

Sulphide Bearing Material Disposal Regulations

made under Section 66 of the
Environment Act
S.N.S. 1994-95, c. 1
O.I.C. 95-296 (April 11, 1995), N.S. Reg. 57/95

Citation

1 These regulations may be cited as the "Sulphide Bearing Material Disposal Regulations".

Definitions

2 In these regulations

- (a) "Act" means the Environment Act;
- (b) "Administrator" means a person appointed by the Minister pursuant to these regulations, and includes an acting Administrator;
- (c) "aggregate" means all consolidated and unconsolidated material excluding minerals, gypsum or limestone for which a mining approval is required under the Mineral Resources Act;
- (d) "approved disposal site" means a disposal site that is designed to prevent an adverse effect resulting from the disposal of sulphide bearing material and is approved by the Minister or Administrator under these regulations;
- (e) "Department" means the Department of Environment and Labour;
- (f) "developer" means a person who develops or proposes to develop land that contains a sulphide bearing material and includes any agent or contractor who works for the developer;
- (g) "development" means any disturbance of land which contains a sulphide bearing material;
- (h) "disposal site" means a parcel of land used for the disposal of sulphide bearing materials;
- (i) "excavation" means the process used for the removal of a sulphide bearing material by mechanical means;
- (j) "excavation site" means the area or site where a sulphide bearing material is removed by mechanical means;
- (k) "impervious material" means a 750 mm layer of clay with a hydraulic conductivity less than 1×10^{-6} cm/sec or any other material with an equivalent hydraulic conductivity;
- (l) "inspector" means a person appointed pursuant to Section 21 of the Act;
- (m) "Minister" means the Minister of Environment and Labour;
- (n) "site plan" means an accurate drawing of 1:2000 scale that includes
 - (i) a key map showing the location of the site,

- (ii) the shape, dimensions, topography, size and type of geology of the site,
 - (iii) any existing or proposed roads on the site,
 - (iv) the location of any watercourse or well on the site and separation distances noted in Section 10, and
 - (v) the location of a centralized collection point and contours to prevent ponding noted in Section 11;
- (o) "sulphide bearing material" means aggregate having a sulphide sulphur content equal to or greater than 0.4% (12.51 kg H₂S₀₄/tonne);
- (p) "watercourse" means a watercourse as defined in the Act.

Administrator

3 The Minister may appoint an Administrator to administer these regulations.

Application of regulations

4 (1) Subject to subsection (2), no person shall dispose of a sulphide bearing material in the Province where the total volume excavated is greater than 500 m³ in situ or 1300 tonnes unless the person responsible for the disposal holds a valid approval issued under these regulations.

(2) A developer of land which contains a sulphide bearing material shall ensure that sulphide bearing material is disposed of at

- (a) an approved disposal site owned and operated by the developer;
- (b) an approved disposal site owned and operated by a person other than the developer;
- (c) a disposal site under the jurisdiction of the Government of Canada and approved by the appropriate federal authority to receive a sulphide bearing material, provided the evaluation, excavation and disposal of the sulphide bearing material are conducted in a manner which is consistent with Sections 6 to 11 of these regulations.

Exemptions

5 These regulations do not apply to

- (a) an excavation site where less than 500 m³ in situ or 1300 tonnes of aggregate is to be removed unless the Administrator believes on reasonable and probable grounds that an adverse effect may be caused by the excavation;
- (b) a sulphide bearing material where the arithmetic mean and the majority of samples analyzed contain less than 0.4% sulphide by weight or 12.51 kg H₂S₀₄/tonne;
- (c) a sulphide bearing material that is found not to be net acid producing based on the test results provided under subsection 8(5);
- (d) a pit which contains a sulphide bearing material and is used primarily as an aggregate source, if the evaluation, excavation and disposal of the sulphide bearing material are conducted in a manner that is consistent with Sections 6 to 11 of these regulations; or

(e) any mining activities under approval or otherwise permitted by the Department of Natural Resources, if the evaluation, excavation and disposal of the sulphide bearing material are conducted in a manner that is consistent with Sections 6 to 11.

Initial screening

6 (1) Where a developer of any proposed development knows or ought to know that the proposed development will involve the physical disturbance or disposition of aggregate in a measure greater than 500 m³ in situ or 1300 tonnes and which contains a sulphide bearing material, the developer shall immediately notify an Administrator of the proposed development.

(2) The developer identified in subsection (1) shall supply an Administrator with a map number and grid reference (1:50 000 map series) that identifies the location of the proposed development.

(3) An Administrator shall use information provided under subsection (2), ground truthing or any other data to conduct an initial screening to determine whether the land to be developed contains a sulphide bearing material.

(4) If an Administrator is satisfied that the land to be developed does not contain a sulphide bearing material, the Administrator shall advise the developer.

(5) If an Administrator informs the developer that the Administrator is uncertain on an initial screening whether the land to be developed contains a sulphide bearing material, the developer shall provide the Administrator with the analysis of the samples that are required to be taken under these regulations.

Sampling

7 (1) Unless exempted under Section 5, a developer shall

(a) have samples collected;

(b) take two samples that are representative of the lands to be developed for each hectare or part thereof to be developed;

(c) analyze the samples collected under clause (b) as required in Section 8; and

(d) send the results to the Administrator.

(2) A sample provided under subsection (1) may be taken by

(a) the test pit method at 0.5 m intervals for the first 2 m depth of sulphide bearing material and thereafter at 1 m intervals to the depth of the proposed excavation site;

(b) the core method with the sample being split along its axis half and the core analyzed along its entire length; or

(c) the trenching method with the sample being analyzed along its entire length.

(3) An Administrator or an inspector may require angled boring or a slight modification to the procedures and frequencies prescribed in subsections (1) and (2) based on bedding planes or any other relevant variables.

(4) The developer shall pay all costs of sampling and analysis required under these regulations.

Analysis and evaluation

8 (1) Each sample gathered under Section 7 shall be analyzed to determine the total sulphur and sulphate sulphur content.

(2) Sulphide sulphur content shall be determined by calculating the difference between total sulphur and sulphate sulphur.

(3) Test results obtained under subsection (2) shall be expressed as kg H₂SO₄/tonne.

(4) Sample testing analysis under subsection (1) shall be conducted using test methods approved in writing by an Administrator.

(5) No person shall fail to forward test results obtained under subsection (1) to an Administrator before work commences on a development.

(6) Where test results indicate a sulphide bearing material, the developer may have the sample reanalysed for net acid production by using the British Columbia Research Confirmation Test (Duncan 1972) or by another test approved in writing by an Administrator.

Excavation requirements

9 (1) No person shall excavate land that contains a sulphide bearing material unless the following conditions are met:

(a) the removal of any vegetation or soil overlying aggregate is limited to satisfy a construction or operational requirement;

(b) surface run-off is diverted away from the disturbed area where the sulphide bearing material is exposed or will be exposed so that no adverse effect is caused or may be caused;

(c) the volume of aggregate disturbed is minimized in all cases;

(d) excavated material is removed immediately and disposed of in accordance with these regulations unless written approval is obtained from the Administrator authorizing the temporary storage of the material on the land for reuse;

(e) all construction activities are scheduled to minimize exposure time of the sulphide bearing material; and

(f) run-off from the disturbed area is diverted to a centralized point before leaving the property and, if required by a written direction made by the Administrator, is monitored so that no adverse effect is caused or may be caused.

(2) No person shall store or use a sulphide bearing material on or near an excavation site without the written approval of the Minister or an Administrator.

Disposal of excavated sulphide bearing material

10 (1) Subject to Sections 4 and 5, no person shall dispose of a sulphide bearing material other than at an approved disposal site.

(2) No disposal site shall be approved unless the disposal site is located

- (a) a minimum distance of 60 m from a watercourse or well; or
 - (b) a minimum distance from a watercourse or well to be established by the Minister where the Minister believes on reasonable and probable grounds that the requirement set forth in clause (a) will not prevent an adverse effect.
- (3) No person shall dispose of a sulphide bearing material in marine waters located within the jurisdiction of the Province unless the disposal is approved by the Minister.
- (4) No person shall dispose of a sulphide bearing material in fresh water.

Operation of a disposal site

11 An approved disposal site shall meet the following conditions of operation:

- (a) effluent or runoff must be directed to a centralized collection point and monitored for pH, aluminum, conductivity and other items detailed in the approval;
- (b) effluent from the centralized collection point must meet the following criteria:
 - (i) pH >4.0,
 - (ii) aluminum <0.8 mg/l
 - (iii) conductivity <500 micromhos/cm;
- (c) unless authorized in writing by the Administrator, the sulphide bearing material must be covered with an impervious material no later than 30 days after the first load of sulphide bearing material is deposited on the disposal site; and
- (d) the disposal site surface must be contoured to prevent ponding.

Approval application information/approval

12 (1) The owner, operator, developer or person responsible for a disposal site shall supply the following information to an Administrator when an application for an approval is made:

- (a) an estimate of the total volume of sulphide bearing material to be deposited at the disposal site; and
 - (b) information, design and site plans showing how the owner, operator or developer intends to address all items required under Sections 10 and 11 of these regulations and rehabilitate the site.
- (2) The amount of security required for an approved disposal site shall be in the amount of \$25.00 per m³ of disposed sulphide bearing material.
- (3) The form of security required under subsection (2) shall be as prescribed in the Approvals Procedure Regulations.
- (4) Upon receipt of the information required under subsection (1) and the security required under subsection (2) and subject to the provisions of the Approvals Procedure Regulations, the Minister or Administrator may issue an approval for a disposal site.

Effective date

13 These regulations shall come into force on, from and after April 11, 1995.

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