



**ROYAL NORWEGIAN MINISTRY OF
CLIMATE AND ENVIRONMENT**

EFTA Surveillance Authority
Rue Belliard 35
1040 BRUSSELS
BELGIUM

Your ref

Our ref

Date

17/2763-

7 June 2019

**Response to follow-up letter - Complaint against Norway concerning
Directive 2006/21/EC on the management of waste from extractive
industries**

Dear Madam/Sir,

Reference is made to the EFTA Surveillance Authority's follow-up letter 22 November 2018 requesting information concerning Directive 2006/21/EC on the management of waste from extractive industries. The Authority invited the Norwegian Government to provide a more detailed explanation, which can guide the Authority through how all the relevant requirements, in particular of Article 5 (Waste Management Plan) of the Mining Waste Directive, have been reflected in various documents that have been submitted to the Authority.

The Norwegian Government's explanation of how the relevant requirements in Article 5 of the Mining Waste Directive have been implemented follows below.

Mining Waste Directive (2006/21/EC)

Article 5

Waste management plan

- 1. Member States shall ensure that the operator draws up a waste management plan for the minimisation, treatment, recovery and disposal of extractive waste, taking account of the principle of sustainable development.**

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As mentioned in the Ministry's letter in January 2018, a waste management plan was not part of the permit applications from Nordic Mining AS and Nussir ASA. The two mining companies submitted their applications 2009 and 2011, respectively. This was before the Mining Waste Directive was implemented in Norwegian regulations (waste regulations, chapter 17).

However, assessments of solutions for minimisation, treatment, recovery and disposal of the mine waste are available through the EIA and the applications for permits pursuant to the pollution control act. References for each of the two planned mining projects are summarised below:

For Nordic Mining (the Engebø project) a report on alternatives to sea deposition considered different minimisation measures (Nordic Mining, 2012). Principles connected to treatment, disposal and recovery are described under Article 5, 3 and reports referred to in the text (below).

Nussir ASA is planning production of copper concentrate from underground operations (application). Minimisation measures are described in two of the EIA-reports (Sintef, 2011 and Bergfald miljørådgivere, 2011). Nordic Mining, on the other hand, is planning for 15 years of open pit mining, followed by around 35 years of underground mining.

When it comes to considerations of the mining techniques, for example open pit vs. underground mining, The Directorate of Mining is the primary authority. However, the Environment Agency also assesses the environmental effects of the mining techniques, and therefore the permits also deal with requirements concerning techniques and the reduction of tailings. To ensure that the enterprises continuously work to reduce the amounts of waste, it is required that the waste management plans shall include a strategy where tailings and waste rock is exploited for other purposes as far as possible, and that backfilling will be used for excessive minerals if possible, cf. paragraph 9.2.2 of the permits.

2. The objectives of the waste management plan shall be:

(a) to prevent or reduce waste production and its harmfulness, in particular by considering:

(i) waste management in the design phase and in the choice of the method used for mineral extraction and treatment;

(ii) the changes that the extractive waste may undergo in relation to an increase in surface area and exposure to conditions above ground;

(iii) placing extractive waste back into the excavation void after extraction of the mineral, as far as is technically and economically feasible and environmentally

sound in accordance with existing environmental standards at Community level and with the requirements of this Directive where relevant;

(iv) putting topsoil back in place after the closure of the waste facility or, if this is not practically feasible, reusing topsoil elsewhere;

(v) using less dangerous substances for the treatment of mineral resources;

(b) to encourage the recovery of extractive waste by means of recycling, reusing or reclaiming such waste, where this is environmentally sound in accordance with existing environmental standards at Community level and with the requirements of this Directive where relevant;

(c) to ensure short and long-term safe disposal of the extractive waste, in particular by considering, during the design phase, management during the operation and after-closure of a waste facility and by choosing a design which:

(i) requires minimal and, if possible, ultimately no monitoring, control and management of the closed waste facility;

(ii) prevents or at least minimises any long-term negative effects, for example attributable to migration of airborne or aquatic pollutants from the waste facility; and

(iii) ensures the long-term geotechnical stability of any dams or heaps rising above the pre-existing ground surface.

Instead of commenting on the objectives of the Directive here, we refer to the comments under Article 5, 3-5 (below).

3. The waste management plan shall contain at least the following elements:

(a) where applicable, the proposed classification for the waste facility in accordance with the criteria laid down in Annex III: — where a Category A waste facility is required, a document demonstrating that a major-accident prevention policy, a safety management system for implementing it and an internal emergency plan will be put into effect in accordance with Article 6(3); — when the operator considers that a Category A waste facility is not required, sufficient information justifying this, including an identification of possible accident hazards;

The two sea deposits do not meet the criteria for a Category A facility. This is not explicitly expressed in the applications, but the description of the facilities makes it clear that none of the sea deposits can give rise to major accidents, which is the first criteria in Annex III. A collapse of the submarine facilities (heaps) will not cause any major accidents. The size of

possible collapses will not be able to cause anything like a tsunami but may result in resuspension of particles. A collapse of the underwater heaps with subsequent resuspension of particles can affect the environment negatively.

None of the deposits will contain waste classified as hazardous under Directive 91/689/EEC or as dangerous under Directives 67/548/EEC or 99/45/EC, and the facilities therefore fall outside the second and third criteria under Annex III.

(b) waste characterisation in accordance with Annex II and a statement of the estimated total quantities of extractive waste to be produced during the operational phase;

The total expected quantities of extractive waste expected to be produced during operational phase are described in the respective applications. Waste characterisation is also given in the applications and the EIAs.

For the Nordic Mining case the original estimate was 250 million tons of tailings, approximately 140 million m³ (Nordic Mining, 2009). The operational phase was planned to last for a total of 50 years, the first 15 of these with open pit mining, the last 35 with underground mining. Based on a recent feasibility study the expected quantity of tailings has later been reduced because of the utilisation of a higher proportion of garnet. The data will have to be updated in a new version of the waste management plan (which is a prerequisite stated in chapter 9.2 of the permit).

For Nussir the estimate of tailings is between 1 to 2 million tonnes of tailings per year from underground mining activity. Based on the finds at the time of application, the enterprise estimates that operations will last for 15 to 20 years and will require a total deposit volume of 23 million m³.

Waste characterisations are given in both the permit applications and the EIAs (Nordic Mining: see Niva, 2009 II and Nordic Mining/NGU, 2009, Nussir: see NTNU, 2011 and Niva, 2011). According to Annex II of the directive, the characterisation of the waste in the waste management plan shall "guarantee the long-term physical and chemical stability of the structure of the facility and to prevent major accidents". Given the characterisation of the waste and the placement on the sea floor, major accidents cannot be expected.

(c) a description of the operation generating such waste and of any subsequent treatment to which it is subject;

Tailings, the fine particulate mineral waste, comes from the processing of the ore. After crushing and grinding, processing techniques comprising gravimetric, magnetic and chemical separation (including flotation and flocculation) remove the concentrate, the valuable minerals, from the tailings.

For Nordic Mining, the processing of the ore is described in the application (Nordic Mining, 2009 – paragraph 3.7.2-3.7.7). In the process, flocculation chemicals will contribute to the de-watering of the slurry. After separation, the tailings will go through a mixing chamber where sea water can replace fresh water and secure proper density of the tailings plume. An outgoing pipeline then transports the tailings towards the deposit on the sea floor. One will always expect adjustments of the techniques compared to the original application, based partly on changes in the processing of the ore. Preliminary tests in connection with a recent feasibility study, indicates reduced need for chemicals. Updates will have to be made in the waste management plan, which is also a requirement stated in the permit. The plan must be accepted by the Environment Agency before the permit can come into force.

For Nussir, the process is described in the application and the EIA (Akvaplan Niva, 2011 – report 5249-02, pages 85-109). Tailings will be transported from the concentrator plant to a thickener plant where a flocculation agent, Magnafloc 10, will be added to increase the rate of the descent of the particles in the thickener. This allows the thickener to recover a higher volume of fresh water and increases the density of the tailings. This in turn increases the rate of descent of the particles to the fjord bottom, ensuring the best possible deposit of tailings in the fjord. The fresh water removed from the thickener is recovered and can be reused in the enrichment process.

(d) a description of how the environment and human health may be adversely affected by the deposit of such waste and the preventive measures to be taken in order to minimise environmental impact during operation and after closure, including the aspects referred to in Article 11(2) (a), (b), (d) and (e);

The Ministry of Climate and Environment would like to underline that since the purpose of the waste management plan (and the Directive) is preventing or reducing as far as possible any adverse effects on the environment and human health, it is primarily an instrument for the environmental authorities in Norway (the Ministry of Climate and Environment and the Norwegian Environment Agency). Other relevant permitting authorities, in this case the Directorate of Mining and the Norwegian Water Resources and Energy Directorate, are not assessing waste prevention or are in need of the waste management plan as such in their case handling. They receive their own specified applications where relevant information, which may also be relevant for the waste management plan, is included. The production license (permit), including the approval of the mining plan, from the Directorate of Mining, will form part of the framework for the final waste management plan which will be approved by the Norwegian Environment Agency.

- **(Article 5, 3 (d): How human health may be adversely affected by submarine deposition of tailings in Førdefjord and Repparfjord**

This can be answered in general terms covering both the Nussir AS (Repparfjord) and the Nordic Rutile AS (Førdefjord) cases. Submarine tailings disposal sites do not constitute a direct threat to human health as opposed to on-land disposal of tailings. Land disposal with dam constructions can experience loss of structural integrity which could lead to serious

danger to human health. Submarine disposal sites like the ones planned in Førdefjord and Repparfjord do not include any structural components which could collapse and e.g. create a "tsunami". Probably the development of the Directive never considered health hazards related to submarine deposit sites at all. The only issue which have been raised during the permitting processes is possible effects of chemical substances from the tailings in marine species and organisms that are of importance for food safety (Akvaplan Niva, report 5249, 2011). We have estimated the risk to be very small. However, we have set requirements in the permits of a monitoring programme which shall document any presence of substances from the tailings, including process chemicals, in marine species and organisms that are of importance for food safety.

Regarding Article 11 (2) (a), for both the Nussir and the Nordic Mining cases, alternative locations of the tailings deposits have been assessed. In addition to the sea-based solutions, alternatives on land and in lakes have been considered. An overview of the assessments is given in each of the permits for the two cases.

Regarding Article 11 (2) (b): Physical stability is not an issue of concern in the same way as for a land-based deposit. Pollution of soil, air and groundwater, as well as damage to landscape, is not relevant. However, pollution of surface water (in these two cases the fjords) is assessed in both cases (in the EIA and application). Details on leaking of metals from the deposits are evaluated. The fact that the tailings are kept under water will reduce the oxygen available, and thus reduce the potential leaking of metals from the tailings.

Regarding Article 11 (2) (d) and (e): The normal after-closure phase of a sea-based deposit will involve monitoring and natural sedimentation. Recolonization of the deposit will normally happen within 5-10 years. In some cases, capping of the deposit can be an option, depending on the contents and characteristics of the deposit.

1. Nussir ASA

1.1. Environmental effects

The most significant negative environmental impact is the fact that 8 km² (10-15 %) of the sea floor in Repparfjord will be covered with tailings. The environmental disadvantages will in principle comprise disappearance of the benthic fauna in the deposit area in the Repparfjord due to the discharge of particulate matter on the seabed in the deposit area.

Measurements and models have been made of the current flow conditions in the fjord. The results of these indicate that dispersion from the deposit will not cause harm to life in the Repparfjord outside the deposit area. The tailings contain several metals which is chemically bound to the mineral particles. These include copper, nickel and zinc. Leaching tests and estimates conducted show a low level of leaching from the tailings to the sea water. Because of the natural supply of metals to the Repparfjord, the background values of some metals in the fjord may be somewhat higher.

Studies show that the Repparfjord, outside the planned deposit area, will not suffer any significant impact caused by particles from the tailings (Akvaplan Niva 2011 – report 4973-01).

1.2. Human health

Adverse effects on human health is not a central issue in the EIA or the permit application for the Nussir-project. A land-based tailings deposit will imply a risk of dam failure, with subsequent adverse effects on human health as a possible result. This is not the case with a sea-based deposit.

However, a sea-based deposit may have indirect effects on human health through leaking of metals and chemicals into the seawater. Sea food safety is therefore a relevant issue. The most significant negative effect will be effects on the benthic fauna near the deposit area (Akvaplan Niva – report 5249-02). Based on the documentation, the Norwegian Environment Agency concluded that food safety issues are within acceptable limits. Furthermore, the permit requires a monitoring programme to be accepted by the Authorities before starting mining operations. This programme shall be presented for The Norwegian Food Safety Authority and The Norwegian Directorate of Fisheries (Environment Agency's permit, paragraph 12).

1.3. Preventive measures to minimise environmental impact

In their application, Nussir ASA stated that the conditions in the area planned and set aside for a marine deposit are suitable for deposition of tailings as this area is a natural basin, has enough volume and low enough bottom current to provide proper conditions for a marine deposit.

The waste system will be designed to provide for deposit of tailings from mining operations. The plans are to remove fresh water from the tailings to increase the net weight of the waste thereby ensuring the best possible deposit at sea. A low content of fresh water in the waste helps ensure that the waste will sink rapidly to the fjord bottom. Different types of chemicals will be used to optimise the enrichment process.

A device (ejector) will be fitted prior to the discharge point to mix the waste with seawater at the end of the pipe, at a depth of 30-50 metres. It will be possible to move the pipe to make optimal use of the deposit (Akvaplan Niva – report 5249-02).

Requirements have been stipulated on the maximum permitted dispersion of particles at the border of the planned deposit area, and upwards in the bodies of water, to prevent unintentional dispersion of particles. If the limits are exceeded, the enterprise is obliged to implement measures or stop deposit of tailings. The discharge installation shall be flexible to ensure a build-up of the marine deposit that minimises the risk of particle dispersion. The exact depth and position of the discharge point shall be determined based on a study to

identify the optimal discharge installation to minimise the risk of particle dispersion (Environment Agency's permit, paragraph 3.2).

Moreover, stringent requirements are placed on monitoring both direct discharges and the impact they have on land and in the sea. The enterprise is also required to take further samples in accordance with the Water Regulations prior to starting mining operations. The enterprise's monitoring programme shall be presented to the Food Safety Authority and the Directorate of Fisheries for quality assurance. We have not granted a permit for the use of one chemical (the Xanthate SIPX), which is planned for use during the enrichment process. However, the enterprise may apply for a permit to use this chemical if they obtain more knowledge of the impact of SIPX on the environment (Environment Agency's permit, paragraph 3.12).

Nussir ASA shall have a waste management plan describing waste from extraction and enrichment processes, monitoring and control of deposits, alternative use of tailings and closing/aftercare of deposits and rehabilitation. The plan shall also include a characterisation of the mineral waste. The waste management plan shall be prepared according to the criteria established in chapter 17, section 17-7 of the Waste Regulations (Environment Agency's permit, paragraph 9.2.1).

The pollution control authorities shall be notified well in advance before the deposits are scheduled for closure. The deposits shall be closed in accordance with the submitted closure and aftercare plan, and any other requirements stipulated by the pollution control authorities (Environment Agency's permit, paragraph 9.3.4).

2. Nordic Mining ASA

It should be pointed out that since the EIA and Nordic Mining's submission of an application for a permit pursuant to the pollution control act, the company has carried out further explorations of the ore. Following a prefeasibility study (PFS), the expected amounts of tailings and the expected use of chemicals in the processing of the ore, are substantially reduced. The reduction of tailings produced is mainly due to the extended utilisation of garnet. These changes in premises will affect the conclusions in a waste management plan. However, we have based the permit and the case handling on the information submitted in advance of the PFS.

2.1. Environmental effects

How the environment may be adversely affected by the deposit of the mineral waste:

The mining project in the Engebø mountain will like most mining operations imply large amounts of tailings. The tailings are to be deposited on the bottom of the outer parts of the Førdefjord, at an approximate depth of 300 meters, covering up to 4.4 km². The deposition of tailings will smother any bottom dwelling organisms close to the pipe with a diminishing effect towards the outer parts of the deposition area. The EIA and the application for a permit

pursuant to the pollution control act gives an overview of the study of the natural diversity in the affected area and an assessment of effects on species and ecosystem.

A report on animals on the bottom of Førdefjorden (NIVA, 2008) states the following: Deposition of large amounts of mineral particles in Førdefjorden is expected to harm or destroy animal communities on the bottom during deposition and will have long-term effects afterwards (5-10 years). To estimate the potential loss of biological production and diversity, an investigation of the animal community status in the fjord was carried out. The results will act as a basis for comparison of the new fauna being established, following the stop of mine tailing disposal when the mine is abandoned.

The fauna is normal and relatively rich in species and individuals. There is a gradual change in dominant species of the fauna community from the inner to the outer part of the investigated fjord area, but the status is good or high in both the inner and outer area. The biodiversity and density of individuals are calculated. The fauna is compared to the fauna in other fjords in Western Norway and the condition classified according to criteria for ecological status. Two indices of species diversity are used, and species are listed in the report. The sensitivity index used indicates good conditions.

A report on deep water fish in the Førdefjord (Institute of Marine research, 2008) states that the deposition will make this part of the habitat disappear for deep-water fish. The population of *rock grenadier* will most likely disappear from this deep pool. The same will probably apply to the longnosed skate. Parts of the habitat in this deep pool will also disappear for the blue ling and the tusk. The rose fish and the common ling are more related to the slopes and will have large parts of this habitat available.

However, deep basins in the Førdefjord, both east and west of the deposition area, will still be unaffected. Further assessments of the impact on the different deep-water fish species in the fjord are available in the report.

Effects on wild salmon and brown trout spawning in rivers in the Førdefjord area are assessed (Niva, 2009). The deposition of tailings is not expected to affect these species, but there is some uncertainty to what extent the mining as such, with noise from blasting, can affect the fish.

An EIA document (Niva, 2009 III) assesses the negative effects from deposition of tailings on the ecosystem. The document describes the differences in effects one can expect on hyperfauna and epifauna (more negative effects on the epifauna). Negative impacts on the zooplankton is considered unlikely, but one will expect both the zooplankton and fish to avoid water around the end of the pipeline, with high concentrations of particles. It is difficult to estimate the effect of the loss of prey from the seabed on species further up the food chain. However, it is supposed to have a limited effect, partially due to the complexity and dynamic flexibility of the food web. Increased turbidity in the sea water, may affect the pelagic fish of the deep waters, in addition to filter feeders. The risk of damage on the production in the fjord

is considered small, since only a small fraction of the waters will have particle concentrations giving substantial effects. Experience from other tailings deposition areas show that with non-toxic minerals, the re-establishing of a mature bottom fauna will take 2-5 years when deposition ends. Depending on the change from the original sediments to the tailings making up the new sea floor (coarseness, elevation etc.), one can expect changes from the original fauna to the fauna establishing after deposition. However, there is no reason to expect the new fauna to be richer or poorer, or the biomass, production or other ecosystem functions to be systematically different from the original.

In a supplementary survey on the marine biology of the fjord (DNV GL 2014), further research was done to search for the presence of corals, sponges or other valuable species, in addition to the presence of fish using the sea floor area. No corals or sponges were found in the planned deposition area on the flat sea bed, but sponges were found on the steep, rocky walls of the fjord. Eel and blue ling were the only two red listed species found. The report lists details on the categorisation of different species.

A report on dispersal of particles in the surface layers of the fjord (Niva 2008 II), considers effects on fish farming from a possible break of the tailings pipeline or accidents on land, bringing tailings into the surface layers of the fjord. During normal operation conditions, spreading of particles to the surface layers are not expected. Hence, negative impact on the aqua culture in the area is not expected. If a pipeline breaks or accidents brings tailings to the surface layers, modelling shows that high concentrations of very fine particles for several days are needed before one can observe enhanced concentrations of particles at the nearby aquaculture installations.

2.2. Human health

Adverse effects on human health is not a central issue in the EIA or the permit application for the Engebø-project. A land-based tailings deposit will imply a risk of dam failure, with subsequent adverse effects on human health as a possible result. This is not the case with a sea-based deposit.

However, a sea-based deposit may have indirect effects on human health through leaking of metals and chemicals into the sea water. Sea food safety is therefore a relevant issue. The EIA and the permit application include characterisation of the tailings (Niva, 2009 II, and Nordic Mining/NGU 2009). The application also includes documentation on the processing chemicals (Nordic Mining 2010, NTNU 2009 and Niva 2010). Based on the documentation, the Norwegian Environment Agency concluded that food safety issues are within acceptable limits. Furthermore, the permit requires a monitoring programme to be accepted by the Authorities before starting mining operations. This programme shall be presented for the Norwegian Food Safety Authority and the Norwegian Directorate of Fisheries

2.3. Preventive measures to minimise environmental impact

Limiting the dispersion of particles is essential to minimise the deposits impact on the environment. A report (DNV GL 2014, II) describes modelling of the dispersion of particles in the fjord in different scenarios. Based on the modelling, the operator will choose solutions limiting the dispersion. This includes considerations of the placing of the pipelines over time. Another report (Nordic Mining 2014) also describes techniques to reduce the potential dispersion of particles. This includes technical issues involved in the mixing of tailings with sea water, dimensioning of tailings pipes, flow rate of water and chemicals, as well as optimising operational parameters, inspections and maintenance of the installations.

(e) the proposed control and monitoring procedures pursuant to Articles 10, when applicable, and 11(2)(c);

None of the mining projects originally planned for backfilling of waste into the excavation voids. Instability, contamination of soil or groundwater will not be an issue when depositing the waste in the fjords. However, the permits for both Nussir and Nordic Mining state that the waste management plan shall include a strategy where tailings not suitable for alternative use as far as possible shall be backfilled into the cavities left behind by the mining. The permit emphasizes that this shall be included in the waste management plan. When submitting the waste management plans for approval, the mining companies will have to include a description of this strategy.

(f) the proposed plan for closure, including rehabilitation, after-closure procedures and monitoring as provided for in Article 12;

When it comes to closure, rehabilitation and after-closure procedures, sea deposits differ from traditional land deposits. In the two cases specific rehabilitation measures (covering, revegetation etc.) in the area set aside for tailings deposition will probably not be relevant. Natural sedimentation will over time cover the deposit, and natural faunal re-colonisation will occur.

The permits' requirements include monitoring in the after-closure phase. Monitoring shall take place for at least 15 years after deposition ends. A detailed program for the monitoring both in the operational phase and the after-closure phase will have to be sent in and accepted by the Environment Agency before mining can start. Based on results from the monitoring, the environment authorities may consider if measures are needed, both during operation and in the after-closure phase.

(g) measures for the prevention of water status deterioration in accordance with Directive 2000/60/EC and for the prevention or minimisation of air and soil pollution pursuant to Article 13;

Questions concerning Directive 2000/60/EC, the Water Framework Directive, have been considered by the Internal Market Affairs Directorate at the Authority, concluding in a letter

from the Authority dated 14 June 2016 (case no. 77442, document no. 808032). See also comments under d) (above).

Air and soil pollution from the sea deposits are not considered relevant. For a land-based deposit wind may spread fine particles from a deposit over long distances. For a sea deposit, currents may function in the same way. This problem is addressed in the permit applications and the EIAs (Akvaplan Niva, 2011 and DNV GL, 2014 II).

(h) a survey of the condition of the land to be affected by the waste facility.

The waste management plan shall provide sufficient information to enable the competent authority to evaluate the operator's ability to meet the objectives of the waste management plan as set out in paragraph 2 and his obligations under this Directive. The plan shall explain, in particular, how the option and method chosen as mentioned in paragraph 2(a)(i) will fulfil the objectives of the waste management plan as laid down in paragraph 2(a).

The waste facilities in question will affect the sea floor, not terrestrial land. Surveys of the sea floor has been carried out in both cases, with quite extensive studies on the fauna in the fjords (DNV GL 2014, Institute of Marine Research 2008, Niva 2008, Akvaplan Niva 2011).

Prevention and reduction of waste production are considered in the permit applications and EIAs. As mentioned in the paragraph on article 5, 1 (above), in both cases alternatives to deposition of tailings have been assessed.

Nordic Mining

For Nordic Mining's project different options have been evaluated (Nordic Mining, 2012). Tailings may be utilised for planned covering of polluted sediments in harbours and fjords, and the composition of the tailings have been considered suitable for covering purposes. Soil improvement has been considered as an option, but further research will have to be accomplished before this can be a realistic solution. Further testing has also been discussed with the Dutch research institute Deltares, in order to assess possible use for reinforcement of dikes. Use of tailings in concrete, ceramics and glass has also been considered, in addition to filling purposes in the proximity of the mine. Backfilling is considered an option when the open pit-mining is over, i.e. after approximately 15 years. However, none of the alternatives mentioned will compensate fully for a tailings deposit.

Nussir

Consecutive backfilling would according to the application, be difficult for operational reasons while mining activities are under way. The masses would therefore have to be sent to a safe and environmentally acceptable method of interim storage before possible backfilling. Any backfilling in the mines shall be part of plan of operations pursuant to the Minerals Act. When the Directorate of Mining is assessing the plan of operations for approval, they must assess

whether all commercial ore has been extracted before the area can be filled with masses and act as a landfill.

Waste minimisation has been assessed in the EIA-reports. The enterprise claims in their study that the reuse of tailings for utility products such as bricks and insulation will only represent a minor reduction in tonnage.

4. The waste management plan shall be reviewed every five years and/or amended, as appropriate, in the event of substantial changes to the operation of the waste facility or to the waste deposited. Any amendments shall be notified to the competent authority.

The waste management plan is part of the permit pursuant to The Pollution Control Act (ref. the Waste Regulations § 17-4). The Environment Agency has an obligation to periodically reconsider all permits (ref. the Pollution Regulations, § 36-19). To ensure that the waste management plans will be revised every five years, the Ministry has decided to make a more precise requirement for the mining companies in the Waste Regulations chapter 17.

5. Plans produced pursuant to other national or Community legislation and containing the information specified in paragraph 3 may be used where this obviates the unnecessary duplication of information and the repetition of work by the operator, on condition that all requirements under paragraphs 1 to 4 are met.

Documentation from both the EIAs, permit applications and additional information from the permitting process and the mining companies' feasibility studies may be relevant in the waste management plans.

6. The competent authority shall approve the waste management plan on the basis of procedures to be decided by the Member States and shall monitor its implementation.

Both permits state that waste management plans for the mining projects shall be submitted to the Environment Agency for approval before mining can start. An approval will be based on the requirements given in article 5, 3 of the Directive and implemented in the Norwegian waste regulations chapter 17.

Enclosed is a list of main references, which previously have been sent to the Authority.

Yours sincerely

Ida Juell
Deputy Director General

Jon Erik Aamdal Lundgaard
Adviser

This document is signed electronically and has therefore no handwritten signature

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