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### **Complaint against the Norwegian Government**

Comments and new information from the complainants regarding the letter from Efta Surveillance Agency (ESA) of 14 June 2016, case 77424, doc 808071 "*Complaint against the Norwegian Government in the area of the environment*".

The complainants had four separate reasons for claiming that Norway violates the Water Framework Directive (WFD). The Internal Affairs Directorate of the EFTA Surveillance Agency has concluded that the permission to dump 250 million tons of mine tailings in Førdefjorden is not a violation of the WFD.

We do not agree with the Directorate's conclusion, and present our comments and arguments below.

We also comment on the three other reasons in our complaint; 2: Increased dumping in Ranfjorden, 3: Permit to dump in Bøkfjorden and 4: that the "river basin management plans" must contain provisions to stop the six ongoing dumping sites in Norwegian fjords.

### **Our conclusions on the Directorate's acceptance of the permit to dump mining waste in Førdefjorden**

1. The Directorate has accepted most of the evidence produced by the paid consultants of the mining company and has only assessed the "process" of granting the permit. The Directorate has in this work not evaluated all of the alternative evidence or detection of incomplete knowledge, presented by leading independent research institutions, authorities and researchers.
  - a. We claim that important pieces of the evidence, forming the base for the Directorate's assessment, are misleading, incorrect and incomplete
  - b. We therefore claim that the Directorate, based on this evidence, has reached a conclusion that could imply an acceptance of a violation of the WFD.
  - c. We present new information about the present negative situation in Jøssingfjorden, a fjord where the dumping of mine waste from a TiO<sub>2</sub> mine was stopped 32 years ago.
2. The Directorate accepts "overriding public interest" as a reason to accept the permit to dump mining waste in Førdefjorden
  - a. The Directorate writes that the permit accepts 250 tons of waste, while the actual permit from the Norwegian government is an acceptance of 250 million tons of waste. If the Directorate's assessment is based on 250 tons of waste, the whole case should be reassessed.
  - b. We claim that dumping of industrial waste in a water body is not an "overriding public interest" and therefore not acceptable as an exemption to article 4(7), according to the guidance documents of the WFD.

- c. We further emphasize that the guidance documents are accepted by all EU member states and Norway. We therefore disagree with the Directorate's conclusion that the Court of Justice of the European Union, CJEU, in reality permits the states to do whatever they like in implementing the WFD.
  - d. We present new information about a process initiated by the Commission (DG EN) to further "strengthen" the guidance document for the exemptions to article 4(7).
- 3. The Directorate accepts that *"the objectives pursued could not, for reasons of technical feasibility or disproportionate cost, be achieved by other means which would have represented a significantly better environmental option."*
  - a. We claim that there are several alternative mining methods and mining waste reduction measures that can be taken, that are not of "disproportionate cost". Compared to standard methods in the European and international mining world, dumping of tailings in Fjørdefjorden should rather be assessed as "disproportionately cheap".
  - b. We claim that a waste management plan with waste reduction measures should have been in place before granting a permit, and before discussing alternative methods of storing the mine tailings. A waste reduction plan with real measures could have resulted in significant waste reduction, but the Ministry has granted a permit for all the 250 million tons of tailings, thereby accepting that there will be no waste reduction. This could be a violation, both to the WFD and to the Mining Waste Directive (MWD), a directive that emphasizes waste reduction, and was implemented as Norwegian law 15.06.2012.

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## 1: PERMIT TO DUMP 250 MILLION TONS OF MINE WASTE IN FØRDEFJORDEN

The Internal Affairs Directorate concludes that the permission to dump 250 million tons of mine tailings in Førdefjorden is not a violation of the WFD. We do not agree with the Directorate's conclusion, and present our comments and arguments below.

### A DECISION MUST BE BASED ON CORRECT EVIDENCE

The Directorate writes that the amount of mine waste to be dumped in Førdefjorden is 250 tons. The correct amount is 250 **million** tons. If this is merely a typing error, we ask it to be corrected. If the conclusion, on the other hand, is based on a belief that it is only 250 tons of waste that is going to be dumped, we cannot see how the assessment by the Directorate can be valid, and ask for a new consideration of the case.

The Internal Market Affairs Directorate writes:

*“Any review by the Directorate of the decision of the Ministry to grant a permit to carry out mining activities is therefore limited. In carrying out its review, the role of the Directorate is not to evaluate the merits of the Ministry's decision, nor can it re-assess the evidence relied upon by the Ministry in the decision. The scope of the Directorate's review is limited to reviewing the process by which the Ministry's decision was reached and to assess whether the decision making was in line with the requirements of the WFD and whether there was any manifest error of assessment on the part of the Ministry.”*

We claim that if ESA should base the decision solely on the evidence produced by the consultants of the mining companies, then ESA risks accepting a violation of the WFD. If important parts of the evidence produced in the EIA are incomplete and/or incorrect, then the decision could also be wrong, and in breach of the WFD. In order to be sure that ESA does not accept a violation of the WFD, one must be sure that the evidence leading to the decision is correct.

In our complaint and in further information that we have sent ESA, we have demonstrated that there are reasons to question the validity of several parts of the alleged evidence used as base for the Ministry's decision.

The Ministry has based the decision almost solely on evidence produced by the mining company's paid consultants, while independent publicly financed Norwegian research institutions (The Institute of Marine Research, the National Institute of Nutrition and Seafood research) and state authorities (the Directorate of Fisheries and the former Directorate for Nature Management) have questioned the validity of important parts of this evidence, and due to this they have warned against the planned dumping of mine waste in Førdefjorden. Also independent researchers (dr.philos. ass. prof. Kvellestad [the Norwegian University of Life Sciences] and Tor Gammelsrud [professor of oceanography at the University of Bergen]) have delivered alternative evidence.

### QUESTIONABLE ASSESSMENT OF PARTICLE DISPERSION AND NEGATIVE INFLUENCE

How far will the finest particles spread? This is an essential question, and the conclusions from the consultants of the mining company have been contested by the Institute of Marine Research and by independent researchers from the University of Bergen and the Norwegian University of Life Sciences.

This independent research shows that it is a high degree of uncertainty regarding the dispersion of the finest particles, and that even very low concentrations of particles may give severe negative effects to marine life.

In addition, the history of dumping of mine waste in Bøkfjorden and Jøssingfjorden has shown the particle dispersion to be wider than anticipated. In Jøssingfjorden, the Institute of Marine research documented the area of particle spreading to be five times larger than the mining company claimed. The situation today in Jøssingfjord, where tailings from a TiO<sub>2</sub> mine (Titania) were dumped until 1984, should have been assessed in as a part of the EIA for the TiO<sub>2</sub> Engebø mine, but this was not done. Newly released photos (13 June 2016) from the fjord, taken by the known underwater photographer Erling Svendsen, show a landscape still covered in fine dust from the tailings. 32 years after the dumping stopped, the tailings are still not stabilized, and spread easily<sup>1</sup>. In view of this, we claim that the precautionary principle should have been used, and the permit to dump 250 million tons of mine waste in Førdefjorden should not have been granted.

The directorate writes:

*“The Ministry recognised that there is a degree of uncertainty related to potential environmental damage caused due to particle dispersion from mining tailings. However, it concluded, on the basis of a number of studies and calculations that there was a low risk associated with the tailings.”*

In our letters to the Agency, we have included a report from an independent researcher and specialist in the area, dr.philos. ass. prof. Agnar Ståle Kvellestad at the Norwegian University of Life Sciences<sup>2</sup>. He has highlighted that the industry-created particles in question have not been fully characterized. He also proved that conclusions in four reports from the consultant companies are directly misleading due to incorrect references to research publications. The consultants of the mining company cited primary international scientific articles incorrectly, selectively and/or misleadingly, when they claimed that 50 mg/liter of particles could be used as an upper general limit for negative consequences. Therefore, he concluded that reports produced by the consultants served as selective filters between the primary scientific sources and the official bodies. The upper limit for negative influence should not be set higher than 2 mg/ liter of particles, according to the international research reports, which were not cited by the Norwegian reports in question but were cited by reports authored by NIVA’s Swedish daughter company. In other words, according to a number of international studies there is a high risk associated with particles from the tailings. In addition, he found that there is strong reason to question the validity of the input data to the model used for predicting/ calculating the spreading of the finest particles.

We have also sent ESA the results from an alternative spreading model used by the independent Institute of Marine Research that indicates a high risk of extensive spreading of fine particles. The consultants of the mining company produced reports telling that there will be almost no spreading of the fine particles.

As a further argument to accept the Ministry’s decision, the Directorate writes:

*“This includes monitoring measures being established, mitigating measures being put in place, e.g. mitigation measures linked to the discharge system to limit particle dispersion from the disposal site and, if necessary, the Ministry required that activities should be discontinued to avoid deterioration in the environmental status of the water body.”*

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<sup>1</sup> <https://www.facebook.com/gorgonocephalus/photos/pcb.554953704706677/554953338040047/?type=3>

<sup>2</sup> Kvellestad A (2015): Planned submarine disposal of mining waste in the Førde Fjord of Norway - underestimation and undercommunication of harmful effects of suspended industry-created particles on fish. 01.12.2015. 104 pages. The report was sent as additional information to the complaint 01.12.2015, available at [http://www.laukeland.no/index.php?option=com\\_docman&task=doc\\_download&gid=105&Itemid=54](http://www.laukeland.no/index.php?option=com_docman&task=doc_download&gid=105&Itemid=54)

Our answer to this is that if the particle dispersion is shown to be much more severe than anticipated, there are only two possible mitigation measures, either a sharp increase in the amount of the flocculation chemical Magnafloc 155 allowed for use, or a change to a more efficient and more toxic flocculation chemical.

The experience from the history of dumping of mine tailings in Bøkfjorden has shown that both these measures were taken, and bad for the environment. Sydvaranger gruve, with a permit to dump mine waste in Bøkfjorden, almost immediately started using other and more toxic chemicals when the operations started. Friends of the Earth Norway and Nature and Youth notified the police May 2010, and the Directorate for Climate and Pollution (now a part of the Directorate of the Environment) concluded that this was a violation of the permit, and ordered an immediate stop<sup>3</sup>. After a couple of days, the company was granted a time limited, and later a permanent permit to continue using the new chemicals, to avoid the negative economic consequences for the mining company and for the society<sup>4</sup>. The environment was less important than the economic consequences for the mining company.

Immediate discontinued dumping, which implies stopping the mining activity, the resignation of workers, and a possible bankrupt mining company, is therefore not a likely option to be put into effect by the authorities. In such a case it is more likely that the dumping will be allowed to continue for many years, with increasing negative effect on the fjord and adjacent coastal zone.

Our opinion is therefore that the mitigation measure stated by the Ministry is not credible, taking into account the severe economic impact to the mining company and the employees if the company is told to stop the dumping immediately.

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#### PARTICLE CONCENTRATION LIMIT WITHOUT SAFETY MARGIN

As a result of the work of dr.philos. ass. prof. Agnar Ståle Kvellestad, the Directorate of the Environment and the Ministry has accepted that a 50 mg/l particle concentration limit for negative consequences outside the disposal area, proposed by the mining consultants in the EIA, was far too high. The permit sets the concentration limit to 2 or 3 mg/l. This is better, but still not in accordance with Annex V 1.2.6 of the WFD, because there is not used a safety factor. 2 or 3 mg/l particle concentration is the limit for negative consequences, but should not be used as the concentration limit for the disposal of mine tailings. Annex V 1.2.6 demands a safety factor, and according to this, the concentration limit for particle concentration should be significantly lower than 2-3 mg/l to ensure “good ecological status” outside the disposal area. We quote from Kvellestad’s report:

*“As particles of the present project are supposed or alleged to settle and not to accumulate in the water body, although not documented for the smallest particles, the **environmental quality standard** should approximately correspond to the **emission limit values [ELVs]**. Inferring ELVs from present knowledge requires an appropriate methodology including consistent use professional terminology. Therefore, and because procedures for setting «particle standards» apparently have not been developed from the directive, one should apply the procedures for the setting of chemical quality standards as expressed in Annex V 1.2.6 (page 52) of the directive (EC 2000).*

*This procedure involves at least two steps in assessing ELVs. **In more detail, the directive recommends the use of acute LC50 and chronic NOEC values, all for different trophic levels. Both are effect concentrations or estimated from observations.** Further, it recommends acute LC50 values to be divided by a safety factor of 1,000 and chronic NOECs to be divided by factors of 10, 50 or 100, depending on the number of species and trophic levels investigated”*

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<sup>3</sup> <http://www.nordlys.no/nyheter/gruveledelsen-ma-i-avhor/s/1-79-5363547>

<sup>4</sup> <https://www.nrk.no/troms/klager-pa-utslippstillatelse-1.7390114>

## WRONG INFORMATION OF HEAVY METALS CONTENT

The directorate writes:

*“As far as heavy metals were concerned, the Ministry found that while the tailings will contain heavy metals, these correspond with the natural background values in the relevant area.”*

According to the EIA it is not correct that the concentrations of heavy metals correspond with the background values.

Heavy metal	Concentration in tailings/ Eclogite ( $\mu\text{g/g}$ )	Concentration in natural sediment ( $\mu\text{g/g}$ )	Difference
Cu	55,4	29	91%
Cr	116	63	84%
Ni	42	NA	NA
Pb	74,2	48	54%
Zn	221	137	61%
Co	85,4	NA	NA

Information from EIA<sup>5</sup>

Quoted from the report:

*“Compared with the natural sediments in the fjord, the content of metals as Chromium, Copper, Lead and Zinc is a factor of two higher in the ore”. (Our translation)*

The correct statement is therefore that there are significant differences between the background level of Cu, Cr, Pb and Zn and the content of these metals in the tailings. The concentration of Cu is alarmingly high. According to a table from the Directorate of the Environment for evaluation of marine sediments, the concentration of Cu is so high that the sediment should be classified as “bad”, with “acute toxic effects from short time exposure”.

We will also draw the attention to the high level of Ni, a priority substance in the WFD.

We have informed ESA about the high metals content in a previous letter<sup>6</sup>.

As we cited in our complaint to ESA, the Directorate of the Environment has stated in an email that the tailings are not to be classified as inert. The high metals content should further substantiate this statement.

## ECONOMIC ASSESSMENT OF VERY LIMITED VALUE

When it comes to the evaluation of economic consequences of the planned mine, there has been almost no evaluation of the possible loss of jobs in tourism and in the important marine seafood business as a consequence of the dumping of mine waste in the pristine Førdefjorden. A report by Sintef, ordered by

<sup>5</sup> “Fysisk-kjemiske egenskaper til eklogitt og avgang”, NIVA, May 2009 (Physical-chemical properties of Eclogite and tailings), table 1.

<sup>6</sup> Letter 13 May 2016, Doc 7; Friends of the Earth Norway about heavy metals in the Engebø tailings.

[http://www.laukeland.no/index.php?option=com\\_docman&task=doc\\_download&gid=129&Itemid=54](http://www.laukeland.no/index.php?option=com_docman&task=doc_download&gid=129&Itemid=54)

Sunnfjord Næringsutvikling, only presented the positive economic impact of the mine, without including the negative impacts on nature, society and existing businesses/ industry<sup>7</sup>. Our view is therefore that the economic evaluation produced in the EIA is worthless as a base for assessing the total economic effect of the mining project, and can be seen as a mere construction to achieve an acceptance of the mining plans. In our complaint we have shown that the business organizations of the tourist industry, wild salmon organizations and seafood business/ industry, all agree in their common condemnation of the dumping plan. The main reason is that they all rely upon a reputation of clean and pristine Norwegian fjords.

The county of Sogn og Fjordane, where the Førdefjord is located, has successful and varied businesses adapted to the west coast. For many years this has been the county with the lowest unemployment rates in Norway, with 1.6% unemployment, compared to 2.9% as the national unemployment average<sup>8</sup>. Existing businesses are now worried that this may change, and 60 companies, with total revenue of 17 billion NOK a year has protested against the plans. We included this letter to the Government in our complaint<sup>9</sup>.

The Directorate writes:

*“The Directorate finds that the Ministry was entitled to conclude that the project would give rise to benefits which were of overriding public interest.”*

As we have shown above, there has not been sufficient and independent economic evaluation of all sides and effects of the mining project to conclude that the project will give rise to substantial benefits. The dumping of mine waste in Førdefjorden could easily give a total of less jobs and a total economic loss, due to the negative impact on the seafood and tourist industry. This has not been assessed.

In addition, we contest the use of “overriding public interest” in this case, and have further arguments below.

#### WHAT IS “OVERRIDING PUBLIC INTEREST”?

The guidance document for article 4(7)<sup>10</sup> has the following list to assess “overriding public interest”:

1. *“Actions or policies aiming to protect fundamental value for citizen's lives (health, safety, environment);*
2. *Fundamental policies for the state and the society;*
3. *Carrying out activities of an economic or social nature, fulfilling specific obligations of public services.”*

The dumping of industrial waste in a water body cannot be accepted using no 1 or 3 (health etc and public services). It should likewise be impossible to call dumping of industrial waste in water bodies as “fundamental policies” for Norway or for the Norwegian society. In our opinion the guidance document says that “overriding public interest” should only be used for projects fundamental to the function of the society.

The validity of this guidance document:

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<sup>7</sup>Arne Stokka et. al. 2013 Sintef rapport: Økonomiske ringvirkninger av mineralbrudd i Engebøfjellet

<https://www.sintef.no/publikasjoner/publikasjon/Download/?pubid=SINTEF+A23129>

<sup>8</sup> Unemployment statistics, the Norwegian Labour and Welfare Administration, June 2016:

[https://www.nav.no/no/NAV+og+samfunn/Statistikk/Arbeidssokere+og+stillinger+-+statistikk/Hovedtall+om+arbeidsmarkedet/\\_attachment/440677?\\_download=true&\\_ts=155a119e220](https://www.nav.no/no/NAV+og+samfunn/Statistikk/Arbeidssokere+og+stillinger+-+statistikk/Hovedtall+om+arbeidsmarkedet/_attachment/440677?_download=true&_ts=155a119e220)

<sup>9</sup> Ja til reint hav – nei til fjorddeponi ! (Yes to a clean sea – no to tailings disposal in the fjord). A petition to the Government,

[http://www.laukeland.no/index.php?option=com\\_docman&task=doc\\_download&gid=92&Itemid=54](http://www.laukeland.no/index.php?option=com_docman&task=doc_download&gid=92&Itemid=54)

<sup>10</sup> Guidance document no 20, GUIDANCE DOCUMENT ON EXEMPTIONS TO THE ENVIRONMENTAL OBJECTIVES, European Communities, 2009

*“The EU Member States, Norway and the European Commission have jointly developed a common strategy for supporting the implementation of the Directive 2000/60/EC, “establishing a framework for Community action in the field of water policy” (the Water Framework Directive).”*

*“This document compiles previously agreed interpretations on issues related to environmental objectives and exemptions and does not add any new issues.”*

In other words, this guidance document contains interpretations on exemptions etc agreed upon by all EU member states and Norway.

## COMMON IMPLEMENTATION STRATEGY

The Directorate refers to the Court of Justice of the European Union (CJEU):

*“The CJEU has noted that as those principles and that framework are to be developed subsequently by States by means of the adoption of individual measures the WFD does not seek to achieve complete harmonisation of the rules concerning water.”*

There is a difference between a call for “complete harmonisation” and an obligation to follow specific guidance documents that are agreed upon by all member countries and Norway in order to ensure a common implementation strategy for the WFD. We claim that the decision in CJEU does not imply a national right to put the common agreed guidance documents aside, and that the guidance documents should be used in assessing exemptions in article 4(7).

The Commission (DG EN) has now launched an initiative for a more specific guidance document for article 4(7):

*“The gaps in the justification of exemptions have been identified as one of the areas that will need improvement in the WFD implementation.” (Strategic Coordination Group, 22 February 2016)*

The water directors of all member countries and Norway participate in this work.

## COULD THE DUMPING BE STOPPED IN THE NEXT RIVER BASIN MANAGEMENT PLAN?

If a dumping permit is granted, using article 4(7), then the dumping will give a physical change of the fjord bottom, and will destroy all bottom life, thereby establishing a “bad” ecological status. (This result is accepted by the Ministry)

In the next river basin plan, it must be decided whether the dumping place can be accepted as a Heavily Modified Water Body (HMWB) or not. If it cannot be accepted as HMWB, the dumping must stop, in order to obtain “good” ecological status.

In our complaint we referred to the guidance documents for HMWB (agreed upon by all member countries and Norway), showing that the guidance documents only accept the construction of important structures for society as HMWB, such as water supply, ports, energy supply, bridges etc.

Dumping of industrial waste is far from the cases that are listed as acceptable in the guidance documents. The dumping should therefore be stopped in the next river basin management plan.

This would be an awkward situation; granting a dumping permit according to article 4(7), and then order the dumping to stop, because the dumping site cannot be accepted as HMWB. This would obviously not be an intention of the WFD, and therefore the guidance documents for HMWB should be used as an additional source for interpreting the sentence “overriding public interest” in article 4(7).

In our complaint we argued for using the guidance documents for HMWB as guidance for article 4(7), but we cannot see that the Directorate has commented on this.

#### NEW DEVELOPMENT IN THE USE OF ARTICLE 4(7)

There is an ongoing work, initiated by the Commission (DG ENV), to develop new guidance documents to ensure a common approach to the use of article 4(7) in the member countries. We cite from work in the Strategic Coordination Group:

*“The gaps in the justification of exemptions have been identified as one of the areas that will need improvement in the WFD implementation. The Commission and Member States have in particular identified the need to develop such guidelines for the application of article 4(7) for new modifications to the physical characteristics of water bodies and for new sustainable human development activities.”*

*“Considerations related to Heavily Modified Water Bodies (HMWBs) and artificial water bodies (AWBs): the application of article 4(7) also applies to HMWBs and AWBs if there is a potential deterioration or a risk of not achieving the objective of good ecological potential. On the other hand, natural water bodies subject to an exemption of article 4(7) are likely to be designated as HMWBs after the project is implemented. The assessment of the impacts of the project on surface waters should therefore be coherent with HMWB designation criteria.”<sup>11</sup> (Our underlining)*

SCG expresses here the same opinion as we expressed in our complaint and in the previous chapter, namely that the guidance documents for designating HMWB should be used when assessing impacts following new projects (4(7)).

What types of projects have proven challenging in application of article 4(7)?

*“The application of article 4(7) has proved quite challenging in a number of Member States, in particular for projects related inter alia to hydropower, navigation, gravel extraction, water abstraction and flood protection. When these projects are liable to cause a deterioration or put at risk the achievement of the environmental objectives, they may only be authorised if all the conditions under article 4(7) are met.”*

Again we see a list of projects that are of strategic importance to society, energy production, navigation etc. Dumping of industrial waste in a water body is not on the list, neither for article 4(7), nor for HMWB.

The acceptance of a project that includes dumping of industrial waste in a water body is far from a type of project that should be classified to be within the exemption rules of 4(7).

#### AVAILABLE MEANS TO OBTAIN A SIGNIFICANTLY ENVIRONMENTAL BETTER OPTION

The Directorate writes:

*“all practicable steps have been taken to mitigate its adverse impacts and that the objectives pursued could not, for reasons of technical feasibility or disproportionate cost, be achieved by other means which would have represented a significantly better environmental option.”*

We strongly disagree with this conclusion. Our conclusion is that there are several available means to obtain a significantly better environmental option that are both technical feasible and without disproportionate cost.

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<sup>11</sup> Strategic Coordination Group, Ad-hoc Task Group Guidance on Article 4.7, Terms of Reference ATG Guidance on Article 4(7), 22 February 2016

Below we discuss alternative mining methods, waste reduction and backfilling methods that are extensively used internationally. We claim therefore that these methods are not of disproportionate cost. It is the methods chosen by Nordic Mining that are disproportionately cheap compared to standard European and international mining practice, especially the dumping of tailings directly into Førddefjorden.

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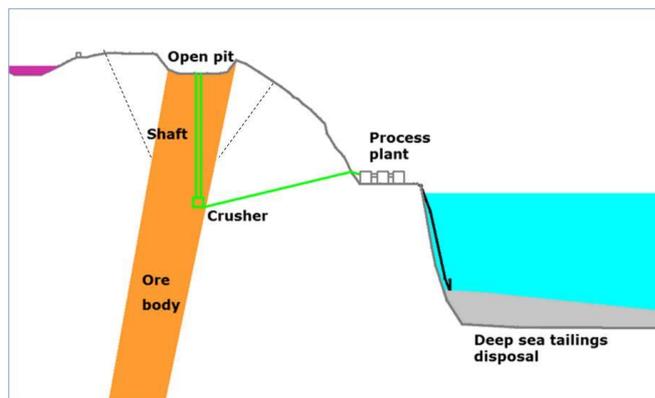
## UNDERGROUND MINING AND BACKFILLING

The operation of the Engebø mine is going to start with a period of open pit mining, and after some years continue with an underground mine. The open pit mining period will create large amounts of waste rock to be put in a landfill, and will in addition make it difficult to practice backfilling of tailings.

The location of the ore body makes it convenient to practice underground mining from the beginning, thereby avoiding the open pit mining period. The ore body is vertically oriented, going from the mountain top and downwards far below the sea level. During both the open pit and the underground mining period, it is planned to have a tunnel from the sea level to access the ore body. This tunnel could also be used as access to the part of the ore body that is above sea level without an open pit construction from the top of the mountain. This mining method is to be used in the planned Nussir copper mine, that has a similar location of the ore body, and could of course also be used in Engebø.

There are three advantages connected with underground mining instead of open pit:

- Less damage to the nature
- Less waste rock, and no need for a waste rock landfill
- Possible to practice backfilling of tailings during the active mining period, thereby obtaining a significant reduction of tailings to be stored



As this illustration from the mining company shows, there is no need to have an open pit mining period. (We have indicated the open pit volume with the two dotted lines). The location of the ore body, directions, levels and location near the fjord, are quite similar to the ore body of Nussir in Kvalsund, but the Nussir mining company has planned to take out all ore as an underground operation, to reduce the environmental impact.

There has not been an assessment of this alternative mining method for the Engebø mine.

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## CUT AND FILL OPERATIONS (BACKFILLING OF TAILINGS)

Internationally, cut and fill operations (overhead and underhead cut and fill) are often used in mining. A volume of ore in the mine is taken out for processing, and this volume is then backfilled with tailings. The volume filled with tailings is then used as a working platform to take out the next volume of ore etc.

With some modifications this method may be used for mining both upwards and downwards.

The advantages of this method are both supporting the void mine areas, thereby reducing risk of mine collapse, and the advantage of internal disposal of mine waste.

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#### WASTE MINIMIZATION AND ALTERNATIVE USE OF TAILINGS

The permit to dump mining waste in Førdefjorden includes a condition for Nordic Mining to establish a waste management plan (chapter 9.2 of the permit), and there is specifically asked for an assessment of backfilling and alternative use of tailings. If Nordic Mining actually establishes extensive alternative use of tailings and in addition practices backfilling, then the waste amount could be significantly reduced. (Below we indicate that it is at least possible to reduce the waste amount of 60 – 70%, and possibly remove all waste.)

The Directorate of the Environment and the Ministry should have demanded an assessment of waste reduction before granting the dumping permit. The Ministry has instead granted a permit for all the 250 million tons of tailings, thereby accepting no waste reduction (such as backfilling and alternative use of the tailings).

The discussion of alternative storage of the tailings, and the conclusions of the Ministry and the Directorate, is not based on the effects of waste reduction measures that must be included in the waste management plan, a plan required by the Mining Waste Directive (WFD). The conclusions of the Ministry and the Directorate that fjord dumping is the only viable alternative to tailings storage is therefore based on insufficient assessment.

In addition to a violation of the WFD, the lack of a waste management plan before granting a permit to dump mining waste in Førdefjorden, could also be a violation of WFD, a directive that emphasizes waste reduction. The mining waste directive was adopted as Norwegian law 15.06.2012.

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#### WASTE MINIMISING

- If Nordic Mining practices alternative use of tailings, as indicated in the EIA, then it is possible to reduce the waste amount significantly, possibly removing all waste
- If Nordic Mining practices underground mining from the beginning and practices direct backfilling while mining, it is possible to backfill about 50% of the material taken out from the mine
- If Nordic Mining practices open pit mining in the beginning, and makes provisions to use the open pit mining area as a backfilling area in the underground period, it could be possible to backfill most of the tailings from the underground period. Totally this could also make it possible to backfill at least 50% of the tailings
- As a conclusion, combining alternative use and backfilling, it should be possible to reduce the waste amount with at least 60 – 70%, and possibly remove all waste

The conclusion is that a waste management plan with emphasis on waste reduction would significantly have changed the discussion of the options for storing the rest of the mining waste.

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#### DRY STACKING OF TAILINGS

Dry stacking is an alternative method of tailings storage that is gaining interest and use internationally. The tailings are dewatered, and are therefore much easier to store and/ or use for alternative purposes. There will be no need for a tailings dam. Technical equipment for dewatering of tailings, with sufficient capacity, is readily available on the market.

Dry stacking is not assessed by the Ministry.

## POSSIBLE VIOLATION OF THE MINING WASTE DIRECTIVE

We cite from article 13 in the introduction chapter of the Mining Waste Directive (MWD):

*“Member States should ensure that operators in the extractive industry draw up appropriate waste management plans for the prevention or minimisation, treatment, recovery and disposal of extractive waste. Such plans should be structured in such a way as to ensure appropriate planning of waste management options with a view to minimising waste generation and its harmfulness, and encouraging waste recovery.”* (Our underlining)

This emphasizes that the purpose of the waste management plan is to prevent or reduce the amount of waste to be stored in a waste management facility. This plan must therefore be established as a basis when granting a permit for the waste management facility. If the waste generation is significantly reduced, then the size of the waste management facility could be significantly reduced, and this would influence the available options for the type of facility to be chosen.

In the Guidelines for the inspection of mining waste facilities we find the following information:

### **“6.1 Pre-deposition**

*The design details of the facility, together with the waste management plan and including the initial version of the O&M Manual, would be prepared and submitted during the permitting stage.<sup>12</sup>”* (our underline)

Here it is stated that the “waste management plan” should be prepared as one of the documents to be submitted before granting a permit for a waste management facility. Our conclusion is that the waste management plan should be established before planning the arrangements for waste management.

In the Engebø case, this means that the waste management plan with waste minimising measures should have been established before the Ministry granted a permit to dispose of a certain amount of mining waste. The waste management plan with waste minimising measures is necessary to assess the amount of mining waste to be managed. Only then it is possible with a good assessment of alternative “waste management options”, such as dumping in Førddefjorden, backfilling or storing in tailings dams or dry stacking facilities.

In the Engebø case, there is no such waste management plan, and therefore no plan for waste minimising. As a result of this, the ministry granted a permit to dump all 250 million tons of mining waste, with no waste minimising in place. MWD article 5(1) gives detailed instruction on establishing the waste management plan.

**We claim that it is a violation of the MWD that the Ministry granted a permit to dump all 250 million tons of mining waste in Førddefjorden without a waste management plan that includes waste minimising measures.**

With a proper waste minimising plan, the amount of mining waste could be significantly reduced, and this would have influenced the assessment of alternative ways of how to dispose of the reduced amount of mining waste.

## 2: PERMIT TO DOUBLE THE DUMPING OF MINE WASTE IN RANFJORDEN

The Agency is still assessing this case, and we have no further comments.

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<sup>12</sup> European Commission, DG Environment, Establishment of guidelines for the inspection of mining waste facilities, inventory and rehabilitation of abandoned facilities and review of the BREF document No. 070307/2010/576108/ETU/C2, Annex 2, Guidelines for the inspection of mining waste facilities, April 2012

### 3: PERMIT TO DUMP MINE WASTE IN BØKFJORDEN

The Norwegian national legislation was already in place when the permit was issued in 2008, but the WFD was accepted as Norwegian law 1 May 2009. The Agency therefore states that the new permit was not a violation of the WFD.

#### OUR COMMENT

There has now been practiced mine waste dumping in Bøkfjorden for several years, and this permit must therefore be assessed according to our complaint, complaint reason no 4.

In the water management plan for Bøkfjorden<sup>13</sup>, the ecological status is assessed as “very bad”, and it is stated that it will be impossible to change this situation as long as the submarine tailings disposal from Sydvaranger gruve continues. The water body is classified as not HMWB, and there is planned no action to amend the situation. We claim that this is a violation of the WFD.

### 4: THE RIVER MANAGEMENT BASINS PLAN FOR 2016 – 2021 MUST HAVE PROVISIONS TO STOP THE 6 ONGOING DUMPING SITES IN NORWAY

The Ministry finalized the management plans 1 July 2016<sup>14</sup>, and we only have one additional comment while we wait for the Agency to assess this question.

#### OUR COMMENT

Norway accepted the WFD 1 May 2009, and has a 15-year time limit (1 May 2024) to achieve good ecological and chemical status. As far as we understand article 11(7), measures to achieve “good” status within 2024 must be operative within 2021. Our conclusion is therefore that closing the 6 ongoing dumping sites must be included as measures in the river management basins plan for 2016 – 2021 in order to achieve “good” ecological and chemical status in 2024.

On behalf of the complainants



Lars Haltbrekken

Chair of Naturvernforbundet / Friends of the Earth Norway

<sup>13</sup> <http://www.vannportalen.no/contentassets/b6f60ad6f3cc497588cbbff2c28b2ad6/tiltakstabell-norsk-finsk-vannregion-2016-2021.xlsx>

<sup>14</sup> <https://www.regjeringen.no/no/aktuelt/kjempeloft-for-bedre-vannmiljo/id2506703/>