TUNGSTEN WEST

Hemerdon Mining Waste Facility

Environmental Permit Application
EPR/FB3639RK/A001

Non-Technical Summary

Document Reference: Section 1

August 2020

NON TECHNICAL SUMMARY - TABLE OF CONTENTS

Referenced Drawings

Drawing 001	**Site Location Plan**
Drawing 002	**Permit Boundary**
Drawing 003	**Current Topography Drawing**
Drawing 004	**Environmental Monitoring**
H1a	**Environmental Site Setting**
Drawing H1b1	**Cultural and Natural Heritage European Sites to 10km**
Drawing H1b2	**Cultural and Natural Heritage sites to 2km**

1.0 INTRODUCTION

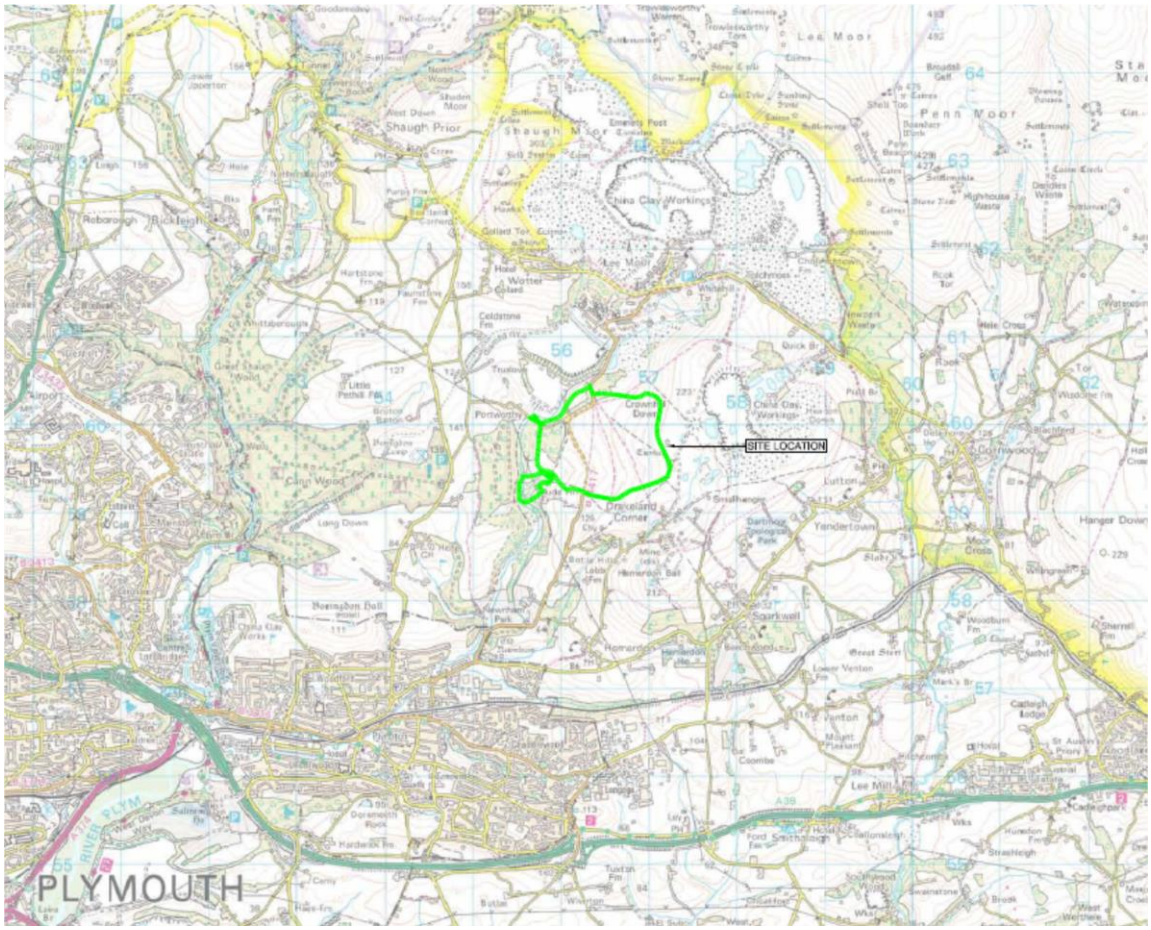
Tungsten West has prepared an Environmental Permit (EP) application for a Mining Waste Facility (MWF) at the Hemerdon Mine, Devon. The mine comprises an open pit, processing facility, MWF and associated infrastructure; this application relates solely to the MWF and associated surface water discharges.

In accordance with Environment Agency (EA) guidance a Non-Technical Summary has been prepared which provides an explanation of exactly what is being applied for, a summary of the regulated facilities, and a summary of the key technical standards and control measures that will be implemented at the site.

1.1 Site Location and Setting

The Hemerdon site is located within an area characterised by historic and current quarrying and mining operations. The city centre of Plymouth is located approximately 10km to the south west, with the suburban town of Plympton approximately 3km to the south west, as shown on Figure 1 below. There are a number of scattered farms and residential properties within 2km of the proposed site boundary in all directions, with the small villages of Yondertown, Sparkwell and Hemerdon to the southeast and south, respectively.

Figure 1-1 MWF and Site Location



The MWF lies on Crownhill Down, covering an area of approximately 175 hectares extending to the lower slopes of the Tory Brook valley. Waste from the open pit will be used to progressively construct the MWF embankments with tailings (generated from the processing plant) continuously deposited and contained within the MWF. The final stage of the MWF's development is show in Figure 1-2 below.

Figure 1-2 MWF Graphic

The following drawings illustrate the location of the site and its environmental setting;

- Site Location (Drawing No. 001)
- Current topography (Drawing No. 003)
- Environmental Site Setting (Drawing No. H1a)
- Cultural and Natural Heritage Sites to 2km (Drawing No. H1b2)
- Cultural and Natural Heritage European Sites to 10km (Drawing No. H1b1)

1.2 Site History

The discovery of Tungsten at Hemerdon dates back to 1867. However, mining for Tungsten at the site only commenced in 1919 following an increase in demand as a result of the First World War. Further mining activities were carried out during the Second World War.

In the 1980's a comprehensive feasibility study was completed by a joint venture company comprising Hemerdon Mining and Smelting Ltd (HMSL) and AMAX, an American mining company. A pilot plant was constructed and large scale test work was undertaken. Planning consent to establish a mine at Hemerdon was granted in 1986 following a public enquiry, however due to a fall in the value of Tungsten at this time, the mine was not developed.

In late 2007, Tungsten West signed a 40 year option and lease agreement with the landowners for the mineral rights and the rights to mine the deposit.

1.3 Planning Consent

The site benefits from conditional Planning Permission, granted by Devon County Council (the Mineral Planning Authority) in 1986. A Modification Order was approved in January 2011 updating the planning conditions in line with legislative changes since 1986.

The Modification Order is enclosed as Appendix 3A of the EP Application.

1.4 Unilateral Undertaking & Restoration Concept

The working and restoration of the Hemerdon Mine will be undertaken in accordance with the Unilateral Undertaking which is a legal agreement between Tungsten West, Devon County Council and the landowners of the Hemerdon site. The Unilateral Undertaking includes obligations in relation to the Restoration Concept, the review processes that are in place in relation to restoration, and the establishment of both technical and local liaison groups.

The Unilateral Undertaking (which incorporates the Restoration Concept) is enclosed as Appendix 3H-1 of the EP Application.

2.0 PROPOSED PERMITTED ACTIVITIES

The main activities to be undertaken at the Hemerdon Mine comprise the following:

2.1 Hard rock open pit;

2.2 Mineral Processing Plant; and

2.3 Mining Waste Facility (MWF) (and integral surface water discharges).

Operation of the mine and processing plant generates extractive waste which falls under the scope of the Mining Waste Directive (the Directive), and an Environmental Permit (EP) is therefore required.

The Mining Waste that is generated at the site is used to construct and is disposed of within the MWF. In addition surface water arising from the MWF will be released via settlement ponds and the Tory Pond to two locations on the adjacent water course, the Tory Brook.

Accordingly, as agreed with the EA during pre-application discussions, the only activities that are included within the scope of this Mining Waste Environmental Permit application are the MWF and the integral surface water discharges to Tory Brook.

3.0 MWF DESIGN

The Hemerdon MWF includes a rockfill embankment constructed from run of mine waste in order to confine the finer residues (tailings) and the excess process water. The MWF also incorporates all necessary infrastructure to enable safe and efficient management, including emergency spillways, decant structures, tailings and return water pipelines and seepage control system as described below:

Confining embankment - The fine tailings disposal area will be encapsulated by engineered containment embankments and engineered waste rock storage. Containment of the fine residues will require a zoned embankment construction, which will be raised to final design height in a series of stages.

Tailings deposition system - The tailings deposition system which involves the deposition of the tailings via an enclosed pipeline and ring main located around the perimeter of the MWF has been designed to enhance drainage and settlement of the tailings in a landform which will be stable post mine closure.

Decant System - A decant system is proposed for the recovery of excess process waters designed to improve consolidation and placed density of the fine tailings.

Emergency Spillway - An emergency spillway has been designed to ensure the embankment is not over topped during operations or post closure notwithstanding probable maximum rainfall events.

Seepage Control - Seepage control measures comprise a basal lining system which will limit seepage from the

tailings impoundment, and also an underdrainage system which will collect seepage from the tailings for recirculation within the MWF.

Settlement Ponds - Settlement ponds and other water management structures namely energy dissipation and release structures will be located between the MWF and Tory Brook.

Tory Pond - Tory Pond, immediately upstream from the confluence of Hooksburry Brook and Tory Brook, is required both for the main water storage facility for the MWF and also for water release controls.

Further details on the design of the MWF are provided in the Waste Management Plan which forms Section 3 of this EP Application, specifically Appendix 3E the Design Report.

4.0 CLASSIFICATION OF FACILITY

The MWD classifies mining waste facilities as either Category A or not Category A. Facilities are considered to be Category A if they contain hazardous waste or dangerous substances above prescribed thresholds or where a failure or incorrect operation could give rise to a major accident.

Assessments have therefore been carried out to determine whether the MWF at Hemerdon is a Category A Facility.

The wastes that will be generated at Hemerdon will be non-hazardous and consequently the MWF will not be considered as a Category A Facility on the basis of hazardous waste or dangerous substances. However, inundation mapping has indicated that properties in the downstream catchment of the MWF might be at risk of inundation in the extremely unlikely event of a failure of the MWF. Consequently, the MWF at Hemerdon is being Classified as a Category A facility.

5.0 WASTE MANAGEMENT PLAN (WMP)

In order to satisfy the requirements of Article 4 of the Directive a Waste Management Plan (WMP) has been drafted in accordance with Environment Agency guidance *EPR6.14 How to comply with your environmental permit. Additional guidance for: mining waste operations.* The objectives of the WMP are to prevent or reduce waste production and its harmfulness and to ensure short and long term safe disposal of the extractive waste.

The WMP provides details on the following aspects of the MWF:

5.1 Site description and setting;

5.2 Classification of facility;

5.3 Waste characterisation;

5.4 Site operation and waste treatment;

5.5 Environmental risk assessment;

5.6 Construction and management of mining waste facility;

5.7 Control and monitoring procedures;

5.8 Closure, aftercare and monitoring;

5.9 Prevention of environmental pollution;

5.10 Survey of land to be affected;

5.11 Review of waste management plan;

5.12 Additional requirements for Category A facilities – Major Accident Prevention.

6.0 BEST AVAILABLE TECHNIQUES

Article 4(3) of the MWD requires that measures taken to prevent or reduce as far as possible any adverse effects on the environment and human health brought about as a result of the management of extractive waste are based amongst other things on Best Available Technique (BAT).

In order to demonstrate that the proposed activities at Hemerdon satisfy the requirements of BAT consideration has been given to the European BAT Reference document (BREF) *Best Available Techniques for Management of Tailings and Waste Rock in Mining Activities.*

The assessment has demonstrated that the requirements of BAT during the design, construction, operation, and post closure phases will be satisfied by the Hemerdon MWF.

The BAT Assessment is included as Section 15 of the WMP (Section 3 of the EP Application).

7.0 TECHNICAL ASSESSMENTS

A number of technical assessments and reports have been prepared in support of this Environmental Permit application to demonstrate that the proposed activities will not give rise to unacceptable impact on human health and the environment.

7.1 Waste Characterisation Report

A study has been undertaken to characterise the waste that will be generated at the Hemerdon Mine, with the general objective of providing a reliable estimation of the future behavior of the different types of mining waste to be generated throughout the life of the project.

The information from the study was used to support the design of the MWF, estimate the resulting drainage quality and inform mitigation measures.

Samples of waste rock, ore and tailings were subjected to a range of analytical techniques including determination of sulphur, chemical analysis, short term leaching tests and pH dependent leaching tests.

The total sulphur results underpin the conclusion that acid rock drainage (ARD) is not an issue at the Hemerdon deposit. Short term leaching test results were used to develop an envelope of estimated leaching rates from the different waste streams, and these results were subsequently used in the groundwater and surface water risk assessment.

Recommendations for future testing of waste streams together with monitoring requirements from a geotechnical perspective are provided.

The Waste Characterisation Report is enclosed as Appendix 3C of the EP Application.

7.2 Waste Types and Classification

There are essentially two distinct waste types that will be generated at the Hemerdon Mine:

7.2.1 Rock Waste derived from the mine that is not suitable for ore processing;
7.2.2 Process Waste generated from the ore processing plant.

The waste rock that is generated at the mine will be transported from the pit area to the location of the MWF, where it will be used to progressively construct the embankments of the MWF.

The process waste includes both a solid waste fraction and a slurry waste fraction. The solid waste fraction comprises coarse rejects from the dense media separation (DMS) process. The slurry waste comprises slimes from the DMS process and rejects from the remaining processes carried out at the ore processing plant including gravity separation, froth flotation, and magnetic separation.

An assessment has been undertaken of the classification of the wastes. The assessment was undertaken using the data from the analysis of the waste, and the proprietary software HazWasteOnline™.

It was concluded that all waste generated at Hemerdon would be classified as nonhazardous.

The Waste Classification Report is enclosed as Appendix 3D of the EP Application.

7.3 Geotechnical Assessment

A report has been prepared which reviews and summarises the results of geological and geotechnical testing carried out at the Hemerdon Mine. The data includes a geological data base prepared in the 1980's and environmental reports prepared as part of a feasibility study at that time. This data has been supplemented by additional testing work and consideration of advice provided by other specialist consultants.

The report interprets the geotechnical conditions at the site including:

7.3.1 Geological sequence and geotechnical properties of the host rock;
7.3.2 The existence of old mine workings;
7.3.3 Groundwater flow and aquifer permeability.

The Geotechnical Assessment is enclosed as Appendix 3F of the EP Application.

7.4 Design Basis

A review has been undertaken to assess the proposed design basis for the Hemerdon MWF. The review has been undertaken by an independent civil engineer as a precursor to the statutory approval process for mines and quarries.

The review included an assessment of the proposed design, construction and operation parameters against a combination of good practice, UK and ICOLD (International Commission on Large Dams) guidelines.

The review has included consideration of relevant legislation, design principles, design risk assessment, compliance monitoring, statutory requirements, inspection, monitoring and reporting.

The review concluded that the current design approach is wholly appropriate and satisfactorily addresses all the International Committee on Large Dams (ICOLD) criteria. Further, the mitigation measures to be incorporated into the design reduce the overall risk of a significant failure event during construction or operation to an extremely low level.

The Design Basis Report is enclosed as Appendix 3G of the EP Application.

7.5 Closure Report

In order to satisfy the requirements of Article 12 of the Directive a Closure Report has been prepared which outlines the measures that will be taken at the Hemerdon MWF during the period of closure and aftercare when disposal operations are complete.

The Closure Report provides details on relevant closure design principles and the closure process. Obligations under the Unilateral Undertaking and the Restoration Concept are summarised including the principles of retention and incorporation, avoidance, enhancement, restoration, compensation, management and monitoring.

Details are provided on the ecological mitigation and enhancement strategy, provisions for planting, soil storage, surface treatment, erosion, surface water management, and maintenance of environmental management systems.

Proposals for environmental monitoring, independent inspections, reporting and notifications to the EA are provided.

The Closure Report is enclosed as Appendix 3H of the EP Application.

7.6 H1 Amenity and Accident Risk

An assessment has been undertaken of the amenity and accident risks presented by the proposed development of the MWF. The assessment has been drafted in accordance with relevant EA Guidance and has considered the risks posed by the following hazards:

7.6.1 Stability;
7.6.2 Hydrogeology (groundwater);
7.6.3 Hydrology (surface water);
7.6.4 Particulate matter (dust);
7.6.5 Mud (on roads);
7.6.6 Odour;
7.6.7 Noise and vibration; and
7.6.8 Accidents and their consequences.

The assessment has identified the management and mitigation measures that will be implemented at the site to ensure that the site does not represent a significant risk to the surrounding environment and human health.

It has been concluded that with the implementation of the specified risk management measures the potential amenity and accident hazards associated with the MWF at Hemerdon Mine are not significant.

The H1 Amenity and Accident Risk Assessment is enclosed as Section 4A of the EP Application.

7.7 Stability Risk Assessment

As part of the Design Report (Appendix 3E of EP Application) an analysis of slope stability has been undertaken using the computer based modelling programme, Slide.

The results of the stability analyses indicate that all staged embankments have adequate factors of safety against failure under both static and earthquake loading conditions.

7.8 Dust Risk Assessment

A dust risk assessment was undertaken for the MWF that considered the construction and potential erosion of the embankment, made up of the run of mine waste and Dense Media Separation rejects, and potential erosion of the beached tailings on the MWF surface. The assessment considered potential risk as a result of airborne dust (PM_{10}) and dust deposition against Air Quality Standards for the protection of health, and benchmarks adopted for protection of amenity and ecological receptors. The assessment included consideration of metals within the dust.

The assessment was undertaken using a semi-quantitative approach, in which the distances between sources and receptors, and local meteorological conditions, i.e. wind direction and precipitation, were considered. The assessment of risk was then based on the probability of an impact occurring and the magnitude of that impact, if it were to occur.

The findings of the assessment were that:

7.8.1 given the likely magnitude of emissions and low background PM_{10} concentration the risk of exceeding Air Quality Standards was considered to be negligible;

7.8.2 based on the distance and direction of sensitive human receptor locations in relation to prevailing winds the risk of dust nuisance was judged to be insignificant; and

7.8.3 the risk of dust deposition on designated ecological receptors or agricultural land exceeding indicative thresholds for their protection is considered to be low.

The Dust Risk Assessment is enclosed as Section 4B of the EP Application.

7.9 Groundwater and Surface Water Risk Assessment

A Tiered approach has been undertaken to the assessment of risk to groundwater and surface water in accordance with EA Guidance. An initial Tier 2 assessment suggested that the proposed MWF had the potential to impact surface water (in terms of copper concentrations in the Tory Brook) and groundwater (in terms of arsenic concentrations).

Consequently a Tier 3 risk assessment has been undertaken using a 3D groundwater flow and transport model in order to assess the potential impact of arsenic on the underlying groundwater. The assessment has demonstrated that where tailings seepage is limited to 20mm/year that any increases in arsenic concentrations at the worst case down gradient locations will be at the limit of discernibility. The concentration plume will terminate at the Tory Brook where it will discharge as base flow to the river. The potential impact on the Tory Brook is negligible as the total loading is minimal.

A sensitivity assessment has also been carried out and this has shown that seepage rates of up to 40mm/year could be applied to the tailings before the pre development arsenic loading would be exceeded.

The groundwater assessment is considered to have shown that there is a satisfactory level of confidence that there will not be a significant impact on the arsenic concentrations down gradient of the MWF subject to the installation of a basal liner which will limit seepage to 20mm/year. The risk assessment has also shown that discharges of metals to the Tory Brook are not liable to cause pollution.

It is therefore concluded that the operation of the Hemerdon TMF will not give rise to a significant adverse impact on groundwater or surface water.

The Groundwater and Surface Water Risk Assessment is enclosed as Section 4C of the EP Application.

7.10 Ecological Risk Assessment (ERA)

The ecological risk assessment has considered the potential impact of the MWF on potential ecological receptors within the vicinity of the site. Consideration has been given to risks arising from routine operation of the site and also from an extremely unlikely breach event.

It has been concluded that none of the potential impact sources are identified to result in a risk of significant effect to sites which will not otherwise be directly impacted by existing mining consents.

Habitat Regulations Assessment (HRA)

Information is provided within the ERA such that the EA as competent authority can carry out a HRA, in pursuance of Regulation 61 of the Habitat Regulations, of the likely significant effects of the MWF on the Plymouth Sound and Estuaries SAC, Tamar Estuaries Complex SPA, the Dartmoor SAC and South Dartmoor Woods SAC.

No direct loss of qualifying habitats or species were identified and none of the potential indirect impacts identified were considered likely to result in risk of significant effect under normal operating conditions or

further to a breach of the MWF.

It was therefore concluded that the favourable conservation status of the European sites is assured.

The Ecological Risk Assessment is enclosed as Section 4D of the EP Application.

7.11 Ecological Mitigation and Enhancement Strategy

This report describes the environmental measures that are proposed to address the ecological impacts arising from the proposed development of the MWF. The report specifies the necessary enhancement, monitoring, management and/or mitigation actions required to avoid potentially adverse effects on ecological receptors and/or contravention of wildlife legislation.

The assessment considers identified biodiversity habitat receptors, comprising broadleaf woodland, mire, and grassland/heath, together with species of bats, badgers, birds, and reptiles.

For each species and habitat the report specifies the mitigation and enhancement strategy, mitigation and enhancement measures and requirements for on-going management and monitoring which will be implemented to ensure effective delivery of the ecological vision for the site.

The Ecological Mitigation and Enhancement Strategy is enclosed as Section 4E of the EP Application.

7.12 Assessment of Potential Downstream Risks

Although it is accepted that failure of the MWF is unlikely, in accordance with good practice, assessments have been undertaken of the hazards that would arise if the embankment of the MWF failed, or the Tory Pond failed, resulting in an uncontrolled outflow of water from the WMF and Tory Pond.

The assessment has been undertaken using conventional flood mapping software developed by the Environment Agency for large raised reservoirs. The resultant mapping has been used to define the downstream properties at risk and to indicate the extent of any potential environmental impact.

The Assessment of Potential Downstream Risks is enclosed as Section 4F of the EP Application.

7.13 Fluvial Geomorphology and Ecology Assessment

The fluvial geomorphology report is a qualitative assessment of the physical and ecological impact of a hypothetical breach of the MWF on the Plymouth Sound Special Area of Conservation (SAC) which is located approximately 8.5km to the south and south west of the MWF. The assessment considers the impact from both the primary material which arises from the MWF and the secondary material from scour along the Tory Brook.

The conclusion from the assessment was that the volume of material likely to be transported through the river system to the SAC is minimal, and that this would equate to a thickness of less than 0.2mm in the SAC. It was further concluded that no species or habitat associated with the SAC would be significantly affected by sediments originating from failure of the proposed MWF and as such the integrity of the sites would be maintained.

The Fluvial Geomorphology and Ecology Assessment is enclosed as Section 4G of the EP Application.

7.14 Water Framework Directive Assessment

An assessment has been undertaken of the proposed development in order to demonstrate compliance with the Water Framework Directive (WFD). It was concluded that the proposed development would not have any significant impacts on the following WFD objectives:

7.14.1 The proposed scheme will not cause deterioration in the status of the biological elements of the adjacent surface water bodies.

7.14.2 The proposed scheme will not compromise the ability of the water body to meet its WFD status objectives.

7.14.3 The proposed scheme will not cause a permanent exclusion or compromise achieving the WFD objectives in other bodies of water in the same River Basin District.

It was therefore concluded that the proposed scheme contributes to the delivery of the WFD objectives.

The Water Framework Directive Assessment is enclosed as Section 4H of the EP Application.

7.15 Radioactive Substances Assessment

An assessment has been undertaken to determine whether the waste to be generated at the Hemerdon mine will be subject to the radiation protection regulations in the UK.

The assessment comprised a literature review of all relevant information and it was concluded that the wastes were far below the out-of-scope values and therefore not subject to radiation protection regulations.

7.16 Surface Water Discharge Applications

There are two proposed discharges to surface water from the MWF. The Portworthy discharge (ED2) relates to a discharge of water from the northern end of the MWF into the Tory Brook upstream of the Portworthy Road bridge. The second discharge (ED1) is via the Tory Pond at the confluence of Hooksburry Brook and Tory Brook further to the south.

The surface water discharge applications include information on proposed discharge volumes and quality, plans of discharge locations and discharge arrangements.

The Surface Water Discharge Applications are enclosed as Section 5 of the EP Application.

8.0 MANAGEMENT

The operation of the Hemerdon MWF will be undertaken in accordance with Tungsten Wests Integrated Management System which will include the requirements for quality, occupational health, environment and safety into a comprehensive set of procedures. The objective is to ensure that operations at the MWF are undertaken without causing harm to human health or the environment.

The management systems will ensure that appropriate technical management is in place at the MWF and that technical development and training of staff is provided.

Operational management procedures will ensure that:

8.1 The risks that the activities pose to the environment are identified;

8.2 The measures that are required to minimise the risks are identified;

8.3 The activities are managed in accordance with the management system;

8.4 Performance against the management system is audited at regular intervals; and

8.5 The Environmental Permit is complied with.

Details on the Tungsten Wests management system which are enclosed as part of this EP Application comprise:

8.6 Environmental Policy (Appendix 3I);

8.7 Environmental Management System summary (Appendix 3I);

8.8 Major Accident Prevention Policy (Appendix 3J);

8.9 Summary of Safety Management System (Appendix 3K);

8.10 Summary of Internal Emergency Plan (Appendix 3L).

9.0 KEY TECHNICAL STANDARDS & CONTROL MEASURES

Key technical standards and control measures that will be implemented at Hemerdon are detailed below.

9.1 Compliance with UK Legislation

The facility will be designed and operated in strict compliance with all relevant UK legislation including:

9.1.1 Environmental Permitting Regulations 2016;
9.1.2 Quarries Regulations 1999;
9.1.3 Mines and Quarries (Tips) Regulations 1971;
9.1.4 Health and Safety at Work Act 1974;
9.1.5 Reservoirs Act 1975;
9.1.6 Floods and Water Act 2010.

The design of the facility will also accord with the recommendations of ICOLD.

9.2 Stability

Detailed site investigation and analysis of the foundation and embankment construction material will be undertaken to ensure that the embankment is designed and constructed to meet the requirements of long-term stability.

9.3 Competent Person

A suitably qualified civil engineer has been appointed as the independent Competent Person to overview and approve of all stages of the design and to undertake the statutory annual inspection and reporting on the facility.

9.4 Monitoring, Inspection and Reporting

The facility will be subject to ongoing monitoring by the appointed Competent Person of embankment construction to ensure compliance with the design standards and construction specification. All necessary statutory reports will be prepared in advance of commencement of operations.

A comprehensive programme of monitoring will also be undertaken on a daily basis and will include monitoring of the pipelines, discharge points, pumps, tailings deposition, decants, sumps, seepage, embankment integrity, and water levels.

9.5 Operating and Maintenance Manual

An approved Operating and Maintenance Manual will be prepared which details all inspection and monitoring routines for ongoing embankment construction and tailings deposition

9.6 Safety Document

A Safety Document will be prepared which details all relevant safety and operating protocols together with a list of statutory and non-statutory appointees responsible for overseeing, inspecting and monitoring the operations.

9.7 Groundwater Protection

In order to limit vertical seepage from the TMF a low permeability lining system will be installed on the base of the impoundment area. The system which is likely to comprise either clay or a geosynthetic or geocomposite

liner will be designed and constructed to achieve a seepage rate of no greater than 20mm/annum.

9.8 Leachate Management

An engineered leachate drainage and collection system will be installed in the base of the impoundment. Leachate collected by the system will be pumped back into the tailings impoundment pond.

9.9 Surface Water Management & Control

An engineered surface water management system will be installed at the MWF. The philosophy for the management of surface water will be as follows:

9.9.1 In areas of the site where runoff will be from undeveloped areas of the site runoff will where possible be diverted away from the MWF and discharged either directly to surrounding water courses or into Tory Pond;

9.9.2

9.9.3 Where runoff is potentially from MWF developed areas this run off will be intercepted and channeled through a series of sediment ponds to remove suspended sediments before being discharged into the local water courses or Tory Pond.

9.10 Dust Management and Control

A comprehensive dust management and monitoring plan will be implemented at Hemerdon to minimise the potential impact on the surrounding environment. Measures to be taken include the use of water trucks and cannon during construction, the adjustment of operations to take account of wind direction, the damping of dry surfaces when conditions dictate, and the establishment of plant cover on completed sections to bind exposed surfaces.

9.11 Noise Management and Control

Emissions of noise during construction operations will be subject to continuous monitoring by site operatives. Changes to operating methods will be implemented where necessary, and noise bunds constructed.

9.12 Environmental Monitoring and Reporting

A comprehensive programme of environmental monitoring will be undertaken at the site, and results will be submitted to the EA. The monitoring programme will include groundwater monitoring, surface water monitoring, leachate monitoring and dust monitoring.

A report will be compiled on an annual basis which summarises the results of monitoring carried out in the previous year.

10.0 FINANCIAL PROVISION

Article 14 of the Directive requires that for Category A facilities a financial guarantee is required. The objective of the financial guarantee is to ensure that all of the obligations of a permit for a MWF are met in order to protect the environment and human health by ensuring funds are available to rehabilitate land affected by a MWF and to provide for aftercare of the facility once it is closed.

Proposals for financial provision sufficient to satisfy the requirements of the Environmental Permit have been developed and are enclosed as Section 6 of the EP Application.

11.0 CONCLUSION

The overall conclusion from the studies undertaken as part of this application is that there is unlikely to be a significant environmental impact as a result of the mining waste and surface water discharge activities at Hemerdon.

Tungsten West is fully committed to ensuring the highest standards are met and will undertake its activities in a manner consistent with best industrial practices and in accordance with the company's management system.

12.0 CLOSURE

This report has been prepared by Tungsten West Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Tungsten West Limited. No warranties or guarantees are expressed or should be inferred by any third parties.