

Tanzania  
Mining Act

## Mining (Environmental Management and Protection) Regulations, 1999

Government Notice 218 of 1999

Legislation as at 31 July 2002

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Mining (Environmental Management and Protection) Regulations, 1999 (Government Notice 218 of 1999)

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## Tanzania

### Mining Act

# Mining (Environmental Management and Protection) Regulations, 1999

## Government Notice 218 of 1999

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*[Note: This legislation has been thoroughly revised and consolidated under the supervision of the Attorney General's Office, in compliance with the Laws Revision Act No. 7 of 1994, the Revised Laws and Annual Revision Act (Chapter 356 (R.L.)), and the Interpretation of Laws and General Clauses Act No. 30 of 1972. This version is up-to-date as at 31st July 2002.]*

### Part I – Preliminary provisions (regs 1-2)

#### 1. Citation

These Regulations may be cited as the Mining (Environmental Management and Protection) Regulations.

#### 2. Interpretation

In these Regulations, unless the context otherwise requires—

"**the Act**" means the Mining Act<sup>1</sup>;

"**application**" means an application for a Mineral Right made in accordance with the Act;

"**Chief Inspector**" means the Chief Inspector of Mines appointed in accordance with section 16 of the Act and regulation 35 of the Mining (Safe Working and Occupational Health) Regulations, 1999;

"**documents**" includes photographs, drawings, maps and plans;

"**environmental information**" means the environmental impact statement and environmental management plan prepared by the applicant, any representations made by any body consulted under these Regulations and any representations made by any member of the public, about the environmental effects of the proposed mine;

"**EIA**" means Environmental Impact Assessment;

"**EIS**" means Environmental Impact Statement as specified in the Third Schedule to these Regulations;

"**EMP**" means Environmental Management Plan as specified in the Fourth Schedule to these Regulations;

"**the land**" means the land on which the proposed mining would be carried out;

"**Schedule 1 application**" means any application for a mining licence, or a gemstone mining licence specified in the First Schedule to these Regulations.

## Part II – Environmental impact assessment and management (regs 3-11)

### 3. Minister to give direction

- (1) Having given due consideration to the objectives of these Regulations and the nature of the proposed mine, the Minister may direct that:
  - (a) A particular application is exempt from these Regulations;
  - (b) a particular application requires consideration of environmental information and is subject to these Regulations.
- (2) Subject to regulation (1) such a directive shall be accompanied by an explanation by the Minister, stating the reasons for his decision, which shall be available for public scrutiny.

### 4. All applications to require EIA and EMP

- (1) Except in cases where an exemption has been granted under section 64(2) of the Act, an environmental impact statement and environmental management plan must accompany applications for Mineral Rights in the following categories—
  - (a) all special mining licence applications;
  - (b) mining licence and gemstone mining licence applications specified in the First Schedule to these Regulations.
- (2) In the case of an application for a special mining licence, mining licence or gemstone mining licence made by the holder of a provisional licence pursuant to the Schedule 4 of the Act, the provisions of subregulation (1) will have no application, but in any such case, the special mining licence, or, if the operations to be conducted fall within the First Schedule to these Regulations, the mining licence or gemstone mining licence, granted to the applicant under the Schedule 4 will be subject to the condition that the licensee commissions an environmental impact assessment in accordance with section 64 of the Act, and submits to the Minister for approval an environmental management plan which takes proper account of the environmental impact assessment.

### 5. Opinion on Schedule 1 application

- (1) A person who intends to apply for a mining licence or a gemstone mining licence may ask the licensing authority to state in writing whether, in their opinion, the proposed mine would be within a category defined in the First Schedule to these Regulations and, if so, within which such category.
- (2) A request under subregulation (1) shall be accompanied by—
  - (a) a plan sufficient to identify the land;
  - (b) a description of the characteristics of the proposed mine, including the land area to be occupied, the anticipated method of mining and on-site processing, wastes to be produced and the proposed annual tonnage of mineral to be mined;
  - (c) such other information as the person making the request may wish to provide.
- (3) A licensing authority receiving such a request under subregulation (1) shall if they consider that they have not been provided with sufficient information to give an opinion on the question, notify the person making the request of the points on which they require further information.
- (4) A licensing authority shall respond to such a request under paragraph (1) within three weeks, beginning with the date of receipt of the request, or such longer period as may be agreed in writing with the person making the request.

- (5) Where a licensing authority has requested additional information under subregulation (3) the period for response, specified in subregulation (4), shall start from the date of receipt of the additional information

## 6. Application made without EIS and EMP

- (1) Where it appears to the licensing authority that an application for a mining licence or a gemstone mining licence is a Schedule 1 application and it is not accompanied by an environmental impact statement and environmental management plan, or where any special mining licence is submitted without an environmental impact statement and environmental management plan, the Minister shall, within three weeks of the application, notify the applicant in writing that he consider the submission of such a statement is required, giving the reasons for his views.
- (2) If the applicant does not comply with the requirement of subregulation, (1), the application shall be rejected at the end of the three week period from the date of notification in accordance with section 39(2) of the Act.

## 7. Publicity for application with EIS and EMP

- (1) Where an applicant submits an environmental impact statement and environmental management plan with a licence application, he shall, within seven days of the date of submission of the application, publish in a local newspaper circulating in the locality in which the land is situated, in Kiswahili and English, a notice stating—
  - (a) his name and that he is the applicant for a mining licence and the name and address of the licensing authority;
  - (b) the date on which the application was made;
  - (c) the address or location and the nature of the proposed mine;
  - (d) that a copy of the application and of the plans and other documents submitted with it, together with a copy of the environmental impact statement and environmental management plan, have been deposited at the offices of the local authority and the zonal mines office and may be inspected by members of the public during normal working hours;
  - (e) the addresses of the offices referred to in paragraph (d), at which those documents may be inspected, and the latest date on which they will be available for inspection, which shall be not less than 30 days later than the date on which the notice is published;
  - (f) that any person wishing to make representations about the allocation should make them in writing before the date given in paragraph (e), to the licensing authority.
- (2) The applicant shall, within seven days of the date of submission of the application, deposit not less than two copies of the environmental impact statement and environmental management plan at each of the addresses referred to in subregulation (1)(e), for inspection by the public.
- (3) A copy of the notice mentioned in subregulation (1), certified as having been published in a named newspaper on a date specified, shall be submitted to the licensing authority.
- (4) The applicant shall, within seven days of the date of submission of the application, submit conformed copies of the environmental impact statement and environmental management plan, together with a copy of the application to the bodies specified in the Second Schedule to these Regulations.
- (5) The applicant shall notify the licensing authority of the names and addresses of all bodies to which copies of the environmental impact statement and environmental management plan and application have been sent.

## 8. Procedure when EIS and EMP is received

- (1) When the licensing authority receives an environmental statement and environmental management plan, the licensing authority shall notify the relevant bodies specified in the Second Schedule that an application with all environmental impact statement and environmental management plan has been received and the date on which the application was received and inform them that they may make representations, up to a date not exceeding 35 days after the date of the application.
- (2) The licensing authority shall not issue a licence until the expiry of at least 60 days from the date of the application.
- (3) Where the licensing authority has notified a body in Accordance with subregulations 1, and no representation has been received from the body served, within 35 days of the date of the application, then the body concerned shall be deemed to have no comments on the statement.

## 9. Further information regarding EIS and EMP

- (1) A licensing authority when dealing with an application in relation to which an environmental impact statement and environmental management plan have been provided, may in writing require the applicant to provide such further information as may be specified, or such evidence as may be required to verify any information in his environmental impact statement or environmental management plan, concerning any matter which is required to be dealt with in the statement or plan, as specified in the Third and Fourth Schedules to these Regulations.
- (2) Where so notified, the applicant shall provide such further information or evidence.

## 10. Submission amendment and updating of EMP

- (1) Holders of mineral rights to which these Regulations apply shall—
  - (a) within two years of a licence being granted, amended or renewed;
  - (b) at intervals not exceeding five years thereafter; and
  - (c) if there is an amendment to a special mining licence, as permitted under section 45 of the Act, submit to the licensing authority a report reviewing the progress and status of the environmental management plan and, if necessary, an updated or revised environmental management plan.
- (2) Any revised or updated environmental management plan will, unless notified by the licensing authority within 30 days as being unacceptable, become part of the licence, replacing any previous version attached to the licence.

## 11. Procedure where revised EMP is not submitted

- (1) Where holders of mineral rights to which these Regulations apply, fail to submit a report or revised or updated environmental management plan, in accordance with regulation 10, the licensing authority shall issue a written notification, that such a plan is required and that failure of which will render the holder in default of the conditions of his mineral right.
- (2) Where the holder of a mineral right receives a notification under subregulation (1), he shall, within 30 days of the date of the notification, submit a plan in accordance with the requirements of the Fourth Schedule to these Regulations.
- (3) Failure to submit a plan as required under subregulation (2) shall render the licence holder in default of the conditions of his licence.

## Part III – Environmental standards and monitoring (regs 12-20)

### 12. Limitation or discharge of pollutants

No Licensee, or Manager or agent of the licensee, shall cause or knowingly permit any discharge, deposit or emission of liquid, solid, gaseous or particulate material, or noise or vibration, from a mine, as defined in the Act, into the environment which will cause pollution, except—

- (a) in the case of all holders of special mining licences and holders of mining licences and gemstone mining licences issued pursuant to applications made in accordance with the provisions of regulation 4 and the First Schedule to these Regulations, in accordance with an authorisation issued by the licensing authority;
- (b) in the case of a liquid effluent, in accordance with an authorisation issued by the Water Officer under the Section 15A of the Water Utilisation (Control and Regulation) Act<sup>2</sup>; and
- (c) in accordance with any relevant standard published by the Tanzanian Bureau of Standards, or where such standards do not exist;
- (d) in accordance with the standards and criteria specified in the Fifth Schedule to these Regulations.

### 13. Action on unauthorised pollution

In the event of any unauthorised discharge, deposit, or emission the licensing authority may direct the mine to implement a programme of action within a specified period, and to observe certain conditions during such period, in order to prevent any further occurrence of unauthorised pollution.

### 14. Power to impose higher standards

Notwithstanding anything contained in regulation 12, the licensing authority may impose additional or more stringent standards and criteria than those specified in respect of any particular operation or process, having regard for the need to protect the receiving environment or adjacent interest:

Provided that—

- (a) in the case of environmental standards regulated by another agency or Ministry, the views of the relevant agency or Ministry have been sought and taken account of;
- (b) one month's notice of any imposition is given to the licensee;
- (c) any response or petition made by the licensee before expiration of the notice period is given due consideration before the imposition is confirmed;
- (d) where such higher standards are imposed, the licensing authority shall provide a written explanation of their reasons for so doing, which shall be open to public scrutiny.

### 15. Period of validity of authorisation

An authorisation given under regulation 12(a) shall be valid for the period of the licence, or until the operations or processes to which it relates are substantially altered or modified, whichever is shorter.



## 16. Procedure for application for an authorisation

- (1) An application for an authorisation under regulation [12\(a\)](#), or for a renewal or modification of an authorisation, shall be made at least 60 days before the date on which the applicant is required to have the authorisation and shall be accompanied by—
  - (a) the information specified in the Sixth Schedule to these Regulations;
  - (b) the application fee specified in the Seventh Schedule to these Regulations.
- (2) The licensing authority shall issue an authorisation within 60 days of the application if it is satisfied that—
  - (a) no irreversible damage or hazard to man and environment or any nuisance will result from the operations or activities authorised;
  - (b) the applicant has taken appropriate steps for the protection of the environment.

## 17. Notification on changes

The holder of an authorisation shall forthwith notify the licensing authority of—

- (a) any substantial changes made or proposed to be made to the particulars furnished in connection with the application for the authorisation;
- (b) any decision to terminate, suspend or subsequently resume any activity or process to which the authorisation relates;
- (c) any case in which limits established by the required environmental standards as set out under the Fifth Schedule to these Regulations are exceeded, and details of any responses or actions undertaken or proposed to be undertaken.

## 18. Provision of reports

The holder of an authorisation shall submit to the licensing authority each year, within one month of the anniversary of the authorisation, the following information—

- (a) full and summarised results of all monitoring undertaken;
- (b) a statement of the number of cases and circumstances in which limits established by the standards as set out under the Fifth Schedule to these Regulations have been exceeded, together with details of any responses and remedial action undertaken;
- (c) details of actual emissions, discharges and wastes, as far as is practicable, in relation to the particulars provided in the application for authorisation.

## 19. Audit and validation

- (1) If requested by the licensing authority the holder of an authorisation shall commission an audit and validation of his monitoring and analysis from an independent third party or consultant acceptable to the licensing authority. The costs associated with carrying out such an audit and validation shall be borne entirely by the holder of the authorisation. All documents and reports associated with the audit and validation shall be passed to the licensing authority in their original form, without editing or amendment.
- (2) If, as a result of the third party audit and validation or of the licensing authority's own investigations, the monitoring arrangements or response procedures are, in the opinion of the licensing authority, inadequate or insufficient, the licensing authority shall notify the holder of the authorisation. On such notification, the holder shall, within one month, take such additional measures or adopt appropriate procedures as agreed with the licensing authority.

## 20. Breach of regulations and penalties

Any person who commits a breach of any regulations under this part or fails to implement a direction under regulation [12](#) or fails to take measures or adopt procedures agreed with the licensing authority under subregulation [\(2\)](#) of regulation [19](#) shall—

- (a) be guilty of an offence and be liable on conviction to a fine not exceeding one million shillings (1,000,000) or imprisonment for a period not exceeding six months or to both;
- (b) in the case of a holder of a mineral right be deemed for the purpose of subsection [\(1\)](#) of section [57](#) of the Act to be in material breach of regulations binding on him.

## Part IV – Reclamation requirements (regs 21-30)

### 21. Reclamation requirement standards

It is the duty of every licensee, manager or agent of the licensee to institute and during the life of the mine to carry out a program of environmental protection and reclamation, in accordance with the standards described in this Part.

### 22. Application of the reclamation standards

- (1) The reclamation standards prescribed in this Part shall apply to any mine except—
  - (a) where a mine is specifically excluded from complying with a particular standard;
  - (b) where any disturbance created by a mining activity has been reclaimed, inspected, and found to be satisfactory.
- (2) The land surface shall be reclaimed to an acceptable use that considers previous and potential use.

### 23. Land productivity to be maintained

The level of land productivity to be achieved on reclaimed areas shall not be less than existed prior to mining on an average property basis unless the owner, agent or Manager can provide evidence which demonstrates to the satisfaction of the Chief Inspector the impracticality of doing so.

### 24. Reclaimed land and structures to be left stable

Land and watercourses shall be left in a stable condition, engineered structures including waste dumps, major haul roads, and tailing impoundments shall be designed in accordance to safety requirements satisfactory to the Chief Inspector in order to ensure long term stability—

- (a) land shall be re-vegetated to a self sustaining state using appropriate plant species;
- (b) on all lands to be re-vegetated, the growth medium shall satisfy land use, productivity, and water quality objectives; all surface soil material removed for mining purposes shall be saved for use in reclamation programs unless these objectives can be otherwise achieved;
- (c) vegetation shall be monitored for metal uptake;
- (d) where harmful metal levels are found, reclamation procedures shall ensure that levels are safe for plant and animal life.

## 25. Consideration for National heritage

Prior to abandonment, and unless the Chief Inspector has made a ruling with respect to National heritage consideration—

- (a) all machinery, equipment and building superstructures shall be removed;
- (b) concrete foundations shall be covered and revegetated unless, because of demonstrated impracticality, they have been exempted by the Chief Inspector; and
- (c) all scrap material shall be disposed of in a manner acceptable to the Chief Inspector.

## 26. Reclamation of waste dumps

Waste dumps shall be reclaimed to ensure—

- (a) long-term stability;
- (b) long-term stability;
- (c) water quality released from waste rock dumps to the receiving environment is of a standard specified in the Fifth Schedule to these Regulations; and
- (d) Land use and productivity objectives are achieved.

## 27. Reclamation of water courses

Watercourses shall be reclaimed to a condition that ensures—

- (a) long-term water quality is maintained to a standard specified in the Fifth Schedule to these Regulations;
- (b) drainage is restored either to original watercourses or to new watercourses which will sustain themselves without maintenance; and
- (c) use and productivity objectives are achieved and the level of productivity shall not be less than existed prior to mining unless the licensee, manager or agent of the licensee can provide evidence which demonstrates, to the satisfaction of the Chief Inspector, the impracticality of doing so.

## 28. Reclamation of pit walls

- (1) Pit walls constructed in overburden shall be reclaimed in the same manner as waste dumps unless the Chief Inspector is satisfied that to do so would be unsafe or conflict with other proposed land uses.
- (2) Pit walls constructed in rock, or steeply sloping footwalls, are not required to be re-vegetated. Pit wall seepage may require treatment to ensure that water is of a quality acceptable to the Chief Inspector.
- (3) Where the pit is free from water, and safely accessible, vegetation shall be established.
- (4) Where the pit floor will impound water, provision could be made to create a body of water where use and productivity objectives are achieved.

## 29. Considerations for reclamations before mine closure

Prior to mine closure—

- (a) a report shall be submitted to the Commissioner and Ministry responsible for environment outlining the post-operational state of the dams, dykes, related seepage control, spillway works, mine water sumps, and post-operational monitoring;

- (b) a permanent spillway shall be designed to a standard required by the Chief Inspector, and installed prior to final abandonment of the tailings dam;
- (c) all tailings ponds and impoundments structures shall be reclaimed to the approved land uses;
- (d) all roads shall be reclaimed in accordance with land use objectives unless permanent access is required to be maintained;
- (e) chemicals or reagents which cannot be returned to the manufacturer are to be disposed of as directed by the Chief Inspector;
- (f) all potential acid generating material shall be placed in a manner which minimises the production and release of acids to a level that assures protection of environmental quality.

### **30. Manager to conduct monitoring**

The licensee, Manager or agent of the licensee shall undertake monitoring programs, as required by the Chief Inspector, to demonstrate that reclamation objectives including land use, productivity, water quality and stability of structures are being achieved.

## **Part V – Rehabilitation bond (reg 31)**

### **31. Rehabilitation bond to be posted**

- (1) The Minister may require a holder of a special mining licence, mining licence or gemstone mining licence to provide for posting of rehabilitation bond which shall be in any of the following forms—
  - (a) Escrow Account;
  - (b) Capital Bond;
  - (c) Insurance or Bank Guarantee Bond;
  - (d) Pledging and Assets;
  - (c) any other form which may be agreed between the Government and the licensee.

*[please note: numbering as in original.]*
- (2) The bond and financial guarantee will form a separate agreement between the Government and the licensee.

## **Part VI – Requirements for artisanal and small scale miners (regs 32-42)**

### **32. Settling ponds**

- (1) The holder of a primary mining licence shall ensure that washing or settling ponds are constructed in his primary mining licence area to provide for washing and sluicing, and no such washing and sluicing shall be done along or close to rivers, streams or any other water sources.
- (2) Where a settling pond is used as part of the mine drainage system, all channels discharging into the river system must be culverted and the slopes protected from erosion.

### **33. No vegetation clearing**

Vegetation clearing will not be undertaken within twenty metres (20m) clearing from any stream or river bank.

**34. Use of a retort**

The holder of a primary mining licence shall not heat mercury amalgam to recover the gold without using a retort.

**35. No cyanide leaching**

The holder of a primary mining licence shall not use leaching without the written approval of the Chief Inspector.

**36. Abandoned workings to be backfilled for fenced**

No holder of a primary mining licence shall commence development of new workings in his primary mining licence area without backfilling or fencing the abandoned previous workings developed by himself or his agent.

**37. Damaged areas to be inspected**

Prior to the commencement of mining in any area that may have been previously environmentally damaged, the primary mining licence holder shall request an inspection of the same area by an inspector to confirm environmental disturbance.

**38. Tailings disposal**

The holder of a primary mining licence shall ensure that tailings are disposed of at a proper place in a manner approved by the inspector.

**39. Children not to be employed**

No holder of a primary mining licence shall cause children below the age of 16 to be employed or be engaged in any mining or processing operations in his primary mining licence area.

**40. Pit latrines to be constructed**

Every primary mining licence holder shall ensure that pit latrines are constructed and maintained at a distance of not less than one hundred (100m) metres inland from any water source other than washing or settling ponds.

**41. Protective gear to be used**

Every primary mining licence holder shall ensure that each employee is provided with protective gear and no person shall handle any toxic substance without using appropriate protective gears.

**42. Offences**

Any person who contravenes any provision under this Part shall be guilty of an offence and shall be liable on conviction to a fine not exceeding fifty thousand shillings or imprisonment not exceeding three months or both.

## First Schedule (Regulation 4)

### **Mining licence and gemstone mining licence applications - description of proposed mining operations for which environmental impact statement and environmental management plans must be submitted**

1. All mines within areas declared as National Parks, Game Reserves and Sanctuaries, Conservation Areas, Forest Reserves or any reserved areas, protected monuments, Marine parks or Marine reserves.
2. Mines which meet the criteria set out below—
  - (a) application area exceeding sixty hectares (60) in all mining areas other than sensitive areas or;
  - (b) application area exceeding thirty hectares (30) in sensitive area; and
  - (c) the production capacity (production of minerals or ore before processing excluding waste that are not processing waste) planned per annum during normal operations, exceeding one hundred thousand tonnes (100,000) in all mining areas other than sensitive areas; or
  - (d) the annual production capacity exceeding fifty thousand tonnes (50,000) in sensitive areas.
3. For the purpose of this Schedule, "sensitive areas" means—
  - (a) areas prone to natural disasters (geological hazards, floods, rain-storms, earthquakes, landslides, volcanic activity, etc.);
  - (b) wetlands (flood plains, swamps, lakes, rivers, etc.) and water bodies characterised by one or any combination of the following conditions—
    - i. tapped for domestic purposes; brick making;
    - ii. within the controlled and/or protected areas;
    - iii. which support wildlife and fishery activities;
    - iv. used for irrigation agriculture, livestock grazing;
  - (c) mangrove swamps characterised by one or any combination of the following conditions:
    - i. with primary pristine and dense growth;
    - ii. adjoining mouth of major river systems;
    - iii. near or adjacent to traditional fishing grounds;
    - iv. which act as natural buffers against shore erosion, strong winds and storm floods;
  - (d) areas susceptible to erosion such as:
    - i. hilly areas with critical slopes;
    - ii. unprotected or bare lands;
  - (e) areas of importance to threatened cultural groups;
  - (f) areas with rare, endangered, or threatened plants and animals;
  - (g) areas of unique socio-cultural, historical, archaeological, scientific purposes or areas with potential tourist value;
  - (h) polluted areas;
  - (i) area subject to desertification and bush fires;

- (j) coastal areas and marine ecosystems such as—
  - i. Coral reef;
  - ii. Islands;
  - iii. Lagoons and estuaries;
  - iv. Continental shelves;
  - v. Beach fronts etc.;
  - vi. Intertidal zones;
- (k) areas declared as watershed reserves, sacred areas, hot-spring areas;
- (l) water catchment areas and recharge areas of acquirers;
- (m) green belts or public open spaces in urban areas;
- (n) burial sites and graves.

## **Second Schedule (Regulation 7)**

### **Consultation procedures**

The applicant shall send copies of any environmental impact statement and environmental management plan submitted in accordance with these Regulations, as specified in regulation 7(4), to the following bodies—

1. The local authority in the locality of the proposed mine, including—
  - (a) in rural areas - the Village Council and the District Land Allocation Committee;
  - (b) in or near urban areas - the town, municipal or city authorities.
2. The appropriate Basin Water Board.
3. The Ministries responsible for—
  - (a) environment;
  - (b) water;
  - (c) tourism;
  - (d) natural resources;
  - (e) agriculture;
  - (f) lands;
  - (g) antiquities.
4. The National Environment Management Council.

## **Third Schedule (Regulation 9)**

### **Content of experimental impact statement**

The following describes the information that is required to be included in an environmental impact statement for a mining project, under these Regulations:

1. A description of the proposed mining development and alternatives considered, including, as appropriate

—

- (a) description of mineral deposit;
- (b) mining plan;
- (c) production rates;
- (d) transport;
- (e) infrastructure;
- (f) mineral processing;
- (g) emissions and discharges to air land and water;
- (h) management of wastes and spoils produced and disposal methods;
- (i) water management;
- (j) use and storage of chemicals;
- (k) closure and decommissioning;
- (l) rehabilitation including progressive rehabilitation.

The information given in this paragraph should cover all stages of the development of the mine, including construction, operation, decommissioning and post-closure.

2. The data necessary to evaluate the existing environment on and surrounding the land, and including information on—

- (a) land use, tenure and ownership;
- (b) settlements and local communities;
- (c) infrastructure and industry;
- (d) flora and fauna;
- (e) climate;
- (f) geology, geomorphology, soils;
- (g) air quality and noise;
- (h) surface water and groundwater;
- (i) cultural heritage;
- (j) landscape and visual character.

3. Relevant environmental legislation and guidelines applying to the site and the development.

4. A description of the outcome of any consultations carried out with relevant statutory authorities.

5. An assessment of the likely significant effects of the mine on the environment, by reference to the data referred to in paragraph 2 and considering—

- (a) direct and indirect effects;
- (b) short, medium and long-term effects;
- (c) beneficial and adverse effects;
- (d) cumulative effects;



- (c) reversible and irreversible.

*[please note: numbering as in original.]*

6. Where significant adverse effects are identified with regard to any of the categories referred to in paragraphs 2 and 3, a description of the measures incorporated into the design of the proposed mine to avoid, minimise or mitigate these effects.
7. An environmental management plan defining monitoring and control systems or management measures to minimise or mitigate the significant environmental impacts identified, during the life of the mine. The requirements for the contents of environmental management plans are specified in the Fourth Schedule to these Regulations.
8. A non-technical summary of the information specified above.

## Fourth Schedule (Regulation 9)

### Content of environmental management plans

The following describes the information that is required to be included in an environmental management plan for a mining project, under these Regulations:

1. A description of the proposed mining development and alternatives considered, including, as appropriate—
  - (a) description of mineral deposit;
  - (b) mining plan;
  - (c) production rates;
  - (d) transport;
  - (e) infrastructure;
  - (f) mineral processing;
  - (g) emissions and discharges to air land and water;
  - (h) management of wastes and spoils produced and disposal methods;
  - (i) water management;
  - (j) use and storage of chemicals;
  - (k) rehabilitation.

The information given in this paragraph should cover all stages of the development of the mine, including construction, operation, decommissioning and post-closure. Where accurate information is given in another statutory document, such as an environmental impact statement, reference may be made to that document and the information need not be repeated in the environmental management plan.

2. A summary of the likely significant effects of the mine on the environment, by reference to the baseline environmental data and relevant environmental regulations and guidelines provided in the environmental impact statement and considering—
  - (a) direct and indirect effects;
  - (b) short, medium and long-term effects;
  - (c) beneficial and adverse effects;
  - (d) cumulative effects;

- (e) reversible and irreversible effects.

This data may be presented in the form of a table or inventory.

3. Details of the measures incorporated into the design of the proposed mine to avoid, minimise or mitigate those effects and of control systems or management measures to achieve compliance with regulatory or higher standards, during the life of the site, including—
- any plant or works or other measures to be provided for control of pollution and other impacts to land, air, water, landscape, ecological, human and cultural resources;
  - procedures for the management of wastes, spoils and tailings;
  - detailed descriptions of monitoring procedures;
  - incident response procedures;
  - detailed plan for progressive rehabilitation;
  - details of personnel and responsibilities for the implementation of the plan;
  - details of environmental audit procedures provisions for documentation and record keeping.

### Fifth Schedule (Regulation 12)

#### Environmental standards

##### 1. Standards for Waters-effluents and receiving waters

Parameter	Units	Effluent		Receiving waters			
		TL	MPC - 1	MPC - 2	MPC - 3		
PH		-	6.5 - 8.5	-	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0
TDS	mg/l	2500	3000	1700	2000	2000	2000
TSS	mg/l	60	100	-	-	-	-
Conductivity	uS/cm <sup>3</sup>	400	-	-	-	-	-
BOD 5	mg/l	25	30	3.5	5	5	10
COD	mg/l	45	60	-	-	-	-
Chloride - Cl	mg/l	650	800	170	200	200	400
Sulphate - SO <sub>4</sub>	mg/l	500	600	500	600	600	600
Ammonia - N	mg/l	7.5	10	0.35	0.5	0.5	0.5

Parameter	Units	Effluent		Receiving waters			
Nitrate - N <sub>3</sub>	mg/l	35	50	35	50	50	100
Nitrite - N <sub>2</sub>	mg/l	0.75	1	-	-	-	-
Phosphate - PO <sub>4</sub>	mg/l	4.5	6	-	-	-	-
Cyanide-total	mg/l	0.75	1	0.035	0.5	0.5	0.1
Cyanide - WAD	mg/l	0.35	0.5	-	-	-	-
Cyanide-free	mg/l	0.075	0.1	-	-	-	-
Oil & grease	mg/l	3.5	5	0.35	0.5	1	5
Phenols	mg/l	0.15	0.2	0.0015	0.002	0.002	0.1
Total hydrocarbons(dissolved & emulsified)	mg/l	-	-	-	-	-	-
Arsenic	mg/l	0.15	0.2	0.04	0.05	0.1	0.1
Cadmium	mg/l	0.075	0.1	0.04	0.05	0.1	0.2
Chromium (total)	mg/l	0.75	1	-	-	-	-
Chromium (hex)	mg/l	0.05	0.1	0.04	0.05	0.1	0.1
Copper	mg/l	0.75	1	2.5	3	3	4
Iron (total)	mg/l	2	3	0.75	1	1.2	1.5
Lead	mg/l	0.075	0.1	0.075	0.1	0.1	0.2
Mercury	mg/l	0.004	0.005	0.00075	0.001	0.001	0.002
Nickel	mg/l	0.4	0.5	0.04	0.05	0.05	0.1

Parameter	Units	Effluent		Receiving waters			
		0.75	1	0.15	0.2	0.2	0.5
Zinc	mg/l	0.75	1	0.15	0.2	0.2	0.5

**Notes:**

TL = Trigger Level which, if exceeded, requires investigation of a potential problem and action if necessary; this level acts as a warning.

MPC = Maximum Permissible Concentration, for receiving water as given in the Wafer Utilisation (Control and Regulation) (Amendment) Act<sup>3</sup>; for effluent discharge as given in the Tanzanian Standard General Tolerance Limits for Municipal and Industrial Wastewaters.

MPC - 1, 2 and 3 = Maximum Permissible Concentration for Categories 1, 2 and 3 of receiving water:

Category 1: Water suitable for drinking water supplies, swimming pools, food and beverage manufacturing industries, pharmaceuticals manufacturing industries or industries requiring water of similar quality.

Category 2: Water suitable for use in feeding domestic animals; in fisheries, shell cultures, recreation and water contact sports.

Category 3: Water suitable for irrigation and other industrial activities requiring water of standards lower than those of water in categories 1 or 2.

The MPC in the receiving water should be measured below the mixing zone of the effluent discharge. For specific discharges, the MPC for effluents given may need to be amended to take account of the mass discharge of the pollutant (ie. concentration x discharge rate) and the dilution in the receiving waters, such that the appropriate receiving water standard is not breached.

**2. Standards for air quality**

- (1) Concentrations of contaminants, measured at the site boundary at any height, should not exceed the following:

Parameter	Time period	TL (u/m <sup>3</sup> )	MPC (u/m <sup>3</sup> )
<b>Particulate matter</b>			
<10um (PM <sub>10</sub> )	annual arithmetic mean	-	100
maximum 24 hours	400	500	
Total suspended Particulates	annual arithmetic mean	-	300
maximum 24 hours	1000	2000	

Parameter	Time period	TL (u/m <sup>3</sup> )	MPC (u/m <sup>3</sup> )
<b>Gases</b>			
Nitrogen oxides as NO <sub>2</sub>	annual arithmetic mean	-	100
maximum 24 hours	150	200	
Sulphur dioxide	annual arithmetic mean	-	100
maximum 24 hours	400	500	

Note: TL = Trigger Level; MPC = Maximum Permissible Concentration. (The methods of measurement shall be as set out in the Tanzanian Standard EMD(2).).

- (2) Ambient air quality beyond 500m of the site boundary shall not exceed the values laid down for ambient air in the Tanzanian Standard for Air Quality, EDMC2.
- (3) Deposition (wet and dry) of contaminants at any point outside the site boundary shall not exceed the following

Contaminant	TL (mg/m <sup>2</sup> /month)	MPL(mg/m <sup>2</sup> /month)
Antimony	225	300
Arsenic	110	150
Cadmium	7.5	10
Chromium (total)	900	1200
Copper	110	150
Lead	450	600
Nickel	38	50
Zinc	900	1200

(MPL = Maximum Permissible Level)

- (4) Deposition of dust (Total Suspended Particulate) at any sensitive location outside the site boundary shall not exceed 250 mg/m<sup>2</sup>/day TL or 400 mg/m<sup>2</sup>/day MPL, as monthly average.

- (5) Site attributable noise levels at any habitation or sensitive location near to the site shall not exceed 75dB(A), measured as 1 hour LAeq, daytime, or 55dB(A) 1 hour LAeq night-time.
- (6) Mercury concentrations in air at any workplace, whether within a building or in the open air, shall not exceed 0.025 mg Hg/m<sup>3</sup> of air (8 hour Time Weighted Average).

### **Sixth Schedule (Regulation 16(a))**

#### **Information to be provided with an application for an authorisation**

1. A plan identifying all sources of air emissions, aqueous discharges and solid wastes. Where these vary for different stages of the operation, a plan for each stage will be provided together with an indication of the time that each stage will be implemented. For the purposes of this plan the following source types will be included:
  - (a) for emissions to the atmosphere: point sources, such as vents, stacks, doorways, conveyor transfers and open plant; line sources such as conveyors and roads; area or diffuse sources such as stockpiles, spoil dumps or silt lagoons and areas containing a number of small point and line sources;
  - (b) for aqueous discharges: process discharges and site drainage where these discharge outside the site boundary into a surface watercourse; see pages to the ground from point, line or area sources, whether or not these enter groundwater;
  - (c) for solid wastes: permanent or temporary storage of wastes and spoils at or near the site, where this is under the control of the Licensee; wastes and spoils that are taken off site for disposal elsewhere, including details of destination
2. A Schedule giving a description, including (but not necessarily limited to) the following details for each identified source—
  - (a) the expected concentration of all contaminants;
  - (b) the total quantity or rate of emission, discharge or waste production;
  - (c) physical characteristics, such as particle sizes, temperature, colour, velocity, where relevant;
  - (d) whether the source is continuous, episodic, periodic or occasional, and the circumstances under which it will occur.
3. Details of any abatement or treatment applied to the source, or other remediation to render it harmless.
4. Baseline information on the existing receiving environment, as appropriate to the nature and extent of the particular sources of pollutants.
5. Details of the proposed monitoring regime, including sampling frequency and analysis, applicable to the sources and to the receiving environment.
6. Details of proposed response procedures and remedial action in the event of any exceedences of the authorisation or the required environmental standards.

### **Seventh Schedule (Regulation 16(b))**

#### **Fees applicable to applications for new, renewed or revised authorisations**

	<b>US\$ for a: New application</b>	<b>Renewal or revision</b>
Special mining licence	1,000	500

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	<b>US\$ for a: New application</b>	<b>Renewal or revision</b>
Mining licence	500	300
Gemstone mining licence	500	300