

Proposal for an EPA Notice for disposal of hazardous substances

Submission on	Proposal for an EPA Notice for disposal of hazardous substances
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Submissions will be publicly available

Straterra confirms it has no objection to its submission being made publicly available.

INTRODUCTION

1. Straterra¹ welcomes the opportunity to submit on the consultation paper entitled “Proposal for an EPA Notice of disposal of hazardous substances”². As always, we do so in the interests of achieving benefits for the NZ minerals and mining industry, and for the New Zealand economy and society as a whole. The scope of our submission is limited to the disposal of toxic, corrosive and eco-toxic substances into landfills, and discharges of the same into land or water.
2. In preparing this submission, Straterra has consulted with its membership, including OceanaGold Corporation, CRL Energy, Elementary, MERMAN Ltd, and a further expert in the field, John Dickie.
3. Straterra would welcome engagement with the Environmental Protection Authority on any aspect of its submission.

¹ Straterra represents NZ minerals production, exploration, research, services, and support
<http://www.straterra.co.nz/about/>

² http://www.epa.govt.nz/Publications/Proposal_for_EPA_Notice_for_Disposal_of_hazardous_substances.pdf

Proposals and submission form

Please use this form to submit your written comments and send it to hsnotices@epa.govt.nz (in Word document format) no later than 5.00 p.m. 22 August 2016.

Question# (Proposal)	Proposal/Question	Pg#	Your comments/notes and rationale
CHAPTER 3 Proposed changes to disposal requirements			
Question 1 (Proposal 1)	<p>Do you agree with the three proposed options for disposal of toxic, corrosive or ecotoxic (class 6, 8, or 9) substances into a landfill:</p> <ol style="list-style-type: none"> Treating the substance so it is no longer hazardous before depositing the substance in a landfill; or Depositing the substance into a landfill, if the landfill will contain the substance until chemical change renders the substance non-hazardous; or Depositing the hazardous substance into a landfill that will isolate and contain the substance (including leachate containing the substance) and prevent it from entering the environment beyond the landfill. 	20	<p>The proposed options for class 6, 8 and 9 substances into a landfill are supported, as workable, known to be effective, and consistent with international best-practice, as discussed in the consultation paper.</p> <p>The definition of a landfill is considered to include tailings storage facilities, as used in mining operations, for the management of “tailings”.</p> <p>The current definition would include that activity.</p>
Question 2 (Proposal 1)	<p>Do you consider there should be a hierarchy of these three proposed disposal options, i.e. specifically in the order as listed above?</p>	20	<p>There should not be a hierarchy.</p> <p>At issue is the desired outcome of disposal of hazardous substances.</p> <p>Persons responsible for disposal into a landfill should have the ability to take a rational and effective approach to achieving the desired outcome. If they don't achieve the outcome, sanctions or penalties would apply.</p> <p>Refer to Appendix 1, which describes tailing storage facilities attached to mining operations.</p>
Question 3 (Proposal 1)	<p>What impact would these proposals have on the disposal of household hazardous substances?</p>	20	<p>Not addressed.</p>
Question 4 (Proposal 1)	<p>Do you consider that a transition period for the landfill requirements proposed would be useful? If so, how long would you recommend?</p>	20	<p>We suggest a transition period of 12 months to allow adequate time for operators to adjust to new regulatory requirements.</p>

Question# (Proposal)	Proposal/Question	Pg#	Your comments/notes and rationale
Question 5 (Proposal 2)	Do you agree that the TEL and EEL requirements should be clarified as stated above?	22	<p>The Tolerable Exposure Limit and Environmental Exposure Limit requirements should not be clarified as proposed (refer to Appendix 2).</p> <p>There are many situations in which TELs or EELs have not been set for a substance, and where current water treatment practices are capable of achieving very low levels of contaminants or hazardous substances (subject to RMA resource consent requirements).</p> <p>A practical example occurs in the dewatering of mines. Groundwater in mineralised rocks is naturally toxic and eco-toxic, containing a wide variety of chemical elements. This water pools in mining operations and is collected and treated to approved standards, subject to RMA resource consents, before being used, or recycled, or discharged to land or water.</p> <p>The key point is that the presence of chemical elements in this water is not zero because that is impossible to achieve. It is not possible to screen every single molecule in a body of water for its chemical composition, in any practical sense. Once the water is treated, concentrations of chemical elements will be at very low levels, in many cases below the detection limit of the measuring instruments that are habitually used. Further dilution occurs on discharge onto land or into water.</p> <p>The EPA's proposal is unworkable, as well as conflicting with the RMA regime. The logical course of action is to align the Notice with the RMA on this matter.</p>

Question# (Proposal)	Proposal/Question	Pg#	Your comments/notes and rationale
Question 6 (Proposal 3)	Do you consider that hazardous substances, that are rapidly degradable and the products of that degradation are not hazardous, should be able to be discharged into the environment?	23	Not addressed.
Question 7 (Proposal 3)	Do you agree that any discharge of a substance that is rapidly degradable must comply with any TEL set for that substance?	23	Not addressed.
Question 8 (Proposal 4)	Do you agree with the proposed changes to the provision relating to discharge into the environment of class 9.1 substances that are bioaccumulative and not readily degradable?	24	Refer to John Dickie's submission.
Question 9 (Proposal 5)	Do you consider it necessary to provide a threshold of the amount of halogenated organic compound in the hazardous substance to apply to this provision? If so, why?	26	Not addressed.
Question 10 (Proposal 5)	Do you consider that a transitional period is necessary? If so, why and what term would you recommend?	26	Not addressed.
Question 11 (Proposal 6)	Do you agree that all persons should be required to detonate and deflagrate explosives in accordance with the HSW (Hazardous Substances) Regulations?	29	Not addressed.
Question 12 (Proposal 7)	Do you agree that the Q Formula should be replaced by a qualitative measure of heat radiation?	29	Not addressed.
Question 13 (Proposal 8)	Do you agree to remove the blast overpressure control for flammable liquids and gases (class 3.1 and 2.1.1 substances)?	30	Not addressed.
Question 14 (Proposal 9)	Do you agree that the disposal of self-reactive substances and desensitised explosives (class 4.1.2 and 3.2 and 4.1.3 substances) should be undertaken in accordance the requirements for the disposal of explosives?	31	Not addressed.
Question 15 (Proposal 10)	Do you agree that compressed gas, contained in a cylinder, should not be disposed of into a landfill?	31	Not addressed.
Question 16 Benefits and Costs	Do you consider that the benefits of these proposals will outweigh the costs?	35	<p>The disposal to landfill provisions are generally logical and sound.</p> <p>The provisions concerning EELs and TELs are unsound and illogical, as discussed. This is not just a matter of cost and benefit; it is a matter of workability and fitness for purpose to achieve desired outcomes.</p>



Question# (Proposal)	Proposal/Question	Pg#	Your comments/notes and rationale
			Straterra deplores the unnecessary duplication of the RMA and HSNO Act regimes for discharges of contaminants, aka. disposal of hazardous substances into land or water.

APPENDIX 1: TAILINGS STORAGE FACILITIES

1. A tailings storage facility (TSF) associated with mining operations is a type of landfill³ in which fine mineral and rock fragments from ore processing are stored to isolate them from the surrounding environment, and from naturally-occurring chemical processes that cause them to demonstrate the properties of hazardous substances. In some cases, these materials are increasingly stabilised through other chemical changes in the TSF, with time.
2. TSFs are engineered earthworks in the form of a pond or a dam in which finely-ground rock left over from gold (or other metals) mining and processing are stored. This powdery material - or "tailings" - typically but not always contains sulphide minerals.
3. In tailings that contain sulphides, exposure to oxygen and water causes a chemical reaction that produces sulphuric acid, and elevated concentrations in water of trace elements such as zinc, copper, cadmium, arsenic and mercury. This chemical process is well understood at mine sites, and acidic / trace element-rich drainages are typically managed with active water treatment.
4. By way of context, acid and trace element-forming reactions are naturally occurring in rock, although at a slower rate of chemical change. This explains the naturally-elevated metal concentrations in surface- and groundwater in areas that contain mined and unmined mineral deposits. When this water appears in mining operations, it is treated to meet either internal water use conditions to be used as part of mining operations, and / or is recycled, or treated to meet external discharge conditions (under the RMA).
5. Within a TSF, the presence of surface water prevents the exposure of reactive chemicals to oxygen, inhibiting the acid-forming chemical reaction, and the mobility in surface- or groundwater of elements of concern. The hazardous nature of tailings is thereby reduced, as well as contained.
6. Once the TSF is full, or once mining is completed, the TSF is fully capped, via further engineered earthworks, or partially capped leaving an artificial lake.
7. Where capping is completed, the site could be covered in topsoil, and pasture, and used for farming, or planted in native vegetation, as appropriate.
8. Where open water remains, a permanent pond or wetland will form. Outflow will be discharged into freshwater, usually with no further management required. In some cases, an initial period of water treatment may be required once mining has finished; in the longer term, in such cases, surface water can be directly discharged, as meeting RMA requirements.

³ As defined in the Hazardous Substances and New Organisms Act 1996.

APPENDIX 2: DISPOSAL OF HAZARDOUS SUBSTANCES INTO THE ENVIRONMENT

1. On the subject of discharges into the environment (RMA terminology) or disposal of treated or managed water from mining operations, any hazardous substances (contaminants) would be at very low levels or below the detection limit of standard measuring equipment.
2. In almost all such cases, there has been no Tolerable Exposure Limit or Environmental Exposure Limit set. The EPA's proposals are unworkable in this area.
3. These issues are also addressed in section 15 (1) of the Resource Management Act 1991, namely, resource consent requirements for discharges, or rules in RMA plans.
4. The provisions in this Notice should be aligned with the RMA to avoid unnecessary regulatory duplication.