

Mining Act
Loi sur les mines

ONTARIO REGULATION 240/00

MINE DEVELOPMENT AND CLOSURE UNDER PART VII OF THE ACT

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SKIP TABLE OF CONTENTS

CONTENTS

Sections

Interpretation

1-3

Mine Rehabilitation Code

4

Notice of Project Status

5

Notice of Material Change

6

Notice of Crown Intervention

7

Public Notice

8

Progressive Rehabilitation Report

9

Forms

10

Closure Plan

11-12

Financial Assurance

13-20

Rehabilitation Standards

21

Temporary Suspension

22

Inactivity
23

Closing Out
24-26

Disclosure of Plans
27-29

Schedule 1
Mine rehabilitation code of ontario
1-79

Schedule 2

Interpretation

1. In this Regulation,

“Code” means the Mine Rehabilitation Code of Ontario set out in Schedule 1;

“crown pillar” means a rock mass of variable geometry that is situated above the uppermost underground workings of a mine and that serves to ensure permanently or temporarily the stability of surface elements and underground workings;

“professional engineer” means a person who holds a licence or a temporary licence in Ontario under the Professional Engineers Act;

“senior officer” means the chair or a vice-chair of the board of directors of a corporation, the president, a vice-president, the chief financial officer or the general manager of the corporation, or the president of a division of the corporation if he or she is an officer of the corporation. O. Reg. 240/00, s. 1.

2. (1) For the purpose of clause (d) of the definition of “mine”, when used as a noun, in section 1 of the Act, any discharge or waste from the washing, crushing, grinding, sifting, reducing, leaching, roasting, smelting, refining or treating of a mineral or mineral bearing substance, or from research on a mineral or mineral bearing substance, is a prescribed substance. O. Reg. 240/00, s. 2 (1).

(2) For the purpose of the definition of “mine”, when used as a noun, in section 1 of the Act, the following constitute prescribed classes of plant, premises or works:

1. Research facilities not located on or directly related to a site.
2. Analytical laboratories not located on or directly related to a site.
3. Refineries of scrap jewellery and metal not located on or directly related to a site.
4. Precious metal refineries engaged in refining only not located on or directly related to a site.
5. Steel mills not located on or directly related to a site.
6. Pits and quarries the closure or rehabilitation of which is regulated by the Aggregate Resources Act. O. Reg. 240/00, s. 2 (2).

(3) In the definition of “mine”, when used as a verb, in section 1 of the Act,

“preliminary exploration” means any exploration that is not advanced exploration. O. Reg. 240/00, s. 2 (3).

(4) In the Act and this Regulation,

“disturbance of the ground” means the excavation or movement of rock, overburden or other material that creates a hazard to public safety or the environment because of the nature of the material or the fact that it is being excavated or moved. O. Reg. 240/00, s. 2 (4).

3. (1) For the purposes of Part VII of the Act and this Regulation, “advanced exploration” includes the following types of work:

1. Exploration carried out underground involving the construction of new mine workings or expanding the dimensions of existing mine workings.

2. Exploration involving the reopening of underground mine workings by the removal of fixed or permanently fastened caps or bulkheads, or involving the excavation of backfilled shafts, raises, adits or portals.

3. Exploration that may alter, destroy, remove or impair any rehabilitation work done in accordance with Part VII of the Act or a filed closure plan.

4. Excavation of material in excess of 1,000 tonnes;

5. Surface stripping on mining lands where the surface area over which the surface stripping is carried out is greater than 10,000 square metres, or where the volume of surface stripping is greater than 10,000 cubic metres, except where all of the following are satisfied:

i. Surface stripping is carried out in two or more separate areas on the mining lands.

ii. The edges of each area where surface stripping is carried out are separated by a minimum of 500 metres.

iii. In each area where surface stripping is carried out,

A. the surface area over which the surface stripping is carried out is not greater than 10,000 square metres, and

B. the volume of surface stripping is not greater than 10,000 cubic metres.

6. Surface stripping on mining lands where the area over which the surface stripping is carried out is greater than 2,500 square metres or where the volume of the surface stripping is greater than 2,500 cubic metres, if the surface stripping is carried out within 100 metres of a body of water. O. Reg. 240/00, s. 3 (1); O. Reg. 282/03, s. 1; O. Reg. 194/06, s. 1.

(2) In the definition of “advanced exploration” in subsection (1),

“material” means rock, ore or any other substance excavated during the process of developing, mining, evaluating or testing any mineral or mineral deposit, but does not include excavated overburden;

“surface stripping” means the removal of overburden to expose bedrock or other material. O. Reg. 240/00, s. 3 (2).

Mine Rehabilitation Code

4. (1) All persons engaged in the rehabilitation of mines and mine hazards shall comply with the standards, procedures and requirements of the Mine Rehabilitation Code of Ontario set out in Schedule 1. O. Reg. 240/00, s. 4 (1).

(2) A specific standard, procedure or requirement set out in the Code does not apply where a closure plan filed and acknowledged under section 140, 141 or 147 of the Act or a closure plan approved under section 142 of the Act sets out another standard, procedure or requirement that meets or exceeds the specific objective set out in the Code, and the Director provides and files a written acknowledgement referred to in section 26. O. Reg. 240/00, s. 4 (2).

Notice of Project Status

5. (1) For the purposes of subsection 140 (1), 141 (1) or 144 (1) of the Act, a proponent shall submit six copies of a notice of project status in Form 1 of Ontario Regulation 195/06 (Forms) made under the Act to the Director at least 45 days before the proposed date of commencement or recommencement of advanced exploration or mine production. O. Reg. 240/00, s. 5 (1); O. Reg. 304/07, s. 1.

(2) The notice of project status shall bear the signature of the proponent and of the mining rights holder if the holder is not a proponent. O. Reg. 240/00, s. 5 (2).

(3) The notice of project status shall contain,

(a) an operating plan, including a description of the project, a site plan, the location of points of access to the site and the means by which it may be accessed, the targeted minerals, the operating schedule for the project and its expected duration and the number of workers;

(b) a map of the project boundaries;

(c) information on the uses of the land and water adjacent to the site; and

(d) the names of the owners, the occupants and any other proponents of the lands that make up the project site and those of the owners and occupants of immediately adjacent lands. O. Reg. 240/00, s. 5 (3).

(4) A proponent shall submit to the Director a further notice of project status if advanced exploration or mine production begins more than one year after the date specified in the project schedule submitted with the original notice. O. Reg. 240/00, s. 5 (4).

Notice of Material Change

6. For the purposes of subsection 144 (2) of the Act, a proponent shall submit to the Director a notice of material change in Form 2 of Ontario Regulation 195/06 (Forms) made under the Act, signed by the proponent, if the proponent makes a material change to the project. O. Reg. 240/00, s. 6; O. Reg. 304/07, s. 2.

Notice of Crown Intervention

7. A notice to a proponent under subsection 147 (2) of the Act shall be in writing, identify the lands on which the mine hazard exists and specify the rehabilitation work to be completed and be given at least 15 days before the Crown or an agent of the Crown enters the lands to rehabilitate the mine hazard. O. Reg. 240/00, s. 7.

Public Notice

8. (1) Public notice under subsection 140 (1) or 141 (1) of the Act shall be given,

(a) by publishing a notice in a newspaper having general circulation in the area in which the project is located or by an alternative or additional measure designed to ensure that as many members of the public as possible have reasonable notice of the meeting;

(b) by holding a public information session in the area in which the project is located or in another location chosen to ensure that as many members as possible of the public affected by the project may receive information regarding it; and

(c) by notifying directly the owners of the lands that are adjacent to the project of the public information session. O. Reg. 240/00, s. 8 (1); O. Reg. 194/06, s. 2 (1).

(2) Public notice shall be given at least seven days before holding the public information session and shall include the following:

1. The name and address of the proponent.

2. The name of the project.

3. The name, address and telephone number of an authorized contact person.

4. A description of the location of the project site and a map showing the location. The map shall be a minimum of seven centimetres per side, include a north arrow and scale and show a minimum of a three kilometre radius and a maximum of a five kilometre radius around the site.

5. A description of the project, indicating its nature and size and the nature and extent of related work to be carried out to complete the project.

6. The proposed date of commencement or recommencement of advanced exploration or mine production.

7. The time and location of the public information session for the project. O. Reg. 240/00, s. 8 (2).

(3) The proponent shall provide to the Director the names of the members of the public who attend the public information session and any written comments provided by them no later than 15 days after the session. O. Reg. 240/00, s. 8 (3).

(4) The proponent shall provide the Director with the names of the owners of lands adjacent to the project notified of the public information session. O. Reg. 194/06, s. 2 (2).

Progressive Rehabilitation Report

9. (1) A proponent shall submit to the Director two copies of a progressive rehabilitation report under subsection 139.1 (2) of the Act. O. Reg. 240/00, s. 9 (1).

(2) The report shall contain the following information:

1. The name and address of the proponent, and if the holder of the mining rights and surface rights is not a proponent, such a holder.

2. The name, including any alternate names by which the site is known, and location of the site containing the mine hazards.

3. The name, address and telephone number of an authorized contact person.

4. The name and address of the person or company that carried out the rehabilitation work.

5. A description of each mine hazard and the nature and extent of the rehabilitation work carried out for each mine hazard, including details of how the work meets the prescribed standards for rehabilitation.
6. A map, to a legible scale, accurately depicting locations and areas where the rehabilitation work was carried out, including references to mining claim numbers, parcel numbers and, where applicable, to township, lot and concession numbers.
7. A summary of results from any monitoring program. O. Reg. 240/00, s. 9 (2).

Forms

10. (1) An inspection warrant under subsection 146 (5) of the Act shall be in Form 3 of Ontario Regulation 195/06 (Forms) made under the Act. O. Reg. 240/00, s. 10 (1); O. Reg. 304/07, s. 3 (1).
- (2) A search warrant under subsection 146 (6) of the Act shall be in Form 4 of Ontario Regulation 195/06 (Forms) made under the Act. O. Reg. 240/00, s. 10 (2); O. Reg. 304/07, s. 3 (2).
- (3) A notice to require a hearing under subsection 152 (2) of the Act shall be in Form 5 of Ontario Regulation 195/06 (Forms) made under the Act. O. Reg. 240/00, s. 10 (3); O. Reg. 304/07, s. 3 (3).

Closure Plan

11. For the purpose of the reporting requirements referred to in clauses 140 (4) (b) and 141 (3) (b) of the Act, a closure plan shall include at least the items and information set out in Schedule 2 in the order in which the Schedule sets out the items and information to be included. O. Reg. 282/03, s. 2.
12. (1) A proponent is solely responsible for ensuring that the measures contained in a closure plan filed or approved for the rehabilitation of a project site under Part VII of the Act are carried out in accordance with it, including any amendments to it filed with or approved by the Director. O. Reg. 240/00, s. 12 (1).
- (1.1) In subsections (2) to (10), a reference to a closure plan includes an amendment to a closure plan. O. Reg. 282/03, s. 3 (1).

- (2) A closure plan filed under Part VII shall contain the following certificate signed by the proponent where the proponent is an individual, or the chief financial officer and one other senior officer where the proponent is a corporation:

I (We) hereby certify that,

- (a) the attached closure plan complies in all respects with the Mining Act and this Regulation, including the Code;
- (b) the proponent relied upon qualified professionals in the preparation of the closure plan, where required, under the Mining Act and this Regulation, including the Code;
- (c) the cost estimates of the rehabilitation work described in the attached closure plan are based on the market value cost of the goods and services required by the work;
- (d) the amount of financial assurance provided for in the attached closure plan is adequate and sufficient to cover the cost of the rehabilitation work required in order to comply with the Mining Act and this Regulation, including the Code;
- (e) the proponent has carried out reasonable and good faith consultations with appropriate representatives of all aboriginal peoples affected by the project;

(f) the attached closure plan constitutes full, true and plain disclosure of the rehabilitation work currently required to restore the site to its former use or condition or to make the site suitable for a use the Director sees fit in accordance with the Mining Act and this Regulation, including the Code. O. Reg. 240/00, s. 12 (2).

(3) A closure plan filed under Part VII shall include all certificates required by the closure plan, signed by the person providing the certificate. O. Reg. 240/00, s. 12 (3).

(4) A certificate shall,

(a) state the name, address, occupation and qualifications of the person providing it;

(a.1) provide a statement of the specific aspects of the closure plan with respect to which the certificate relates;

(b) indicate whether the person providing the certificate personally examined the project or examined information related to it provided by another source;

(c) state the date of an examination carried out under clause (b);

(d) if the certificate is not based on personal examination of the project, indicate the source of the information assessed before making the certificate; and

(e) contain details of any direct or indirect interest, current or expected, of the person providing the certificate or of a person who has provided information to that person, in the project of a corporate proponent or any of the proponent's affiliates, including any direct or indirect beneficial ownership in the securities of the proponent or any of its affiliates. O. Reg. 240/00, s. 12 (4); O. Reg. 282/03, s. 3 (2); O. Reg. 194/06, s. 3.

(f) Revoked: O. Reg. 282/03 s. 3 (2).

(5) For the purposes of clause (4) (e), a corporation shall be deemed to be affiliated with another corporation if one of them is the subsidiary of the other, both are subsidiaries of the same corporation or each of them is controlled by the same person. O. Reg. 240/00, s. 12 (5); O. Reg. 282/03, s. 3 (3).

(6) The proponent shall submit eight copies of the closure plan document to the Director but may be required to submit as many as 11 if the interests of a municipality, a First Nation or some other entity are concerned. O. Reg. 240/00, s. 12 (6).

(7) If any item of information required in a closure plan is not applicable to a project, the proponent shall specifically refer to the item of information in the closure plan and state that the item is not applicable. O. Reg. 240/00, s. 12 (7).

(8) If a closure plan relates to a project with respect to an existing or abandoned site and information is required regarding conditions or events that existed or occurred prior to the start of the project, the proponent shall provide the information that is reasonably available and, where such information is not reasonably available, shall indicate what searches have been undertaken with a view to providing the required information, including a list of any sources searched. O. Reg. 240/00, s. 12 (8).

(9) A plan or map, or additional detail or background information, required in a closure plan may appear in an appendix to the closure plan if the proponent specifically refers to the plan, map, detail or information under the item of information required in the closure plan to which the plan, map, detail or information relates. O. Reg. 240/00, s. 12 (9).

(10) An appendix to a closure plan forms part of the closure plan. O. Reg. 240/00, s. 12 (10).

Financial Assurance

13. (1) A closure plan shall specify the form and amount of the financial assurance to be provided by the proponent in respect of the project. O. Reg. 240/00, s. 13 (1).

(2) The financial assurance shall be submitted with the closure plan. O. Reg. 240/00, s. 13 (2).

14. Sections 16 and 17 establish and describe corporate financial tests compliance with which is a form of financial assurance as provided in paragraph 5 of subsection 145 (1) of the Act. O. Reg. 240/00, s. 14.

15. (1) For the purpose of the corporate financial tests,

“credit rating” means a corporate credit rating or, in the absence of such a rating, a debt rating on a proponent’s most senior debt instrument having a term of at least five years;

“life of a mine” means the projected length of time that a project will be in mine production, be processing mineral products resulting from mine production or the active placement of tailings;

“proven and probable reserves” means reserves of ore that have been determined in accordance with the standards for determining such reserves found in Canadian Securities Administrators’ National Instrument 43-101. O. Reg. 240/00, s. 15 (1); O. Reg. 194/06, s. 4 (1).

(2) Subsections (3), (4), (5) and (6) apply for the purpose of the definition of “life of a mine”. O. Reg. 240/00, s. 15 (2).

(3) The life of a mine begins on the date on which the closure plan for the rehabilitation of the project is filed or deemed to have been filed. O. Reg. 240/00, s. 15 (3).

(4) Subject to subsections (4.1) and (4.2), the life of a mine is calculated with reference to,

(a) the proven and probable reserves at the site;

(b) the planned production schedules referred to in the closure plan; and

(c) the mine development period referred to in the closure plan. O. Reg. 240/00, s. 15 (4); O. Reg. 194/06, s. 4 (2).

(4.1) For those projects, located on their own site, that process mineral products resulting from mine production such as but not limited to refining, smelting or milling, the life of a mine is calculated with reference to total feed dedicated to the processing facility over the life of the contributing mines divided by the annual production schedule if,

(a) at least two thirds of mined material supplied to the processing facility during the proponent’s fiscal year came from the proponent’s proportioned share of mined material from mines in which it has an ownership interest; and

(b) at least one third of mined material supplied to the processing facility during the proponent’s fiscal year came from the proponent’s proportioned share of mined material from Ontario mines. O. Reg. 194/06, s. 4 (3).

(4.2) For those projects that are located on their own site and consist of the active placement of tailings, the life of the mine is calculated with reference to total feed dedicated to the processing facility producing the tailings over the life of all the proponent’s contributing mines divided by the annual production schedule of the processing facility if,

(a) at least two thirds of mined material supplied to the processing facility during the proponent’s fiscal year came from the proponent’s proportioned share of mined material from mines in which it has an ownership interest; and

(b) at least one third of mined material supplied to the processing facility during the proponent's fiscal year came from the proponent's proportioned share of mined material from Ontario mines. O. Reg. 194/06, s. 4 (3).

(5) Subject to subsection (6), if some of the operations mentioned in subsection (4) are carried out on mined material received from other projects, the life of the mine is calculated by prorating the proven and probable reserves and the planned production schedules for all projects providing material to those operations. O. Reg. 240/00, s. 15 (5).

(6) Subsection (5) does not apply for the calculation of the life of a mine unless the following conditions are met:

1. At least two-thirds of mined material supplied to a project during the proponent's fiscal year came from the proponent's proportioned share of mined material from mines in which they have an ownership interest.
2. At least one-third of mined material supplied to a project during the proponent's fiscal year came from the proponent's proportioned share of mined material from Ontario mines. O. Reg. 240/00, s. 15 (6); O. Reg. 282/03, s. 4.

16. (1) If a proponent's credit rating meets or exceeds two of the following credit ratings from the stated credit rating services, the proponent complies with the corporate financial test for the entire life of the mine:

1. Revoked: O. Reg. 282/03, s. 5.
2. A (low) from the Dominion Bond Rating Service Limited.
3. A3 from Moody's Investors Services Inc.
4. A- from Standard and Poor's Inc. O. Reg. 240/00, s. 16 (1); O. Reg. 282/03, s. 5.

(2) A proponent that provides financial assurance by complying with the test under subsection (1) shall, in the closure plan,

(a) name the rating services whose ratings are being relied upon;

(b) submit confirmation from those services of their credit ratings for the proponent; and

(c) identify the form and amount of financial assurance that the proponent will provide if the proponent ceases to comply with the test under subsection (1) or ceases production from the mine. O. Reg. 240/00, s. 16 (2).

(3) A proponent that has complied with the test shall inform the Director,

(a) within seven days if any rating service named under clause (2) (a) downgrades the proponent's credit rating or issues a credit watch with respect to the proponent's credit rating; or

(b) within 30 days if any matter other than those mentioned in clause (a) arises that may materially affect the proponent's status in relation to financial assurance or the life of a mine. O. Reg. 240/00, s. 16 (3).

(4) If, as a result of a downgrading under clause (3) (a), the proponent no longer complies with the corporate financial test under subsection (1), the proponent shall, within 30 days, provide the Director with financial assurance in the form and in the amount identified in accordance with clause (2) (c). O. Reg. 240/00, s. 16 (4).

(5) Despite subsection (4), a proponent described in that subsection may provide evidence satisfactory to the Director that the proponent, although no longer complying with the corporate financial test under subsection (1), complies with the test set out in section 17. O. Reg. 240/00, s. 16 (5).

(6) A proponent that complies with the test under section 17 is considered to have provided financial assurance for the balance of the first half of the life of the mine. O. Reg. 240/00, s. 16 (6).

17. (1) If a proponent's credit rating meets or exceeds two of the following credit ratings from the stated credit rating services, the proponent complies with the corporate financial test for the first half of the life of the mine if the first half of the life of a mine is at least four years:

1. Revoked: O. Reg. 282/03, s. 6.

2. BBB (low) from the Dominion Bond Rating Service Limited.

3. Baa3 from Moody's Investors Services Inc.

4. BBB- from Standard and Poor's Inc. O. Reg. 240/00, s. 17 (1); O. Reg. 282/03, s. 6.

(2) A proponent that provides financial assurance by complying with the test under subsection (1) shall, in the closure plan,

(a) name the rating services whose ratings are being relied upon;

(b) submit confirmation from those services of their credit ratings for the proponent; and

(c) identify the form and amount of financial assurance that the proponent will provide if the proponent ceases to comply with the test under subsection (1) or ceases production from the mine, and that the proponent will provide over the second half of the life of the mine. O. Reg. 240/00, s. 17 (2).

(3) A proponent that has complied with the test shall inform the Director,

(a) within seven days if any rating service named under clause (2) (a) downgrades the proponent's credit rating or issues a credit watch with respect to the proponent's credit rating; or

(b) within 30 days if any matter other than those mentioned in clause (a) arises that may materially affect the proponent's status in relation to financial assurance or the life of a mine. O. Reg. 240/00, s. 17 (3).

(4) If, as a result of a downgrading under clause (3) (a), the proponent no longer complies with the corporate financial test under subsection (1), the proponent shall, within 30 days, provide the Director with financial assurance in the form and in the amount identified in accordance with clause (2) (c). O. Reg. 240/00, s. 17 (4).

(5) A proponent that complies with the test under subsection (1) shall provide the Director with a certified statement of the amount of ore produced or processed during the previous fiscal year within 60 days after the end of that fiscal year. O. Reg. 240/00, s. 17 (5).

18. (1) If a proponent is subject to a filed closure plan and the proponent wishes to provide financial assurance by complying with the test set out in section 16 or 17, the proponent shall file a certified amendment to the closure plan containing all necessary information in support of compliance with the test. O. Reg. 240/00, s. 18 (1).

(2) If a proponent has provided financial assurance other than by way of compliance with a corporate financial test and the proponent complies with a corporate financial test set out in section 16 or 17, the Director shall return the previously provided financial assurance to the proponent within 30 days after the Director acknowledges receipt of the amendment. O. Reg. 240/00, s. 18 (2).

19. A proponent that complies with a corporate financial test under section 16 or 17 and that places a project into temporary suspension shall provide 25 per cent of the financial assurance that the proponent would have been required to provide if the proponent had not complied with the test,

(a) within 30 days of the filing of the notice of change of project status indicating that the project has been placed in temporary suspension; and

(b) no later than the first, second and third anniversaries respectively of the date of filing of the notice of change of project status indicating that the project has been placed in temporary suspension. O. Reg. 240/00, s. 19.

20. If the Director requires financial assurance under subsection 145 (6) of the Act, the Director shall notify the proponent, in writing, of the required form of assurance, by regular lettermail, fax or by electronic means. O. Reg. 240/00, s. 20.

Rehabilitation Standards

21. The Director is hereby authorized to exempt a proponent from complying with any standard, procedure or requirement in this Regulation, including the Code, if the Director determines that the closure plan meets or exceeds the objectives of the provision in which the standard, procedure or requirement is set out. O. Reg. 240/00, s. 21.

Temporary Suspension

22. (1) In order to place a project in a state of temporary suspension, the proponent shall, after providing notice under subsection 144 (1) of the Act, take all reasonable measures to prevent personal injury or property damage that is reasonably foreseeable as a result of placing the project in a state of temporary suspension. O. Reg. 240/00, s. 22 (1).

(2) The proponent shall implement or complete the following minimum rehabilitative measures in accordance with the applicable standards, procedures and requirements of the Code:

1. All reasonable measures shall be taken to restrict access to the site and all buildings and other structures to authorized persons only.

2. All mine openings that are potentially dangerous shall be protected against inadvertent access.

3. All electrical systems shall be protected from inadvertent access.

4. All mechanical and hydraulic systems shall be maintained in a no-load condition.

5. All physical, chemical and biological monitoring programs shall be continued.

6. All contaminated effluents shall be controlled.

7. All waste management systems and sites and petroleum products, chemicals and waste shall be made secure.

8. All explosives shall be disposed of or removed from the site.

9. All rock piles, overburden piles and stockpiles and all tailings, water and other impoundment structures shall be maintained in a stable and safe condition. O. Reg. 240/00, s. 22 (2).

Inactivity

23. (1) In order to place a project in a state of inactivity, the proponent shall, after providing notice under subsection 144 (1) of the Act, take all reasonable measures to prevent personal injury or property damage that is reasonably foreseeable as a result of placing the project in a state of inactivity. O. Reg. 240/00, s. 23 (1).

(2) The proponent shall implement or complete the following minimum rehabilitative measures in accordance with the applicable standards, procedures and requirements of the Code:

1. All reasonable measures shall be taken to restrict access to the site and all buildings and other structures to authorized persons only.

2. All shafts, raises and stopes open to surface shall be secured.

3. All portals of adits and declines shall be secured.

4. All other mine openings to surface that create a mine hazard shall be stabilized and secured.

5. All surface and subsurface mine workings shall be assessed by a qualified professional engineer to determine their stability and any surface areas disturbed or likely to be disturbed by such mine workings shall be stabilized or, if stabilization is not practicable, protected against inadvertent access if such disturbance is likely to endanger the public or property.

6. All mechanical and hydraulic systems shall be maintained in a no-load condition.

7. All essential electrical systems shall be protected from inadvertent access and non-essential electrical systems shall be de-energized.

8. All tailings, rock piles, overburden piles, stockpiles, landfill sites and other waste management sites and systems shall be monitored and maintained, or be rehabilitated.

9. All petroleum products, chemicals and waste, including PCBs, shall be removed, disposed of, isolated or otherwise managed on site.

10. All explosives shall be disposed of or removed from the site.

11. All impoundment structures shall be maintained in a stable and safe condition.

12. All materials, or conditions created as a result of mining, that produce or may produce acid rock drainage or metal leaching shall be dealt with in accordance with the management plan referred to in section 59 of the Code. O. Reg. 240/00, s. 23 (2).

(3) The proponent shall inspect the site at least once every six months to ensure that all required rehabilitative measures are in place. O. Reg. 240/00, s. 23 (3).

Closing Out

24. (1) Before a project is closed out, the proponent shall, after providing notice under subsection 144 (1) of the Act, take all reasonable measures to prevent personal injury or property damage that is reasonably foreseeable as a result of closing out the project. O. Reg. 240/00, s. 24 (1).

(2) The proponent shall complete the following minimum rehabilitative measures in accordance with the applicable standards, procedures and requirements of the Code:

1. All shafts, raises and stopes open to surface shall be secured.

2. All portals of adits and declines shall be secured.

3. All other mine openings to surface that create a mine hazard shall be stabilized and secured.
4. All surface and subsurface mine workings shall be assessed by a qualified professional engineer to determine their stability, and any surface areas disturbed or likely to be disturbed by such workings shall be stabilized.
5. All buildings, power transmission lines, pipelines, waterlines, railways, airstrips and other structures shall be dismantled and removed from the site to an extent that is consistent with the specified future use of the land.
6. All machinery, equipment and storage tanks shall be removed from the site to an extent that is consistent with the specified future use of the land.
7. All transportation corridors shall be closed off and revegetated to an extent that is consistent with the specified future use of the land.
8. All concrete structures, foundations and slabs shall be removed or covered by overburden and revegetated.
9. All petroleum products, chemicals and waste shall be disposed of on site or removed.
10. All explosives shall be disposed of or removed from the site.
11. Polychlorinated biphenols (PCBs) or material contaminated with PCBs shall be removed or managed on site.
12. All landfill sites and other waste management sites shall be rehabilitated.
13. All soils in the vicinity of sites used for storing or transferring petroleum products, chemicals, ore, concentrates or waste during the life of the project shall be sampled and tested for contamination and, if contamination is found, a management plan consisting of a risk assessment and action plan for the contaminated soils shall be implemented.
14. All tailings, rock piles, overburden piles and stockpiles shall be rehabilitated or treated to ensure permanent physical stability and effluent quality.
15. All materials, or conditions created as a result of mining, that produce or may produce acid rock drainage or metal leaching shall be dealt with in accordance with the management plan referred to in section 59 of the Code.
16. All impoundment structures shall be certified by a qualified professional engineer with respect to their stability against static and dynamic loadings to which the structures are likely to be subjected, to ensure that the materials are completely contained and the specified land use maintained.
17. All decant structures, other than dam spillways, shall be removed or left inoperable.
18. All remaining on-site watercourses or drainage channels shall be left so as not to require maintenance and shall be consistent with the specified future use of the land.
19. All disturbed sites shall be revegetated. O. Reg. 240/00, s. 24 (2); O. Reg. 194/06, s. 5.
- (3) The proponent shall restore the site to its former use or condition or to an alternate use or condition that the Director sees fit. O. Reg. 240/00, s. 24 (3).
25. (1) The proponent of the project to which the closure plan relates shall prepare and maintain each year,

- (a) surface site plans required in the closure plan;
 - (b) plans on a horizontal plane, with separate drawings for each mining level, showing all underground workings, including shafts, tunnels, dams and bulkheads; and
 - (c) plans on a vertical plane of all mine sections at suitable intervals and azimuths, showing all shafts, tunnels, drifts, stopes and other mine workings in relation to the surface, including the location of the top of the bedrock and the surface of any known body of water. O. Reg. 240/00, s. 25 (1).
- (2) Copies of the plans shall be prepared to a legible scale and shall be digitized or microfilmed or made suitable for digitization or microfilming. O. Reg. 240/00, s. 25 (2).
- (3) The proponent shall,
- (a) promptly submit copies of the plans to the Director on request; and
 - (b) make copies of the plans available for inspection at the project site or another mutually agreed upon location in Ontario. O. Reg. 240/00, s. 25 (3).
- (4) If the project is placed in a state of inactivity or is closed out, the proponent shall promptly revise the plans to the date of inactivity or close out and submit them to the appropriate office of the Resident Geologist of the Ministry. O. Reg. 240/00, s. 25 (4).
26. A proponent is not required to carry out a specific rehabilitative measure referred to in section 22, 23 or 24 if the Director provides the proponent with a written acknowledgment that,
- (a) it is impracticable to carry out the required measure;
 - (b) the required measure would adversely affect the environment;
 - (c) the required measure is inconsistent with a land use control set out in a municipal by-law or an order of the Minister of Municipal Affairs and Housing made pursuant to the Planning Act; or
 - (d) the proponent has specified in the closure plan an alternative measure that meets or exceeds the standards, procedures and requirements set out in this Regulation, including the Code. O. Reg. 240/00, s. 26.

Disclosure of Plans

27. Any drawings, plans and specifications accompanying closure plans shall be made available to the Association of Professional Engineers of the Province of Ontario and the Ontario Association of Landscape Architects upon request for the purpose of determining whether the Professional Engineers Act or the Ontario Association of Landscape Architects Act, 1984 is being contravened. O. Reg. 240/00, s. 27.

28. Omitted (revokes other Regulations). O. Reg. 240/00, s. 28.

29. Omitted (provides for coming into force of provisions of this Regulation). O. Reg. 240/00, s. 29.

SCHEDULE 1

MINE REHABILITATION CODE OF ONTARIO

PART 1

PROTECTION OF MINE OPENINGS TO SURFACE

Objective

1. The objective of this Part of the Code is to ensure that inadvertent access to mine openings to the surface is prevented.

General

2. (1) Subject to sections 11 to 14 (steel caps) and 17 (backfilling) of this Part, a reinforced concrete cap certified by a qualified professional engineer shall be used to stop shafts, raises and stopes.

(2) Before installation of a concrete cap to stop shafts, raises and stopes,

(a) a qualified professional engineer shall examine the competency of the rock at the supports and no construction shall be undertaken unless the engineer approves the rock as competent;

(b) all loose rock shall be removed from the rock anchorages leaving only competent rock;

(c) all concrete work shall meet or exceed the minimum standards set out in the CAN/CSA-A23.1-M90 or latest revision;

(d) the formwork for the concrete, shoring and temporary support shall be designed by a qualified professional engineer.

(3) The concrete cap may be left exposed to the elements or may be buried.

(4) Where the cap is to be left exposed, consideration shall be given to providing a slope to the surface of the cap to prevent the collection of water on the surface.

Concrete Caps — Design Specifications

3. All reinforced concrete caps shall meet or exceed the following specifications:

1. The reinforced concrete cap shall be designed for the following minimum design live loads:

i. 1.4 metres cover of saturated soil uniformly distributed with a unit weight of 19 kN/cubic metre, and

ii. the greater effect of either,

A. an 18 kPa uniformly distributed load, or

B. an 81 kN concentrated load applied over an area 300 mm by 300 mm anywhere on the cap,

and the weight of the cap as the dead load.

2. The 28-day concrete strength shall be a minimum of 30 MPa.

3. The reinforcing bars yield strength shall be a minimum of 400 MPa.

4. The concrete cap minimum thickness shall be,

i. 450 mm as per MNDM Drawing No. 94103-M1: “Monolithic Concrete Cap Typical Plan and Section” and Drawing No. 94103-M2: “Typical Monolithic Concrete Cap Reinforcement Schedule”, or

ii. 300 mm if an alternate design with all calculations is provided.

5. All supports shall be founded on sound rock having a minimum bearing capacity of 600 kPa.

6. All concrete design shall be as per CAN3-A23.3-M84 or its most recent revision.

7. The reinforced concrete cap shall be vented with a stainless steel pipe that is at least 75 mm in diameter and extends above the cap or soil cover to permit airflow.
8. The reinforced concrete cap shall be securely attached to the bedrock or to the concrete collar if one exists.
9. Appropriate reinforcing steel bars and concrete shall be used in areas where corrosive conditions may exist.

Reinforced Concrete

4. The concrete design shall meet the following specifications:
 1. The minimum 28-day concrete strength shall not be less than 30 MPa.
 2. The maximum slump shall not be greater than 75 mm. \pm 25 mm.
 3. The maximum aggregate size shall not be greater than 20 mm.
 4. The air entrainment content shall be 6 per cent \pm 1 per cent.
 5. The maximum water/cement ratio by weight shall not be greater than 0.50.
 5. The aggregates used in the concrete mix shall be non-alkali-silica reactive type.
 6. The concrete cover shall be as follows:
 1. 75 mm thick on the top of reinforcing bars.
 2. 50 mm thick on the bottom of reinforcing bars.
 3. 40 mm thick on the stirrups.
 7. The concrete shall be cured as per CSA-A23.1-M90 or its latest revision. Curing compounds shall be clear liquid conforming to Canadian General Standards Board (CGSB) Standard 90-GP-1a, Type 1 or latest revision and applied as directed by the manufacturer.

Inspection and Testing

8. Before the placement of concrete, a qualified professional engineer shall inspect and approve any reinforcing steel bars that have been installed.
9. (1) The concrete shall be tested for air content and slump in the field.
 - (2) A minimum of one set of four cylinders shall be cast and tested for compressive strength.
 - (3) The cylinders shall be cured under the same field conditions as the shaft cap and seat support (if applicable).
 - (4) The testing shall be done in accordance with CAN/CSA-A23.2-M90 or its latest revision.
10. A qualified professional engineer shall certify all test results obtained under section 9, and the certified results shall be submitted to the Director no later than 90 days after testing.

Steel Caps — Design Specifications

11. With the Director's prior authorization, a steel cap designed and certified by a qualified professional engineer may be used, instead of a reinforced concrete cap, to stop shafts, raises and stopes if the project is temporarily suspended or placed in a state of inactivity.

12. (1) A steel cap shall only be used in an area where there is no vehicular traffic.

(2) A steel cap shall not be covered with earth.

13. Before the installation of a steel cap,

(a) a qualified professional engineer shall examine the competency of the rock at the supports and no construction shall be undertaken unless the engineer approves the rock as competent;

(b) all loose rock shall be removed from the rock anchorages leaving only competent rock;

(c) all steel used in making the cap shall comply with Ontario Provincial Standard Specification 906 or latest revision;

(d) all structural steel and its erection shall conform to CSA-CAN3-S16.1-M78 or latest revision;

(e) the cap shall be protected against corrosion in accordance with CSA-G189-1980 or latest revision;

(f) temporary support and shoring shall be designed by a qualified professional engineer;

(g) warning signs and barriers shall be set up around the cap location; and

(h) a qualified professional engineer shall inspect all steel members.

14. The cap shall meet or exceed the following design and steel specifications:

1. The cap shall be designed for the following minimum design loads:

i. the greater effect of,

A. a uniformly distributed load of 18 kPa, or

B. a concentrated load of 81 kN over a 300 mm square area anywhere on the cap, and

ii. the weight of the cap as a dead load.

2. The cap design shall be based on CSA-CAN3-S16.1-M84 or latest revision.

3. All structural steel shall be Grade 300W conforming to CSA-CAN3-G40.21-M78 or latest revision.

4. All welding shall conform to CSA W59-1989 or latest revision and electrodes shall be type E480xx to CSA W48.1-M1980 or latest revision.

5. The individual or the corporation that employs the individual who performs the welding shall be certified in accordance with W47.1-1992 or latest revision.

6. The cap shall have no opening greater than 75 mm.

7. All bolts shall conform to ASTM A325 (A325M) or latest revision.

8. All galvanized coating shall conform to CSA G164 or latest revision.

9. All supports shall be founded on sound rock based on the minimum bearing value of good quality sedimentary rock of 600 kPa.

10. All oil and grease shall be removed in accordance with SSPC Standard SP-1 or latest revision.

11. The steel shall be cleaned and painted in accordance with the following rules:

- i. the prime coat shall be applied at a dry film thickness of 2.5 mils,
- ii. the two intermediate coats shall be applied at a dry film thickness of not less than 3.5 mils per coat,
- iii. the final high gloss, anti-fouling coat shall be applied at a dry film thickness of not less than 2 mils,
- iv. the coating material shall be applied by brushing or spraying or a combination of these methods,
- v. each coat shall be inspected for coverage and dry film thickness prior to the application of the following coat,
- vi. all painted surfaces that have been damaged during transit or installation shall be touched up with two intermediate coats and a final coat,
- vii. primer shall conform to CGSB-85-GP-10M or latest revision for plain steel surface, and
- viii. paint materials shall conform to CGSB standards.

15. An inspection of the cap shall be carried out at least once every five years to ensure that it continues to meet the specifications and requirements of this Code.

Adits

16. The measures designed to permanently prevent access to adits, ramps, declines or portals shall be certified by a qualified professional engineer.

Backfilling

17. If a shaft, raise or stope is to be backfilled rather than capped, the long term stability of the backfilled opening shall be certified by a qualified professional engineer.

PART 2 OPEN PITS

Objective

18. The objective of this Part of the Code is to limit potential hazards, maintain public safety and restore the site to an appropriate land use.

General

19. When planning the rehabilitation of open pits, including quarries, open cuts and trenches, safety shall be the prime objective although land use and aesthetics are also important.

20. Open pits shall be rehabilitated through measures that have been decided upon after consideration of,

- (a) the dimensions of the open pit;
- (b) the characteristics of the pit walls and benches;

- (c) access to the crest of the open pit;
- (d) the nature of the rock;
- (e) faulting;
- (f) rock stability;
- (g) the surrounding topography;
- (h) the surrounding land use;
- (i) proximity to residential or recreational areas;
- (j) the disposition of waste rock extracted from the open pit; and
- (k) water elevations and ground water characteristics.

Rehabilitation

21. (1) Subject to subsections (2) to (6), open pits shall be rehabilitated by backfilling.
- (2) Flooding may be used to rehabilitate an open pit if fully justified in the closure plan.
- (3) Sloping may be used to rehabilitate an open pit if fully justified in the closure plan as being more appropriate than backfilling or flooding.
- (4) If backfilling, flooding or sloping are impracticable, boulder fencing or berming may be used if fully justified in the closure plan.
- (5) If none of the measures set out in subsections (1) to (4) are practicable, fencing and signs may be used if fully justified in the closure plan.
- (6) A combination of measures set out in subsections (1) to (5) may be used at different stages of closure if fully justified in the closure plan.
22. Where an open pit has a single vertical or near vertical drop of greater than 3 metres and a bench width of less than 3 metres and is not to be rehabilitated by the measure referred to in subsection 21 (1), a geotechnical study and report signed by a professional engineer shall be provided to state the long term stability of the structure.
23. If an open pit is flooded,
- (a) additional rehabilitation is required only with respect to workings above the final ground water elevation;
 - (b) interim protection shall be provided until the final ground water elevation is reached;
 - (c) at least one sloped entrance shall be left or created to allow a reasonable exit point should inadvertent access occur; and
 - (d) a professional qualified in hydrogeology shall predict the water elevation within the pit to provide an assurance of the continuing effectiveness of flooding as a protective measure.
24. If boulder fencing is used, the boulders,

- (a) shall be a minimum of 2.0 metres in height;
- (b) shall be no further than 0.60 metres apart; and
- (c) where no geotechnical study exists, shall be set back from the toe of the pit at least a distance equivalent to the pit depth so as to locate the boulder fence beyond any area of potential pit instability.

25. If berming is used, the berm,

- (a) shall be at least 2.0 metres in height;
- (b) where no geotechnical study exists, shall be set back from the toe of the pit at least a distance equivalent to the pit depth so as to locate the berm beyond any area of potential pit instability; and
- (c) may be combined with a shallow trench or boulders to increase its effectiveness.

26. If fencing is used, fences,

- (a) shall be constructed of at least #6 gauge chain-link galvanized material;
- (a.1) shall be constructed in accordance with,
 - (i) the drawing entitled “Fence, Chain-link: Component — Barbed Wire” and identified as OPSD-972.101,
 - (ii) the drawing entitled “Fence, Chain-link: Component — Gate” and identified as OPSD-972.102, and
 - (iii) the drawing entitled “Fence, Chain-link: Installation — Roadway” and identified as OPSD-972.130,in Volume 3 of the Ontario Provincial Standards for Roads and Public Works, published by the Ministry of Transportation;
- (b) shall be secured against access at the bottom;
- (c) where no geotechnical study exists, shall be set back from the toe of the pit at least a distance equivalent to the pit depth so as to locate the fence beyond any area of potential pit instability; and
- (d) shall be used in conjunction with signs.

27. If signs are used in conjunction with another measure, the signs,

- (a) shall be at least 30 cm by 30 cm in size;
- (b) shall be placed no further than 20 metres apart; and
- (c) shall have at least the words “Danger — Open Hole”, in both English and French, in letters that are at least 3.5 cm in size.

PART 3

STABILITY OF CROWN PILLAR AND ROOM AND PILLAR OPERATIONS

Objective

28. The objective of this Part of the Code is to limit potential hazards, maintain public safety and restore the site to an appropriate land use.

General

29. In this Part,

“NGI-Q” means the Norwegian Geotechnical Institute Q value as given by E. Hoek, P.K. Kaiser and W.F. Bawden in “Support of Underground Excavations in Hard Rock”, A.A. Balkema, Rotterdam, 1995;

“RMR” means the Council for Scientific and Industrial Research (CSIR) Rock Mass Rating as given by E. Hoek, P.K. Kaiser and W.F. Bawden in “Support of Underground Excavations in Hard Rock”, A.A. Balkema, Rotterdam, 1995.

30. (1) Where a crown pillar or pillars are to remain on a site, a geotechnical study shall be undertaken to determine their long term stability in order to select those rehabilitation measures that will be compatible with the planned or possible long term land use of the site, and the study shall be certified by a qualified professional engineer.

(2) The study required under subsection (1) shall include at least information with respect to,

(a) the history, if any, of instability of the rockmass in the stope walls or in the crown pillar;

(b) whether backfilling of the stopes should be considered and, if so, the type of backfill that would be suitable;

(c) the location of backfilled stopes and the backfill material used;

(d) the proximity of people or infrastructure to the site;

(e) the population density in the surrounding area;

(f) the likelihood that the public will access the site;

(g) the infrastructure at risk including roads, power lines, pipelines, gas lines, buildings;

(h) the potential for mining or alternative uses in the future;

(i) the possible environmental impacts caused by a failure; and

(j) the current and future land use designation.

(3) Based on the results of the study required under subsection (1), an assessment of the risk and consequences of crown pillar failure shall be provided by a qualified professional engineer.

31. For sites determined to be of low risk and consequence, the following is the minimum information that shall be evaluated:

1. General surface topography, including lakes, rivers, roads, buildings, benchmarks and survey details.

2. Sections showing the overburden profile.

3. Sections showing plans of all mine levels to a depth specified by a professional engineer that is not less than 200 metres below the base of the crown pillar.

4. The basic crown pillar/abutment and stope configuration, including length, span, thickness, basic geology and structural features.

5. The nature and composition of the backfill, where applicable.

6. The RMR and NGI-Q values for each of the controlling rock mass zones.

7. Historical information on rock mass instability, where available.

32. (1) For all other sites, the following minimum information shall be evaluated:

1. Surface conditions, including,

i. surface topography in the vicinity of the crown pillar,

ii. the presence or absence of a water body,

iii. a surface projection of the underground working to a depth specified by a professional engineer that is not less than 200 metres below the base of the crown pillar,

iv. general surface topography, including lakes, rivers, roads, buildings, benchmarks and survey details,

v. all rights-of-way, utility corridors and easements, and

vi. the surface area that would be affected by a crown pillar failure.

2. Overburden characterization, including,

i. soil types and thicknesses, unless a qualified professional engineer considers this information unnecessary,

ii. the bedrock-overburden interface topography,

iii. the ground water regime, and

iv. if soil investigation is undertaken, the following information shall be collected as a minimum requirement:

A. bulk density,

B. in situ bulk density,

C. grain size distribution,

D. friction angle,

E. cohesion,

F. moisture content, and

G. ground water levels.

3. A rock mass characterization including,

i. the geology,

ii. the strike and dip of the ore body and host rocks,

iii. the presence of structural features such as joints, faulting or cleavage,

iv. the geotechnical classification of the hangingwall, footwall and crown pillar using both the RMR and NGI-Q classification systems, utilizing,

- A. underground mapping or drill core data evaluation,
- B. laboratory strength determination or published ranges, where available, with justification for using the data specified and its origin, and
- C. discontinuity characterization.

4. The mine workings geometry, including the geometry and location of the crown pillar, upper mine openings and stopes including,

- i. the mining width and depth, if mine unfilled,
- ii. the crown pillar thickness,
- iii. the stope span,
- iv. the nature and composition of backfill,
- v. the support method used,
- vi. all drifts, shafts and raises, and
- vii. historical information on rockmass instability, where available.

5. Other factors including the presence of,

- i. elevated horizontal stress fields,
- ii. multiple openings, and
- iii. complex geometries.

(2) Numerical modelling of the crown pillar and stope geometry shall be conducted using an industry-recognized model to assist in assessing potential failure mechanism and the likelihood of crown pillar failure.

(3) All rock and soil properties testing shall conform to American Society for Testing and Materials (ASTM) Standards.

33. (1) The results of the evaluation under sections 31 and 32 shall be used to determine appropriate rehabilitation measures for the crown pillars.

(2) The measures determined under subsection (1) shall be justified, documented, and certified by a qualified professional engineer.

(3) If it is determined that the appropriate rehabilitation measures include the use of fencing, the fences shall be constructed in accordance with the requirements set out in section 26 of this Schedule.

34. (1) For room and pillar operations, geotechnical studies and evaluations similar to those referred to in sections 30, 31 and 32 shall be undertaken in the manner specified by a qualified professional engineer.

(2) The results of the evaluation under sections 31 and 32 shall be used to determine appropriate rehabilitation measures.

(3) The measures determined under subsection (2) shall be justified, documented, and certified by a professional engineer.

(4) If it is determined that the appropriate rehabilitation measures include the use of fencing, the fences shall be constructed in accordance with the requirements set out in section 26 of this Schedule.

PART 4

TAILINGS DAMS AND OTHER CONTAINMENT STRUCTURES

Objective

35. The objective of this Part of the Code is to ensure the long-term physical stability of tailings dams and other containment structures.

General

36. (1) The procedures and requirements set out in the “Dam Safety Guidelines” published by the Canadian Dam Safety Association shall be given due regard by all persons engaged in the design, construction, maintenance and decommissioning of tailings dams and other containment structures.

(2) Details of the consideration given under subsection (1) shall be provided in the closure plan.

PART 5

SURFACE WATER MONITORING

Objective

37. The objective of this Part of the Code is to ensure that water quality is demonstrated to be unimpaired and that it is satisfactory for aquatic life and other beneficial uses.

General

38. (1) In this Part,

“mixing zone” means the smallest possible area of surface water that does not meet the Provincial Water Quality Objectives (PWQO) established by the Ministry of the Environment as a result of discharge, drainage or seepage from a project, or the background levels for water quality referred to in subsection (2).

(2) Subject to subsection (3), the surface water quality of a closed out site shall meet the PWQO referred to in subsection (1) or, where the proponent establishes that it is not practicable to meet the objectives set out therein, shall meet the background levels for water quality if the proponent establishes scientifically what those levels were.

(3) The proponent may use a mixing zone if able to demonstrate scientifically that,

(a) it is not practicable to meet either of the standards referred to in subsection (2);

(b) contaminant levels in the mixing zone will meet the requirements of sections 44 and 45; and

(c) the mixing zone is of minimal area.

39. (1) A monitoring program shall demonstrate that, during closure of the site or portion of the site, contaminant concentrations in water draining from the site will not exceed the more stringent of,

(a) concentration limits determined from existing environmental compliance approvals; and

(b) the effluent limits prescribed under Ontario Regulation 560/94.

(2) Despite subsection (1), if the limits referred to in subsection (1) are exceeded at the site discharge point or points, the closure plan shall be amended to specify the procedures that will be implemented to ensure that the limits are not exceeded.

(3) If the limits specified in subsection (1) cannot practicably be achieved, it must be demonstrated to the satisfaction of the Director that contaminant loading will not be significant.

40. If aquatic life in the receiving water body has been adversely affected during the operating phase or the closure of the site, the closure plan shall be amended to specify the steps that will be taken to re-establish a diverse and viable aquatic community.

Components of a Monitoring Program

41. (1) Details of a monitoring program shall be established on a site-specific basis.

(2) In determining specific details under subsection (1), the following shall be considered:

1. The size of the operation.
2. The characteristics of the ore.
3. The nature of the receiving watercourse.
4. Any other characteristics specific to the site that would influence monitoring requirements.

Mixing Zone

42. A mixing zone shall not be used as an alternative to reasonable and practical treatment.

43. Mixing zones shall be assessed on a site-specific basis, including the consideration of,

- (a) water quality;
- (b) seasonal stream-flow and current patterns;
- (c) physical factors;
- (d) biotic communities and habitat in and adjacent to the mixing zone;
- (e) nearby water uses such as bathing beaches and drinking water intakes; and
- (f) other waste-water discharges.

44. (1) Conditions within a mixing zone must not result in irreversible environmental damage, risk to ecosystem integrity or risk to human health.

(2) Mixing zones shall not interfere with other water uses such as existing drinking water supply or recreation.

45. In order to protect important aquatic communities in the vicinity of mixing zones, no conditions shall be created within the mixing zone which,

- (a) are lethal to aquatic life in the mixing zone, in accordance with accepted testing procedures;
- (b) cause irreversible responses which could result in detrimental post-exposure effects;

- (c) result in bioconcentration of toxic materials which are harmful to the organism or its consumer; or
- (d) create a barrier to the migration of fish or other aquatic life.

46. To ensure the protection of acceptable aesthetic conditions, mixing zones should not contain,

- (a) materials which form objectionable deposits including scums, oil or floating debris;
- (b) substances producing objectionable colour, odour, taste or turbidity;
- (c) substances which produce or contribute to the production of objectionable growths of nuisance plants and animals; or
- (d) substances that render the mixing zone aesthetically unacceptable.

Chemical Monitoring

47. (1) Surface water chemical monitoring shall be conducted for the following:

1. Discharge or seepage exiting on-site sources.
2. Discharge or seepage exiting the property boundary.
3. On-site water bodies and water bodies downstream from the site.
4. Background reference sites.

(2) Concentrations at the sites referred to in subsection (1) shall be monitored for at least the following:

- (a) pH;
- (b) conductivity;
- (c) total suspended solids;
- (d) total dissolved solids;
- (e) alkalinity;
- (f) acidity;
- (g) hardness;
- (h) cyanide;
- (i) ammonium;
- (j) sulphate;
- (k) aluminum (Al);
- (l) arsenic (As);
- (m) cadmium (Cd);
- (n) calcium (Ca);

- (o) copper (Cu);
- (p) iron (Fe);
- (q) lead (Pb);
- (r) mercury (Hg);
- (s) molybdenum (Mo);
- (t) nickel (Ni); and
- (u) zinc (Zn).

(3) The monitoring requirements under subsection (2) may be reduced if it can be demonstrated scientifically that any of the tests are not applicable.

48. Additional physical or chemical tests must be considered where site specific characteristics warrant.

Frequency of Monitoring

49. (1) The frequency of monitoring must be adequate to establish water chemical conditions on a site specific basis and must be sufficient to demonstrate the site's chemical stability.

(2) The applicability of the tests and the frequency of the monitoring must be certified by a qualified professional.

PART 6 GROUND WATER MONITORING

Objective

50. The objective of this Part of the Code is to identify and characterize any potential impediments to beneficial use of ground water as a result of the presence of migration of contaminants.

General

51. (1) The hydrogeology of all mine sites shall be addressed in sufficient detail in a site ground water characterization study and shall be certified by a qualified professional.

(2) The study specified under subsection (1) shall identify,

- (a) the expected uses of area ground water;
- (b) the existence or potential for development of ground water contamination;
- (c) the nature of the contamination;
- (d) the potential of contaminants to migrate; and
- (e) the degree of attenuation expected.

(3) Where an existing or potential threat to the use of ground water exists, the magnitude of that threat shall be assessed and remediation methods shall be proposed.

Components of the Study

52. (1) The site ground water study required under subsection 51 (1) shall contain the following, where applicable:

1. A topographic map showing,

i. drainage patterns,

ii. major watersheds,

iii. tailings areas,

iv. waste rock dumps,

v. waste disposal sites,

vi. fuel storage areas,

vii. chemical storage areas, and

viii. any other contaminant sources.

2. A topographic map identifying.

i. the regional ground water flow regime,

ii. all relevant ground water users,

iii. sensitive receivers, and

iv. all monitoring locations.

(2) Contaminant migration, where applicable, shall be identified detailing,

(a) migration direction;

(b) rate of migration;

(c) potential impact on receivers; and

(d) calculated arrival times.

(3) Monitoring wells, where required, shall be located to provide a baseline assessment of the local ground water regime and shall be used to assess the contaminant sources by monitoring ground water quality both up-gradient and down-gradient of the contaminant sources.

Chemical Monitoring

53. (1) Chemical monitoring of ground water shall be undertaken in sufficient detail to characterize contamination sources and to identify contaminants of concern and associated indicator tests.

(2) The monitoring shall be carried out for at least the following:

(a) pH;

- (b) conductivity;
- (c) total suspended solids;
- (d) alkalinity;
- (e) acidity;
- (f) hardness;
- (g) cyanide;
- (h) ammonium;
- (i) sulphate;
- (j) aluminum (Al);
- (k) arsenic (As);
- (l) cadmium (Cd);
- (m) calcium (Ca);
- (n) copper (Cu);
- (o) iron (Fe);
- (p) lead (Pb);
- (q) mercury (Hg);
- (r) molybdenum (Mo);
- (s) nickel (Ni); and
- (t) zinc (Zn).

(3) The monitoring requirements under subsection (2) may be reduced if it can be demonstrated scientifically that any of the tests are not applicable.

54. Additional physical or chemical tests must be considered where site specific characteristics warrant.

Frequency of Monitoring

55. (1) The frequency of monitoring must be adequate to establish ground water chemical conditions on a site specific basis with due regard to seasonal variability and must be sufficient to demonstrate the site's chemical stability.

(2) The applicability of the tests and the frequency of the monitoring must be certified by a qualified professional.

PART 7

METAL LEACHING AND ACID ROCK DRAINAGE REQUIREMENTS

Objective

56. The objective of this Part of the Code is to determine the potential for significant metal leaching (ML) or acid rock drainage (ARD) and, if necessary, to ensure the development and implementation of effective prevention, mitigation and monitoring strategies.

Sampling

57. (1) A program shall be undertaken to sample all materials remaining on the site that have been excavated, exposed or otherwise disturbed by mining activities, including but not limited to,

- (a) drill core;
- (b) metallurgical samples;
- (c) pit walls;
- (d) existing waste rock, ore, concentrate and overburden piles;
- (e) construction rock; and
- (f) tailings.

(2) The sampling program shall be undertaken in accordance with both of the following documents by a person who is qualified in Ontario as a professional geoscientist or agrologist or as a qualified professional engineer in Ontario:

1. Guidelines for Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia. 1998. British Columbia Ministry of Energy and Mines. 86p.

2. Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia. 1997. British Columbia Ministry of Energy and Mines. 159p.

Testing and Interpretation

58. Testing of the materials sampled pursuant to section 57 of this Schedule and the interpretation of the data shall be conducted in accordance with the documents listed in subsection 57 (2), and shall be certified by a person who is qualified as a professional geoscientist or agrologist or as a professional engineer having geological and geochemical experience.

59. (1) Where the interpretation indicates that the materials have the potential for ML or ARD, a management plan shall be developed to ensure that these materials do not adversely affect the quality of the environment.

(2) In order to ensure the chemical and physical stability of the ML or ARD generating materials and that the quality of the environment is protected, the management plan shall consider, where appropriate,

- (a) the design and construction of covers and diversion works; and
- (b) the use of passive and active treatment systems.

(3) In order to meet the objectives of the closure plan, wet and dry covers for materials that have ML or ARD potential shall be designed and constructed in accordance with best engineering practices and be certified by a qualified professional engineer.

(4) Analytical models shall be used to predict the performance of wet and dry covers for the materials mentioned in subsection (3) and a monitoring program shall be put in place to test the results predicted by the analytical models used.

PART 8 PHYSICAL STABILITY MONITORING

Objective

60. The objective of this Part of the Code is to ensure the safety of the site by requiring that all lands, water management structures and other mine-related structures are left in a stable condition.

General

61. (1) All mine-related structures and workings shall be monitored for physical stability during all stages of closure until the site is closed out, including,

- (a) crown pillars;
- (b) open pits, including slope stability;
- (c) rock and overburden piles;
- (d) tailings dams;
- (e) water management structures;
- (f) surface structures; and
- (g) surface openings.

(2) Any mine-related structure or working that is determined not to be physically stable shall be forthwith protected and remediated.

Specific Monitoring Issues

62. The physical stability of all underground mine workings, such as crown pillars, glory holes, shafts, adits and plugs shall be monitored,

- (a) for tension cracks, scarps and changes in drainage patterns;
- (b) for any enlargement or other changes in existing tension cracks or scarps;
- (c) where mine features or overlying structures may be affected by rising water levels, for the water filling rate by measuring and recording water levels; and
- (d) for subsidence or other instability by conducting accurate ground surveys involving the installation of appropriate instrumentation or the use of geophysical techniques.

63. The physical stability of all open pits, including quarries, open cuts and trenches, shall be monitored for at least the following:

- 1. Slope stability by,
 - i. inspecting for and identifying tension cracks at the crest of slopes and signs of new or ongoing failure and gully erosion,

ii. surveying or instrumenting if critical rates of slope movement are reached.

2. The water filling rate by measuring water levels.

64. The physical stability of all stockpiles including rock, ore waste, concentrate or other mine development piles shall be monitored for at least the following.

1. Slope stability by,

i. inspecting for tension cracks at the crest of any slopes,

ii. inspecting for signs of new or ongoing failure,

iii. inspecting for rill or gully erosion.

2. Cover stability by inspecting for,

i. erosion, and

ii. the stability of vegetation.

65. The physical stability of all tailings impoundment areas, dams and underdrains shall be monitored for at least the following:

1. Surface erosion, including gully or wind erosion.

2. Vegetation cover growth.

3. Tension cracks at the crest of any slopes.

4. Signs of new or ongoing failure.

5. Seepage stains.

6. Piping failure.

7. Bulging of slopes.

8. Sloughing of crests.

9. Drainage for suspended solids.

10. Settlement, seepage increases or internal deformation which may require surveying or instrumentation.

11. Water discharge by measuring discharge rates and comparing to design flows.

66. The physical stability of all water management structures, including ditches and spillways, shall be monitored,

(a) for erosion;

(b) for blockage or potential blockage caused by sediment, ice, debris accumulation or animal activity; and

(c) for deterioration of materials.

67. (1) For temporarily suspended or inactive sites, the physical stability of all surface structures shall be monitored for structural integrity.

(2) The frequency of monitoring must be adequate to identify stability problems and must be sufficient to demonstrate a safe environment if inadvertent access occurs.

PART 9 REVEGETATION

Objectives

68. (1) The objectives of this Part are to,

(a) stabilize surface materials and provide protection from wind and water erosion;

(b) improve the appearance and aesthetics of the site;

(c) enhance natural vegetation growth and establish self-sustainable vegetation growth; and

(d) support the designated end use of the site.

(2) A site shall not be considered to be closed out until sufficient vegetative growth, where specified in the closure plan, has been achieved to meet the objectives stated in subsection (1).

General

69. When determining the appropriate revegetation measure for a site, the following shall be considered:

1. Future land use.

2. Climatic conditions including mean daily temperature, frost free period, growing season, amount and timing of precipitation and the prevailing wind.

3. The size of the area requiring revegetation in order to assess materials requirements.

4. Presence of waterbodies, sensitive ecosystems or other special considerations.

5. Availability of stockpiled materials for revegetation.

6. Success of natural revegetation and species present.

7. Need for contouring or engineering works to ensure proper drainage or re-establish previous drainage.

8. Presence of erosion prone areas, and necessity for erosion control work.

9. Soil characteristics including texture, pH, moisture regime, and content of nutrients and organic matter.

10. Use of native species.

70. Wherever practicable, soils on the site that are displaced due to mining activities shall be stored appropriately for use in revegetating the site.

Site Preparation

71. When revegetating waste rock storage areas, tailings dams or other steeply sloped features, the following specific measures shall be considered, where appropriate:

1. Contouring to mimic local topography and blend into surrounding landscape.
2. The application of soil to a depth sufficient to maintain root growth and nutrient requirements.
3. The incorporation of organic materials, mulches and fertilizers based upon soil assessment.
4. The scarification or ripping of flat surfaces which may have been compacted by heavy equipment.
5. Improving site drainage to prevent water erosion on rehabilitated areas.
6. Establishing windbreaks to prevent wind erosion on rehabilitated areas.
7. Contouring and sloping of impoundment areas must be integrated with engineering design.

72. When revegetating tailings surfaces, the following rehabilitation measures shall be considered, where appropriate:

1. Contouring to provide accessibility and good surface drainage while controlling surface erosion.
2. Removing any crests prone to wind erosion or creating/planting live wind breaks.
3. The scarification or ripping of crusted surfaces.
4. The incorporation of organic materials and mulches.
5. Correcting the pH and adding fertilizer based upon soil assessment and vegetation requirements.
6. Applying soils or a gravel barrier.

73. When revegetating mill or building sites or other concrete structures, the following rehabilitation measures shall be considered for implementation after the decontamination and removal of buildings:

1. Applying topsoil on the fill material to provide an appropriate growth medium to a depth sufficient to maintain root growth and nutrient requirements.
2. Scarifying areas of the site that have been heavily compacted by large equipment.
3. Adding soil amendments based upon soil assessment and vegetation requirements.

74. When revegetating transportation or utility corridors or other disturbed areas, the following rehabilitation measures shall be considered for implementation:

1. Scarifying or ripping corridors after they are no longer required for site inspection and monitoring, after any infrastructure has been removed and after decontamination, if applicable, so that vegetation can be established.
2. Grading and contouring to fit the surrounding landscape.
3. Applying topsoil and other amendments at some locations to improve initial growth and the establishment of a sustainable community.

75. When revegetating sites containing reactive materials,

- (a) all dust and erosion shall be controlled; and

(b) the application of an appropriate measure such as a capillary break consisting of coarse rock or an impermeable layer, covered with an appropriate growth medium and revegetated, may be required where the upward movement of acidic pore water and heavy metals may inhibit plant growth.

76. Where alternative measures are to be utilized, other than those given under sections 71, 72, 73, 74 and 75, such measures shall be proposed and certified by an appropriate qualified professional.

Inspection and Maintenance

77. (1) Inspection of the revegetated area shall be conducted semi-annually following initial planting until vegetation is successfully established.

(2) Soil analysis for nutrients and pH shall be conducted annually in the spring until the vegetation is successfully established.

(3) Areas showing evidence of erosion, sedimentation or slope failure shall be restored.

(4) Evidence of excessive vegetation stress or poorly established areas require reassessment of the revegetation program and implementation of additional measures to ensure successful revegetation.

78. Once vegetation has been established, annual inspection shall be conducted to determine any necessary repairs, and to review the progress toward development of a self sustaining ecosystem.

79. (1) The vegetation on the site must support the end land use which has been established in the closure plan document.

(2) Once a self-sustaining cover has been established and the objectives under section 68 have been attained, the monitoring and inspection program may be discontinued.

O. Reg. 240/00, Sched. 1; O. Reg. 282/03, s. 7; O. Reg. 194/06, s. 6; O. Reg. 304/07, s. 4; O. Reg. 229/11, s. 1.

SCHEDULE 2

Item

Column 1

Column 2

1.

Letter of transmittal

(i) to be signed and dated by the proponent, where an individual, or where the proponent is a corporation, a senior officer of the corporation.

(ii) indicate that closure plan document constitutes entire closure plan and whether submitted for filing or approval under Part VII of the Act.

(iii) names of agents or employees, if any, authorized to act on behalf of the proponent.

2.

Certification

(i) statement of certification set out in subsections 12 (2) and (3) of the regulation.

3.

Project information

(i) name and address of the proponent, location and address of project site.

(ii) boundaries of the project site, details of the land tenure of the project, including the proponent's interest in the mining lands within the boundaries and of the tenure of land not owned but leased or otherwise controlled by the proponent.

(iii) a site plan of legible scale indicating the location of all project features, including all openings to the surface, in relation to the site boundaries and the claim numbers, parcel numbers and, where applicable, the township name, lot number and concession number.

(iv) plans and sections of proposed new underground development.

4.

Current project site conditions

(i) details of the current land use of the site and the immediately adjacent lands that may be affected by the project, including current zoning and official plan designations, where applicable.

(ii) topographical details of the site, including a plan of appropriate scale and contour interval where the project will alter existing site topography.

(iii) details of the surface waters on or flowing through the site and any surface waters receiving flow from the site, including an assessment of the quality and quantity of such waters that indicates whether and to what extent they will be affected by the project and shall be consistent with the monitoring requirements specified in the Code and a plan of legible scale showing the current location of all such waters and their watershed boundaries.

(iv) details of the ground waters within and beyond the site boundaries that may be affected by the project, including the identification of aquifers and an assessment of the quality and quantity of such ground waters that indicates whether and to what extent they will be affected by the project and shall be provided in accordance with the Code.

(v) details of the terrestrial plant and animal life that may be affected by the project.

(vi) details of the aquatic plant and animal life that may be affected by the project.

(vii) complete details of any previous activities that may have resulted in a mine hazard existing on the site or any contamination of the site that has occurred, including the history of the site, an assessment of any physical mine hazards that exist and an assessment of any current contamination of soils, surface and ground waters that exist at the start of the project.

5.

Project description

(i) a brief summary of the project.

(ii) details of the mineralogy of the ore and host rock within the site.

(iii) details of the mining activities anticipated throughout the life of the project, including methods and rates of mine development and mining, and methods and procedures for handling mine backfill.

(iv) details of any processing, including a general description of the process, types and rates of any reagents used and a process water balance.

(v) details of existing and expected buildings and infrastructure on the site, including their size, type, use and location and a surface plan, at a legible scale, showing their location.

(vi) details of the production, handling and disposal of any tailings on the site, including the physical and chemical nature of the tailings, an assessment of the potential for metal leaching and acid mine drainage in

accordance with the Code, the rate of production of tailings, methods of handling tailings, the location, size and nature of any tailings impoundment and treatment areas and a surface plan of legible scale showing the location of any such areas with engineering details of any impoundment structures.

(vii) details of the production, handling, storage and disposal of waste rock, ore, concentrate and overburden, including the physical and chemical nature of the materials, an assessment of the potential for metal leaching and acid mine drainage in accordance with the Code, the rates of production of such material, methods of handling and the location, size and nature of any storage or disposal areas and a surface plan of legible scale showing the location of any storage or disposal areas.

(viii) available details of any existing or proposed waste management systems and treatment or disposal sites, including disposal sites located within tailings areas, a description of the treatment or disposal process or system and a surface plan of legible scale showing the location of any treatment or disposal site and effluent discharge points.

(ix) details of any water management or treatment systems, including a description of the processes and physical facilities for such systems.

(x) details of storage sites for petroleum products, chemicals, explosives, hazardous substances and toxic substances, including the quantity of materials stored, the size, nature and location of such storage areas and a surface plan of legible scale showing their location.

(xi) a proposed schedule.

6.

Progressive rehabilitation

(i) details of any such measures anticipated during the life of the project, including a schedule for carrying them out.

7.

Rehabilitation measures — temporary suspension

(i) details of measures to restrict access to the project site, buildings and other structures to authorized persons to secure petroleum products, chemicals, waste and waste management systems are made secure and to dispose of or remove explosives from the site.

(ii) details of measures for the prevention of unauthorized or inadvertent access to mine openings to the surface.

(iii) details of measures to ensure maintenance of mechanical and hydraulic systems in a no-load condition and the safety and security of electrical systems.

(iv) details of measures to control effluents of all types

(v) details of measures to ensure that all waste rock piles and stockpiles of ore, concentrate, overburden and other materials are maintained in a safe and stable condition.

(vi) details of measures to ensure that all tailings, water and other impoundment structures are maintained in a safe and stable condition in accordance with the Code.

(vii) a schedule of rehabilitation measures to be implemented in order for the project to be considered in temporary suspension.

8.

Rehabilitation measures — state of inactivity

(i) details of measures to restrict access to the project site, buildings and other structures to authorized persons.

(ii) details of how all shafts, raises or open stopes are to be secured in accordance with the Code.

(iii) details of how all portals of adits and declines are to be secured in accordance with the Code.

(iv) details of measures to ensure that all other mine openings to surface that create a mine hazard are stabilized and secured in accordance with the Code.

(v) details of measures to ensure that all mechanical and hydraulic systems are maintained in a no-load condition and that non-essential electrical systems are de-energized and all other electrical systems are made safe and secure.

(vi) details of measures to monitor, maintain or rehabilitate all tailings impoundment areas.

(vii) details of measures to monitor, maintain or rehabilitate all landfill or other waste management sites.

(viii) details of measures to remove, dispose of, isolate or manage on site all petroleum products, chemicals and waste, including PCBs, and to ensure that all explosives are disposed of or removed from the site.

(ix) details of measures to ensure that all waste rock piles and stockpiles of ore, concentrate, overburden and other materials are maintained in a physically and chemically safe and stable condition.

(x) details of measures to ensure that all tailings, water and other impoundment structures are maintained in a safe and stable condition in accordance with the Code.

(xi) details of a site inspection program to be conducted at least once every six months to ensure that the required rehabilitative measures are in place and how the site inspections will be recorded and reported to the Director.

(xii) a schedule of the rehabilitation measures to be implemented in order for the project to be considered in a state of inactivity.

9.

Rehabilitation measures — closed out

(i) details of how all shafts, raises or open stopes shall be secured in accordance with the Code.

(ii) details of how all portals of adits and declines are to be secured in accordance with the Code.

(iii) details of the measures to be implemented to ensure that all other mine openings to surface that create a mine hazard are stabilized and secured in accordance with the Code.

(iv) details of the measures to be implemented to assess the stability of surface and subsurface mine workings and any measures to be used to ensure stability of the ground surface in accordance with the Code, including reports of all studies conducted under sections 30, 31 and 32 of Schedule 1.

(v) details of how all buildings, power transmission lines, pipelines, airstrips and other structures and infrastructure will be removed or otherwise disposed of.

(vi) details of how all machinery, equipment and storage tanks will be removed or otherwise disposed of.

(vii) details of how all transportation corridors will be closed off and revegetated in accordance with the Code.

(viii) details of how all concrete structures, foundations and slabs shall be removed or covered and revegetated in accordance with the Code.

(ix) details of how all petroleum products, chemicals and waste will be removed or disposed of on-site and that all explosives will be disposed of or removed from the site.

(x) details of how any PCBs or PCB contaminated material will be removed or managed on-site.

(xi) details of measures to rehabilitate all landfill sites and other waste management sites.

(xii) details of measures to test soils in the immediate vicinity of any petroleum product, chemical, explosive or waste storage or transfer sites and measures to be implemented including a risk assessment analysis to control or dispose of any soils found to be contaminated.

(xiii) details of measures to ensure physical and chemical stability, erosion control and surface and ground water quality at all tailings areas.

(xiv) details of measures to ensure physical and chemical stability, erosion control and surface and ground water quality at all waste rock piles and stockpiles of ore, concentrate, overburden and other materials.

(xv) details of measures to breach or stabilize all tailings, water and other impoundment structures against static or dynamic loadings to ensure the containment of materials and to maintain the specified land use.

(xvi) details of measures to remove or make inoperable all decant structures, other than dam spillways.

(xvii) details of measures to ensure that the physical structure of all water courses and drainage channels remaining on the site will be naturally stable and integrated into the surrounding ecosystem, and that they will be consistent with the specified land uses of the site.

(xviii) details of measures to ensure that the revegetation of all disturbed areas will be self-sustaining, integrated with the surrounding ecosystem and consistent with the specified land uses of the site in accordance with the Code.

(xix) a schedule of the rehabilitative measures to be implemented before the project can be considered closed out.

10.

Monitoring

(i) details of the monitoring programs and procedures in accordance with the Code to ensure that the physical stability of mine hazards located on the site provide the level of protection required for each stage of closure, including the locations, methods and frequencies of monitoring and how the results of the monitoring will be recorded and reported to the Director.

(ii) details of the monitoring programs and procedures in accordance with the Code to ensure that the chemical stability of tailings, waste rock, ore stockpiles, concentrate stockpiles, overburden and other stockpiles, and surface and subsurface effluents provide the level of protection required for each stage of closure, including the locations, methods and frequency of sampling, the parameters to be analyzed, the analytical methods to be used and how the results of the monitoring will be recorded and reported to the Director.

(iii) details of any biological monitoring programs and procedures to assess the effects of the project on any biological communities. These details shall include the locations, nature, methods and frequency of monitoring, the biological communities to be monitored and how the results of the monitoring will be recorded and reported to the Director.

11.

Expected site conditions

(i) details of the specified land uses of the site after close out.

(ii) details of the site topography after close out if significant changes to the existing site topography are expected, including a topographic plan of legible scale and contour interval.

(iii) details of the expected conditions, after close out, of all surface waters on or flowing through the site and any surface waters receiving flow from the site, including the expected quantity and physical and chemical quality as well as all expected final water elevations of all surface waters that may be affected by the project.

(iv) details of the expected conditions, after close out, of all ground waters located within the site that may have been affected by the project, including the expected location of aquifers, the expected quantity, the expected physical and chemical quality, all expected final water elevations and the compatibility with expected land use of all ground waters that may be affected by the project.

(v) details of the expected condition of the terrestrial plant and animal life communities, as compared to the condition of such communities prior to the start of the project, that may have been affected by the project, including the methods to be used to assess the health or quality of the communities to demonstrate that the project will sustain terrestrial plant and animal life and that the project can be considered closed out.

(vi) details of the expected condition of the aquatic plant and animal life communities, as compared to the condition of such communities prior to the start of the project, that may have been affected by the project, including the methods to be used to assess the health or quality of the communities to demonstrate that the project will sustain aquatic plant and animal life and that the project can be considered closed out.

12.

Costs

(i) details of the expected costs of implementing the rehabilitation measures and monitoring programs required to close out the site, including at least a detailed expenditure schedule and an itemized estimate of capital costs and operating costs based on the market value of the material goods and services provided.

13.

Financial assurance

(i) the form and amount of the financial assurance to be provided.

(ii) all financial and commercial information used to establish the financial assurance.

14.

Consultation with aboriginal peoples

(i) the consultations carried out with all aboriginal peoples affected by the project, including a description of their comments and responses, if any, to the proposed closure plan.

O. Reg. 240/00, Sched. 2; O. Reg. 194/06, s. 7.