

Walker, Jake

From: Ian Reynolds <ian.reynolds@tungstenwest.com>
Sent: 24 November 2023 15:17
To: Walker, Jake
Cc: Argent, Rob; Beamish, Louise; emily; Brian Jarvis; Neil Gawthorpe
Subject: Response to Environment Agency Questions 23 November 2023
Attachments: 70108756 Three Months Collated Data.xlsx; Table 6-3 of the NIAv3.docx

Follow Up Flag: Follow up
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Dear Jake,

Thank you for the questions received yesterday and the opportunity to discuss our replies with you and your team. The following answers reflect those discussions.

As always, any need for clarification or open working sessions are offered at a time and date that is suitable to the Environment Agency.

I have set up a holding time for this coming Monday for yourself and Rob Argent, please forward attendance as you see fit.

Environment Agency Question One:

We require a comparison of all available low frequency noise monitoring data from the Wolf Minerals' operation, against the predicted levels for Wolf modelled in the LFN Noise Impact Assessment. Your comparison should consider wind direction, and the observation that an underprediction of 6.4dB was observed for downwind receptors in the NIA Table 9-2.

EA Commentary:

This is to help establish the baseline conditions that were adversely experienced by receptors during the Wolf Mineral's operation.

We have provided you with 3 months' worth of monitoring data from the Wolf operation (August to October 2017). This data was received by us from Wolf in 2017.

This data includes an eastern boundary monitoring position which is regularly down wind of the site. It is noted that the predicted levels in Table 6-3 and Figure 6-6 are based on neutral wind conditions, and that an underprediction of 6.4dB was observed for downwind receptors in the NIA Table 9-2.

Tungsten West Response to Question One:

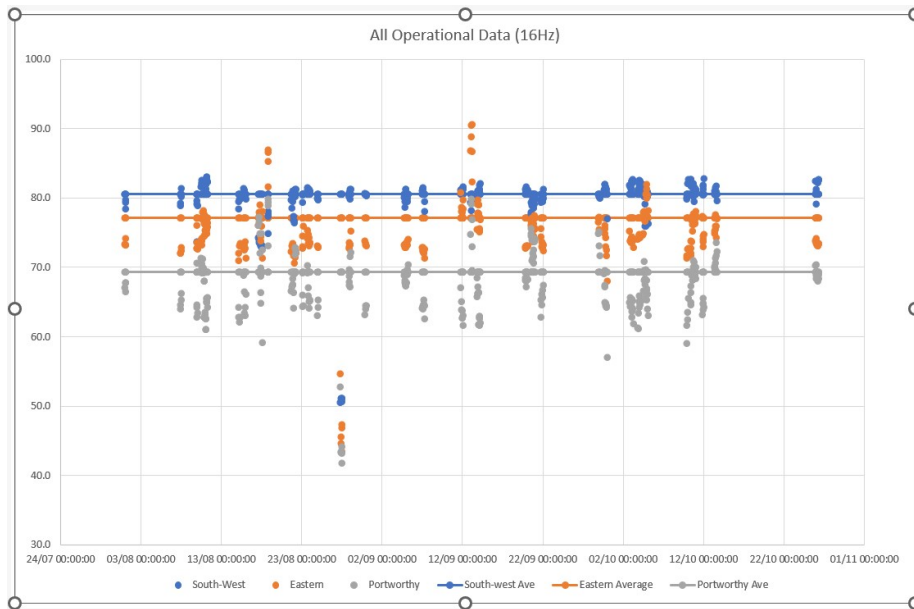
The attached spreadsheet (70108756 Three Months Collated Data) includes the 12.5Hz, 16Hz and 20Hz data and the weather data for the three-month monitoring period from August to October 2017, as shared by the Environment Agency on 22 November 2023. These data are included in the tab "All Data". Also in this tab is information on whether all Wolf Minerals' screens were operating at the time of noise measurements (see column T).

Data where all screens were running have been used in our analysis and the remaining data, gathered when limited/no screens were operating, have been discarded. The data carried forward for our analysis are shown in the tab "Operational Data". These data are plotted in the four graphs in the spreadsheet – one for each of the three monitoring locations and the fourth showing operational data at all three locations. The solid lines on each of the

graphs represents the logarithmic average of the measured operational levels at each location (see tab “Averages” for the workings).

The following screen shot from the excel file shows all boundary locations provided as per tab ‘Chart_All operational Data’.

From the data provided it appears that the ‘South-West’ boundary data are lower than expected, possibly due to monitoring equipment issues; the values at this location had been expected to be significantly higher. The lack of any reasonable data spread tends to align with this view.



We have not derived a range to represent the baseline noise level for the Wolf Minerals operation as this would introduce yet more conservative assumptions into the assessment, potentially (and falsely) highlighting the need for additional mitigation. It is possible that some of the ‘lower’ readings have occurred with some screens off or unloaded which would require the TW modelled data to also be adjusted to reflect unloaded (lower screen efficiency) or screens not running. All TW modelled outputs assume all screens operating at a conservative screen efficiency at all times.

The “Reductions” tab, in the excel file, includes the modelled Tungsten West noise levels (including the inherent mitigation which now includes enclosures, deck venting and active noise control) in comparison to the derived Wolf Minerals baseline noise level for the 16Hz band (this is the logarithmic average). A screen shot is provided below for convenience. Note that the Reduction Column is the difference between the ‘TW (inc ANC)’ column and the ‘Measured WM Log Average’ column.

	Easting	Northing	Modelled		Measured	
			TW (inc ANC)	WM	WM Log Average	Reduction (Column C-E)
South-west	56721	58538	62.5	91.4	80.6	-18.1
Eastern	57677	58542	56.4	80.3	77.1	-20.7
Portworthy Boundary	55934	60058	42.8	71.3	69.4	-26.6
Note: The active noise control loudspeakers have been optimised for each screen						

The TW modelled data shown in the table above, with the addition of Active Noise Control is included and defined with EA question Two below.

Environment Agency Question Two:

Should question 1 identify that the LFN Noise Impact Assessment overpredicted levels for Wolf, please confirm how you will ensure that you continue to provide the same level of improvement from the Wolf scenario, as stated in Table 6-3.

EA Commentary:

You stated in an email yesterday that – ‘If the model is predicting a higher figure than actual data then the same would be true for DRL operations. If future verification monitoring shows the levels to be lower than the predicted results this would confirm that the model was conservative’.

We understand both sets of predictions in Table 6-3 could be over predicted, and you have already provided some justification in your NIA on why you believe these could be overpredicted.

However, there are also different inputs for the two scenarios, including the screens and acoustic efficiency values, so one scenario overpredicting wouldn’t necessarily mean both are, or to the same degree.

Importantly we are trying to establish a reduction from the levels experienced under the previous operation.

If significant uncertainty remains on the achieved LFN reduction between the DRL and Wolf scenarios in the conclusions of the comparative assessment here requested, we seek to receive from you a conservative proposal for the implementation of any additional viable mitigation measures from the beginning of the proposed permitted operations, or within the shortest possible timeline.

Tungsten West Response to Question Two:

Based on discussions held over the previous few days TW has taken the view to provide additional primary mitigation resulting in the screen installations including the following.

Screen enclosure

Deck Venting

Active Noise Control

The requirement to move ANC from a secondary to a primary position has been done to align with the EA’s risk profile and thus satisfied the stated mitigation between Wolf actual data relative to TW modelled data.

Table 6.3 has been updated to include the three noted primary mitigations and is included in the attached document ‘Table 6-3 of the NIAv3.doc’.

Note, In the original Table 6.3 there was a value given for Boringdon Hall, but the coordinates of Boringdon Hall were not correct. This has since been spotted and rectified. Other values in the table have been slightly changed and the reason for this is that the original values were calculated by picking the locations from the map with a cursor. While this might have been good enough for comparisons with the Wolf screens, it is not accurate enough to spot the small changes with the ANC on its lowest settings. The work has therefore been repeated using precise coordinates for all mitigation options and those coordinates have been added to Table 6.3.

This document also contains details relating to the input data used to support Active Noise Control modelling outputs.

Note that the ANC discussion held yesterday has been updated to account for individual screen, the 2.5Pa model run (ANC1) is provided along with a model run that reflects the anticipated ANC settings which range from 3 to 15Pa in value (ANC2).

The improvement between Wolf Minerals Actual Data (Log Average) and the TW Active Noise Control is based on ANC2, shown in Question One above and the attachment '70108756 Three Months Collated Data', indicates reductions of more than 20dB (note excluding the SW boundary which shows 18dB, this difference is considered low due to data collection issues).

Closing Comments:

It is TW's position that including Active Noise Control into the primary mitigation, meaning installed and included in Construction Verification works, ensures LFN levels, at defined receptors, will be significantly below that necessary to ensure Mineral Processing Facility Operation. TW believe that on this basis it is reasonable to provide a permit to operate the Mineral Processing Facility.

It is also TW's view that it is reasonable to provide documented assurance by Friday 1 December that a draft permit will be forthcoming as a matter of urgency.

Regards

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Best Regards

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