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Ministry of Economic Affairs  
Royal Government of Bhutan  
Thimphu



SECRETARY

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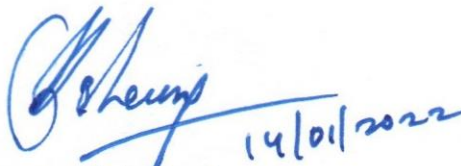
14<sup>th</sup> January 2022

### NOTIFICATION

Sub: Adoption of Mines and Minerals Management Regulations 2022

This is to notify the general public that the **Mines and Minerals Management Regulation 2002** has been revised to be called as **Mines and Minerals Management Regulations 2022** and it shall come into effect from 14<sup>th</sup> January 2022. With this, the Mines and Minerals Management Regulations 2002 is hereby repealed along with its subsequent amendments made through Notifications and Circulars.

In view of the above, all the concerned stakeholders are hereby requested to note that the provisions of the **Mines and Minerals Management Regulations 2022** shall be strictly enforced for mining application and management of mining leases. The revised regulations can be accessed from the Ministry's website [www.moea.gov.bt](http://www.moea.gov.bt).

  
(Karma Tshering) 14/01/2022

In exercise of the powers conferred by section 50 of the Mines and Minerals Management Act, 1995, the Ministry of Economic Affairs makes the following Regulations:

### **Table of Contents**

<b>PART 1. MINING LEASES AND MANAGEMENT</b>	<b>5</b>
<b>Chapter 1. Administration, definitions, procedures</b>	<b>5</b>
Short title	5
<b>Chapter 2. Boundaries</b>	<b>9</b>
<b>Chapter 3. Registry of Mineral Titles</b>	<b>9</b>
<b>Chapter 4. Mapping and Exploration</b>	<b>9</b>
<b>Chapter 5. Mining lease and Quarrying lease</b>	<b>10</b>
Mining Lease	11
Quarrying Lease	12
Application for grant of mining lease	12
Scrutiny of Application	13
Final Mine Feasibility Study	13
Environmental Clearance	14
Grant of Mining Lease	14
Modification of the application documents	15
Lapse of the lease.	15
Renewal of lease	15
Suspension, termination, modification by the Government	16
Disqualification for grant of a mining lease	17
<b>Chapter 6. Royalty, mineral and surface rent</b>	<b>17</b>
Royalty and mineral rent	17
Lease Rent	17

Environmental restoration bond	18
<b>Chapter 7. The mining operation</b>	<b>19</b>
Boundary Pillars	19
Notice for opening or reopening of a mine	19
Abandonment /Discontinuance/Surrender	19
Transfer of the mining lease	20
Mine closure	20
<b>Chapter 8. Management of Mining Operations</b>	<b>22</b>
Manager	22
Foreman	22
Blaster	23
Engineer/engineering supervisor	23
<b>Chapter 9. Records, Reports and Notices</b>	<b>23</b>
Plans and Sections	23
Records of the mine	24
Report on minerals Exploration	25
Bi-annual report	25
Annual report	25
Notice of change in employment	26
Change of name of mine and address	26
<b>Chapter 10. Monitoring, offences and sanctions Inspection and Monitoring</b>	<b>26</b>
Powers of Inspectors	26
Qualifications of Inspector	28
Compliance orders	28



Compensation and Sanctions	29
Remedies	29
Administrative appeals	29
<b>PART 2. CORPORATE SOCIAL RESPONSIBILITY, OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT</b>	<b>30</b>
<b>Chapter 11. Corporate Social Responsibility</b>	<b>30</b>
<b>Chapter 12. Explosives</b>	<b>31</b>
General requirements	31
Use of explosives	31
Misfires	32
<b>Chapter 13. Machinery and plant</b>	<b>33</b>
<b>Chapter 14. Accident Prevention and response</b>	<b>34</b>
Protective clothing and equipment	34
Notice of accidents	34
Weekly day of rest	35
Hours of work	35
Compensation	35
<b>Chapter 15. Open cast mines</b>	<b>36</b>
General precautions	36
Underground mining	37
<b>Chapter 16. Occupational health and environment</b>	<b>37</b>
Health and environmental standards	37
Occupational disease	37
Sanitary and drinking water conditions	38



Dust	38
Noise	39
Use of topsoil	40
Overburden and waste dumps	40
Ground vibration	41
Water	41
Monitoring of Environmental Quality	42

## PART 1. MINING LEASES AND MANAGEMENT

### Chapter 1. Administration, definitions, procedures

#### Short title

1. This Regulation shall be called the Mines and Minerals Management Regulations 2022.

#### Commencement

2. This Regulation shall come into force on the 14<sup>th</sup> Day of January, 2022.

#### Repeal

3. The Mines and Minerals Management Regulations 2002 along with its subsequent amendments made through Notifications and Circulars is hereby repealed.

#### Definitions

4. The following definitions shall apply to this Regulation:
  - 4.1 “Blaster” means a shot firer certified by Ministry of Home Affairs under section 68 of the Explosive Rules, 1989 or any person holding a blaster or shot firer's certificate from recognised institutes but endorsed by the Ministry of Home and Cultural Affairs on recommendation by the Department of Geology and Mines.
  - 4.2 “Captive mine” means a mine leased to the owner or promoter of a processing industry for the sole purpose of supplying raw materials to that industry or a mine leased to supply critical additives for multiple domestic industries.
  - 4.3 “Company” means any organization registered under the Companies Act of Bhutan.
  - 4.4 “Competent person” means any person who has the qualifications for a specified responsibility as defined in this Regulation or who possess other documents issued or approved by the Royal Government of Bhutan.

- 4.5 “Critical additives” means those essential minerals other than primary raw materials necessary for processing industries but not in large quantities.
- 4.6 “Department” means the Department of Geology and Mines, Ministry of Economic Affairs, Royal Government of Bhutan.
- 4.7 “Director” means the Head of the Department of Geology and Mines.
- 4.8 “EA Act” means the Environmental Assessment Act.
- 4.9 “Employed” means any person who is paid by the lessee to carry out activities in connection with the mine.
- 4.10 “Environment” means the complex web of interrelationships between the abiotic and biotic components which sustains life on earth, including the social, health and cultural aspects of human beings.
- 4.11 “Environmental Management Plan (EMP)” means a plan that specifies the environmental, health and safety terms for the design, construction, and operation of a mine under section 24 of the MMMA.
- 4.12 “Environmental Restoration Bond (ERB)” means bond deposited by the lessee in an account designated by the Department as a security to ensure post mining reclamation of the mine.
- 4.13 “Final Mine Feasibility Study (FMFS)” means the mining assessment report for the operation of a mine highlighting the technical, financial, environmental and social parameters which demonstrates, in a reasonable manner, the socio-economic viability of the proposed mine.
- 4.14 “Foreman” means the competent person employed and appointed in writing by the lessee to supervise or control activities in a mine or a part thereof



- 4.15 "Government" means the Royal Government of Bhutan or any government agency authorized by it to carry out a specific activity on behalf of the Royal Government of Bhutan.
- 4.16 "Lessee" shall mean a Bhutanese citizen as an individual or a proprietor of a licensed firm or a company who has been granted a mining lease.
- 4.17 "Manager" means the competent person employed and appointed in writing by the lessee to manage all the operations of the mine under section 36 of the MMMA.
- 4.18 "Mine official" means any person employed and appointed in writing by the lessee to carry out specific duties related to compliance of the terms of the lease.
- 4.19 "Mine Plan (MP)" means a detailed description of the mine and proposed mining works to optimize return on investment, through capital investment, design, extraction scheduling, and preparation of the mineral product in accordance with the mineral specification.
- 4.20 "Mine Restoration Plan (MRP)" means a detailed description of the environmental, health and safety terms for the closure of a mine or its part, the termination of related activities, and the restoration of the natural environment at the site of the mine and surrounding area and it shall form a part of the FMFS under section 23 of the MMMA.
- 4.21 "Mines Inspector" means a person employed by the Department to monitor mineral transport and mining operation and issue transport permits.
- 4.22 "Mining Division" means the Mining Division of the Department of Geology and Mines.
- 4.23 "Minister" shall be the Head of the Ministry of Economic Affairs under section 4(f) of the MMMA.

- 4.24 “Misfire” means the failure to explode of an entire charge of explosives in a shot hole.
- 4.25 “MMMA” means the Mines and Minerals Management Act, 1995.
- 4.26 “National Inspector” means an officer of the Department who is authorized in writing by the Director to inspect all mines under the MMMA.
- 4.27 “Officer” means an officer of the Mining Division authorized in writing by the Minister or Director to exercise powers conferred by the MMMA.
- 4.28 “Operational mining scheme” means a periodically updated description of how the EMP, MP and MRP will be implemented in practice.
- 4.29 “Proven mineral reserve” means those mineral deposits assessed to be economically feasible for mining by the Department, Geological Survey of India (Bhutan Unit) and on Royal Government of Bhutan funding.
- 4.30 “Public road” means road under the jurisdiction of the Government for public use.
- 4.31 “Regional Inspector” means an officer of the Mining Division who is authorized to inspect and control mines in a region.
- 4.32 “Registry” means the Registry of Mineral Titles, Department of Geology and Mines.
- 4.33 “Serious bodily injury” means any injury which involves, or in all probability will involve, the permanent loss of any part or section of a body or the use of any part or section of a body, or the permanent loss of or injury to the sight or hearing or any permanent physical incapacity or the fracture of any bone or one or more joints or bones of any phalanges of hand or foot.
- 4.34 “Site” means the mining area for which a mining lease has been granted under the MMMA.

4.35 “Working place” means the place on the site where an activity connected with the mine is carried out by or on behalf of the lessee.

## **Chapter 2. Boundaries**

5. The Department determines the boundaries of the mining area for leasing under section 18 of the MMMA.
6. All boundaries extend downward, vertically without limit.
7. All boundaries are demarcated by the official demarcation surveys.

## **Chapter 3. Registry of Mineral Titles**

8. The Registry of Mineral Titles is established within the Department to maintain accurate registers, maps, and technical and financial records of mining leases under section 14(vii) of the MMMA.
9. The Registry of Mineral Titles shall collect and maintain the documents listed in Annex 3 of this Regulations.

## **Chapter 4. Mapping and Exploration**

10. The Department shall carryout:
  - (1) geological mapping at regional scale as primary source of information on geology for mineral development, land planning, environment management, seismic risks and geohazards prevention and infrastructural development;
  - (2) mineral resources mapping to establish national mineral resources database; or
  - (3) exploration of minerals of geological potential either on its own or outsource.
11. Notwithstanding section 10(3) of this Regulations, the Department shall issue Exploration Permit for:
  - (1) eligible minerals to process as captive mine to a Bhutanese citizen, proprietor of licensed firm or company;



- (2) leased minerals as an additional deposit to state-owned mining agency; or
  - (3) any other minerals to state-owned mining agency as decided by the Ministry.
- 12. The Ministry shall notify the list of eligible minerals and requirement of value addition under Annex 7 of this Regulations.
  - 13. A proponent of the Exploration Permit shall be required to seek a written consent from the private registered landowner or any person in custody of such land.
  - 14. A proponent shall furnish the Forestry Clearances, Environment Clearances, clearances for use of aerial or unmanned aerial vehicle from the relevant authorities for issuance of Exploration Permit.
  - 15. The Department shall undertake mapping and exploration activities with intimation to the relevant agencies.
  - 16. The Department shall issue Exploration Permit in accordance with section 11 of this Regulations upon obtaining all the required sectoral clearances.
  - 17. The Exploration Permit holder shall pay fair compensation to the land and property owner if any damages are caused during exploration.
  - 18. The Exploration Permit holder shall not have rights over the explored minerals or claim compensation thereof, if the deposit is assessed to be techno-economically not feasible for establishment of an industry.
  - 19. The Department may issue the Mineral Exploration Guidelines in respect of processing the application for Exploration Permit and Code of Exploration Practices.

### **Chapter 5. Mining lease and Quarrying lease**

- 20. The grant of mining and quarrying lease shall be only in accordance with section 21 of the MMMA.
- 21. The mining and quarrying lease shall be applicable to all excavations including winning rocks and minerals, digging and dredging below the riverbeds.

22. A Bhutanese citizen as an individual or a proprietor of a licensed firm, or a household, or a company shall not be eligible to obtain or operate more than two mining or quarrying leases at any point of time.
23. Notwithstanding section 22 of this Regulations, the limitation of two mining or quarrying leases shall not apply to the state-owned mining agency .

#### **Mining Lease**

24. A company shall be eligible to obtain a mining lease for captive mine to supply raw materials to their processing industry.
25. A Bhutanese citizen as an individual or a proprietor of a licensed firm shall be eligible to obtain a mining lease for a captive mine to supply critical additives to multiple industries.
26. Notwithstanding section 25 of this Regulations, a Bhutanese citizen as an individual or a proprietor of a licensed firm shall not be eligible to obtain a mining lease where minerals are leased to state owned mining agency.
27. The Ministry shall allocate proven mineral reserve:
  - (1) directly to state-owned mining agency; or
  - (2) directly to a Bhutanese citizen as an individual or a proprietor of a licensed firm, or a company for the purposes as stated in section 29 of this Regulations.
28. Direct allocation of proven mineral reserve to state owned mining agency shall be based on:
  - (1) wider economic benefits;
  - (2) high potential for export in primary form;
  - (3) potential for generating substantial revenue;
  - (4) reliable and affordable supply of minerals and mineral products in the country; or
  - (5) sustainable development of mineral resources.

29. Direct allocation of proven mineral reserve to a Bhutanese citizen as an individual or a proprietor of a licensed firm, or a company shall be based on:
- (1) supply of raw materials for the establishment of a domestic processing industry;
  - or
  - (2) supply of critical additives to domestic industries.
30. The Department shall lease mineral deposit explored by the Exploration Permit holder as captive mine based on techno-economic feasibility for the establishment of an industry.
31. The Department shall lease only one captive mine for a single mineral to a mineral based industry.
32. Notwithstanding section 31 of this Regulations, the Department may lease additional captive mines for the same mineral if the sustenance of the industry is at stake.

#### **Quarrying Lease**

33. A Bhutanese citizen as an individual or a proprietor of a licensed firm, or a company shall be eligible to obtain a quarrying lease.
34. The Department on receipt of the application shall process and lease stone quarries to a Bhutanese citizen as an individual or a proprietor of a licensed firm, or a company.
35. The Department shall issue permit for short term quarries to government agencies, projects or organizations in accordance with the Guidelines for Short Term Quarries.

#### **Application for grant of mining lease**

36. An application for grant of a mining lease shall be submitted in Form A of Annex 1 of this Regulations to the Department.





37. Upon receipt of the applications, the Department shall communicate to the applicants in writing stating the decision on acceptance or rejection of the application within the time limit specified in Annex 6 of this Regulations

### **Scrutiny of Application**

38. After acceptance of the applications, the Department shall convene a technical committee meeting to assess and scrutinize:
- (1) the applicant's capability as per section 21 of the MMMA;
  - (2) that the applicant has operated the earlier leases satisfactorily;
  - (3) the type of mineral required for the applicant's proposed operation;
  - (4) the annual requirement of material;
  - (5) the potential size and extent of the deposit;
  - (6) the possibility of carrying out the proposed mining works with respect to the location, topographical conditions and behavior of the deposit; and
  - (7) the fulfillment of other requirements as per the Form A of Annex 1 of this Regulations.
39. The Department shall then consult with the concerned agencies and seek necessary clearances for issuance of mining lease.
40. After obtaining necessary clearances, the Department shall communicate to the applicant to carry out Detailed Geological study and Final Mine Feasibility Study (FMFS) of the proposed mine or quarry.

### **Final Mine Feasibility Study**

41. The applicant shall carry out the FMFS in accordance with the guidelines given in Annex 2 of this Regulations and submit the report to the Department.



42. The Department shall convene a meeting where the applicant shall present the FMFS report in detail for the purpose of scrutiny and approval.
43. The applicant shall revise the FMFS after its presentation and submit it to the Department for approval.
44. Upon approval, one copy of the FMFS report shall be returned to the applicant with seal and signature of the authorized officer.

#### **Environmental Clearance**

45. The applicant shall submit an application for issue of environmental clearance along with the Environmental Impact Assessment and FMFS report in case of new proposals and six months before the expiry of earlier environmental clearance in case of an operating mine.
46. The Department shall forward the application to the Secretariat of the National Environment Commission for review and issue of the Environmental Clearance.

#### **Grant of Mining Lease**

47. Upon receipt of all clearances required by law from concerned authorities of the Government under section 19 of the MMMA, and upon determining that the applicant satisfies the conditions in section 21 of the MMMA, the Department shall communicate it to the applicant in writing and shall state the basis for the decision.
48. The grant of mining lease is confirmed upon signing of lease agreement in Form B of Annex 1 of this Regulations. The format provided in Form B of Annex 1 of this Regulations may be amended as may be necessary with the approval of the Minister.
49. The term of initial lease or renewal shall not exceed:
  - (1) expected economic life of a mine; or
  - (2) a maximum period of 15 years or whichever is less.

**Modification of the application documents**

50. An applicant who intends to make a material change to the mining activity shall submit a written request to the Department to take into account the intended change.
51. Within the time limit specified in Annex 6 of this Regulations for response to a request under section 50 of this Regulations to amend an application, the Director shall:
- (1) if the change is acceptable, issue an order in writing to the applicant allowing the modifications; or
  - (2) if the change is not acceptable, issue an order in writing to the applicant refusing to allow the modifications.

**Lapse of the lease.**

52. When a lessee has not commenced mining operation within a period of two years from the date of grant of the lease or discontinues mining operation for a period exceeding two years, the lease shall lapse automatically.
53. The Ministry, upon written application by the lessee, may determine that the non-commencement or discontinuance was due to reasons beyond the control of the lessee, may revive the lease and modify the terms and conditions.

**Renewal of lease**

54. An application for renewal of a lease shall be made to the Department at least one year before expiry of the existing lease in Form F of Annex 1 of this Regulations. A mining lease for the operation of the captive mine will be renewed depending on the availability of mineral reserve and compliance to the Regulations.
55. The Department shall take the average of half yearly and annual performance ratings carried out in Form H(i) and H(ii) of this Regulations.



56. The Lessee shall be not eligible for renewal of the mining lease if the score is below average.
57. If the Department refuses to issue or renew a mining lease for the whole or part of the area applied for, the Department shall inform the applicant in writing within one week of taking the decision and state the basis for the decision.

**Suspension, termination, modification by the Government**

58. If mining works are not carried out in compliance with the lease agreement and the approved FMFS or the updated and approved FMFS, the National Inspector or Regional Inspector may order the lessee to suspend all or part of the mining operation until compliance with the terms of the lease is restored.
59. In case of serious and imminent threat to human health or the environment caused by noncompliance with the lease agreement and the FMFS, the suspension order may be delivered orally on the site by the National Inspector or Regional Inspector, and shall take effect immediately. Within one week, the Director shall issue an order in writing, stating the noncompliance with the lease and the actions that shall be taken to restore compliance, and giving a time limit for the actions to be taken.
60. The Department shall inform the lessee in writing, at least three months in advance, of its intent to modify or terminate the lease for the reasons set out in section 32 of the MMMA.
61. The Department shall suspend, terminate or modify the mining lease upon receipt of the information of the suspension, termination or modification of any clearance required for the operation of a mining lease by an agency, and shall immediately inform the lessee in writing, stating the basis of the decision

### **Disqualification for grant of a mining lease**

62. A Bhutanese citizen, proprietor of a licensed firm or a company shall be disqualified to obtain a mining lease or participate in any form in a mining venture if:
- (1) that Bhutanese citizen, proprietor of a licensed firm or company has defaulted in complying with the lease terms and conditions and has been penalised for more than two times for a same offense; or
  - (2) that Bhutanese citizen, proprietor of a licensed firm or company has failed to fulfill the terms and conditions of a tender for mining lease after emerging as a successful bidder.

## **Chapter 6. Royalty, mineral and surface rent**

### **Royalty and mineral rent**

63. The lessee shall pay royalty and mineral rent under section 42 of the MMMA, in accordance with the schedule in Annex 5 of this Regulations and Taxes & Levies Act.
64. The royalty and mineral rent payable shall be on the actual quantity of mineral despatched from the mine done through Form C of Annex 1 of this Regulations and the payment shall be made as per the agreed schedule in the lease agreement.
65. The Government may amend the rates of royalty and mineral rent from time to time.

### **Lease Rent**

66. The lessee shall pay lease rent for the lease area under section 43 of the MMMA.
67. The lease rent for the state land in the demarcated mining area shall be payable at the rate fixed by the Government.
68. If any part or whole of the mining area is private registered land, then the lessee shall pay the lease rent to the land owner. However, in case of the damage of the standing crops on the land of the titleholder, owing to mining operation, the lessee shall pay the

cash compensation and the lease rent to the affected owner, as per the rate fixed by the government from time to time.

69. The rate of lease rent may be subject to periodic revision by the Government.

**Environmental restoration bond**

70. The lessee shall deposit an ERB to the Government as security for mine reclamation and environmental restoration in the mine to ensure that the negative impacts on the surrounding environment are minimized.
71. The ERB shall be payable based on the area coverage, overburden and actual production of material as per the approved FMFS and ERB estimation formula under Annex 4 of this Regulations.
72. The payment of ERB shall not relieve the lessee from implementing environmental protection measures as per approved FMFS report during the course of mining operation
73. On surrender, termination or the expiry of the mining lease, the Department shall allow the lessee to reclaim the ERB, when it has received certification by the Department that the restoration work in the mine and the surrounding area has been satisfactorily completed.
74. If the lessee did not carry out restoration or rehabilitation activities as per approved FMFS during surrender, termination or expiry of the lease up to the complete satisfaction of the Department, the ERB shall be claimed by Department and utilise it to cover the costs of restoration of the mining area affected by the mining activities.
75. Any difference between the actual cost of reclamation and restoration of the mining area and the amount of the ERB deposited shall be returned to the lessee.



## Chapter 7. The mining operation

### Boundary Pillars

76. On the grant of a lease, the lessee shall at his own expense erect and throughout the lease period maintain easily visible and identifiable boundary walls or pillars according to the demarcation to be shown in the plan annexed to the lease.
77. Boundary pillars shall be erected at regular intervals.
78. The boundary pillars shall remain intact till the mining lease expires.

### Notice for opening or reopening of a mine

79. The lessee shall inform the Department in writing at least 15 days in advance of the opening of a new mine or reopening of an existing mine after discontinuance or suspension of operation exceeding three months in Form J of Annex 1 of this Regulations.

### Abandonment /Discontinuance/Surrender

80. The lessee may not abandon/discontinue/surrender a mine or part of a mine during the lease period without prior permission in writing from the Department.
81. The lessee shall send a statement of intention to abandon/discontinue/surrender the mine to the Department at least three months in advance. Where abandonment takes place as a result of natural or human forces beyond the control of the lessee, notice shall be sent as soon as possible.
82. The notice shall be accompanied by plans and sections on a scale of not less than 1:1000 showing the up-to-date workings and highlighting the environmental protection measures undertaken as well as those remaining to be carried out in the mine. The notification of the lessee's intention to cease operations under section 28(iv) of the MMMA, shall include the following:

- (1) Brief description of reasons for closure;
  - (2) All current maps, records and reports on current location of workings;
  - (3) Summary of remaining reserves;
  - (4) Quantity and quality of all stockpiles and waste piles; and
  - (5) Description of current production methods, equipment, mine restoration plan and remaining products.
83. The Director may, by order in writing before the proposed date of abandonment, prohibit abandonment or allow it with such conditions as he may specify in the order.

**Transfer of the mining lease**

84. The lessee shall apply to the Department in Form G of Annex 1 of this Regulations, at least three months in advance of any intent to transfer the rights and obligations of the mining lease to a third party under section 27(i) of the MMMA.
85. The Department shall examine the proposed transfer and may allow it if the party receiving the mining lease is capable and demonstrates their intent to fulfill the obligations of sections 28(i) and 37 of the MMMA.

**Mine closure**

86. The lessee shall submit Mine Restoration Plan to the Director two and half years prior to expiry of the lease for its approval in line with the Mines Restoration Guidelines.
87. The lessee shall ensure that restoration work is carried out and completed within the mining lease period in accordance with the Mine Restoration Plan to the satisfaction of the Department .
88. A notification for closure of the mine shall be issued in Form K of Annex 1 of this Regulations within six months from the expiry of the mining lease.

89. The technical committee of the Department shall evaluate the performance of the mine based on the following criteria in Form H(iii) of this Regulations:

Performance	Maximum Score (%)
Average of annual performance ratings	80
Mine reclamation	20

90. The mine shall be rated as follows:

Outstanding	80% & above
Very Good	70 to 79%
Good	60 to 69%
Average	50 to 59%
Below Average	below 50%

91. If the mine is rated as “Below Average”, the promoter shall be debarred for future mining lease as follows:

- (1) If the score on mine reclamation is below 10% (50% of 20), the lessee shall be debarred for three years.
- (2) If the score on average of annual performance ratings is below 40% (50% of 80), the lessee shall be debarred for two years.
- (3) If the score is below average on both 92(1) and 92(2), the lessee shall be debarred for five years.



## **Chapter 8. Management of Mining Operations**

### **Manager**

92. The lessee shall appoint a suitably qualified manager to be responsible for the control and daily supervision of the mine under section 36 of the MMMA as per sections 94 and 95 of these Regulations and his/her appointment shall be intimated to the Department.
93. The manager shall be the authorized representative of the lessee for compliance with the terms of the lease and, in particular, with the obligation set out in sections 28, 36 and 37 of the MMMA and this Regulations.
94. The manager shall have a minimum educational qualification of Class XII and at least two years experience of working or training in a mine for the mines employing 10 or more persons.
95. The manager shall have a degree in mining engineering and at least two years experience of working in a mine, for:
- (1) Large mines employing over 100 persons; or
  - (2) Mechanised mines using heavy earth-moving machinery such as loaders, dumpers, drill machines, excavators etc.

### **Foreman**

96. In mines employing over 10 persons, a mine foreman having a minimum qualification of Class X and at least two years experience of working or training in a mine, shall be employed.
97. In mines employing more than 100 persons, a foreman possessing minimum five years of field experience with a certificate course in mining from Department or outside, shall



be employed to assist the manager and to take charge of the mine during the absence of the manager.

98. In a mine carrying out blasting operations, the foreman shall also possess a blaster's certificate or shall obtain one as soon as possible.

#### **Blaster**

99. In mines using explosives for breaking rock, the lessee shall employ a blaster having a shot firer's certificate under section 68 of Explosives Rules, 1989.

#### **Engineer/engineering supervisor**

100. For mines employing more than 100 persons, an engineer or engineering supervisor shall be employed to assist the manager in installation and maintenance of electrical and mechanical equipment.
101. The Director may require the lessee to appoint an engineer/engineering supervisor in a mine with fewer workers but with many installed machineries such as crushers, screens, compressors, heavy earth-moving machinery, etc., where such a person is needed to ensure the safe operation of the machinery.

### **Chapter 9. Records, Reports and Notices**

#### **Plans and Sections**

102. The lessee shall keep the following plans and sections on the mine site:
- (1) a key plan on a scale of 1:50,000 or larger, showing the boundary of the mining lease and the adjoining area up to a distance of 5 km, contours at not more than 20 m intervals, the natural drainage system, roads and footpaths, land uses, and places of religious or cultural heritage or natural value (e.g., sites of endangered species or biotopes, special beauty, etc.);

- (2) an environment plan of the mining lease and the surrounding area within 1 KM of the mining lease on a suitable scale showing the boundary of the lease, contours at 5 m intervals, natural drainage system, roadways, power transmission line, land use of the area, places of cultural heritage and tourist interest, if any, the location of landslides, if any, the mine workings, area deforested, area covered by dumps, mine infrastructure such as workshop, crusher house, mine office, township, area afforested and mined area reclaimed;
  - (3) a working plan showing details of the mine workings and every surface feature within the boundary of the mine leasehold on a scale of 1:500, 1:1000 or 1:2000, as appropriate; and
  - (4) a transverse section or sections of the workings indicating the topographical surface, the dip and thickness of the mineral deposit and other strata, faults and folds and benches in the overburden, mineral and soil dumps, if any.
103. All plans and sections submitted under this Regulation shall clearly show the name of the mine, the name of the lessee, the purpose for which the plan or section has been prepared, the true North, and the scale of the plan.

#### **Records of the mine**

104. The lessee or the manager shall keep and maintain in the mine office, the up-to-date records of the mine which shall include records on:
- (1) excavation and disposal of overburden and inter-burden waste, top soil and low-grade mineral;
  - (2) mineral raised, stockpiled or despatched to its destinations;
  - (3) all workers deployed, mandays worked, wages of workers, age, gender and nationality of workers;
  - (4) Machinery and equipment, their performance, fuel and lubricant consumption;



- (5) Blast-hole drilling and explosives;
- (6) Accidents;
- (7) Health and safety measures;
- (8) Environmental protection measures; and
- (9) Others not yet specified.

**Report on minerals Exploration**

105. The exploration permit holder shall submit to the Director the half yearly progress report and a final report of the work giving details of the findings.

**Bi-annual report**

106. On or before the 15<sup>th</sup> day of the month following half of the year, the lessee shall submit to the Department a bi-annual report in Form D of Annex 1 of this Regulations.

**Annual report**

107. Each year, on or before the 30<sup>th</sup> day of April, the lessee shall submit to the Director an annual report for the preceding year in Form E of Annex 1 of this Regulations.
108. The FMFS shall be reviewed and updated annually, and modifications shall be communicated to the Department in the annual report under section 107 of this Regulations.
109. If a mine is abandoned, or the mine lease is transferred, or upon termination or expiry of the mining lease, the report under section 107 of this Regulations shall be submitted within one month of the abandonment or change of lessee, or within three months of termination or expiry, as the case may be.

### **Notice of change in employment**

110. When a new manager, engineer, surveyor or foreman is appointed, or when the employment of any manager, engineer, surveyor or foreman is terminated for any reason, the lessee shall inform the Department within two weeks.

### **Change of name of mine and address**

111. The lessee shall inform the Department in writing of any change in the name or address of the mine within one week of the change.

## **Chapter 10. Monitoring, offences and sanctions Inspection and Monitoring**

112. The Department shall inspect and monitor all leased mines at least once every six months and may also conduct spot checks, as frequently as necessary.
113. An officer who enters property under section 112 of this Regulations shall, upon request, provide proof of identity to any person on the site.

### **Powers of Inspectors**

114. The Director shall appoint such officers possessing the prescribed qualifications to be Inspectors for the purpose of enforcing the MMMA and this Regulations.
115. An Inspector may:
- (1) call for and examine all reports, registers and records required to be maintained by all holders of a mining lease;
  - (2) visit, enter, inspect and examine, with or without previous notice, all facilities related to operation directly or indirectly related to a mining lease;
  - (3) investigate the circumstances surrounding an accident, dangerous occurrence, or activity connected with the health and safety of workers or the public;
  - (4) take measures either immediately or by subsequent notice, up to and including the closure of part or all of a mine, where the workings are not being carried out

in accordance with the provisions of the MMMA and with the approved plans required by this Regulations. Such measures to be provided in writing to the person in charge of the operation at the time such action is deemed necessary by the inspector;

- (5) take samples of any material from the mine or discharged from any mineral processing facility;
  - (6) orally examine any person supposed to be acquainted with the facts and circumstances of any activity being examined or investigated under the MMMA;
  - (7) take any other actions under the MMMA and regulations for the purpose of monitoring and enforcing the environmental terms of an exploration permit or mining lease;
  - (8) upon producing official identification, stop and search any conveyance suspected of carrying mineral illegally which is defined as an offence under the MMMA;
  - (9) prepare and distribute notices approved by the Director regarding either general or mine-site specific details on proper procedures and precautions for good and safe mining practices, environmental standards and worker and public health and safety, such notices to have the legal status of regulations. The lessee shall keep such notices posted in one or more conspicuous places at the mine; and
  - (10) exercise such other powers as may be authorized by the Government in this behalf,
116. All powers conferred by this Regulation to Inspectors shall be exercised in such a manner as to avoid unreasonably impeding or obstructing the legitimate working of the mine.



### **Qualifications of Inspector**

117. Officers appointed by the Director, as National Inspectors and Regional Inspectors, shall hold a degree in either mining engineering or geological sciences from an educational institution recognized by the Government.
118. Officers appointed by the Director, as Mines Inspectors shall complete prescribed training and apprenticeship requirements.

### **Compliance orders**

119. If the Department determines that an offense is being committed or has been committed under sections 32 or 45 of the MMMA, the Director shall issue an order in writing directing the permit holder or lessee to comply with the order.
120. The order shall state the sanctions and basis for their imposition. It shall give the contact details of the responsible official, and state that the decision may be appealed, within the time limit given in Annex 6, to the Director or Minister under section 48 of the MMMA.
121. The Director may give the lessee the opportunity to make a compliance agreement in writing, wherein, the lessee shall undertake to comply with the FMFS and other terms of the mining lease within the time limit and on the terms specified in the agreement.
122. The Director may issue a separate order concerning:
- (1) matters not covered by the agreement;
  - (2) the consequences of non-compliance with the agreement; or
  - (3) matters not covered by the agreement, if additional facts relevant to the agreement were not known to the Department at the time of the agreement.
123. A lessee who enters into a voluntary compliance agreement with the Department under section 121 and who complies fully with the agreement, does not commit an offense under sections 32 or 45 of the MMMA.

### **Compensation and Sanctions**

124. The determination of liability and sanctions for offenses committed under sections 32 or 45 of the MMMA shall take the following factors into account:

- (1) magnitude of the offense;
- (2) frequency of the offense;
- (3) the culpability of the offender; or
- (4) the extent of the achieved or intended economic advantage from the offense.

### **Remedies**

125. A sanction for an offence under the MMMA does not relieve a person from other liability under law.

### **Administrative appeals**

126. Any decision or order taken against the applicant or lessee under the MMMA and subsidiary regulations shall state that the person has the right to appeal within a specified time limit, and shall give the name and contact details of the person and office to which appeal may be made.

127. Such appeal, if not resolved amicably by the Director within 60 days, may be transmitted to the Minister.

128. The Minister shall notify the appellant of receipt of the appeal and the action to be taken regarding investigations and arbitration procedures, within 30 days of official receipt of the appeal from the Director.

## **PART 2. CORPORATE SOCIAL RESPONSIBILITY, OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT**

### **Chapter 11. Corporate Social Responsibility**

129. The lessee shall:
- (1) provide preference for employment, trainings, and upgrade skills to the affected communities;
  - (2) support local businesses;
  - (3) give preference in awarding of mining contracts, hiring of equipment and machineries to the affected local communities;
  - (4) develop special program to support the directly affected community;
  - (5) procure locally available goods and services based on the required standards; or
  - (6) draw agreements with the local communities detailing community development projects and its implementation.
130. The lessee shall appoint a dedicated focal person for Corporate Social Responsibility.
131. Any socio-economic infrastructures and facilities of the holder of a permit or a lessee shall be made accessible without any charges or costs to the affected or local community.
132. The lessee shall maintain proper financial records of contributions made towards community development or any other supports to the communities as part of corporate social responsibility and submit the mandatory annual report to the stakeholders.





## Chapter 12. Explosives

### General requirements

133. All acquisition, transport, storage and use of explosives on the site shall be carried out in compliance with the Explosives Rules.
134. Any explosive brought into a mine shall be in a well-constructed and securely locked container made of heavily galvanized iron or steel. The blaster shall keep the keys to the containers on his person throughout his shift and relinquish them to the manager at the end of the shift. A container for detonators may not be constructed of metal or other conductive material.
135. Detonator shall not be kept in a container that contains other explosives.

### Use of explosives

136. No explosive may be used in a mine except that provided by the lessee.
137. A detonator may only be taken out from its container when it is required for immediate use.
138. The preparation of charges and the charging and stemming of holes shall be carried out by or under the personal supervision of the blaster.
139. Only the blaster may fire the shots.
140. The blaster shall be provided with wooden rods for stemming shot holes, a pair of suitable crimpers for crimping detonators, a pricker made of wood or of a non-ferrous metal for priming cartridges, and a knife for cutting off fuses.
141. In case of electric shot firing:
  - (1) the shot shall only be fired by means of a suitable shot firing apparatus;
  - (2) the blaster shall keep the key of the shot firing apparatus in his person throughout his shift and relinquish it to the manager at the end of the shift; and

- (3) when multiple shots are to be fired at the same time, the circuit shall be tested for electrical resistance or continuity before it is connected to the firing apparatus
142. Before a shot is charged, stemmed, circuit tested or fired:
- (1) the blaster shall ensure that all persons in the vicinity have taken proper shelter; and
  - (2) he shall give sufficient warning, by an efficient system of signals or by other means approved by the manager over the entire danger zone of 500 metres radius from the place of firing that a blasting is going to take place.
143. Adequate shelters shall be provided when the workings offer insufficient protection against fly rock.
144. An all-clear signal shall be given after shots have been fired, except in case of a misfire.
145. Where a public road lies within the 500 m radius of the danger zone from the blast holes, guards shall be posted at appropriate places to prevent persons and vehicles coming within the danger zone during the blasting period.

### **Misfires**

146. When a misfire occurs in a mine, indicated by the counting of exploded shots in case of fuse blasting, or observed by the blaster from other indications in case of electrical or detonating cord blasting, no person shall enter the place of blasting until 30 minutes in case of fuse blasting and 5 minutes in case of electrical or detonating cord blasting after the firing of shots. The place of the misfire shall be marked by a red flag to indicate it as a danger zone.
147. In the event of a misfire, the following procedure shall be followed:
- (1) the tamping may be sludged out with compressed air or water under pressure and the hole may be reprimed and fired;

- (2) when the misfire is due to a faulty cable, or is due to a faulty connection in case of electrical firing, the shot may be fired again after the defect has been rectified;
  - (3) where the steps in sections 147(1) and 147(2) of this Regulations have not been successful, another shot may be fired in a relieving hole where practicable. The relieving hole shall be drilled at least 30 cm away from and parallel to the misfire hole;
  - (4) after the relieving hole has been fired, a careful search shall be made for cartridges and detonators amongst the material brought down by the shot;
  - (5) before leaving the mine, the blaster shall inform the foreman and the manager of the misfire that has occurred; when a misfired shot has not been relieved or re-blasted, he shall also inform the officer of the next shift before he leaves the mine;
  - (6) the blaster shall record every incident of misfire in a bound-paged book kept for that purpose.
148. The manager shall ensure that utmost care is exercised when working is carried out in the mine in an area where the presence of a misfired hole has been reported and the hole has not been relieved.

### **Chapter 13. Machinery and plant**

149. Only properly trained and certified persons may operate or supervise the operation of machinery on the site of the mine. The operator of heavy earth moving machinery shall possess an operating certificate duly certified by mechanical in-charge and manager of the mine.
150. Every air receiver forming part of a compressed air plant shall be fitted with a safety valve and an air gauge, which shows pressure in excess of the atmospheric pressure.



151. Moving parts of any machinery, which can pose danger to the workers, should be adequately fenced while in use. Adequate precautions shall be taken while the guards are removed for carrying out any examination, adjustment or repair.
152. Loose outer clothing may not be worn in close proximity to any moving machinery.
153. A competent person shall, at least once a week, make a thorough inspection of all machinery and plant in use and shall record the result in a bound-paged book kept for the purpose.
154. When heavy earth-moving machinery is used in a mine, the lessee shall maintain a log book for each machine showing the hours in use and idle, the reason for idleness, consumption of fuel/energy and lubricants, and the output of the machine during the corresponding working hours.

#### **Chapter 14. Accident Prevention and response**

##### **Protective clothing and equipment**

155. The lessee shall ensure that any person entering a mine site shall wear a helmet and protective footwear.
156. The lessee shall supply, free of charge, a helmet and protective footwear to any person who works in the mine site. This shall be replaced when damaged or worn.
157. The National Inspector or Regional Inspector may ask the lessee to supply other protective equipment such as gloves, goggles, ear plugs, dust respirators, etc., to any worker or a group of workers who are exposed to special hazards at work.

##### **Notice of accidents**

158. The lessee shall immediately inform the Regional/Mines Inspector and the Director, and submit a report on the accident in Form I of Annex 1 of this Regulations to the Director within one week with a copy endorsed to Dzongdag, if an accident:

- (1) causes loss of life or serious bodily injury to any person in or near a mine due to mining operation; or
- (2) occurs due to explosives or bursting of equipment containing compressed air or other substance at high pressure.

**Weekly day of rest**

159. No person shall be required or allowed to work in a mine for more than six days in one week.

**Hours of work**

160. No person employed in a mine shall be required or allowed to work more than forty-eight hours in any one week.
161. No person employed in a mine shall work for more than five hours continuously before he has had a rest interval of at least half an hour.
162. The period of work of every employee shall be arranged so that, in addition to the rest interval, it does not total more than 12 hours in one day.

**Compensation**

163. Compensation, in case on accidents resulting in injury or death, shall be made as per the existing laws of the Kingdom.
164. In case of any damage to private or government property within or outside the mining lease area resulting from any activity in the mine, the lessee shall pay suitable compensation as determined by the Government.

## Chapter 15. Open cast mines

### General precautions

165. In open cast working in soft rock, such as alluvial soil, clay, debris, gravel or similar ground:
- (1) The sides shall be sloped at an angle not exceeding 45 degrees from the horizontal, unless the Director permits another angle by order in writing.
  - (2) The sides shall be kept benched; the height of any bench may not exceed 1.5 m and the breadth may not be less than the height.
166. In an excavation in any hard and competent rock worked manually:
- (1) The sides shall be sloped at an angle of not more than 60 degrees from the horizontal.
  - (2) The face shall be benched; the height of any bench may not exceed 5 m and the breadth may not be less than the height.
167. Where, in a mine employing heavy earth-moving machinery and deep hole blasting, the requirements of sections 165 or 166 cannot be complied with, the manager shall propose a suitable method for approval in writing to the Director at least 60 days prior to the start of the work.
168. Work may not begin until the lessee has received written permission for the alternative method from the Director.
169. No tree, loose stones or debris shall be allowed to remain within a distance of 3 m from the edge or sides of the excavation.
170. No person may undercut any face or side to cause over-hanging.



### **Underground mining**

171. If a lessee or manager proposes to extract ore/mineral by underground mining method, he shall submit a detailed proposal with the scheme of entry, blasting, loading, support, size of openings and pillars, haulage etc. to the Director for approval.
172. Any underground mining shall not start prior to the approval in writing from the Director.
173. The Department shall formulate separate regulations for the operation of underground mines as and when required.

## **Chapter 16. Occupational health and environment**

### **Health and environmental standards**

174. The lessee shall ensure that the mine works comply with all emission limits and ambient air quality standards adopted by the National Environment Commission under the EA Act.
175. If emission limits or ambient air quality standards are adopted after the grant of the mine lease, the lessee shall prepare an action plan to bring the mine works into compliance within a reasonable time not exceeding one year, and submit it to the Director for approval as a proposed modification to the FMFS in the annual report under section 107 of this Regulations.

### **Occupational disease**

176. The lessee shall inform the Department within seven days of any cases where a person employed in the mine is suspected of having contracted pneumoconiosis and other dust diseases of the lungs.

177. Any medical practitioner, who attends to a person employed in a mine and diagnoses that the person is suffering from pneumoconiosis, shall immediately send a notice in writing to the Department.

**Sanitary and drinking water conditions**

178. In compliance with section 37(ii) of the MMMA, the lessee shall provide and maintain adequate numbers of clean latrines and a sufficient supply of cool and wholesome drinking water for all persons working at the site.

**Dust**

179. The lessee shall take such all necessary measures to control dust emissions at any work place and to suppress dust by spraying water or by other measures to ensure that workers are not exposed to harmful concentration of airborne respirable dust.
180. For the purpose of this Regulations, respirable dust is airborne dust with size of less than 10 micrometer.
181. For the purpose of this Regulations, a place shall be considered to have harmful concentrations of airborne respirable dust if:
- (1) the 8-hour time-weighted average concentration of airborne respirable dust exceeds three mg/m<sup>3</sup> of air if the dust contains less than 5 percent of free silica;  
or
  - (2) the 8-hour time-weighted average concentration of airborne respirable dust exceeds the value of 15 divided by the percentage of free silica present in the dust.
182. Pending adoption of emission limits and ambient air quality standards by the National Environment Commission under section 33.2 of the EA Act, the lessee shall take all measures necessary to ensure that the ambient air quality meets the following standards at the site boundary:

- (11) less than 500 µg/m<sup>3</sup> concentration of suspended particulate matter; and
  - (12) less than 200 µg/m<sup>3</sup> concentration of suspended particulate matter if the area immediately beyond the leasehold is rural or residential in character.
183. The lessee shall at least every six months or whenever the Regional Inspector requires by an order in writing, cause the air at every workplace where airborne dust is generated to be sampled and the concentration of respirable dust determined.
184. When the dust monitoring results have established that the permissible levels of dust concentration are being exceeded at any place, the operation or operations causing excessive dust generation shall be shut down until remedial measures have been taken to ensure that the ambient air quality standards in sections 181 and 182 of this Regulations or in the mine lease or other rules and regulations issued by the Government are complied with.

#### **Noise**

185. The lessee shall take steps to control the generation of noise in a mine and ensure that workers at the mine are not exposed to high noise levels.
186. The maximum permissible noise level on the site shall be 90 dBA for an 8-hour shift.
187. If a particular operation in the mine such as drilling, dozing, crushing, compressor operation, etc. generate a higher noise level, the working hours for the operators of such equipment shall be reduced to 4 hours when the noise level is 93 dBA; the working hours shall be reduced by further 50 percent for every additional 3 dBA increase in the noise level in the work zone.
188. Workers shall not be allowed to enter an area in which the noise level is 115 dBA or more without appropriate ear protection.
189. The lessee shall provide ear plugs or ear muffs to workers in areas of more than 90 dBA.



190. The lessee shall cause to be monitored the noise level at the site and just outside the boundary at suitable locations at least every three months, according to the terms of the lease.

**Use of topsoil**

191. Where topsoil is excavated for mining works or where creation of overburden/waste dumps would cover the topsoil, the lessee shall remove the topsoil separately before starting the excavation or constructing the waste dump.
192. The lessee shall use the topsoil for reclamation of mined out areas, overburden and waste dumps.
193. If the topsoil cannot be used immediately after its removal, the lessee shall store it separately for future use in such a way as to prevent loss through wind or water.

**Overburden and waste dumps**

194. Wherever possible, the lessee shall back-fill the waste rock and overburden into the mine excavations with a view to restore the land to its approximate original shape.
195. In deposits where in-pit dumping is not possible and also to accommodate the overburden and waste material produced in the initial stage of mine development, the lessee is required to locate suitable waste dumping places outside the mine pit, create dump in layers suitably terraced at the edges to improve stability, control erosion and for ease in reclamation, and vegetate it as early as possible.
196. The lessee shall undertake phased reclamation or rehabilitation in the areas affected by the mining operation which has no prospect for future use or further mining.
197. The lessee shall incorporate the phased reclamation works in the updated FMFS report and submit for approval by the Department.

198. The overburden and wastes shall be disposed only at the site indicated in approved FMFS or the area approved by the Department and as per the terms and conditions of the Environmental Clearance.

#### Ground vibration

199. Whenever any damage to private or public property or places of cultural heritage is reportedly caused by blast-induced ground vibration, the Regional Inspector may require the lessee to carry out measurements of peak particle velocity (PPV) and frequency of the ground vibration induced by blasting and to develop a predictor equation for ground vibration for the site.
200. Depending on the type of structures and the dominant excitation frequency, the peak particle velocity (PPV) in mm/s on the ground adjacent to the structures not belonging to the lessee may not exceed the values given below in the table. For structures belonging to the lessee 50% higher ppv value may be permitted.

Types of Structures	Dominant excitation frequency, in Hz and maximum permissible ppv value in mm/w		
	<8Hz	8-25Hz	>25Hz
Domestic houses	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Places of cultural heritage	2	5	10

#### Water

201. Any water leaving the mine boundary shall not exceed the value of
- (1) 50mg/l of total suspended solid (TSS);
  - (2) 10mg/l of oil and grease.

202. Where the mine effluent or overburden dump seepage water has any toxic element, the water shall be treated to reduce the toxicity level acceptable to Department/NECS before being allowed to leave the mine lease area.

**Monitoring of Environmental Quality**

203. The lessee or the manager of a mine shall be required to get the environmental quality in and around the mine lease area monitored regularly for air, water, noise, vibration and slope stability as specified in the environmental clearance.
204. A copy of the environmental quality monitoring results shall be submitted to the Regional Inspector every three months.
205. The lessee or the manager shall get the annual environmental statement prepared giving the environmental quality of air, water and noise in the mine and its surroundings, the area deforested and revegetated, results of ground vibration measurements, area of top soil and waste dumps and details of environmental protection works.

  
14/01/2022

TENGYE LYONPO  
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