockpiling for subsequent uses of loss of vegetation and humus soil.
- (3) Provision of roads/paths for pedestrian and vehicles.
- (4) Development and designation of dump sites and stockpile sites.
- (5) Safety measures along haulage routes.
- (6) Transported material shall be covered with trampolines during transportation.
- (7) Maintenance of vehicles to ensure efficiency and reduce emission levels.
- (8) Waste management.
- (9) Pollution control measures.
- (10) Safety and Warning signs shall be installed for the duration of construction activities.
- (11) Land reclamation measures.

ISSUED at Abuja this 29th day of October, 2013.

ARC. DARIUS DICKSON ISHAKU, fnia,
Honourable Minister of Environment

EXPLANATORY NOTE

(This note does not form part of the above Regulations but is intended to explain its purport)

These Regulations seek to control and regulate Quarrying and Blasting Operations and their adverse effects on the Environment and Human Health.

- (1) ...
- (2) ...
- (3) ...
- (4) ...
- (5) ...
- (6) ...
- (7) ...
- (8) ...
- (9) ...
- (10) ...
- (11) ...

... (This was not part of our report and is included in ...)

... (These negotiations were to ...)

... (Questions should be asked ...)

... (The ...)

... (The ...)

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