

# TECHNICAL NOTE

## Mineral Processing Facility Schedule 5 response

Attention: Paul Barker - Environment Agency

### Mineral Processing Facility Schedule 5, notice of request for more information response 29<sup>th</sup> November 2022

Tungsten West Plc (Tungsten West) submitted a bespoke environmental permit (EP) application for the operation of the Mineral Processing Facility on the 26<sup>th</sup> August 2021. The Environment Agency (EA) duly made the application on the 16<sup>th</sup> September 2021 and carried out an initial public consultation closing on the 29<sup>th</sup> October 2021. Tungsten West has been issued a Schedule 5 notice of request for more information from the EA on the 8<sup>th</sup> February and 16<sup>th</sup> February 2022.

This technical note addresses the points raised in the schedule 5 issued on 8<sup>th</sup> February 2022. The schedule 5 request is detailed below in bold italics with Tungsten West's response following.

#### Non-technical summary

1. *Please update and resubmit your non-technical summary to clarify the full design proposals including the specification of crushers that TWL propose to use. Please provide further details on the design, proposed location and control measures for noise and dust. We cannot fully ascertain the specification of the crushers proposed in the current application. Whilst TWL may wish to change the design of the primary crushers from that used previously by Wolf Minerals, they should continue to meet the previous BAT requirements for noise and dust mitigation measures.*

*Reasoning: The non-technical summary consists of two documents. TWL-CP-PA-EN-006.0.08 is from the original permit application made by Wolf Minerals in February 2014 which still commits to the primary crusher being 'located in a closed building with negative pressure and bag filter to elevated release vent'. The non-technical summary addendum (TWL-CP-PA-EN-006.2.08.1) notes the modifications to the previously submitted installation are limited to the crushing and screening facilities or 'front end' but does not provide any further written details on the new design proposals. Reference is made to the flow diagrams in Appendix A and B. Appendix A includes a primary grizzly and primary crusher in the pit, with 2 secondary crushers in Area 110. Appendix B has one mobile jaw crusher feeding into the ROM (run of mine) bin. Both these diagrams are marked preliminary/not for construction, which indicated these proposals may also change. The noise sources in table 05-01 of the BS4142 resubmitted noise assessment from December 2021 include 2 mobile jaw crushers and 1 secondary crusher, which is different to that presented in non-technical summary documents submitted with this application.*



#### Tungsten West response

Included in appendix 1 is an updated non-technical summary, including the full Mineral Processing Facility (MPF) design, location and detailing the technical reports that have been updated to reflect updated mitigation measures.

#### BAT assessment

2. Please update and resubmit your BAT assessment to take account of any modifications proposed under this application and confirm that any changes will continue to meet the BAT requirements for noise and dust, in accordance with those set out in PGN3.08 below.

Reasoning: The document 'Tungsten West Environmental Permit Application – Section 7 Best Available Techniques and Operating Techniques – TWL-CP-PA-EN-006.2.25' based on the previous application submission by Wolf Minerals in February 2014, reviewed by TWL as current in April 2021, appears to contradict the current proposals for use of mobile jaw crushers on the ROM pad (without enclosure), rather than the enclosed roll crusher design used previously which was accepted as BAT. Whilst the applicant may wish to modify the previous design for operational reasons, any proposed changes will need to continue to meet the BAT requirements for noise and dust mitigation measures.

This document also refers to an extract from DEFRA Process Guidance Note for quarry processes PGN 3.08 which provides indicative guidance for BAT. The crusher plant complies with PGN 3.08 (para 5.1) in that: 'crushers will be located within a sealed building to prevent dust and noise emission - dust generation points in the crusher building will be fitted with dust collection equipment at slight negative pressure to prevent dust emissions. – crushers will be provided with LEV to bag filter to prevent nuisance dust emissions.' Crushes product from screening will be transported wet. – screening will be performed as wet process. – material will be transported between plant and the process by conveyor enclosed to protect it from the wind (para 5.6), with scrapers and catch plates keep the return belt clean and drop chutes to control drop height. – crushers and screens will use variable height chutes to reduced drop heights and/or minimise the free fall of materials (para 5.2) – crushers will be sited to minimise windlift. – in normal operation there would be no significant visible emissions.

#### Tungsten West response

SLR Consulting Limited (SLR) have reviewed and prepared an updated Best Available Techniques (BAT) Assessment which is included in Appendix 2.

#### Environmental Risk Assessment

3. Please update and revise your document – H1 Environmental Risk Assessment, TWL-CP-PA-EN-006.2.34, September 21, in particular (table 6) to accurately reflect the risk of noise and dust from the proposed activities.





Reasoning: The Environmental Risk Assessment based on the previous application documents submitted by Wolf Minerals in February 2014 claims there is a low risk of 'noise nuisance at local receptors' (p15, p16). There is no specific mention of low frequency noise, or infrasound emissions within this assessment. The claim is not well justified by various supporting documents, including the current BS4142 assessment which based on our assessment suggests that there may be a significant adverse impact at some receptor locations. Also note 'for dust from crushing' the mitigation is enclosed buildings, which is different to the mobile crusher proposals on the ROM pad. Please also note our guidance on risk assessments has changed since 2014, and is available here Risk assessments for your environmental permit - GOV.UK ([www.gov.uk](http://www.gov.uk)) as provided with your original pre-app advice. Also note the term H1 is used for air quality screening now rather than environmental risk assessments, to avoid potential confusion.

Tungsten West response

SLR have reviewed and prepared an updated Environmental Risk Assessment (ERA) which is included in Appendix 3.

The ERA has considered global warming, point source emissions to air, noise and vibration (including low frequency noise and infrasound), fugitive dust, odour, fugitive emissions and potential for accidents and incidents.

The ERA concludes that with the implementation of the risk management measures, potential hazards from the MPF are not likely to be significant and no further assessment is required

#### BS4142 Noise Impact Assessment

4. Please provide a new BS4142 assessment based on a revised plant design which addresses the issues discussed below.

Reasoning: The revised BS4142 assessment submitted on 23/12/2021 has not been accepted by the Environment Agency due to continued uncertainty over the risks of significant adverse noise impacts ( in accordance with BS4142) based on the current proposed operation.

The assessment refers to meteorological data which was measured at a met station at Hemerdon Mine throughout the baseline sound survey. This data has been used to inform graphs of background sound levels versus wind speed at the survey locations, as shown in appendix 04. These graphs do not give an indication of the time periods in which adverse weather conditions occurred (i.e wind speeds >5m/s, or instances of rainfall), or what the wind direction was at the measurement locations. We require the raw meteorological data to be provided, which should include wind speed, wind direction and instances of rainfall as a minimum. We have concerns that adverse weather conditions occurred throughout parts of the baseline sound survey, especially during the weekend of Saturday 10<sup>th</sup> / Sunday 11<sup>th</sup> July 2021. Any further assessment should clearly indicate periods where adverse meteorological data occurred, and any background sound data which has been excluded from the assessment should be clearly identified.



For daytime operations, the mobile crusher is dominant, and we have not been provided with sufficient evidence to validate the assumptions made in the assessment regarding this source. The mobile crusher has been modelled with a lower sound power level (117 dB LWA) than in the previous submission (122 dB LWA), with no justification provided. There is a risk of adverse/borderline significant adverse impacts, even with the lower sound power level in place. Due to the uncertainty associated with this source, we cannot rule out a significant adverse impact during daytime hours, particularly at weekends. The operational sound level of the mobile crusher must be clearly defined, with sufficient evidence provided. The operator should consider that this source will require additional mitigation to reduce the impacts during daytime hours.

For night-time operations, the mobile crusher will not operate, so the specific sound levels are made up of contributions from sound energy breakout through the various processing buildings on site. The assessment has assumed a higher sound insulation performance (22 dB Rw at 500 Hz) for the external building cladding than previously (20 dB Rw at 500 Hz) and has referred to laboratory test results for a 'comparative system' comprising 24g (0.61mm) cladding. We have not been provided with evidence that this is the same material that the external façades and roofs of the existing buildings are currently constructed from. A laboratory test certificate has not been provided, and the assessment has used the transmission loss performance at 500 Hz only. The current assessment presents a significant adverse impact at several receptors during night-time hours before mitigation is considered. A mitigated scenario has been presented which relies on specific sound levels being reduced by roller shutter doors being closed at night. The assessment does not provide a sound insulation performance specification for the roller shutter doors. The modelling files provided indicate that these have been modelled using the same sound insulation performance as the building cladding (22 dB Rw at 500 Hz), which we consider to be very high for a lightweight roller shutter door construction. The proposed mitigation strategy at night is based on keeping these doors closed for the entire night-time period (23.00 – 07.00). We have concerns regarding the practicality of this arrangement. There is much uncertainty associated with the proposed mitigation for night-time operations, and we cannot rule out a significant adverse impact at night, especially at weekends.

The assessment proposes that the impacts could be reduced when considered in the context of the absolute specific sound levels being low or very low. We disagree and consider that receptors could be even more sensitive at night, due to the low existing background sound levels and the nature of the existing rural sound climate. The assessment also makes reference to sound emissions from mining waste operations at the site, suggesting that sound emissions from the proposed processing activities would be 'masked' by these operations. This is not the case – the activities will take place on the same site, and will be perceived as a combined sound source at the receptors. The mining waste operations will exacerbate the impact from the processing operations, and vice versa.

In summary, we cannot rule out the possibility of significant adverse noise impacts based on the current proposals. In order to reduce the impacts from the processing activities, the operator will need to investigate strategies for reducing operational sound levels from the mobile crusher and sound energy breakout through the building envelope, which should not be limited to the openings/roller shutter doors which have previously been considered. The



acoustic performance of this building should be optimised to prevent/minimise emissions of noise.

Tungsten West response

SLR have reviewed and prepared an updated BS4142 assessment which is included in Appendix 4. The NIA has been carried out in accordance with guidance contained in British Standards (full reference within the Noise Impact Assessment). The assessment has been completed with background sound levels established from the results of sound surveys and a computer-based model of the MPF for both day-time and night-time periods.

The NIA concludes that development sound will have no effect at distant noise sensitive receptors. In the worst-case and closest receptors, it would be largely unnoticeable, or just perceptible.

It has been concluded from the findings of this assessment that the range of noise impacts for the proposed employment use development are acceptable with respect to overarching and local requirements for planning and noise.

5. Please include a new potential receptor location for Goodamoor Farm (near Dartmoor Zoo), for any impact assessments re-submissions required under this application (BS4142 assessment, Air quality impact assessment under this notice, and noise and vibration impact assessment – subject to future schedule 5 notice)

Reasoning: Planning permission was granted on 01/02/2022 for conversion of an agricultural building as a dwelling house. As we are asking for this new receptor to be assessed as part of any impact assessment resubmissions by TWL to ensure they include the best available data at the time. Further details here Application Details - South West Devon Planning Search ([southhams.gov.uk](http://southhams.gov.uk)).

Tungsten West response

Tungsten West have not considered Goodamoor Farm as the site's closest receptor because a refusal of certificate of lawfulness for existing use of development (Appendix 5) was issued to the occupants of Goodamoor Farm on the 12<sup>th</sup> August 2022.

6. Please confirm the operational hours for any proposed crushers, as there is contradictory information in the application.

Reasoning: the BS4142 assessment states 'that the mobile crusher would operate on the ROM pad (run of mine stockpile area) during the daytime period between 0700 and 1900 only' (5.2 page 49). This contradicts the information proved in the 'Noise Compliance report' dated February 2021 prepared by Noise Consultants Limited (NCL). This states 'it is proposed that during evening and night-time periods, that only one crusher would be operated at the TOM pad, and the other will be used as a stand-by' (6.12 page 24).

Tungsten West response





Tungsten West can confirm that the operational hours for the proposed crusher will be 0700-2200, 7 days a week Monday to Sunday. All reviewed and updated assessments, included in the appendices have been updated to reflect these operational hours.

### Air Quality Impact Assessment

7. Please review your air quality impact assessment for the mineral processing facility and resubmit as necessary, if there have been any material changes to your proposals which would affect the original assessment carried out in 2014, either since your application, or as a result of this schedule 5 notice.

Reasoning: Our Air quality audit is based on your re-submission of the previous operators plant configuration and data from 2014. We have assessed this in line with updated meteorological data and modelling parameters. As noted above the primary crusher configuration proposed in your application is difference to the previous operator design inside enclosed buildings with subsequent potential impacts on dust etc. which do not appear to have been fully addressed in the review of this documentation by TWL. Please review this assessment and supply an updated air quality assessment based on the proposed plant design.

Tungsten West response

SLR have reviewed and prepared an updated Air Emissions Risk Assessment (AERA) to reflect the proposed changes to MPF which is included in Appendix 6.

The AERA concludes that there are no predicted exceedances of Air Quality Assessment Levels for nitrogen dioxide, sulphur dioxide, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) or arsenic at any of the receptor locations and there are no predicted exceedances of dust deposition benchmarks for the protection of amenity at any receptor location.

### Site Plan

8. Please review your site plan and resubmit as necessary, if there have been any material changes to your design proposals, either since your application, or as a result of this schedule 5 notice.

Reasoning: if mobile crushers are to be included in the proposed installation, then the site plan must include the locations where those mobile crushers would be places and operated. The use of mobile crushers in other locations not indicated would be unauthorised and in breach of the permit conditions.

Tungsten West response

Included in Appendix 7 is an updated site plan (Drawing 007) including the proposed location for the mobile crusher.

