

Determination of an Application for a variation of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2016

Consultation on our decision document recording our decision-making process.

The Permit Number is: EPR/AP3203ML
The Applicant / Operator is: Drakelands Restoration Limited
The Installation is located at: Hemerdon Mine, Plympton, Devon, PL7 5BW

Consultation commences on: 19/03/2024
Consultation ends on: 30/04/2024

What this document is about

This is a draft decision document, which accompanies a draft permit.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the draft permit we are proposing to issue to the Applicant. It is our record of our decision-making process, to show how we have considered all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Applicant's proposals.

This document also identifies where we have accepted the Applicant's proposal, but require further information prior to, or during, the sites operation, to verify the information in the Application.

The document is in draft at this stage because we have yet to make a final decision. Before we make this decision, we want to explain our thinking to the public and other interested parties, to give them a chance to understand that thinking and, if they wish, to make relevant representations to us. We will make our final decision only after carefully considering any relevant matter raised in the responses we receive. Our mind remains open at this stage. Although we believe we have covered all the relevant issues and reached a reasonable conclusion, our ultimate decision could yet be affected by any further information that may be provided that is relevant to the issues we have to consider. However, unless we receive information that leads us to alter the conditions in the draft Permit, or to reject the Application altogether, we will issue the Permit in its current form.

In this document we frequently say, "we have decided". That gives the impression that our mind is already made up; but as we have explained above, we have not yet done so. The language we use enables this document to become the final decision document in due course with no more re-drafting than is absolutely necessary.

We try to explain our draft decision as accurately, comprehensively, and plainly as possible. Achieving all three objectives is not always easy, and we would welcome

any feedback as to how we might improve our draft decision documents in future. A lot of technical terms and acronyms are inevitable in a document of this nature: we provide a glossary of acronyms near the front of the document, for ease of reference.

Preliminary information and use of terms

We gave the application the reference number **EPR/AP3203ML/A001**. We refer to the application as “the **Application**” in this document in order to be consistent.

The number we propose to give to the Permit is **EPR/AP3203ML**. We refer to the proposed permit as “the **Permit**” in this document.

The Application was duly made on 17/09/2021.

The Applicant is **Drakelands Restoration Limited**. We refer to Drakelands Restoration Limited as “the **Applicant**” in this document. Where we are talking about what will happen after the Permit is granted, we call Drakelands Restoration Limited “the **Operator**”. The Application was originally submitted by Tungsten West Ltd, but this was changed by the Applicant to Drakelands Restoration Limited in June 2022.

Drakelands Restoration Limited’s facility is located at Hemerdon Mine, Plympton, Devon, PL7 5BW. We refer to this as “the **Installation**” in this document.

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Glossary of acronyms used in this document

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Glossary of acronyms used in this document

(Please note that this glossary is standard for our decision documents and therefore not all these acronyms are necessarily used in this document).

AAD	Ambient Air Directive
AFC	Acoustic Feature Correction
AONB	Area of Outstanding Natural Beauty
AQS	Air Quality Strategy
AW	Ancient Woodland
BAT	Best Available Techniques
CLe	Critical Level
CLo	Critical Load
CO	Carbon Monoxide
CROW 2000	Countryside and Rights of Way Act 2000
DAAs	Directly Associated Activities
DMS	Dense media separation
EALs	Environmental Assessment Levels
EPR	Environmental Permitting Regulations
EMS	Environmental Management System
ES	Environmental Standards
IED	Industrial Emissions Directive
LWS	Local Wildlife Sites
MDR	Maximum Deposition Rate
MPF	Mineral Processing Facility
MWF	Mining Waste Facility
NGR	National Grid Reference
NMP	Noise Management Plan
NOx	Nitrogen Oxides
PC	Process Contribution
PGN	Pollution Prevention Guidance Notes
PM	Particulate Matter
PPS	Public Participation Statement
RBMP	River Basin Management Plan
SACs	Special Area of Conservation
SCR	Site Condition Report
SHDC	South Hams District Council

SO ₂	Sulphur Dioxide
SPAs	Special Protection Area(s)
SSSIs	Site(s) of Special Scientific Interest
TGN	Technical Guidance Notes
UK HSA	Health Security Agency
WFD	Water Framework Directive
WTP	Water Treatment Plant

1 Our proposed decision

We are minded to grant the permit to the Applicant. This will allow them to operate the Installation, subject to the conditions in the Permit.

We consider that, in reaching that decision, we have considered all relevant considerations and legal requirements and that the permit will ensure that a high level of protection is provided for the environment and human health.

This Application is to operate an Installation which is subject principally to the Industrial Emissions Directive (IED).

The draft permit contains many conditions taken from our standard Environmental Permit template including the relevant Annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations (EPR) and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard condition appropriate.

This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

This includes pre-operational and improvement conditions, where we require further information prior to, or during, the sites operation, to verify the information in the Application.

2 How we reached our decision

2.1 Receipt of Application

The Application was duly made on 17/09/2021. This means we considered it was in the correct form and contained sufficient information for us to begin our determination but not that it necessarily contained all the information we would need to complete that determination. See section 2.3 below for more information on our requests for further information.

The Applicant made no claim for commercial confidentiality. We have not received any information in relation to the Application that appears to be confidential in relation to any party.

2.2 Consultation on the Application

We carried out consultations on the Application in accordance with the EPR, our statutory Public Participation Statement (PPS) and our own internal guidance RGN 6 for Determinations involving Sites of High Public Interest. RGN 6 was withdrawn as external guidance, but it is still relevant as Environment Agency internal guidance.

We consider that this process satisfies, and frequently goes beyond the requirements of the Aarhus Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters, which are directly incorporated into the IED, which applies to the Installation and the Application.

We have also considered our obligations under the Local Democracy, Economic Development and Construction Act 2009 (particularly Section 23). This requires us, where we consider it appropriate, to take such steps as we consider appropriate to secure the involvement of representatives of interested persons in the exercise of our functions, by providing them with information, consulting them or involving them in any other way. In this case, we consider that our consultation already satisfies the requirements of the 2009 Act.

We have consulted on the Application two times. This was due to there being a substantial change in the Application and Applicant, which required a second consultation period.

For both consultations, we advertised the Application by a notice placed on our website, which contained all the information required by the IED, including telling people where and when they could see a copy of the Application. We also placed an advertisement in the South Hams Gazette.

For both consultations, we made a copy of the Application and all other documents relevant to our determination available to view from our Public Register. Anyone wishing to see these documents could arrange for copies to be made. Application documents were also available to view on our citizen space website.

We took the following steps to inform people of the consultations:

- Notable contacts, including local parish councils, were notified of the consultation. Details in the notification contained:
 - details of the Application received, and consultation;
 - issues we could / could not consider as part of the consultation;
 - how to view and comment on the Application;
 - a summary of the permitting process.

The first consultation ran from 01/10/2021 to 12/11/2021. Responses received after this date were also included for consideration.

The second consultation was extended for a two-week period, after receiving complaints that there was insufficient time to respond. The consultation ran from 12/12/2022 to 31/01/2023. Responses received after this date were also included for consideration.

We sent copies of the Application to the following bodies, which includes those with whom we have “Working Together Agreements”:

- Public Health England
- Food Standards Agency
- Health and Safety Executive
- South Hams District Council (Planning Department)
- South Hams District Council (Environmental Health Department)
- Plymouth NHS (Director of Public Health) [ex PCT equivalent]
- Plymouth City Council
- Devon County Council - Mineral Planning Authority
- South West Water
- Dartmoor National Park
- Devon Wildlife Trust
- English Heritage
- UK Health Security Agency

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly. Note under our Working Together Agreement with Natural England, we only inform Natural England of the results of our assessment of the impact of the Installation on designated Habitats sites.

Further details along with a summary of consultation comments and our response to the representations we received can be found in Annex 3. We have taken all relevant representations into consideration in reaching our determination.

2.3 Requests for Further Information

Although we were able to consider the Application duly made, we did in fact need more information in order to determine it and issued formal information requests on:

- 08/02/2022
- 16/02/2022
- 03/02/2023

- 01/03/2023
- 05/10/2023
- 09/11/2023
- 23/11/2023

A copy of each formal information request, and the Applicant's subsequent response, was placed on our public register.

In addition to our information notices, we received additional information during the determination from the Applicant in the form of a further update to the site's proposed housing of the primary and secondary crusher on 21/09/2023 and 26/09/2023. We made a copy of this information available to the public in the same way as the responses to our information notices.

Finally, we have consulted on our draft decision in the same manner that we initially consulted on the Application which we describe above. We have added any previous respondent to our list of notable contacts to ensure they have been contacted for this consultation on the draft decision.

Having carefully considered the Application and all other relevant information, we are now putting our draft decision before the public and other interested parties in the form of a draft Permit, together with this explanatory document. As a result of this stage in the process, the public has been provided with all the information that is relevant to our determination, including the original Application and additional information obtained subsequently, and we have given the public three separate opportunities (including this one) to comment on the Application and its determination. Once again, we will consider all relevant representations we receive in response to this final consultation and will amend this explanatory document as appropriate to explain how we have done this, when we publish our final decision.

A summary of the consultation responses and how we have considered all relevant representations is shown in Annex 3.

3 The legal framework

The Permit will be granted, if appropriate, under Regulation 13 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED; and,
- subject to aspects of other relevant legislation which also have to be addressed.

We address some of the major legal requirements directly where relevant in the body of this document. Other requirements are covered in a section towards the end of this document.

We consider that if we grant the Permit, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection as a whole will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

4 The Installation

4.1 Description of the Installation and related issues

4.1.1 The Hemerdon Mine complex activities

The development at the site consists of three main elements.

- The mining, quarrying and base mineral extraction operation to be carried out under Planning Authorisations and subject to the control of **Devon County Council**.
- The deposit of unwanted waste material from the base mineral mining extraction operation and waste produced by the Mineral Processing Facility in a Mining Waste Facility (MWF) controlled by the **Environment Agency** under Mining Waste Permit reference **EPR/JB3209MD**. This Permit was issued in December 2022.
- The Mineral Processing Facility (MPF), subject to control by the **Environment Agency**, that takes extracted base mineral from the mining/quarry operation to produce ore concentrates that are exported from the site for final metal extraction and refining elsewhere.

Other environmental permits granted to and held by the Applicant in relation to the wider mining site include the permits listed in the table below. These environmental permits have been permitted separately, and cover activities such as water abstractions and discharges.

There was no requirement for the MPF and MWF facilities to be within a single permit. This approach follows how the site was historically permitted.

Other permits relating to this installation		
Activity	Permit number	Date of issue
Mining Waste Facility Permit	EPR/JB3209MD	09/12/2022
Smallhanger discharge south tank	EPR/QP3420XX	10/11/2022
Elford's Pond discharge	EPR/DB3290RH	10/11/2022
Loughner Mill Impoundment Licence	SW/047/0002/005	29/12/2021
Loughner Mill Abstraction Licence	SW/047/0002/023	21/02/2023
Tory Pond Reservoir Impoundment Licence	SW/047/0002/003	29/12/2021
Tory Pond Abstraction Licence	SW/047/0002/022	21/02/2023
Dewatering abstraction licence and surface water discharge permit	SW/047/0002/020 EPR/QP3420XX	23/11/2022
Sewage Treatment - site offices	EPR/WB3893DT	30/03/2022
Sealed sources - Radioactive Substances Activity	EPR/VB3191DN	07/08/2020

4.1.2 The MPF Permitted activities

The MPF Installation is subject to the EPR because it carries out an activity listed in Part 1 of Schedule 1 to the EPR:

- S2.1 A(1)(a) - Roasting or sintering metal ore, including sulphide ore, or any mixture of iron ore with or without other minerals.
- S5.4 A(1)(a)(ii) - Treatment of non-hazardous waste in a plant with a capacity of more than 50 tonnes per day by physico-chemical treatment.
- S3.5 Part B (a) - Crushing, grinding or other size reduction of any designated mineral or mineral product.

An installation may also comprise “directly associated activities” (DAAs). At this Installation the following activities are considered DAAs to both the S2.1 A(1)(a) and S3.5 Part B (a) activities.

- Dense media separation (DMS) and associated storage of waste
- X-Ray transmission ore sorting
- Grinding, fines and floatation separation
- Pre concentrate dryer
- Magnetic separation
- Ore concentrate separation and final tin concentrate drying
- Storage of excavated material and crushed ore
- Storage of ore sorter rejects
- Raw material storage
- Surface water collection and storage

Together, these listed and directly associated activities comprise the Installation.

The S3.5 Part B (a) activity and the S2.1 A(1)(a) activity are both considered to be technically connected as both units are served by the same DAAs and S5.4 A(1)(a)(ii) activity. These activities are therefore considered part of the same installation, in accordance with Regulatory Guidance Note 2 Understanding the meaning of regulated facility.

4.1.3 What the Installation does

Tungsten and tin metal compounds are naturally present with iron oxide deposits within the extracted base mineral material. It is the iron content within the extracted mineral that enables the final stages of separation into tungsten and tin ore concentrates.

Mined mineral extracted from the mining operation is processed in primary and secondary crushing and screening plant (EPR Schedule 2 activity reference S3.5 Part B(a)) to reduce the physical size of the ore material for subsequent processing. All crushing and screening operations take place in enclosed buildings, equipped with bag filter systems to control dust emissions.

The size reduced mineral ore undergoes a series of further physical treatment and separation processes within the process buildings. These operations are progressive

water-based suspension separation techniques which include dense media separation and froth flotation.

The physical separation processes produce an ore pre-concentrate for subsequent drying and processing in the reduction kiln stage of the plant (Section 2.1 A(1)(a) – Roasting or sintering metal ore, including sulphide ore, or any mixture of iron ore with or without other minerals). The output from the reduction kiln is subject to further physical separation and drying operations to produce separate tungsten and tin ore concentrates which are then transported away from the site for refining into final metal products at separate off-site facilities.

The dryer plant and reduction kiln utilise diesel or liquified petroleum gas fired combustion processes with the combustion flue gasses being vented via 25m and 30m flue stacks. Emissions from the reduction kiln are treated through a wet scrubber abatement system prior to release to air. Emissions from the pre-concentrate and tin concentrate dryer systems are treated through a bag filter prior to release to air.

The water based physical separation processes for the incoming crushed ore material involves high volumes and circulation flow rates through the various stages of the process (up to 2,200 m³ per hour).

To maintain the process requirements within the various process stages the facility also includes a waste Water Treatment Plant (WTP) (EPR Schedule 2 activity reference S5.4 A(1)(a)(ii)) that can treat up to 500 m³ per hour of the circulating flow and return the cleaned process water to the system.

The MPF site includes stockpiles of excavated materials, crushed ore and ore sorter rejects. These stockpiles are located on impermeable surfaces with sealed drainage. All surface water discharged off site shall be subject to Environmental Permits EPR/QP3420XX and EPR/JB3209MD. This will include required monitoring standards and emission limits.

All waste generated at Hemerdon will be transported to the MWF (Permit reference EPR/JB3209MD) for use in the tailings embankment. This Permit does not cover the processing of this material for the purpose of use as an aggregate.

Solid and slurry waste from the MPF will include: dense media separation rejects, the water treatment filter cake, and tailings. This material is a waste at the point it is discarded. The tailings are an extractive waste from the fines separation unit, and shall be transported by pipeline to the MWF, with a limit of 13,000 m³ per day.

Ore sorter rejects may be transported off site for use as an aggregate. If this material does go to the MWF and is discarded, it is a waste.

4.2 The site and its protection

4.2.1 Site setting, layout, and history

The MPF is located in the centre of the Hemerdon Mine complex, which also includes the hard rock open pit to the south of the site, and MWF to the north.

The MPF is located on Crownhill Down, at national grid reference (NGR): SX 56952

58992. The town of Plympton is located 3km to the south west of the facility, and the city of Plymouth is approximately 10km to the south west. The site also lies north of the villages of Sparkwell and Hemerdon and is adjacent to the china clay pits near Lee Moor.

The majority of the land near the site is moorland, or farmland used for livestock grazing. There are also areas of woodland near the boundaries of the Hemerdon Mine complex.

The Site Condition Report (SCR) for the MPF provided with the Application identifies that the site lies in an area characterised by current and historic quarrying and mining operations. Several short periods of mining and mineral processing have taken place at the site since the presence of tungsten was first discovered in 1867.

A processing plant was first established during the First World War but closed in 1919. During the Second World War, mining recommenced between 1930 and 1944. The site then remained unoperated until the most recent operation of the Mineral Processing Facility by Wolf Minerals (UK) Limited. The MPF site was permitted between July 2014 and March 2019.

Since the previous permitted operation of the site, the MPF permit boundary has changed to include new site areas. This includes a new location for the primary and secondary crusher, new material stockpiles, attenuation ponds and new buildings with ore sorter screens. The new boundary remains within the area under planning permission for the Hemerdon Mine complex.

The Applicant submitted a site plan which we consider is satisfactory, showing the site of the Installation and its extent. During the permit determination, it was determined that the ore sorter rejects temporary storage needed to be included within the permit boundary, as it is a DAA to the installation activity, so the proposed site boundary needed to be altered from that originally applied for. It was also determined that the attenuation ponds that receive surface water run-off, and the tailings transfer pipeline needed to be included within the permit boundary.

A plan is included in Schedule 7 to the Permit, and the Applicant will be required to carry on the permitted activities within the site boundary.

4.2.2 Proposed site design: potentially polluting substances and prevention measures

The Applicant has provided information on potentially polluting substances and prevention measures within their Application. Key operating techniques to prevent ground contamination are summarised below:

- All storage tanks will be quality assured and tested for leakage prior to commissioning.
- Storage areas will be clearly marked.
- Procedures will be in place for the regular inspection and maintenance of storage areas, with repairs undertaken as soon as is practicable.
- The main process buildings and the area occupied by the Water Treatment Plant (WTP) will be constructed with an impervious concrete base. The main process building is designed with a gradient and fall to sealed collection drains

and blind sumps. Any spillages or releases from the process will be contained and collected within the building, before being removed by pumping and returned to the process.

- Bunds and other secondary containment will be provided for all tanks containing liquids.
- IBCs will be stored internally and/or on spill trays as appropriate.
- Larger or fixed tank's bund walls will be constructed of suitable materials to prevent harm to the bund.
- The WTP includes a series of 30m³ and 40m³ treatment tanks within a bunded area and a reagent storage area with bunded tank storage for ferrous chloride solution and sodium hydroxide, and for other reagents stored in drums and IBCs.
- In addition to the primary and secondary containment provided by the tanks and bunds, further tertiary containment is provided by the surrounding surfacing and site drainage collection which is routed to the on-site sump ponds.

All new material storage areas, including the stockpile for ore sorter rejects, shall be on impermeable surface with sealed drainage.

The majority of these operating techniques and referenced infrastructure remain unchanged since we permitted the MPF site in 2014. On the basis of these operating techniques, we consider the pollution risk to ground and groundwater to be insignificant. Groundwater shall be monitored for the wider Hemerdon Mine Complex, as part of the MWF permit (EPR/JB3209MD).

Permit condition 1.1 of the permit requires the Operator to implementation of an Environmental Management System (EMS) on site. This will include an Accident Management Plan. This must be made available to the Environment Agency before operations commence, as stated in pre-operational condition (PO1), within Table S1.4 of the permit.

We have also included two pre-operational conditions (PO6 and PO7), within Table S1.4 of the permit, which require the Applicant to review the primary and secondary containment measures prior to the ore commissioning stage of the operation. This will include a review of the condition of the physical condition of the containment infrastructure, to ensure that the containment has not deteriorated since its original installation.

We have also included pre-operational condition PO8 in the Permit, requiring the Operator to provide an 'as installed' site drainage plan. This is to ensure that any minor changes to the drainage design are identified to the Environment Agency.

Under Article 22(2) of the IED the Applicant is required to provide a baseline report containing at least the information set out in paragraphs (a) and (b) of the Article before starting operation.

The Applicant provided a Site Condition Report (SCR) which replicated the SCR provided for the 2014 Wolf Minerals Limited application. The Applicant has not submitted a baseline report which covers the whole of the new permit boundary. Notably the area for the ore sorting reject storage has not been included. We have therefore set a pre-operational condition (PO5), within Table S1.4 of the permit,

requiring the Operator to provide this information prior to the ore commissioning stage of the operation.

The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the installation and at cessation of activities at the installation.

4.2.3 Closure and decommissioning

We are satisfied that the appropriate measures will be in place for the closure and decommissioning of the Installation. Pre-operational condition PO1, within Table S1.4 of the permit, requires the Operator to have an EMS in place before the Installation is commissioned. This EMS will include a Site Closure Plan.

At the definitive cessation of activities, the Operator must satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, considering both the baseline conditions and the site's current or approved future use. To do this, the Operator will apply to us for surrender of the permit, which we would not grant unless and until we are satisfied that these requirements have been met.

The wider Hemerdon Mine complex has requirements for the Operator to restore the entire site. The Restoration Plan for the wider site has been included within Table S1.2 of the MWF permit (permit reference: EPR/JB3209MD).

4.3 Operation of the Installation – general issues

4.3.1 Administrative issues

The Applicant will be the sole Operator of the Installation. We are satisfied that the Applicant is the person who will have control over the operation of the Installation after the granting of the Permit; and that the Applicant will be able to operate the Installation so as to comply with the conditions included in the Permit.

4.3.2 Management

The Applicant has stated in the Application that they will implement an EMS that will be certified under ISO14001. We are satisfied that appropriate management systems and management structures will be in place for this Installation, and that sufficient resources are available to the Operator to ensure compliance with all the Permit conditions. Pre-operational condition PO1, within Table S1.4 of the permit, is included in the permit requiring the Operator to provide the EMS prior to the ore commissioning stage of the operation.

4.3.3 Site security

Having considered the information submitted in the Application, we are satisfied that appropriate infrastructure and procedures will be in place to ensure that the site remains secure. Further information will be included in the EMS, and must be in place prior to commissioning, as required by pre-operational condition PO1, within Table S1.4 of the permit.

4.3.4 Accident management

The Applicant has not submitted an Accident Management Plan. However, having considered the other information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that accidents that may cause pollution are prevented but that, if they should occur, their consequences are minimised. An Accident Management Plan will form part of the Environmental Management System and must be in place prior to commissioning as required by pre-operational condition PO1, within Table S1.4 of the permit.

4.3.5 Off-site conditions

We do not consider that any off-site conditions are necessary.

4.3.6 Climate change adaptation

We have assessed the climate change adaptation risk assessment. We consider the climate change adaptation risk assessment is satisfactory. Since the Application was submitted, the Environment Agency has ceased to request and assess climate change adaptation risk assessments from Applicants.

4.3.7 Waste management

Solid wastes and slurries from the MPF include; dense media separation (DMS) rejects, the WTP filter cake and tailings. These wastes will be transported to the Mining Waste Facility (Permit reference EPR/JB3209MD) for use in the tailings embankment.

Any wastes are considered extractive wastes, and are required to have a Waste Management Plan, in accordance with Schedule 20 to the EPR 2016.

Ore sorter rejects may be transported off site for use as an aggregate. The Operator must conduct a self-assessment to determine its waste status. If this material does go to the MWF and is discarded, it is a waste.

We have informed the Applicant that should ore sorter rejects need further processing into an aggregate on site, this will need to be a permitted activity. Processing rejects for use as an aggregate is not currently permitted by the Environment Agency and has not been applied for to date.

A Waste Management Plan for the solid and slurry waste was approved by us for the MWF Permit (EPR/JB3209MD) and has been included in the Operating Techniques Table S1.2 of the MPF permit. The Waste Management Plan includes the processes that created the solid and slurry waste, the characterisation of the wastes, and a review of the potential environmental impact.

We have also considered the environmental impact of the waste storage and treatment within the MPF boundary as part of this Application. This includes the storage of the ore sorter reject stockpile.

The S5.4 A(1)(a)(ii) activity at the MPF is treating process water. Waste water treatment and use of process water at the MPF remains mostly unchanged since our

previous approval in 2014. The waste water treatment and resulting filter cake are required to be added to the existing Waste Management Plan. We have included this as a requirement in pre-operational condition PO9 (within Table S1.4 of the permit).

5 Minimising the Installation's environmental impact

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration, fugitive emissions to air and water; as well as point source releases to air, discharges to ground or groundwater, and generation of waste and other environmental impacts. All these factors are discussed in this and other sections of this document.

For an installation of this kind, the principal emissions are those to air, although we also consider those to land and water.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of the emissions to air, and emissions of noise and dust from the Installation, and what measures we require to ensure a high level of protection.

These sections are for the MPF only. Activities outside of the permit boundary are not being determined as part of this Application. The MWF permit (permit reference: EPR/JB3209MD) was issued on 09/12/2022. A separate decision document was produced by the Environment Agency with regards to the MWF and was placed on our public register.

5.1 Audible noise

5.1.1 Audible noise modelling and impact assessment

Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration, and to prevent significant pollution from noise and vibration outside the site. Whilst the results of the noise assessment indicate potential adverse impacts, and the Installation may be audible at a receptor, we do not consider that there will be significant pollution. Further details on our conclusions are found in section 5.1.8.

The Application contained a noise impact assessment which identified local noise sensitive receptors, potential sources of noise at the proposed plant and noise attenuation measures. Measurements were taken of the prevailing ambient noise levels to produce a baseline noise survey and an assessment was carried out in accordance with BS 4142:2014 to compare the predicted plant rating noise levels with the established background levels.

We have reviewed the Applicant's modelling assumptions, numerical predictions, and conclusions regarding impact in accordance with BS4142:

- A difference of around +10dB or more is likely to be an indication of significant adverse impact, depending on the context.
- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.

Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

This study has been reviewed by our noise modelling and assessment specialists and we consider that it forms a suitable assessment of the potential noise impacts from the installation.

We have determined that the results of the noise assessment indicate potential adverse impacts, but not significant adverse impacts. Adverse impacts are only permissible if the site is working to Best Available Techniques (BAT) to minimise operational sound emissions which we consider will be the case here.

BAT means the available techniques which are the best for preventing or minimising emissions and impacts on the environment. 'Techniques' include both the technology used and the way your installation is designed, built, maintained, operated, and decommissioned. Our consideration of BAT for noise is outlined in section 5.1.7 below.

5.1.2 Receptors

During our determination we were notified by South Hams District Council (SHDC) of a certificate for lawful use had been granted for a new residential receptor at Goodamoor Farm, which is the closest residential receptor approximately 900m south east from the permit boundary.

In response to this we asked the Applicant under schedule 5 notice to consider this new additional receptor as part of their risk assessment screening. Following further investigation by SHDC, the certificate of lawful use was subsequently revoked on 12/08/2022, so we do not consider this to be a relevant receptor and has not been considered further as part of this determination.

If the circumstances for the facility change whilst operational, for example, if a new residential property is built closer to the site boundary, the Operator may have to take action to prevent or where that is not practicable, minimise actual or potential noise emissions.

5.1.3 Background levels

We mostly agreed with the background sound survey locations and methodology. We noted that some measurements were made during periods of unsuitable meteorological conditions (wind speeds > 5m/s, instances of rainfall), but acknowledge that all unsuitable data, due to adverse weather, was removed from the Applicant's analysis.

We analysed the background sound data and found marginally lower background sound levels at most receptors and the potential for much lower levels at Mumford Cottage. This was considered as part of our assessment.

5.1.4 Sound source levels

We agree with the sound source levels used for the internal and external sound sources associated with the proposed mineral processing operations. The measured or estimated levels line-up with their closest corresponding BS5228 levels and are in-line with our knowledge of sources from other sites.

The Applicant's BS 4142:2014 did not include the mitigation of the primary and secondary crushers being housed, in acoustically clad buildings. The Assessment also did not include the mitigation of acoustic enclosures for 12 of the large processing screens, and the secondary crusher. These additional mitigation measures will reduce the impact of noise.

We have included an improvement condition (IC3), in Table S1.3 of the permit, requiring the Operator to conduct a BS4142 noise assessment during normal operations of the site, to verify the assumptions made in the Application.

5.1.5 Acoustic feature corrections

We agree with the consultant's acoustic feature correction (AFC) of +3dB during the night, which accounts for the proposed mineral processing activities being audible against the underlying sound climate. The Applicant has not applied an AFC for daytime operations, stating that the mineral processing activities would not be audible compared to non-permitted mining activities.

We are satisfied with the AFC applied by the Applicant. We have included an improvement condition (IC3), in Table S1.3 of the permit, requiring the Operator to conduct a BS4142 noise assessment during normal operations of the site, to verify the assumptions made in the Application.

5.1.6 Context

The wider Hemerdon Mine complex will have associated noise emissions, not associated to the MPF. This includes the MWF (permit reference: EPR/JB3209MD), and the mining, quarrying and base mineral extraction operation to be carried out under Planning Authorisations subject to the control of Devon County Council.

These activities may often have noise emitting machinery that is closer to receptors than the MPF.

We disagree with the Applicant's conclusion that the modelling demonstrates a low impact of noise based on the context of the site location. We know that local residents are sensitised to noise from the permitted activities, and the MPF further operates 24 hours a day, 7 days a week. The context for the site location and activities therefore does not demonstrate low impact. We have determined that the results of the noise assessment indicate potential adverse impacts, but not significant adverse impacts.

5.1.7 Noise management

The Applicant has provided a Noise Management Plan (NMP) (reference: Noise Management Plan for Minerals Processing Facility, dated: October 2023) and Best Available Technique (BAT) Assessment (reference: Best Available Techniques and Operating Techniques, dated: November 2022), to detail the operating techniques that will be used to prevent, or where that is not practicable, minimise, noise.

We have considered the operating techniques against the BAT Reference Document for the Non-Ferrous Metals Industries, and BAT for other common Installation sectors. Part B Installation activities do not have BAT reference documents associated to noise. We have further considered our gov.uk guidance on noise and vibration

management (replacing Horizontal Guidance for Noise H3). We consider that the operating techniques proposed for noise management meet BAT.

The operating techniques stated in the Application include the following:

- The primary and secondary crushers are a key source of audible noise. The crusher has been relocated to be approximately 150-250m further away from the receptors most impacted by audible noise, when compared to the previous site operations.
- The tipping of material from articulated dump trucks, and removal of waste materials, will only occur between the hours of 07:00 and 19:00. The primary and secondary crushing, and associated screens, will only operate between the hours of 07.00 - 22.00.
- The primary and secondary crushing plant, and associated screens, will be located in cladded buildings. The secondary crusher and screen will further have an additional noise enclosure located within the cladded building.
- A noise attenuating barrier will be installed on the southern and western boundaries of the crusher area. The crusher buildings shall also be built lower than the surrounding ground level to create a noise barrier.
- The crushers will be fitted with rubber lined feed hoppers and rock boxes to mitigate noise generation.
- There will be additional new buildings, and an extension to the main processing building and tertiary crusher building, to house new screens. These new areas will have improved cladding to the walls and roofs.
- All other screens and crushers will continue to operate within the steel cladded building. However new processing screens will also be introduced in the main processing building. This will be to replace some of the previously operational larger screens that were notable for noise emissions.
- In addition to being in cladded buildings, all screens and the secondary crusher will also be contained within separate bespoke noise enclosures, designed to reduce noise emissions.
- There is a new ore sorting system to reduce the amount of material that needs to be processed by crushers and screens. This is estimated as a 70% reduction of ore processing during the nighttime and a 37% reduction during daytime, compared to the previous site operations.
- Conveyors on site will be covered, and conveyor entries will be designed to mitigate noise.
- Site personnel will be trained in the need to minimise site noise and will be responsible for monitoring and reporting excessive noise when carrying out their everyday duties.
- Roller shutter doors will be fitted to mitigate the release of noise. Procedures will be in place to minimise the opening of the roller shutter doors, particularly during nighttime operations.
- Building apertures will be designed to mitigate noise emissions.
- Plant will be turned down/off when not in use.
- Plant and equipment will be maintained regularly to minimise noise resulting from deterioration and inefficient operation.
- There will be continuous noise monitoring for the site at four locations.
- A NMP is in place to confirm the following details:
 - a protocol containing appropriate actions and timelines;
 - a protocol for conducting noise and vibration monitoring;

- a protocol for response to identified noise and vibration events, e.g., complaints;
- a commitment that any noise control equipment is operated and maintained appropriately so it controls noise effectively at all times.
- details of the actions they will take, contingencies, and responsibilities, when problems arise, including expected actions resulting from exceptional circumstances or where serious pollution may occur.
- confirmation of the procedures in place to consider reducing or stopping operations to avoid serious noise pollution.
- a commitment to review the NMP every 2 years or sooner if required.
- a commitment to staff training in use of the NMP.

For the wider Hemerdon Mine complex, outside of the permit boundary for the MPF, vehicles and site roads will be maintained to minimise noise, including speed limits for all vehicles.

5.1.8 Permit compliance requirements

Condition 3.4.1 of the permit states that:

Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

Our guidance for Operators also states for audible or detectable noise:

This level of noise means that noise pollution is being (or is likely to be) caused at a receptor. Your duty is to use appropriate measures to prevent or, where that is not practicable, minimise noise. You are not in breach if you are using appropriate measures. But you will need to rigorously demonstrate that you are using appropriate measures. The closest corresponding BS 4142 descriptor is 'adverse impact' (following consideration of the context).

We have approved the Noise Management Plan, listed in Table S1.2, as we consider it to be appropriate measures based on the information available to us at the current time.

We have determined that the measures listed in the NMP should minimise the noise and vibration from the activities, and are likely to prevent significant pollution at receptors. Whilst the results of the noise assessment indicate potential adverse impacts, and the Installation may be audible at a receptor, we do not consider that there will be significant pollution. We therefore expect the Operator to be compliant with condition 3.4.1 of the permit.

The Operator must use all measures stated in the NMP. If we consider during the operation of the site that there are deficiencies in the NMP, we can require the Operator to update the NMP, through permit condition 3.4.2.

We have included an improvement condition (IC3), in Table S1.3 of the permit, requiring the Operator to conduct a BS4142 noise assessment during normal

operations of the site, to verify the predicted ratings levels made in the Application. If the assessment concludes that the noise levels are above those stated in the Application, then the Operator will need to detail any improvements necessary to further reduce noise emissions.

We have also included an improvement condition (IC5), in Table S1.3 of the permit, requiring the Operator to conduct a review of the effectiveness of the NMP within 12 months from the completion of commissioning. It is best practice to regularly review plans during the operation of the site. The improvement condition is to ensure that this happens in the first year of the operation.

We have excluded from the operating techniques (Table S1.2 of the permit), the proposed 'noise limits' shown in Table 4-6 and 4-7 of the NMP.

The limits stated in Table 4-6 are associated to the planning permission for the wider mine site. We have undertaken our own assessment of noise in respect of those elements we regulate and consider that the standard permit conditions are sufficiently protective to prevent significant noise pollution.

The Applicant is required to keep the plans under constant review and revise them annually or if necessary, sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance 'Control and monitor emissions for your environmental permit'.

5.2 Low Frequency Noise / Infrasound

Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise low frequency noise and to prevent significant pollution from low frequency noise outside the site.

As detailed in section 5.1 of this decision document, the MPF was previously operational by Wolf Minerals Limited, under permit reference EPR/GP3531EX.

The MPF previously caused persistent extremely low frequency noise issues (called "Infrasound"). The Environment Agency carried out a study investigating the previous infrasound pollution, which we reported in December 2017. This study concluded that infrasound from the MPF was causing pollution that was having a significant impact on the lives of some local residents.

The source of the infrasound was the process screens, within the main process building.

The Application contained a Low Frequency Noise Impact Assessment (reference: Noise Impact Assessment, dated: August 2023), which identified the local sensitive receptors, the sources of infrasound, and the proposed mitigation measures.

The Assessment also detailed the results of trials on noise enclosures, conducted by the Applicant during the permit determination period.

The Applicant also provided further information which was an addendum to the Noise Impact Assessment. This included:

- Response to Schedule 5 (dated: 25/10/2023)
- Response to Schedule 5 (dated: 14/11/2023)
- Response to request for information (dated: 24/11/2023) - this response includes the final predicted infrasound levels at receptors, including the use of antiphase speakers on site.

This information has been included in this consultation for review.

We have checked the Applicant's modelling assumptions, numerical predictions, and conclusions regarding the infrasound impact.

5.2.1 Proposed mitigation

The Applicant has proposed the following measures to reduce infrasound emissions from the site, when compared to the previous site operations:

- There is a new ore sorting process to reduce the amount of material that needs to be processed by the infrasound emitting screens. This is estimated as a 70% reduction of ore processing during the nighttime and a 37% reduction during daytime, compared to the previous site operations. The screens processing lower amounts of material are expected to reduce the infrasound emissions.
- New processing screens will be introduced, which will overall be smaller, and replace some of the larger screens that were previously identified as key sources of infrasound emissions. The smaller screens are expected to reduce the infrasound emissions.
- All 12 screens that emit infrasound will be:
 - fitted with 'deck venting' mitigation to increase the open area of the screen and reduce its sound pressure level.
 - enclosed within separate, bespoke designed acoustic enclosures to reduce infrasound emissions.
 - fitted with active noise control (antiphase speakers) within their enclosures, to further reduce infrasound emissions.

All of these measures have been trialled individually by the Applicant to ensure that they reduce infrasound emissions. These controls have not been trialled in combination at the same time. This will be a requirement for the pre-operational verification process.

The NMP covers the management of both audible noise and infrasound. The NMP includes:

- a protocol containing appropriate actions for managing noise, and timelines for these measures;
- a protocol for conducting infrasound monitoring;
- a protocol for response to identified infrasound events, e.g., complaints;
- a commitment that any noise control equipment is operated and maintained appropriately so it controls noise effectively at all times.
- details of the actions they will take, contingencies, and responsibilities, when problems arise, including expected actions resulting from exceptional circumstances or where serious pollution may occur.

- confirmation of the procedures in place to consider reducing or stopping operations to avoid serious noise pollution.
- a commitment to review the NMP every 2 years or sooner if required.
- a commitment to staff training in use of the NMP.

5.2.2 Predicted reduction

The Applicant has predicted through modelling that these measures would reduce infrasound levels at receptors by 20dB to 30dB. This is the equivalent of a >99% reduction of infrasound emissions, when compared to the previous Wolf Minerals operation.

The Applicant predicted the former Wolf Minerals emission levels through bespoke modelling, and also by comparing the modelling results against available monitoring data taken during the trials and the previous site operation.

Table 1 shows the predicted maximum infrasound sound pressure levels at the fundamental frequency (dBZ) in neutral wind conditions, when all mitigation measures are being used, compared to the predicted modelled levels for Wolf Minerals previous operation in neutral wind conditions.

Table 1 - Predicted maximum infrasound sound pressure levels

Receptor	Predicted "New" Maximum Sound Pressure Level with Mitigation (dBZ)	Predicted "Old" Wolf Minerals Sound Pressure Level (dBZ)	Predicted Sound Pressure Level dBZ reduction
Galva House	50.8	77.2	26.4
Birchland Farm	49.5	74.7	25.2
Dartmoor Zoo	43.7	75.9	32.2
Mumford Cottage	40.9	66	25.1
Windwhistle Farm	40.9	70.8	29.9
Gorah Cottages	39.3	66.3	27.0
Road Junction	37.7	65.1	27.4
Newnham House	36.2	71.3	35.1
Yondertown	36.2	62.6	26.4
Portworthy Farmhouse	35.5	67.3	31.8
Boringdon Hall	34.5	57.8	23.3
East of Lee Moor	34.1	59.6	25.5
Lutton	33.7	59.5	25.8
Elfordleigh Hotel	31.4	61.8	30.4
Broadoaks Cottages	30.0	62.6	32.6
Cornwood Inn	29.5	55.2	25.7
Colebrook	28.2	60.9	32.7
Wotter	27.2	57.5	30.3

5.2.3 Background infrasound levels

Infrasound is present in the background at receptor locations when the MPF is not operating. These infrasound levels are due to emissions from other sources, not associated to the Hemerdon Mine complex.

The Low Frequency Noise Impact Assessment (NIA) identified monitored infrasound background levels at receptors up to 50 dBZ. There are many background observations stated in the Low Frequency NIA that show the predicted emissions for the MPF are similar or below background levels at many receptors.

5.2.4 Low frequency assessment review

The Applicant's assessment has been reviewed by our noise specialists. We consider that the proposed >20dB reduction would be a substantial improvement compared to previous operations, and the proposed control measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent significant pollution from noise and vibration outside the site.

The levels stated in Table 1 above are the predicted maximum levels in neutral wind conditions. It was observed in the NIA and through reviewing historic monitoring data that monitored infrasound levels can be higher than those predicted by the Applicant's modelling at downwind receptors by up to 6.4dB.

The receptors when downwind may therefore experience higher emission levels than those stated in Table 1. Including downwind effects, this would still likely represent >20dB reduction upon the previous operation, equivalent of a >99% reduction of infrasound emissions.

The Operator must consider downwind effects when verifying the emissions levels stated in Table 1 above and demonstrate that the levels stated in Table 1 are representative of the levels in neutral wind conditions. The detailed verification plan shall be agreed with the Environment Agency through pre-operation condition PO2. Please see section 5.2.5 for details on how low frequency noise shall be verified.

We observed in 2017 instances of a residence appearing to amplify low frequency noise emissions from the MPF. The Applicant completed a literature review (Appendix N of NIA) that concluded 'consideration of available research on vibration transmission into and through buildings... indicates that effects will be small or negligible'.

Considering all available information, we have determined that with a >20dB reduction of low frequency noise emissions from the site it is unlikely that room resonances or amplification will cause a significant impact on receptors.

5.2.5 Permit compliance requirements

We have included a pre-operational condition (PO2 and PO3), within Table S1.4 of the permit, which requires the Operator to verify the emissions of infrasound, prior to the site becoming fully operational. The Operator would need to demonstrate the emissions of infrasound are at or below the level predicted in the Application (Table 1 above) during the commissioning period of the site development.

Condition 3.4.1 of the permit states that:

Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

We have approved the Noise Management Plan, listed in Table S1.2, as we consider it to be appropriate measures based on information available to us at the current time. The Applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

We have determined that the measures listed in the NMP minimise the noise and vibration from the activities and are likely to prevent significant adverse impacts at receptors.

The Operator must use all measures stated in the NMP. If we deem during the operation of the site that there are deficiencies in the NMP, we can require the Operator to update the NMP, through permit condition 3.4.2.

We have included an improvement condition (IC4), in Table S1.3 of the permit, requiring the Operator to review LFN monitoring during normal operations of the site, to verify the assumptions made in the Application. If the assessment concludes that the emissions are above those stated in the Application, then the Operator will need to detail any improvements necessary to further reduce noise emissions.

We have also included an improvement condition (IC5), in Table S1.3 of the permit, requiring the Operator to conduct a review of the effectiveness of the NMP within 12 months from the completion of commissioning. It is best practice to regularly review plans during the operation of the site. The improvement condition is to ensure that this happens in the first year of the operation.

Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent significant pollution from noise and vibration outside the site.

5.3 Emissions to air

5.3.1 Assessment methodology

There are five point-source emissions to air from the installation which are summarised below, along with the predicted composition and associated abatement control for the release.

(a) Pre-concentrate Ore Drying Plant. This is a rotary drum drying system for pre drying the ore concentrate prior to processing in the Reduction Kiln. The dryer heating is powered by the combustion of either diesel or LPG fuel and the exhaust is treated via a bag filter abatement system prior to release to air via a 25m exhaust stack. The associated release pollutants are Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Sulphur Dioxide (SO₂) and particulate matter.

(b) Reduction Kiln. Pre dried ore concentrate is heated with coal (carbon) reductant in a rotary kiln using diesel or LPG as the combustion fuel source. Flue gas from the kiln is sequentially treated by cyclone, thermal oxidiser, and wet alkali scrubber abatement systems. As well as oxides of iron, tungsten and tin, the ore concentrate also contains arsenic which is present with these compounds in the extracted base mineral material. The cyclone and wet scrubber systems are designed to remove the majority of the arsenic content from the flue gas stream, but a small amount may still be released to air via a 30m exhaust stack. The associated release pollutants from this source are NO_x, CO, SO₂, particulate matter and arsenic (likely to be mainly present in the particulate element of the release).

(c) Tin Concentrate Drying Plant. A small rotary drying plant for the separated tin ore concentrate fraction of the final product. Dryer heating is supplied by the combustion of either diesel or LPG fuel and the exhaust flue gas is treated via a bag filter abatement system prior to release to air via a 25m exhaust stack. The associated release pollutants are NO_x, CO, SO₂ and particulate matter.

(d and e) The primary and secondary crusher plant and associated screens will be enclosed within buildings which have negative pressure and are ventilated via a bag filter abatement plant for dust particulate control. The only associated release is particulate matter.

A methodology for risk assessment of point source emissions to air, which we use to assess the risk of applications we receive for permits, is set out in our guidance 'Air emissions risk assessment for your environmental permit' and has the following steps:

- Describe emissions and receptors
- Calculate process contributions
- Screen out insignificant emissions that do not warrant further investigation
- Decide if detailed air modelling is needed
- Assess emissions against relevant standards
- Summarise the effects of emissions

The methodology uses a concept of "process contribution (PC)", which is the estimated concentration of emitted substances after dispersion into the receiving environmental media at the point where the magnitude of the concentration is greatest. The methodology provides a simple method of calculating PC primarily for screening purposes and for estimating process contributions where environmental consequences are relatively low. It is based on using dispersion factors.

These factors assume worst case dispersion conditions with no allowance made for thermal or momentum plume rise and so the process contributions calculated are likely to be an overestimate of the actual maximum concentrations. More accurate calculation of process contributions can be achieved by mathematical dispersion models, which consider relevant parameters of the release and surrounding conditions, including local meteorology - these techniques are expensive but normally lead to a lower prediction of PC.

5.3.2 Use of air dispersion modelling

For applications, we require the Applicant to submit a full air dispersion model as part of their Application. Air dispersion modelling enables the PC to be predicted at any environmental receptor that might be impacted by the plant.

Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Standards (ES). ES are described in our web guide 'Air emissions risk assessment for your environmental permit'.

Our web guide sets out the relevant ES as:

- Ambient Air Directive Limit Values
- Ambient Air Directive and 4th Daughter Directive Target Values
- UK Air Quality Strategy Objectives
- Environmental Assessment Levels

Where an Ambient Air Directive (AAD) Limit Value exists, the relevant standard is the AAD Limit Value. Where an AAD Limit Value does not exist, AAD target values, UK Air Quality Strategy (AQS) Objectives or Environmental Assessment Levels (EALs) are used. Our web guide sets out EALs which have been derived to provide a similar level of protection to Human Health and the Environment as the AAD limit values, AAD target and AQS objectives. In a very small number of cases, e.g., for emissions of lead, the AQS objective is more stringent than the AAD value. In such cases, we use the AQS objective for our assessment.

AAD target values, AQS objectives and EALs do not have the same legal status as AAD limit values, and there is no explicit requirement to impose stricter conditions than BAT in order to comply with them. However, they are a standard for harm and any significant contribution to a breach is likely to be unacceptable.

PCs are screened out as **Insignificant** if:

- the **long-term** process contribution is less than **1%** of the relevant ES; and
- the **short-term** process contribution is less than **10%** of the relevant ES.

The **long term** 1% process contribution insignificance threshold is based on the judgements that:

- It is unlikely that an emission at this level will make a significant contribution to air quality;
- The threshold provides a substantial safety margin to protect health and the environment.

The **short term** 10% process contribution insignificance threshold is based on the judgements that:

- spatial and temporal conditions mean that short term process contributions are transient and limited in comparison with long term process contributions;
- the threshold provides a substantial safety margin to protect health and the environment.

Where an emission is screened out in this way, we would normally consider that the Applicant's proposals for the prevention and control of the emission to be BAT. That is because if the impact of the emission is already insignificant, it follows that any further reduction in this emission will also be insignificant.

However, where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant.

For those pollutants which do not screen out as insignificant, we determine whether exceedances of the relevant ES are likely. This is done through detailed audit and review of the Applicant's air dispersion modelling taking background concentrations and modelling uncertainties into account. Where an exceedance of an AAD limit value is identified, we may require the Applicant to go beyond what would normally be considered BAT for the Installation or we may refuse the Application if the Applicant is unable to provide suitable proposals. Whether or not exceedances are considered likely, the Application is subject to the requirement to operate in accordance with BAT.

This is not the end of the risk assessment, because we also take into account local factors (for example, particularly sensitive receptors nearby such as a SSSIs, SACs or SPAs). These additional factors may also lead us to include more stringent conditions than BAT.

If, as a result of reviewing of the risk assessment and taking account of any additional techniques that could be applied to limit emissions, we consider that emissions **would cause significant pollution**, we would refuse the Application.

5.3.3 Assessment of impact on air quality

The Applicant's assessment of the impact of air quality is set out in their Air Quality Assessment of the Application. The assessment comprises:

- Dispersion modelling of emissions to air from the operation of the installation.
- A study of the impact of emissions on nearby sensitive habitat / conservation sites.

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the installation and its impact on local air quality. The impact on conservation sites is considered in section 5.3.7.

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon local conservation and habitat sites and human health. These assessments predict the potential effects on local air quality from the Installation's stack emissions using the Lakes AERMOD View V11 dispersion model, which is a commonly used computer model for regulatory dispersion modelling.

The model used 5 years of meteorological data collected from the weather station at Plymouth Mountbatten Meteorological Observation Station. The impact of the terrain surrounding the site upon plume dispersion was considered in the dispersion modelling.

The modelling assumed that the primary and secondary crushers, and associated screens, would be located externally. During the determination of the Application, this proposal was changed to have this plant housed and fitted with dust abatement systems. This represents an improvement in dust and PM₁₀ emissions from the site.

The assumptions underpinning the model have been checked by us and are reasonably precautionary.

As well as calculating the peak ground level concentration, the Applicant has modelled the concentration of key pollutants at a number of specified locations within the surrounding area.

The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed by us to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts and impact on habitats and conservation sites.

Our review of the Applicant's assessment leads us to agree with the Applicant's conclusion with respect to human health receptors. We have also audited the air quality and human health impact assessment and similarly agree that the conclusions drawn in the reports were acceptable.

The Applicant's modelling predictions are summarised in the following sections.

5.3.4 Assessment of air dispersion modelling outputs

The Applicant's modelling predictions are summarised in the tables below.

The Applicant's modelling predicted peak ground level exposure to pollutants in ambient air and at discreet receptors. The tables below show the peak ground level concentrations.

Whilst we have used the Applicant's modelling predictions in the table below, we have made our own simple verification calculation of the percentage process contribution and predicted environmental concentration.

Table 2 – Maximum impact concentration at most highly impacted human receptor locations

Pollutant	EQS / EAL $\mu\text{g}/\text{m}^3$	Process Contribution (PC) $\mu\text{g}/\text{m}^3$	PC as % of EQS / EAL	PEC $\mu\text{g}/\text{m}^3$	PEC as % of EQS / EAL
NO ₂ (Annual)	40	<0.1	<0.1		
NO ₂ (Hourly)	200	0.4	0.2		
SO ₂ (Hourly)	350	1.2	0.3		
PM ₁₀ (Annual)	40	1.7	4.1	16.5	41.2
PM ₁₀ (24 hour)	50	4.0	8.0		
PM _{2.5} (Annual)	25	1.7	8.3	9.1	45.3
Arsenic (Annual)	0.006	0.00059	9.8	0.001	16.6

Note: In the tables above, a conservative assumption has been made that all of the particulate release is at either the PM₁₀ or PM_{2.5} particle size fraction to compare against the relevant AQ standards.

- (i) Screening out emissions which are insignificant

From the tables above the following emissions can be screened out as insignificant in that the process contribution is < 1% of the long-term ES and <10% of the short-term ES. These are:

- NO₂, SO₂, PM₁₀ (24 hour)

Therefore, we consider the Applicant's proposals for preventing and minimising the emissions of these substances to be BAT for the Installation subject to the detailed audit referred to below.

(ii) Emissions unlikely to give rise to significant pollution

From the tables above, the following emissions (which were not screened out as insignificant) have been assessed as being unlikely to give rise to significant pollution in that the predicted environmental concentration is less than 100% (taking expected modelling uncertainties into account) of both the long term and short-term ES.

- PM₁₀ (annual), PM_{2.5}, arsenic

There are no emissions considered to have the potential to give rise to pollution in that the Predicted Environmental Concentration exceeds 100% of the long term or short-term ES.

Although the in-combination impact from all sources of emissions of PM₁₀, PM_{2.5} and Arsenic across the mine site, are not able to be screened out as insignificant, reference to the PEC values confirms that there is sufficient headroom relative to the EQS/EAL standards for us to conclude that it is unlikely that operation of the installation will cause any breach of an EQS or environmental standard.

The Air Quality Standards Regulations 2010 Target Value of 0.006 µg/m³ has been used in the assessment for arsenic. UK HSA (Health Security Agency- Formerly Public Health England) has stated that the Expert Panel on Air Quality Standards (chapter 2) described potential health risks from inhalation of arsenic and recommended an annual average guideline of 0.003 µg/m³ to be used for the assessment. Considering this lower limit, our conclusion that arsenic emissions being not significant does not change.

The main contribution to arsenic emissions was identified as the reduction kiln. Modelling assumed the reduction kiln operating continuously at the emission limit value of 1mg/m³. This is a conservative assumption. Under the previous operation of the site (2014-2018), the reduction kiln abatement system was tested for compliance, and regularly demonstrated arsenic concentrations <0.1mg/m³. Additionally, the new operation of the site is expected to have less use of the reduction kiln.

An improvement condition (IC1), within Table S1.3 of the permit, requires the Operator to verify the modelling and assessment, through on-site monitoring.

5.3.5 Consultations

As part of our normal procedures for the determination of a permit application, we consult with Local Authorities, Local Authority Directors of Public Health, FSA, and PHE. We also consult the local communities who may raise health related issues. All

issues raised by these consultations are considered in determining the application as described in Annex 3 of this document.

5.3.6 Assessment of health effects from the installation

We have assessed the health effects from the operation of this Installation in relation to the above (sections 5.3.1 to 5.3.4). We have applied the relevant requirements of the National and European legislation in imposing the Permit conditions. We are satisfied that compliance with these conditions will ensure protection of the environment and human health.

In carrying out air dispersion modelling as part of the Environmental Impact assessment and comparing the predicted environmental concentrations with European and national air quality standards, the Applicant has effectively made a health risk assessment for many pollutants. These air quality standards have been developed primarily in order to protect human health.

The Applicant's assessment of the impact of all pollutants either screened out as insignificant or where they have not been screened out as insignificant, the assessment still shows that the predicted environmental concentrations are within air quality standards or environmental action levels.

We have reviewed the methodology employed by the Applicant to carry out the health impact assessment. We are satisfied with the Applicant's conclusions that there will not be a significant impact on human health.

Overall, considering the conservative nature of the impact assessment (i.e. that it is based upon an individual exposed for a lifetime to the effects of the highest predicted relevant airborne concentrations and consuming mostly locally grown food), it was concluded that the operation of the proposed facility will not pose a significant carcinogenic or non-carcinogenic risk to human health.

The Environment Agency is therefore satisfied that the Applicant's conclusions presented above are soundly based and we conclude that the potential emissions of pollutants are unlikely to have an impact upon human health.

5.3.7 Impact on habitat sites

There are three European Habitats Directive sites within 10km of the installation:

- **Dartmoor SAC** (approximately **3.0 km** from the installation)
- **South Dartmoor Woods SAC** (approximately **3.9 km** from the installation)
- **Plymouth Sound & Estuaries SAC** (approximately **8.5 km** from the installation)
- **Tamar Estuary SPA** (approximately **9.5 km** from the installation)

There are no SSSI sites within 2km of the installation.

There are several Local Wildlife Sites (LWS) without statutory designation within 2km of the installation.

The Applicant's Habitats assessment was reviewed by the Environment Agency's technical specialists for modelling, air quality, conservation, and ecology technical

services, who agreed with the assessment's conclusions, that there would be no likely significant effect on the interest features of the protected sites and will not damage the special features of any SSSI.

The impact of emissions from the Installation have been compared to the critical levels and critical loads.

Critical Load (CLo) values for N Deposition and Acidification and Critical Level (CLe) values have been obtained from the APIS website. Background air concentration values Defra background pollutant concentration data.

The maximum predicted impact values at the SACs and the SPA are summarised in the tables below.

Table 3 - Predicted direct and deposition impacts most highly impacted ecological receptor locations.

Pollutant and Benchmark Unit	Benchmark CLe or CLo	Process Contribution (PC) $\mu\text{g}/\text{m}^3$	PC as % of EQS / EAL
<i>Direct Impacts</i>			
NOx ($\mu\text{g}/\text{m}^3$)	30	0.0027	<0.1
NOx ($\mu\text{g}/\text{m}^3$) (Daily Mean)	75	0.046	0.1
SO ₂ ($\mu\text{g}/\text{m}^3$)	10	0.0015	<0.1
<i>Deposition Impacts</i>			
N Deposition (kg N/ha/yr)	10	0.0003	<0.1
Acidification - Nitrogen Dep (Keq/ha/yr)	1.54	<0.001	<0.1

The predicted process contribution impacts are all less than 1% of the relevant Critical Level/Load benchmarks (long term), or less than 10% of the relevant short term Critical Level Values and can therefore be considered insignificant.

An assessment was submitted by the Environment Agency to Natural England, for information only.

Although there are several Local Wildlife Sites and areas of ancient woodland assignment within 2km of the installation, considering their distance and location from the installation and the features and species likely to be present within these sites, the following table provide a representative summary of the likely 'worst case' impact consideration of sites within the relevant screening distance.

Table 4 - Predicted impact on Hookebury Wood (LWS and ancient woodland)

Pollutant and Benchmark Unit	Benchmark CLe or CLo	Process Contribution (PC) $\mu\text{g}/\text{m}^3$	PC as % of EQS / EAL
<i>Direct Impacts</i>			
NOx ($\mu\text{g}/\text{m}^3$)	30	0.0419	0.1
NOx ($\mu\text{g}/\text{m}^3$) (Daily Mean)	75	0.358	0.5

Pollutant and Benchmark Unit	Benchmark CLe or CLo	Process Contribution (PC) $\mu\text{g}/\text{m}^3$	PC as % of EQS / EAL
SO ₂ ($\mu\text{g}/\text{m}^3$)	10	0.0539	0.5
<i>Deposition Impacts</i>			
N Deposition (kg N/ha/yr)	10	0.0084	0.1
Acidification - Nitrogen Dep (Keq/ha/yr)	1.876	0.013	0.7

The table above shows that the PCs are <1%. Hence, we conclude that impacts are insignificant.

5.4 Dust and arsenic

5.4.1 Dust and arsenic in-combination assessment

Although there are no point source emissions to air from either the Mining Waste Facility operation or the mining/quarry mineral extraction operations that will be part of the wider development activities taking place at the site, there is the possibility of fugitive dust emissions from these activities forming an in-combination impact with point source particulate releases from the Mineral Processing Facility installation.

A detailed dispersion modelling assessment of the combined potential fugitive dust emissions from the mineral processing facility and mining extraction operations was produced by the Applicant and assessed as part of the permit Application.

As part of the in-combination assessment of both fugitive and point source particulate releases that might take place as part of the wider development activities taking place at the site, the Applicant has undertaken an assessment of the potential deposition impact resulting from those particulate emissions.

The assessment considered source term release rates from the various activities and operations taking place at the site (drilling/blasting, material extraction and handling, entrainment from vehicle transportation, wind erosion, crushing and screening, reduction kiln operations etc.) and the predicted particle size for each of these expected releases. Given the nature of the process activities taking place at the site there is the potential for arsenic to be present as a component in some of these particulate release sources.

As part of the impact assessment, a laboratory study was conducted, utilising samples of base ore bearing granite from the site to simulate tailings production within the process and their resultant arsenic content.

This collective data was then used to provide inputs and parameters for a dispersion modelling study to establish the maximum predicted off-site deposition impacts at nearby receptor locations. Total dust deposition rates and the arsenic content of that deposition are summarised in Table 8 below.

Table 5 – Total dust deposition rates at the worst-case receptors.

Pollutant	EQS / EAL (mg/m ² /day)	Process Contribution (PC) (mg/m ² /day)	PC as % of EQS / EAL
Dust Deposition from MPF	200	5.4	2.7
Dust Deposition from whole site	[note 1]	15.4	7.7
Arsenic Deposition from MPF	0.036	0.00048	1.3
Arsenic Deposition from whole site	[note 2]	0.00053	1.5

Note 1: The Environment Agency's dust monitoring guidance M17 proposes limit values for protection against dust annoyance. An adopted limit value of 200mg/m²/day has been used for the assessment.

Note 2: Maximum Deposition Rate (MDR) for protection of soils for agricultural use - Environment Agency H1 Guidance, Annex F. Daily rate based on cumulative impact over 28-year lifetime of contributing source operation.

Dust

The total dust deposition rate is significantly less than indicative nuisance value indicators for human receptor locations or criteria for impairment of higher plant ecological receptors.

We believe the dust emissions from the combined wider operations are not significant. Section 5.4.3 below details how the site shall have continuous monitoring of these emissions, and section 5.4.4 confirms how the Operator will verify that dust will not have a significant impact whilst operational.

Arsenic

The arsenic deposition rate shown in Table 5 is the maximum deposition beyond the site boundary, not at a recognised receptor. At all recognised human and habitat receptors, the process contribution is considered insignificant with a maximum of 0.3% of the 0.036 mg/m²/day Maximum Deposition Rate (MDR).

A large contribution to arsenic emissions was identified as the MPF and the reduction kiln. Modelling assumed of the reduction kiln operating continuously at the emission limit value of 1mg/m³. This is a conservative assumption. Under the previous operation of the site, the reduction kiln abatement system was tested for compliance, and regularly demonstrated arsenic concentrations <0.1mg/m³. Additionally, the new operation of the site is expected to have less use of the reduction kiln.

The estimated level of arsenic in dust for the assessment was also a conservative assumption, based upon analysis of the tailings waste,

Taking account of these factors, we believe the arsenic emissions from the combined wider operations are not significant and are therefore unlikely to cause any deterioration of local land condition.

Other trace elements

We have further considered the other trace elements presented within the Applicant's elemental analysis. The trace elements that have Environmental Standards screen out as insignificant.

Verification

We have included an improvement condition in the permit (IC1) which requires the Operator to verify the assumptions stated in the air emissions modelling. Section 5.4.2 outlines the dust management approach for the MPF.

5.4.2 Dust management

The Applicant has provided an air quality assessment (reference: Air Emissions Risk Assessment, dated: November 2022) to estimate the level of risk posed by point source and fugitive emissions of dust to receptors from both the MPF and MWF.

Please see section 5.4.1 for why we consider the potential dust emissions to be below the level of dust annoyance. The assessment identified:

- the local sensitive receptors
- other local contributors of dust and emissions
- the emissions sources on site
- site abatement systems

The Applicant has also provided a written risk assessment (reference: Environmental Risk Assessment, dated: November 2022) and dust management operating techniques (reference: Best Available Techniques and Operating Techniques, dated: November 2022) to explain the operating techniques that will be used by the installation to prevent and reduce dust emissions from the MPF.

Additional dust control measures and monitoring for the wider Hemerdon Mine complex, were provided and assessed as part of the MWF Application (permit reference: EPR/JB3209MD). We have considered the proposed monitoring by the Applicant for permit EPR/JB3209MD as part of this Application, as it will monitor the combined process contributions for the wider mine site.

We consider that the operating techniques proposed for dust management meets BAT and that measures will be in place to prevent or where that is not practicable minimise emissions. To determine this, we have considered the requirements of the BAT Reference Document for the Non-Ferrous Metals Industries, and Process Guidance Note 3/08 Statutory guidance for quarry processes. We have also considered our guidance on control and monitor emissions for your environmental permit.

The Applicant has detailed the relevant diffuse and point source dust emissions and defined the appropriate actions and techniques to prevent or reduce diffuse emissions. The operating techniques stated in the Application include the following:

Conveyors

- Conveyor belts moving material around the site shall be covered.
- Conveyors will be designed to be of sufficient capacity to prevent spillage.
- Chutes will be fitted at belt conveyor transfer points to minimise free fall at discharge and reduce the dust arising.
- Conveyors will be located in open areas above ground, allowing leaks to be detected quickly.

Containment

- All crushing, grinding, screening and separation activities will occur within buildings.

- The primary and secondary crushers will be housed in new buildings with negative pressure, leading to a dust abatement system. Conveyor entry points shall be designed to minimise the loss of dust. Doors to the buildings shall be self-closing.
- Material shall enter the primary crusher building by the crusher feed bin, which shall be fitted with dust suppression spray bars.
- The secondary crusher and screen will also be within an additional enclosure (within the building), further controlling fugitive dust emissions. For the secondary crusher building, dust water suppression will also be included at the head of the screen infeed, as well as the feed from the secondary crusher to outgoing conveyor.
- Following the secondary crushing and screening process, all further processing will occur where the material has a high moisture content and shall continue to be within buildings.

Dust abatement systems

- The reduction kiln cyclone will remove and recover dust prior to being emitted.
- The dryer exhaust emissions will be discharged through 25m stack, and abatement system to remove dust.
- The primary and secondary crushers shall be housed with two new dust abatement systems, designed to treat, and minimise dust emissions to releases to less than 50mg/m³, in accordance with BAT stated limits in PGN 3/08.
- A continuous indicative monitoring system will be fitted to the new dust abatement systems, that will include the following:
 - Audible and visual alarms if levels are exceeded, sited in an appropriate location for Operators.
 - Automatic recording of alarms.

Mineral stockpiles

- The number of stockpiles has been minimised to reduce the surface area.
- There will be:
 1. the Run of Mine (RoM) pad stockpile prior to primary crushing.
 2. the ore sorter stockpile after secondary crushing and screening; and
 3. the ore sorter product/rejects stockpile.
- Drop heights when moving material will be minimised.
- The RoM pad and ore sorter stockpile shall have fixed water suppression. The material will also be conditioned with water prior to the point of discharge onto these stockpiles, when required.
- The ore sorter rejects stockpile shall only have material that has been screened to remove material under 10mm and has been conditioned with water before the point of discharge onto the stockpile.
- The moisture content of the ore to be crushed will consistently be at levels >3%. The previous ore moisture content when the site previously operated was consistently >3%.
- Moisture content will be monitored regularly by site personnel and continuous water suppression will be provided when required.
- Visual monitoring for dust shall occur at least three times a day.

- The site has a large water supply to ensure that water suppression is not affected during periods of drought. There is a raw water tank and process water tank that can be replenished by the Tory Pond, a large surface water feature that forms part of the wider Hemerdon Mine complex.

General site techniques

- There is a new ore sorting system to reduce the amount of material that needs to be processed by crushers and screens. This is estimated as a 70% reduction of ore processing during the nighttime and a 37% reduction during daytime, compared to the previous site operations.
- All process buildings will be regularly cleaned to minimise fugitive emissions.
- Start up and shut down will be minimised as much as possible.
- Operatives will be trained to ensure they are aware of responsibilities under the Environmental Permit and receive training in control of point source and fugitive emissions to air.

Vehicles movements across the wider Hemerdon Mine complex

- There will be no vehicle movements associated to this activity on public highways, and speed limits will be imposed for vehicles on site.
- Dust suppression measures will be implemented on internal roads.
- Roads will be maintained to minimise fugitive emissions from road surfaces.
- Wheel washing equipment will be provided.
- All of the following methods will be applied as required when loading or unloading material:
 - spraying the shovel/bucket of the loader when loading;
 - spraying the bucket of the truck; and,
 - direct water spraying of the trucks and/or sprinkling.

5.4.3 Monitoring

At the MPF, visual assessment of emissions shall be made at least 3 times a day. The time, location and results will be recorded. For the wider Hemerdon Mine complex, visual monitoring for significant dust generation and potential dusts dispersing in the direction of receptors will be undertaken continually by all staff. Issues will be reported to the site foreman or environmental manager for actions to be implemented.

Dust deposition monitoring is undertaken by Wolf Minerals at receptors in the vicinity of the installation and on-site locations. There are currently five omnidirectional “frisbee” deposition gauge-style dust monitors situated within the site boundaries and in the nearby community.

In order to define baseline conditions dust deposition monitoring has been carried out at receptor locations in the vicinity of the site prior to the commencement of operations. Monitoring will continue during the operational period as necessary to demonstrate that activities at the site are not giving rise to adverse impact from dust.

The monitoring will include the following:

- visual dust monitoring;

- monthly routine monitoring (or as deemed required) for dust deposition levels around the MWF and in the surrounding environment; and
- periodic analysis of deposited dust for metals.

Dust deposition measurement will be carried out in accordance with methods detailed in Environment Agency M17 guidance. Dust samples are collected monthly and analysed by a UKAS-accredited laboratory.

Two real-time dust monitors are also installed in two of the nearby communities, Sparkwell Village Hall, and Hemerdon Village Hall. Each dust monitor records PM₁₀, PM_{2.5} and PM₁ in real-time.

The results of dust monitoring and effectiveness will be regularly presented to the Environment Agency and at regular community liaison meetings to demonstrate how the Operator is meeting the required Environmental Standards.

5.4.4 Permit compliance for dust emissions

An Operator must control emissions of dust to make sure they do not cause pollution. Condition 3.2.1 of the permit states that ‘emissions of substances not controlled by emission limits ... would not cause pollution’. If the permitted activities are found by the Environment Agency to have caused dust pollution, then this will be a breach of their permit, and the Operator will need to take remedial action prevent further pollution.

The Applicant has provided sufficient information with regards to dust management. To assist with compliance for the site, we require the Operator to provide this information in a standalone dust and emissions management plan. This is required through pre-operational condition PO4, of Table S1.4 in the permit.

We have also included improvement condition IC2, of Table S1.3 in the permit, requiring the Operator to review the effectiveness of the dust and emissions management plan. It is best practice to regularly review plans during the operation of the site. The improvement condition is to ensure that this happens in the first year of the operation to capture any issues in the operation’s early development.

We have stipulated that the Applicant must undertake continuous particulate matter monitoring as part of the permit. This is stated in Table S3.5 of the permit.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise fugitive emissions.

The Applicant should keep the plans under constant review and revise them annually or if necessary, sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance ‘Control and monitor emissions for your environmental permit.

5.5 Emissions to water

We have considered the volume and rate of discharge of the residual ‘tailings’ slurry material from the MPF to the MWF and are satisfied that the volumes indicated in the

Application, and now included in the permit, are consistent with the containment proposals and flood risk assessment included as part of the determination of the Mining Waste Facility permit. Please see the decision document for permit EPR/JB3209MD for further information.

Storm water falling on the surfaced areas of the installation is collected in two on-site sump ponds for reuse within the process. These sump ponds have an engineered overflow system for use in storm conditions, but the majority of time the plant is reliant on the import of water, and therefore there is limited release from these collection sump ponds.

Any discharge from these collection ponds is directed to the off-site Smallhanger settlement pond and then subsequently to the Smallhanger discharge pond, both of which are part of the designed surface water management system for the mining and mineral extraction operation taking place at the site.

Site surface water will include run-off from the RoM pad and crushed ore stockpile. Water shall drain via oil interceptors and will be treated to remove sediment.

Smallhanger Brook currently receives trade effluent water from the mine under discharge permit EPR/QP3420XX and EPR/DB3290RH. This includes the mine pit dewatering discharge. These permits include monitoring of Smallhanger Brook for water quality and ecology. The Applicant is currently applying to vary permit EPR/QP3420XX, to include surface water run-off from the MPF within the discharge. This shall include a risk assessment of the water quality.

The MPF also has a stockpile of ore sorter rejects. This is material >10mm and has been processed with water to remove fines, before being stockpiled. This stockpile is for the temporary storage of the rejects prior to being removed from the MPF. The stockpile is to be based on hardstanding or impermeable surface with sealed drainage. The run-off from this area shall drain to the Tory Brook via the Tory Pond. This emission to Tory Brook is already permitted by the MWF (EPR/JB3209MD). This includes the emission of trade effluent from the MWF. Monitoring and emission limits for this discharge to Tory Brook are established in the MWF permit.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise emissions to water.

5.6 Odour

This will not be an inherently odorous activity. Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise odour and to prevent pollution from odour.

6. Application of Best Available Techniques

Our decisions on BAT for emissions of noise, fugitive dust emissions and odour are provided in Section 5 of this decision document. In this section, we explain how we have determined whether the Applicant's other proposals are the Best Available Techniques (BAT) for this Installation.

The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in the relevant TGN's and we consider them to represent appropriate techniques for the facility.

The permit conditions ensure compliance with relevant BREFs and BAT Conclusions, and ELVs deliver compliance with BAT-AELs. The following Technical Guidance Notes (TGN) and Pollution Prevention Guidance Notes (PGN) have been considered in the assessment of the proposed operating techniques to be used at the installation: BAT Reference Document for the Non-Ferrous Metals Industries and Waste Treatment, EPR2.03, PGN 3/08(12) and PGN 3/18(12).

6.1 Operating techniques

We have specified through Permit condition 2.3.1 and Table S1.2 of the permit that the Applicant must operate the Installation in accordance with documents contained in the Application.

6.2 Energy efficiency

Having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that energy is used efficiently within the Installation.

The Application details measures that will be implemented at the Installation in order to increase its energy efficiency:

- Heat energy from fuel burnt in the kiln & offgas oxidiser will be recovered from the flue gas to provide heat energy to the pre-dryer.
- Pumps, motors, and drives will be selected to include equipment with variable speed drives and a low energy use footprint.
- Equipment not in use will be turned off or put onto reduced duty.
- Low energy light fittings will be used, with the need for lighting being minimised by the inclusion of translucent roof and wall panels in the main buildings.
- Equipment will be regularly serviced and maintained to keep it in good condition – this will include a weekly maintenance programme. Regular maintenance ensures equipment continues to operate at optimum energy efficiency and that energy consumption does not increase due to inefficient performance.
- Energy use will be monitored, recorded, and periodically reviewed to identify areas of improvement and to ensure that inefficiency is investigated, and improvement actions are implemented.
- An ISO50001 Energy Management System will be implemented on site to promote continual improvement.
- Staff will undergo awareness training in energy efficient practices.

- Equipment will be gravity driven where possible including spirals, screens, and water reception sumps & ponds to minimise energy used for pumps and motors.

Standard condition 1.2.1 in the permit requires the Operator to: take appropriate measures to ensure that energy is used efficiently in the activities; review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and take any further appropriate measures identified by a review.

6.3 Efficient use of raw materials

Having considered the information submitted in the Application, we are satisfied that the appropriate measures will be in place to ensure the efficient use of raw materials and water.

There will be a substantial system for the recovery and re-use of water. The MPF utilises large volumes of water as part of the initial and intermediate material treatment separation stages of the process. Typically, 2,200 m³ per hour of process water will circulate through the various ore separation and treatment processes in order to achieve an approximate quantity of 1.6 tonnes per hour of ore concentrate for input and processing through the reduction kiln activity.

The plant design includes a Water Treatment Plant (WTP) which continuously treats a proportion of the circulating process water (up to 120 m³/hour) so that the quality of the circulating process water is maintained to meet the requirements of the various separation techniques within the process, and to remove the accumulation of arsenic compounds from the process water stream. Spent liquor from the reduction kiln scrubber plant is also treated as part of the WTP activity.

The WTP involves a number of physico-chemical treatment stages including oxidation, flocculation, precipitation, and clarification with the cleaned water being returned to the process and the separated solids being pressed into a filter cake (approximately 5 tonne/day) for off-site disposal.

Water is lost from the process, mainly as part of and as a result of the tailings slurry that is discharged to the MWF (up to 200 m³/hour). Smaller quantities are also lost as a result of the ore drying and reduction kiln processes, and in the residual filter cake output from the WTP).

After settlement within the engineered tailings pond system of the MWF, a significant proportion (40-50%) of the water within the tailings slurry that is discharged to the MWF is collected and returned to the MPF for re-use within the process. This is not considered waste water as it is not discarded.

Storm water falling on the surfaced areas of the installation is collected in two on-site sump ponds for reuse within the process.

We are therefore satisfied that the various treatment, retention, collection, and re-use of water arrangements within the activities at the site represent BAT for water utilisation within the installation. The Operator is required to monitor imported water

usage within the facility and to report usage relative to the quantity of ore concentrate produced.

Standard condition 1.3.1 in the permit requires the Operator to: take appropriate measures to ensure that raw materials and water are used efficiently in the activities; maintain records of raw materials and water used in the activities; review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and take any further appropriate measures identified by a review.

6.4 Avoidance, recovery, or disposal with minimal environmental impact of wastes

This requirement addresses wastes produced at the Installation. The principal waste streams the Installation will produce are mineral rejects, water treatment solids and process water.

Having considered the information submitted in the Application, we are satisfied that the waste hierarchy referred to in Article 4 of the WFD will be applied to the generation of waste and that any waste generated will be treated in accordance with this Article.

We are satisfied that waste from the Installation that cannot be recovered will be disposed of using a method that minimises any impact on the environment. Standard condition 1.4.1 will ensure that this position is maintained.

6.5 Setting ELVs and Monitoring

We have decided that monitoring should be carried out for the parameters listed in Schedule 3 of the permit, using the methods and to the frequencies specified in those tables.

These monitoring requirements have been imposed in order to demonstrate compliance with conditions and limits contained in the permit and to verify that the operating techniques proposed in the Application represent BAT for the activities taking place within the installation.

Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the Applicant's techniques, personnel, and equipment will have either MCERTS certification or MCERTS accreditation as appropriate.

6.6 Reporting

We have specified the reporting requirements in Schedule 5 of the Permit either to meet the reporting requirements set out in the IED, or to ensure data is reported to enable timely review by the Environment Agency to ensure compliance with permit conditions and to monitor the efficiency of material use and energy recovery at the installation.

7 Other legal requirements

In this section we explain how we have addressed other relevant legal requirements, to the extent that we have not addressed them elsewhere in this document.

7.1 The EPR 2016 and related Directives

The EPR delivers the requirements of a number of European and national laws.

7.1.1 Schedules 1 and 7 to the EPR 2016 – IED Directive

We address the requirements of the IED in the body of this document above and the specific requirements of Chapter IV in Annex 1 of this document.

There is one requirement not addressed above, which is that contained in Article 5(3) IED. Article 5(3) requires that “In the case of a new installation or a substantial change where Article 4 of Directive 85/337/EC (now Directive 2011/92/EU) (the EIA Directive) applies, any relevant information obtained or conclusion arrived at pursuant to articles 5, 6 and 7 of that Directive shall be examined and used for the purposes of granting the permit.”

- Article 5 of EIA Directive relates to the obligation on developers to supply the information set out in Annex IV of the Directive when making an application for development consent.
- Article 6(1) requires Member States to ensure that the authorities likely to be concerned by a development by reason of their specific environmental responsibilities are consulted on the Environmental Statement and the request for development consent.
- Article 6(2)-6(6) makes provision for public consultation on applications for development consent.
- Article 7 relates to projects with transboundary effects and consequential obligations to consult with affected Member States.

The grant or refusal of development consent is a matter for the relevant local planning authority. The Environment Agency’s obligation is therefore to examine and use any relevant information obtained or conclusion arrived at by the local planning authorities pursuant to those EIA Directive articles.

In 1986 Devon County Council mineral planning authority (MPA) granted planning permission (9/42/49/0542/85/3) for an extension to the operations of the mine site, with a new processing plant. In 2017, the 1986 planning permission was varied (DCC/3823/2015) to alter planning conditions and to extend the lifespan of the original permission.

In determining the Application we have considered the following documents: -

- The Environmental Statement submitted with the 2015 planning application (which also formed part of the Environmental Permit Application).
- The decision of the Devon County Council to grant planning permission on 16/02/2017.

- The report and decision notice of the local planning authority accompanying the grant of planning permission.
- The response of the Environment Agency to the local planning authority in its role as consultee to the planning process.

From consideration of all the documents above, the Environment Agency considers that no additional or different conditions are necessary.

7.1.2 Directive 2003/35/EC – The Public Participation Directive

Regulation 60 of the EPR 2016 requires the Environment Agency to prepare and publish a statement of its policies for complying with its public participation duties. We have published our public participation statement.

This Application has been consulted upon in line with this statement, as well as with our guidance RGS6 on Sites of High Public Interest, which addresses specifically extended consultation arrangements for determinations where public interest is particularly high. This satisfies the requirements of the Public Participation Directive.

Our draft decision in this case has been reached following a programme of extended public consultation, both on the original application and later, separately, on the draft Permit and a draft decision document. The way in which this has been done is set out in Section 2.2. A summary of the responses received to our consultations and our consideration of them is set out in Annex 3.

7.1.3 Schedule 22 to the EPR 2016 – Water Framework and Groundwater Directives

To the extent that it might lead to a discharge of pollutants to groundwater (a “groundwater activity” under the EPR 2016), the Permit is subject to the requirements of Schedule 22, which delivers the requirements of EU Directives relating to pollution of groundwater. The Permit will require the taking of all necessary measures to prevent the input of any hazardous substances to groundwater, and to limit the input of non-hazardous pollutants into groundwater so as to ensure such pollutants do not cause pollution and satisfies the requirements of Schedule 22.

No releases to groundwater from the Installation are permitted. The Permit also requires material storage areas to be designed and maintained to a high standard to prevent accidental releases.

7.1.4 Schedule 20 to the EPR 2016 – Mining Waste Directive

The Permit is subject to the requirements of Schedule 20 of EPR 2016, which delivers the requirements of EU Directives relating to mining waste.

Article 4 of the Mining Waste Directive - General requirements

Article 4 sets out requirements for the protection of the environment and human health which apply to the management of extractive waste. Under the EPR an environmental

permit is required for a mining waste operation which is defined as the management of waste whether or not it involves a waste facility. It is through the permit and the conditions imposed that we are satisfied that the provisions of Article 4 will be met.

Article 5 of the Mining Waste Directive - Waste management plan

This outlines the requirement for the Operator to provide a waste management plan (WMP) and the information required within this. The WMP was assessed in accordance with these requirements and is satisfactory. Condition 2.3.1 ensures that the operations are limited to those described in the WMP. It also ensures that the Operator follows the techniques set out and that any deviation will require our written approval.

Article 6 of the Mining Waste Directive - Major accident prevention.

We are satisfied that the MPF is not a Category A waste facility and so article 6 does not apply. The MWF permitted site (EPR/JB3209MD) is a Category A waste facility and therefore the provisions on Article 6 will apply to the MWF. A Major Accident Prevention Policy has been submitted for permit application (EPR/JB3209MD/A001). We were satisfied that the requirements of Article 6 were met for the MWF.

Article 7 of the Mining Waste Directive - Application for a permit

The MPF is not a waste facility, as defined in the Mining Waste Directive, and Article 7 therefore does not apply.

The neighbouring MWF permitted site (EPR/JB3209MD) is a waste facility and covers the management of extractive waste and includes a waste facility as defined in the MWD. The Application (EPR/JB3209MD/A001) contained all necessary elements in Article 7(2) relevant to this site. We were satisfied that the requirements in Article 7(3) were met.

7.2 National primary legislation

7.2.1 Environment Act 1995

(i) Section 4 (Pursuit of Sustainable Development)

We are required to contribute towards achieving sustainable development, as considered appropriate by Ministers, and set out in guidance issued to us. The Secretary of State for Environment, Food and Rural Affairs has issued *The Environment Agency's Objectives and Contribution to Sustainable Development: Statutory Guidance (December 2002)*. This document:

“Provides guidance to the Agency on such matters as the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and the allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency”.

In respect of regulation of industrial pollution through the EPR, the Guidance refers in particular to the objective of setting permit conditions “*in a consistent and proportionate fashion based on Best Available Techniques and taking into account all relevant*

matters...". The Environment Agency considers that it has pursued the objectives set out in the Government's guidance, where relevant, and that there are no additional conditions that should be included in this Permit to take account of the Section 4 duty.

(ii) Section 5 (Preventing or Minimising Effects of Pollution of the Environment)

We are satisfied that our pollution control powers have been exercised for the purpose of preventing or minimising, remedying, or mitigating the effects of pollution.

(vi) Section 39 (Costs and Benefits)

We have a duty to take into account the likely costs and benefits of our decisions on the applications ('costs' being defined as including costs to the environment as well as any person). This duty, however, does not affect our obligation to discharge any duties imposed upon us in other legislative provisions. In so far as relevant we consider that the costs the permit may impose are reasonable and proportionate in terms of the benefits provided.

(vii) Section 81 (National Air Quality Strategy)

We have had regard to the National Air Quality Strategy and consider that our draft decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

We have also had regard to the clean air strategy 2019 and consider that our draft decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

(viii) National Emissions Ceiling Regulations 2018

We have had regard to the National Air Pollution Control Programme and consider that our draft decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

7.2.2 Section 108 Deregulation Act 2015 – Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this Permit.

Paragraph 1.3 of the guidance says:

"The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation."

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this Permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

We consider our approach proportionate when considering the need to protect the environment, the nature and scale of potential environmental issues that previously occurred at the Installation, and the Applicant's economic interest. We consider that the permit conditions impose an appropriate balance and achieve the required legislative standards.

7.2.3 Human Rights Act 1998

We have considered potential interference with rights addressed by the European Convention on Human Rights in reaching our draft decision and consider that our draft decision is compatible with our duties under the Human Rights Act 1998. In particular, we have considered the right to life (Article 2), the right to a fair trial (Article 6), the right to respect for private and family life (Article 8) and the right to protection of property (Article 1, First Protocol). We do not believe that Convention rights are engaged in relation to this determination.

7.2.4 Countryside and Rights of Way Act 2000 (CROW 2000)

Section 85 of this Act imposes a duty on Environment Agency to have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty (AONB). There is no AONB which could be affected by the Installation.

7.2.5 Wildlife and Countryside Act 1981

Under section 28G of the Wildlife and Countryside Act 1981 the Environment Agency has a duty to take reasonable steps to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which a site is of special scientific interest. Under section 28I the Environment Agency has a duty to consult Natural England in relation to any permit that is likely to damage SSSIs.

We assessed the Application and concluded that the Installation will not damage the special features of any SSSI. The assessment is summarised in greater detail in section 5.3.7 of this document.

7.2.6 Natural Environment and Rural Communities Act 2006

Section 40 of the Natural Environment and Rural Communities Act 2006 has been amended with effect from 1 January 2023 to require consideration of the general

biodiversity objective, which is to further the conservation and enhancement of biodiversity through the exercise of our functions. We have considered the general biodiversity objective when carrying out our permit application determination and, consider that no different or additional conditions are required in the permit.

7.2.7 Countryside Act 1968

Section 11 imposes a duty on the Environment Agency to exercise its functions relating to any land, having regard to the desirability of conserving the natural beauty and amenity of the countryside including wildlife. We have done so and consider that no different or additional conditions in the Permit are required.

7.2.8 National Parks and Access to the Countryside Act 1949

Section 11A and section 5(1) imposes a duty on the Environment Agency when exercising its functions in relation to land in a National Park, to have regard to the purposes of conserving and enhancing the natural beauty, wildlife, and cultural heritage of the areas, and of promoting opportunities for the understanding and enjoyment of National Parks by the public.

We have done so and consider that no different or additional conditions in the Permit are required. There is no National Park which could be affected by the Installation.

7.3 National secondary legislation

7.3.1 Conservation of Habitats and Species Regulations 2017

We have assessed the Application in accordance with guidance agreed jointly with Natural England and concluded that there will be no likely significant effect on any European Site.

We have sent our draft decision to Natural England by means of an HRA.

The habitats assessment is summarised in greater detail in section 5.3.7 of this document. We have placed a copy of SSSI Assessment / Habitats Risk Assessment on citizen space and the public register.

7.3.2 Water Environment (Water Framework Directive) Regulations 2017

Consideration has been given to whether any additional requirements should be imposed in terms of the Environment Agency's duty under regulation 3 to secure compliance with the requirements of the Water Framework Directive, Groundwater directive and the EQS Directive through (inter alia) environmental permits, and its obligation in regulation 33 to have regard to the river basin management plan (RBMP) approved under regulation 31 and any supplementary plans prepared under regulation 32. However, it is felt that existing conditions are sufficient in this regard and no other appropriate requirements have been identified.

We are satisfied that granting this permit with the conditions proposed would not cause the current status of the water body to deteriorate, and that it will not compromise the ability of this water body to achieve good status.

7.4 Other relevant legal requirements

7.4.1 Duty to Involve

S23 of the Local Democracy, Economic Development and Construction Act 2009 require us where we consider it appropriate to take such steps as we consider appropriate to secure the involvement of interested persons in the exercise of our functions by providing them with information, consulting them or involving them in any other way. S24 requires us to have regard to any Secretary of State guidance as to how we should do that.

The way in which the Environment Agency has consulted with the public and other interested parties is set out in section 2.2 of this document. The way in which we have taken account of the representations we have received is set out in Annex 3. Our public consultation duties are also set out in the EP Regulations, and our statutory Public Participation Statement, which implement the requirements of the Public Participation Directive. In addition to meeting our consultation responsibilities, we have also taken account of our guidance in Environment Agency Guidance Note RGS6 and the Environment Agency's Building Trust with Communities toolkit.

ANNEX 1: Pre-Operational Conditions

Based on the information on the Application, we consider that we do need to impose pre-operational conditions. These conditions are set out below and referred to, where applicable, in the text of the decision document. We are using these conditions to require the Operator to confirm that the details, measures and predictions proposed in the Application have been adopted or implemented prior to the operation of the Installation.

Reference	Pre-operational measures
PO1	<p>Prior to commissioning of the installation, the operator shall submit a written copy of the final site Environmental Management System (EMS) and make available for inspection all documents and procedures which form part of the site EMS.</p> <p>The EMS shall cover all activities at the installation and shall be in accordance with the Environment Agency Guidance – How to develop a management system: environmental permits and the Ferrous Metals Processing Industries BREF. The EMS shall include the techniques the operator relies upon to manage the operation, accidents, closure and decommissioning of the site. The documents and procedures set out in the EMS shall form the written management system referenced in condition 1.1.1 (a) of the permit.</p>
PO2	<p>Prior to the commencement of ore commissioning as defined in the ‘verification plan’, included in Operating Techniques Table S1.2, the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected durations of commissioning activities and the actions to be taken to protect the environment during commissioning.</p> <p>The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the measures to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions.</p> <p>The commissioning plan shall include the method of verification testing for low frequency noise emitting plant, to be agreed with the Environment Agency.</p> <p>Commissioning shall be carried out in accordance with the commissioning plan as approved.</p>
PO3	<p>Prior to the completion of the ore commissioning as defined in the ‘verification plan’, included in Operating Techniques Table S1.2, the Operator shall carry out verification testing for low frequency noise</p>

Reference	Pre-operational measures
	<p>emitting plant. This shall be completed in accordance with the agreed verification plan (as required in PO2).</p> <p>The Operator shall submit a written report, and obtain the Environment Agency's written approval to it, detailing the verification process and the environmental performance of the plant against the predicted noise levels stated in the permit Application for low frequency noise emissions (Table 6.3, levels stated for Mitigation D, attached to email titled 'Response to Environment Agency Questions 23 November', dated: 24/11/2023).</p>
PO4	<p>Prior to the commencement of commissioning, the Operator shall provide a standalone Dust and Emissions Management Plan to the Environment Agency for written approval.</p> <p>This shall include:</p> <ul style="list-style-type: none"> • all dust management operating techniques submitted with the Application; and • any dust management operating techniques and monitoring requirements submitted within the Application for the Mining Waste Facility (EPR/JB3209MD/A001), where relevant to the Mineral Processing Facility.
PO5	<p>The Operator shall submit a report, and obtain the Environment Agency's written approval to it, on the baseline conditions of soil and groundwater at the installation, for the whole permitted site boundary (as shown in Schedule 7). The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED.</p>
PO6	<p>The operator shall ensure that a review of the design, method of construction and integrity of the proposed site secondary containment is carried out by a competent person (qualified civil or structural engineer).</p> <p>The review shall be undertaken in accordance with the methodology detailed in CIRIA C736 - Containment Systems for the Prevention of Pollution - secondary, tertiary and other measures for industrial and commercial premises or other relevant industry standard and shall compare the constructed secondary containment against the standards stated above.</p> <p>The review shall include:</p> <ul style="list-style-type: none"> • physical condition of the constructed secondary containment;

Reference	Pre-operational measures
	<ul style="list-style-type: none"> • any work required to ensure compliance with the standards detailed in CIRIA C736 or other relevant industry standard; and • a maintenance and inspection regime. <p>A written report of the review shall be submitted to the Environment Agency for written approval, detailing the review's findings and recommendations.</p> <p>Remedial action shall be taken to ensure that the secondary containment meets the CIRIA C736 standards and the operator must implement the maintenance and inspection regime.</p>
PO7	<p>The operator shall submit a written 'primary containment report' and shall obtain the Environment Agency's written approval to it.</p> <p>The report shall contain the results of an inspection and program of works undertaken by a qualified engineer, and shall assess the extent design specification and condition of primary containment systems where polluting liquids and solids are being stored, treated, and/or handled.</p> <p>The report shall include:</p> <ul style="list-style-type: none"> • an assessment of the physical condition of all primary containment systems (storage and treatment vessels) using a Written Scheme of Examination; • a program of works with timescales for the implementation of individual improvement measures necessary to demonstrate that the primary containment is fit for purpose or alternative appropriate measures to ensure all polluting materials will be contained on site; and, • a maintenance and inspection regime.
PO8	<p>The Operator shall supply a written report to the Environment Agency that includes an 'as installed' site drainage plan, and shall obtain the Environment Agency's written approval to it.</p>
PO9	<p>The Operator shall supply an updated Waste Management Plan that includes the solid filter cake waste from the waste water treatment plant and shall obtain the Environment Agency's written approval to it.</p>

ANNEX 2: Improvement Conditions

Based in the information in the Application we consider that we need to set improvement conditions. These conditions are set out below - justifications for these is provided at the relevant section of the decision document. We are using these conditions to require the Operator to provide the Environment Agency with details that need to be established or confirmed during and/or after commissioning.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	<p>The Operator shall carry out an assessment of the impact of emissions to air to verify the assumptions made in the Application. The assessment shall include all pollutants subject to emission limit values.</p> <p>A report on the assessment shall be made to the Environment Agency. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each pollutant against the relevant Environmental Standard.</p> <p>In the event that the assessment shows that an environmental standard can be exceeded, the report shall include proposals for further investigative work.</p>	<p>Within 15 months from the completion of commissioning, or otherwise agreed by the Environment Agency.</p>
IC2	<p>The Operator shall submit a report which reviews the effectiveness of the Dust and Emissions Management Plan. The report shall include:</p> <ul style="list-style-type: none"> • A review of the dust monitoring results obtained during the first year of operation. • A review of any complaints received, and how these were addressed. • A review of the effectiveness of the Dust Management Plan. • A summary of any required additional improvements for effective dust management, including set timescales for the implementation of any required improvements. <p>The report shall be submitted to the Environment Agency in writing for approval.</p>	<p>Within 15 months from the completion of commissioning, or otherwise agreed by the Environment Agency.</p>

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC3	<p>The Operator shall undertake a noise assessment during normal operations in accordance with the procedures given in BS4142:2014 (Rating industrial noise affecting mixed residential and industrial areas) and BS7445: 2003 (Description and measurement of environmental noise) or other methodology as agreed with the Environment Agency. The assessment shall include, but not be limited to:</p> <ul style="list-style-type: none"> • A review of the noise sources from the facility. Where any noise source(s) are identified as exhibiting tonal contributions, they shall be quantified by means of frequency analysis. • A review of noise levels from static plant. • Considerations of on-site vehicle movements. <p>A report shall be provided to the Environment Agency for approval, detailing the findings of the assessment.</p> <p>Should the BS4142:2014 assessment conclude that emissions from the permitted activities are above the predicted ratings levels stated in the Application, the operator shall detail in the report any improvements necessary to ensure that emissions are reduced to an acceptable level.</p> <p>Where the report identifies additional mitigation is required the Operator shall submit proposals for implementing improvements, including timescales for implementation, and further monitoring, to be approved in writing by the Environment Agency.</p>	<p>Within 12 months from the completion of commissioning, or otherwise agreed by the Environment Agency.</p>
IC4	<p>The Operator shall conduct a review of low frequency noise emissions from the Installation using emissions monitoring data obtained during full operation of the site.</p> <p>The monitoring schedule shall be designed to provide data representative of typical and worst-case operating conditions. A reasoned 'worst case' is to be agreed with the Environment Agency before monitoring commences.</p>	<p>Within 6 months from the completion of ore commissioning, or otherwise agreed by the Environment Agency.</p>

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
	<p>The Operator shall submit a written report to the Environment Agency detailing the monitoring undertaken, the results obtained, and a comparison with the assessment provided within the application.</p> <p>If the monitored emissions exceed those in the Application (Table 6.3, levels stated for Mitigation D, attached to email titled 'Response to Environment Agency Questions 23 November', dated: 24/11/2023), the Operator shall submit proposals for implementing improvements, including timescales for implementation, and testing for success to ensure that emissions of low frequency noise are reduced to those stated in the Application.</p> <p>Any improvements shall be implemented in accordance with the Environment Agency's written approval.</p>	
IC5	<p>The Operator shall submit a report which reviews the effectiveness of the Noise Management Plan, for preventing, or where that is not practicable, minimising emissions of noise. The report shall include:</p> <ul style="list-style-type: none"> • A review of the noise monitoring results obtained during full operation. • A review of any complaints received, and how these were addressed. • A review of the effectiveness of the Noise Management Plan. • A summary of any additional measures for effective noise management identified as a result of the review, including set timescales for the implementation of any required improvements. <p>The report shall be submitted to the Environment Agency in writing for approval.</p>	<p>Within 12 months from the completion of ore commissioning, or otherwise agreed by the Environment Agency.</p>

ANNEX 3: Consultation Responses

A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with the Environment Agency's Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of consultation responses have been placed on the Environment Agency public register.

Two consultations have been held for this Application. For both consultations, we advertised the Application by a notice placed on our website, which contained all the information required by the IED, including telling people where and when they could see a copy of the Application. We also placed an advertisement in the South Hams Gazette and London Gazette. For further information on the consultations, please see section 2.2.

The following statutory and non-statutory bodies were consulted: -

- Public Health England
- Food Standards Agency
- Health and Safety Executive
- South Hams District Council (Planning Department)
- South Hams District Council (Environmental Health Department)
- Plymouth NHS (Director of Public Health) [ex PCT equivalent]
- Plymouth City Council
- Devon County Council - Mineral Planning Authority
- South West Water
- Dartmoor National Park
- Devon Wildlife Trust
- English Heritage
- UK Health Security Agency

1) Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from Plymouth City Council	
Brief summary of issues raised:	Summary of action taken / how this has been covered
General concerns over noise and dust during the operational phase.	<p>These issues are covered in the following sections of this decision document:</p> <ul style="list-style-type: none"> • Section 5.1 - Audible noise • Section 5.2 - Low Frequency Noise • Section 5.3 - Emissions to air • Section 5.4 - Dust and arsenic <p>We are satisfied that there will not be a significant impact from noise and dust.</p>
Concern that impacts at all receptors was not considered.	We considered the impact to the worst-case receptors when assessing the emissions from

	the site. This was generally the receptors closest to the site.
Concern that the original application consisted of old documents and data.	<p>We have received several updated documents during the determination period for this application.</p> <p>The documents have been newly written and are bespoke to the specific future operation. All of these documents have been available for review during the 3 consultation periods.</p>

Response Received from UK Health Security Agency	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Concern that there are drinking water abstractions that might be affected by permitted activities.	There are no drinking water abstractions nearby which could be affected by the permitted activities.
A recommendation that the Applicant demonstrates that other trace elements are unlikely to occur at very high levels in dust emissions from this site.	<p>We have outlined in section 5.3 how we have considered emissions to air. Section 5.4 also outlines the approach to prevent significant impacts on receptors from dust emissions.</p> <p>We have considered the trace elements presented within the Applicant's elemental analysis. The trace elements that have Environmental Standards screen out as insignificant.</p> <p>As part of Improvement Condition 1, the Operator must monitor ambient dust and produce H1 risk assessment to verify that the emissions associated to dust are insignificant.</p>
A recommendation that the Applicant provides an Accident Management Plan that addresses the potential impacts on air quality from releases of solid material with high levels of arsenic, and risks from exposure to chemicals that might be released during an accident.	<p>Measures to prevent spillages are summarised in section 4.2.2 of this decision document. We consider that the risk of a major leak is low.</p> <p>We are satisfied that the risk of accidents and their consequences will be minimised through the EMS and condition 1.1 of the permit including for material containing arsenic and for other chemicals that could be released if there were an accident.</p> <p>An Accident Management Plan will also form part of their Environmental Management System (EMS) that is subject to pre-operational condition PO1. This Accident Management Plan will require to include potential accidental releases and emissions.</p>

Response Received from Director of Public Health	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Concerns raised relating to low frequency noise emissions, and there being a limited amount of guidance in this area.	<p>These issues are covered in section 5.2 of this decision document. Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent significant pollution from noise and vibration outside the site.</p> <p>Due to there being no standardised risk assessment methods or guidance for infrasound, we have taken the additional precaution of requiring verification of infrasound levels through a pre-operational condition (PO3 of Table S1.4).</p> <p>Continuous monitoring would then occur when the site is operational, and improvement conditions have been set, requiring the Operator to review the emissions whilst operational.</p>
General concerns over air quality (including dust and particulate matter), and noise.	These issues are covered in sections 5.1 (audible noise) 5.3 (air quality) and 5.4 (dust) of this decision document. We are satisfied that there will not be a significant impact on air quality or from noise and dust.

Response Received from South Hams District Council	
Brief summary of issues raised:	Summary of action taken / how this has been covered
Concern that the primary and secondary crushers were external.	<p>The primary and secondary crushers will be in buildings. This aspect was changed in the Application after the second consultation period.</p> <p>The secondary crusher shall further be contained within an acoustic enclosure, within the new building.</p> <p>These buildings will reduce dust and noise emissions and are considered a best available technique.</p> <p>Details for the buildings are provided in the Application document 'Addendum to Best</p>

	Available Techniques and Operating Techniques', dated 21/09/2023.
<p>Concern over how the audible noise modelling was carried out including:</p> <ul style="list-style-type: none"> • the quality of background data; • whether all receptors were considered; • whether the new buildings are fully enclosed; and, • have all noise sources been included. 	<p>We audited the Applicant's noise assessment. As part of the audit, we checked that these factors were considered appropriately by the Applicant. See section 5.1 of the decision document for further details.</p> <p>Our assessment considered the worst-case operational scenarios.</p> <p>Based on the Applicant's modelling we are satisfied that there will not be a significant impact from noise.</p>
<p>View expressed that options had not been reviewed as part of the BAT process, and that it was not clear how mitigation was selected.</p>	<p>Additional mitigation has been introduced during the determination process, after the second consultation.</p> <p>This includes the primary and secondary crushers being placed in negatively pressured buildings with dust abatement, and additional new noise enclosures for 12 of the screens and secondary crusher.</p> <p>The Applicant has provided options assessments for new equipment and abatement, replacing existing equipment. We are satisfied the measures proposed are BAT.</p>
<p>General concerns over low frequency noise and the proposed mitigation.</p>	<p>These issues are covered in section 5.2 of this decision document. Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent significant pollution from noise and vibration outside the site.</p>
<p>Concern that there are drinking water abstractions that might be affected by permitted activities.</p>	<p>There are no drinking water abstractions nearby which could be affected by the permitted activities.</p>
<p>Concern whether a secondary aggregates business has been included in the application.</p>	<p>The activities we are permitting are detailed in section 4.1.2 of this decision document, and Table S1.1 of the permit.</p> <p>This permit does not cover other activities. After the permit is issued, any changes to these activities would need to be approved by us through a variation to the permit.</p> <p>We have informed the Applicant that should the ore sorter rejects being transported to the MWF</p>

	<p>need further processing into an aggregate on site, that this we need to be a permitted activity. Processing this material for use as an aggregate is not currently permitted by the Environment Agency, and has not been applied for to date.</p> <p>The Operator may export ore sorter rejects from the Hemerdon site for use as an aggregate. The Operator must conduct a self-assessment to determine its waste status.</p>
<p>View expressed that the background levels used in the air emissions assessment should be representative.</p>	<p>We audited the Applicant's dispersion modelling. As part of the audit, we checked that the modelling parameters, weather data and background levels used by the Applicant, were appropriate and we are satisfied that they were. Based on the Applicant's modelling we are satisfied that there will not be a significant impact in air quality.</p> <p>Further information can be found in section 5.3 and 5.4 of this decision document. This includes the dust monitoring that the Applicant shall undertake.</p>
<p>Concern that there is no dust monitoring as part of the permit application.</p>	<p>Dust monitoring requirements are covered in section 5.4 of this decision document. This was approved for the Mining Waste Permit EPR/JB3209MD and will be incorporated into the Dust and Emission Management Plan for this permit through pre-operational condition PO4.</p>
<p>Recommendations that previous air emission monitoring results should be used to validate that model is accurate.</p>	<p>Previous monitoring could not be used to validate the accuracy of the modelling, as there are numerous changes to the site and operating techniques.</p> <p>We will require validation of the modelling using monitored data through Improvement Conditions IC1 and IC2.</p>
<p>A request to review updated plans for the management of noise and dust.</p>	<p>The Noise Management Plan has been included in this minded to consultation for comment.</p> <p>The operating techniques for dust management have been included in the previous consultations for the MPF (EPR/AP3203ML/A001) and the MWF (EPR/JB3209MD/A001).</p>

	<p>We require these operating techniques to be in a standalone Dust and Emission Management Plan, through pre-operational condition PO4. This document shall be made publicly accessible, and the Environment Agency shall continue to work with local interest groups.</p> <p>We have reviewed all the operating techniques proposed and are satisfied with them.</p>
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2) Consultation Responses from Members of the Public and Community Organisations

The consultation responses received were wide ranging and a number of the issues raised were outside the Environment Agency’s remit in reaching its permitting decisions. Specifically, questions were raised which fall within the jurisdiction of the planning system, both on the development of planning policy and the grant of planning permission.

Guidance on the interaction between planning and pollution control is given in the National Planning Policy Framework. It says that the planning and pollution control systems are separate but complementary. We are only able to consider those issues, which fall within the scope of the Environmental Permitting Regulations.

a) Representations from Councillors and Parish / Town / Community Organisations and members of the public

Representations were received from Councillor Patrick Nicholson, Sparkwell Parish Council, Shaugh Prior Parish Council, and members of the public, who raised the following issues.

Brief summary of issues raised:	Summary of action taken / how this has been covered
General	
Concern that impacts at all receptors was not considered.	<p>We considered the impact to the worst-case receptors when assessing the emissions from the site.</p> <p>During our determination we were notified by South Hams District Council (SHDC) of a certificate for lawful use had been granted for a new residential receptor at Goodamoor Farm, which is the closest residential receptor approximately 900m south east from the permit boundary.</p> <p>In response to this we asked the Applicant under schedule 5 notice to consider this new additional</p>

	<p>receptor as part of their risk assessment screening. Following further investigation by SHDC, the certificate of lawful use was subsequently revoked on 12/08/2022, so we do not consider this to be a relevant receptor and has not been considered further as part of this determination.</p> <p>If the circumstances for the facility change whilst operational, for example, if a new residential property is built closer to the site boundary, the Operator may have to take action to prevent (or where that is not practicable, minimise) actual or potential noise pollution.</p>
<p>Concern that the primary and secondary crushers were external.</p>	<p>The primary and secondary crushers will be in buildings. This aspect was changed in the Application after the second consultation period.</p> <p>The secondary crusher shall further be contained within an acoustic enclosure, within the new building.</p> <p>These buildings will reduce dust and noise emissions and are considered a best available technique.</p> <p>Details for the buildings are provided in the Application document 'Addendum to Best Available Techniques and Operating Techniques', dated 21/09/2023.</p>
<p>Concern whether a secondary aggregates business has been included in the application.</p>	<p>The activities we are permitting are detailed in section 4.1.2 of this decision document, and Table S1.1 of the permit.</p> <p>This permit does not cover other activities. After the permit is issued, any changes to these activities would need to be approved by us through a variation to the permit.</p> <p>We have informed the Applicant that should the ore sorter rejects being transported to the MWF need further processing into an aggregate on site, that this we need to be a permitted activity. Processing this material for use as an aggregate is not currently permitted by the Environment Agency, and has not been applied for to date.</p> <p>The Operator may export ore sorter rejects from the Hemerdon site for use as an aggregate. The Operator must conduct a self-assessment to determine its waste status.</p>

<p>Concern that the original application consisted of old documents and data.</p>	<p>We have received several updated documents during the determination period for this application.</p> <p>The documents have been newly written and are bespoke to the specific future operation. All of these documents have been available for review during the 3 consultation periods.</p>
<p>Comments about low frequency noise impacts</p>	
<p>Concerns over low frequency noise, including:</p> <ul style="list-style-type: none"> • the previous issues for the site; • not all sources have been considered; • the plans are not clear; • no details on how compliance would work; • issues with beating and amplification; and, • trials or testing is required before they start operations. 	<p>These issues are covered in section 5.2 of this decision document. This section includes details on compliance, verification of emissions prior to operations commencing, and ongoing monitoring.</p> <p>We are satisfied that all sources of infrasound have been considered.</p> <p>New documents, including a Noise Management Plan and Low Frequency Noise Impact Assessment have been received in 2023 after the second consultation. These documents have been included in this minded to consultation for review.</p> <p>These updated documents detail an improvement upon the previous proposal. We believe the proposal to be a substantial improvement upon the previous operation of the site too.</p> <p>All 12 infrasound emitting screens that emit infrasound will be:</p> <ul style="list-style-type: none"> • fitted with ‘deck venting’ mitigation to increase the open area of the screen and reduce its sound pressure level. • enclosed within bespoke designed acoustic enclosures to reduce infrasound emissions. • fitted with antiphase speakers within their enclosures, to further reduce infrasound emissions.
<p>Concern that the Operator would have to undertake intrusive measurements in resident’s homes to confirm the levels.</p>	<p>Continuous monitoring of low frequency noise will occur in 4 locations at the Hemerdon Mine Complex boundary.</p> <p>Verification testing shall also occur at external receptor locations, where there is prior agreement from the land or property owners.</p>
<p>Comments about audible noise</p>	
<p>Concern over how the audible noise modelling was carried out including:</p>	<p>We audited the Applicant’s BS4142 noise assessment. See section 5.1 of the decision document for further details.</p>

<ul style="list-style-type: none"> • Whether the worst-case scenario has been considered. • The emissions from the crushers are underestimated. • Impulsivity and tonality have not been considered. 	<p>Our assessment considered the worst-case operational scenarios. As we conduct check modelling ourselves, we are able to test and consider varying scenarios.</p> <p>The crushers are now to be housed in cladded buildings. The secondary crusher shall further be located within an acoustic enclosure, within the building.</p> <p>Based upon the information in the Application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site.</p> <p>The Applicant considered sound character corrections, including impulsivity and tonality, in their BS4142 assessment. We are satisfied with their justification for correction application.</p> <p>Improvement Condition 4 requires the Operator to undertake a noise assessment during normal operations in accordance with the procedures given in BS4142:2014, in order to validate the assessment provided within the Application.</p>
<p>Concern that cladding the new buildings is insufficient.</p>	<p>The Applicant has used a conservative assumption in their modelling for the level of noise reduction that the building cladding shall provide.</p> <p>Improvement Condition 4 requires the Operator to undertake a noise assessment during normal operations in accordance with the procedures given in BS4142:2014, in order to validate the assessment provided within the Application.</p>
<p>Concern that conveyor entry mitigation is unrealistic.</p>	<p>Improvement Condition 4 requires the Operator to undertake a noise assessment during normal operations in accordance with the procedures given in BS4142:2014, in order to validate the assessment provided within the Application.</p> <p>We have assessed the impacts of the proposal without conveyor entry mitigation as a worst-case scenario, and the impact was still identified as not significant.</p>
<p>Suggestion that if monitoring demonstrates higher levels of noise, then the activities should stop.</p>	<p>Improvement Condition 4 requires the Operator to undertake a noise assessment during normal operations in accordance with the procedures given in BS4142:2014, in order to validate the assessment provided within the Application.</p>

	<p>If the monitored emissions exceed those in the BS4142 assessment in the Application, the Operator shall outline any improvements necessary to ensure that emissions of noise are reduced to or below those in the Application. The Operator would be required to submit proposals for implementing improvements, including timescales for implementation, and testing for success, to be approved in writing by the Environment Agency. These measures would then need to be implemented.</p> <p>Section 5.1.8 of the decision document has further details on audible noise permit compliance requirements.</p>
<p>The accumulative effects of noise sources outside of the boundary have not been considered.</p>	<p>The mining, quarrying and base mineral extraction operation is to be carried out under Planning Authorisations subject to the control of Devon County Council and we do not regulate this activity. This activity has not been considered as part of this permit application as we do not regulate this activity.</p> <p>The MWF (permit reference: EPR/JB3209MD) was assessed and permitted separately by the Environment Agency and concluded there would be no significant impact of noise from these activities.</p> <p>We have determined that the cumulative effects of the MWF would not impact our conclusion that the MPF would not cause a significant impact on receptors. This is considering the dominant noise sources, time of operations and distance to receptors.</p> <p>There shall be continuous monitoring of noise at the permit boundaries for both the MPF and MWF. We consider that the permit conditions within both the MWF and MPF are sufficiently protective to prevent significant noise pollution.</p> <p>The mining activities were not operating when the background levels were established for the BS4142. This ensures that we have considered a worst-case background level as the baseline for our assessment.</p>
<p>Concern over noise from traffic.</p>	<p>Only vehicle movements within the Installation boundary can be considered through environmental permitting. Vehicle movements outside of</p>

	<p>Installation boundary are not within our remit. The Applicant's noise assessment included on-site vehicle movements and we are satisfied that there will not be a significant impact.</p>
<p>View expressed that options had not been reviewed as part of the Best Available Techniques process.</p>	<p>Additional mitigation has been introduced during the determination process, after the second consultation.</p> <p>This includes the primary and secondary crushers being placed in negatively pressured buildings with dust abatement, and additional new noise enclosures for 12 of the screens and secondary crusher.</p> <p>The Applicant has provided options assessments for new equipment and abatement. We are satisfied the measures proposed are BAT.</p>
Comments about dust impacts	
<p>Confirmation wanted over how dust emissions would be monitored and baseline conditions obtained.</p>	<p>Dust monitoring requirements are covered in section 5.4.3 of this decision document, and we are satisfied appropriate measures will be in place.</p> <p>This will be incorporated into the Dust and Emission Management Plan for this permit through pre-operational condition PO4.</p> <p>Once the site is operational, the site shall carry out dust monitoring at the site boundary, and selected receptors. Dust samples are collected monthly and analysed by a UKAS-accredited laboratory. The results of dust monitoring and effectiveness will be regularly presented to the Environment Agency and at regular community liaison meetings to demonstrate how the Operator is meeting the required Environmental Standards.</p> <p>The Operator shall carry out a monitoring study to verify the assumptions made in the Application in relation to the releases of pollutants to air. This is a requirement set out in Improvement Condition 1.</p>
<p>Confirmation wanted over how compliance with dust emissions would be managed.</p>	<p>Dust compliance requirements are covered in section 5.4.4 of this decision document.</p>
<p>Concern that arsenic emissions are not insignificant.</p>	<p>We have assessed the impacts for arsenic, and we are satisfied that there will not be any significant impacts. See section 5.3 for how we have reviewed the risk assessment for emissions to air and see</p>

	<p>section 5.4 for further details on how emission of dust and arsenic will be managed.</p>
<p>A comment that elemental analysis not been produced and presented for the dust</p>	<p>The risk assessments are based on multi-elemental dry weight analyses of the tailings, which are expected to have higher concentrations of arsenic, and therefore provide a conservative assumption.</p> <p>Improvement Condition 1 requires the Operator to carry out an ambient dust monitoring study to verify the assumptions made in the Application in relation to the releases of pollutants to air.</p>
<p>Comments about other impacts</p>	
<p>Concern over emissions to water.</p>	<p>Emissions to water are covered in section 5.5 of this decision document.</p> <p>Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise emissions to water.</p> <p>Surface water monitoring and limits shall be carried out in accordance with the permits EPR/QP3420XX and EPR/JB3209MD. This includes monitoring of extensive lengths of the receiving surface waters.</p>
<p>Comments about regulation</p>	
<p>Concern over how the Environment Agency will regulate the site.</p>	<p>We will regulate the site carrying out a continual assessment of plant operations and its environmental performance.</p> <p>The Operator must monitor emissions and report the results to us. We will regularly inspect the Installation, review monitoring techniques, and assess monitoring results to measure the performance of the plant, review operating techniques and review management systems and plans. We will carry out on-site audits of Operator monitoring. We will carry out both announced and unannounced inspections.</p> <p>The Operator must inform us within 24 hours of any breach of the emissions limits, followed by a fuller report of the size of the release, its impact and how they propose to avoid this happening in the future.</p> <p>The Operator's monitoring results will be placed on the public registers. If there is a breach, then we will take appropriate enforcement action, including but not limited to issuing Compliance Assessment</p>

	Report forms, written warnings and reviewing issues with the Operator.
Concern that granting a permit would not fit with the Environment Agency's aims of: <ul style="list-style-type: none"> • protect and improve the environment and • create better places for people and wildlife 	Our role in EPR permitting is to ensure that any Installation does not cause significant pollution or harm to human health. We are satisfied that this Installation will not cause significant pollution or harm and that it will provide a high level of protection for the environment as a whole as such it fits with these aims.
The planning application is not consistent with the permit Application.	Our view is that the planning and the Permit are not likely to conflict but in any event the Applicant will have to comply with both their planning permission and the Permit and in the event of any difference comply with the most stringent.
The consultation was not adequate.	We are satisfied that we took appropriate steps to inform people about the Application and how they could comment on it. How we did this is described in section 2 of this decision document.
Concern over the impact of light pollution	Pollution from light is primarily a concern for considering visual impacts and as such generally covered by the planning process. In any event light pollution and pollution are not likely to have a significant effect on health or the environment.
View expressed that this is not the right location for the Installation.	Decisions over land use are matters for the planning system. The location of the installation is a relevant consideration for Environmental Permitting, but only in so far as its potential to have an adverse environmental impact on communities or sensitive environmental receptors. The environmental impact is assessed as part of the determination process and has been reported upon in the main body of this document.
Comments about vehicle access to the installation and traffic movements on local roads.	These are relevant considerations for the grant of planning permission, but do not form part of the Environmental Permit decision making process except where there are established high background concentrations contributing to poor air quality and the increased level of traffic might be significant in these limited circumstances. This does not apply to this Application.
View expressed that energy efficient methods were needed.	Having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that energy is used efficiently within the Installation. Please see section 6.2 of the decision document for further information.

Concerns that the previous operation impacted local private water supplies.	There are no drinking water abstractions nearby which could be affected by the permitted activities.
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b) Representations on issues that do not fall within the scope of this permit determination.

Brief summary of issues raised:	Environment Agency comment
Emissions from the Mining Waste Facility.	These do not fall within the scope of this permit determination. Please see the decision document for EPR/JB3209MD.
Concerns about the mineral extraction activity, including blasting.	These do not fall within the scope of this permit determination as EPR relates to the impacts from emissions from the operation of the permitted activities. Some of these concerns may be relevant to planning applications.
Concern over impacts during construction.	
Concern over the visual impact of the site.	
Concern over damage general downgrading of the area including damage to the economy and house prices and tourism.	
The need for the facility.	