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Date: 25 June 2020
Ref.: Vygenhoek Opinion

EMAssistance
Po Box 386
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2200

Attention: Ms. Anandi Alers

Dear Madam

**SPECIALIST OPINION TO BE USED FOR INPUT INTO THE SCOPING REPORT FOR THE PROPOSED
VYGENHOEK PLATINUM PROJECT**

The above-mentioned issue as well as your query about the potential for a noise impact is of reference.

Description of the proposed project

It is the understanding that the developer, Nomamix (Pty) Ltd propose to explore the mineral resource located on the Farm Vygenhoek 10 JT, located in Mpumalanga. While focusing on the Platinum Group Metals (PGM), the mining project will optimize the extraction of all related minerals, including precious and other base metals found in association with the PGM. The proposed mining method would be opencast, though the project may in the future extract the mineral resources using underground mining techniques. Apart from the opencast pit, there will be a number of ancillary activities to support the mining activity. Considering the information available in the Mine Works Programme, mining is to commence to the west of the farm, close to the Limpopo / Mpumalanga provincial boundary, though mining may take place at other areas.

Such mining activities have a number of noise sources, normally associated with the mobile mining equipment operating inside and around the opencast pit. No processing or beneficiation activities are anticipated. As the alignment of mining roads as well as traffic volumes are not defined, the potential noise impact from these sources cannot be considered.

Potential Noise-sensitive Developments

A number of the closest receptors (Noise-sensitive developments or NSD) was identified considering available aerial images (Google Earth ©) and illustrated in **Figure 1**. A number of structures were identified, though the status of these structures were not defined. It is likely that a number of these structures will be used for residential activities.

If mining activities are to take place to the west of the project focus area, active mining could take place within 2,000 m from the closest NSD.

Due to the residential activities taking place, the proposed mining activity should not change the existing ambient sound levels with more than 7 dB (a disturbing noise as defined by the National Noise

Control Regulations, R154 of January 1992). In addition, mining activities should not raise the total noise levels higher than 45 dBA (the noise limit for residential use as recommended by the World Health Organization).

Current Ambient Sound Levels

The site was not visited for this brief assessment, but, the author has measured ambient sound levels at various locations in South Africa, with the typical ambient sound levels for quiet areas illustrated in **Figure 2**. This data represent more than 50,000 measurements (sound levels and wind speed), with the data presented to illustrate the impact of wind speed on sound levels. While there are other mining activities to the west of the proposed project, the distance to these mining activities as well as the topography will limit the impact from these activities on the focus area.

From **Figure 2**, it can be seen that the expected ambient sound levels will be between 30 and 40 dBA, typical of a rural noise district. The main source of noise in rural areas relates to faunal activity (birds and insects), with sounds from dwellings raising the noise levels temporary due to transient sounds (voices, passing vehicles, household activities).

Potential Noise Impact

For most mining projects, four potential zones of impacts could roughly be classified (although it does depend on the size of the operation and type of activities), namely:

- Zone closer than 500m from mining activities. Mining noises will be clearly audible both day and night and the mining noises could be the dominant noise, especially at night. Noise levels will be significant, will change the ambient sound levels significantly and could be considered disturbing. The significant of the noise impact could be high. Noise complaints are expected. Monthly to quarterly noise monitoring must take place at these receptors.
- Zone between 500 – 1,000m from mining activities. Mining should be audible during the day and clearly audible at night. Noise levels could be significant during quiet times and mining noises may change the ambient sound levels, especially at night. The change in ambient sound levels can be measured. Noise-sensitive receptors may considering the noises to be disturbing during quiet periods, such as at night. The significant of the noise impact could be medium. Some receptors may complain. Quarterly to annual noise monitoring must take place at these receptors.
- Zone between 1,000 – 2,000m from mining activities. Mining noises may be audible during quiet times in the day and audible at night. The mining activity may change ambient sound levels in quiet environments, although it may be difficult to define at times. Noise-sensitive receptors will be unlikely to complain about noises. The significant of the noise impact could be medium to low. Noise levels from mining activities are generally less than 45 dBA further than 1,000m from the mining activities. Annual noise monitoring is recommended at some of these receptors.
- Zone further than 2,000m from mining activities. Mining noises may be audible up to a distance of 2,000m (audible up to 4,000m during quiet periods at night with certain meteorological conditions). The significant of the noise impact would be low. Once-off (pre-operational) measurement could be undertaken and locations this far could be used to define typical ambient sound levels for the area (if pre-operational data are not available).

The above-mentioned guidelines are used when identifying the potential impact of noise on surrounding communities.

Summary Findings

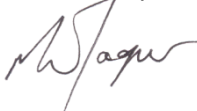
Considering the location of the identified NSD, as well as the area where mining may take place, there is a potential that mining activities may take place within 1,000 – 2,000 m from these NSD (can only be confirmed once the mine layout is available). At this distance, mining may result in noise levels that are audible during the day and night. **The significant of the noise impact could be medium to low. If mining activities take place closer than 1,000m, the noise impact may be higher.**

Due to the risk of the noise impact, it is recommended that the proposed mining activity be evaluated in detail using a noise propagation model considering:

- the actual mining layout and the proposed mining activities (equipment and the average use of these equipment);
- the topography and surface characteristics of the surrounding area;
- actual ambient sound levels (requiring a future site visit and ambient sound level measurements).

Should you require any further details, or have any additional questions, please do not hesitate to call me on the above numbers.

Yours Faithfully,



Morné de Jager
Enviro Acoustic Research cc

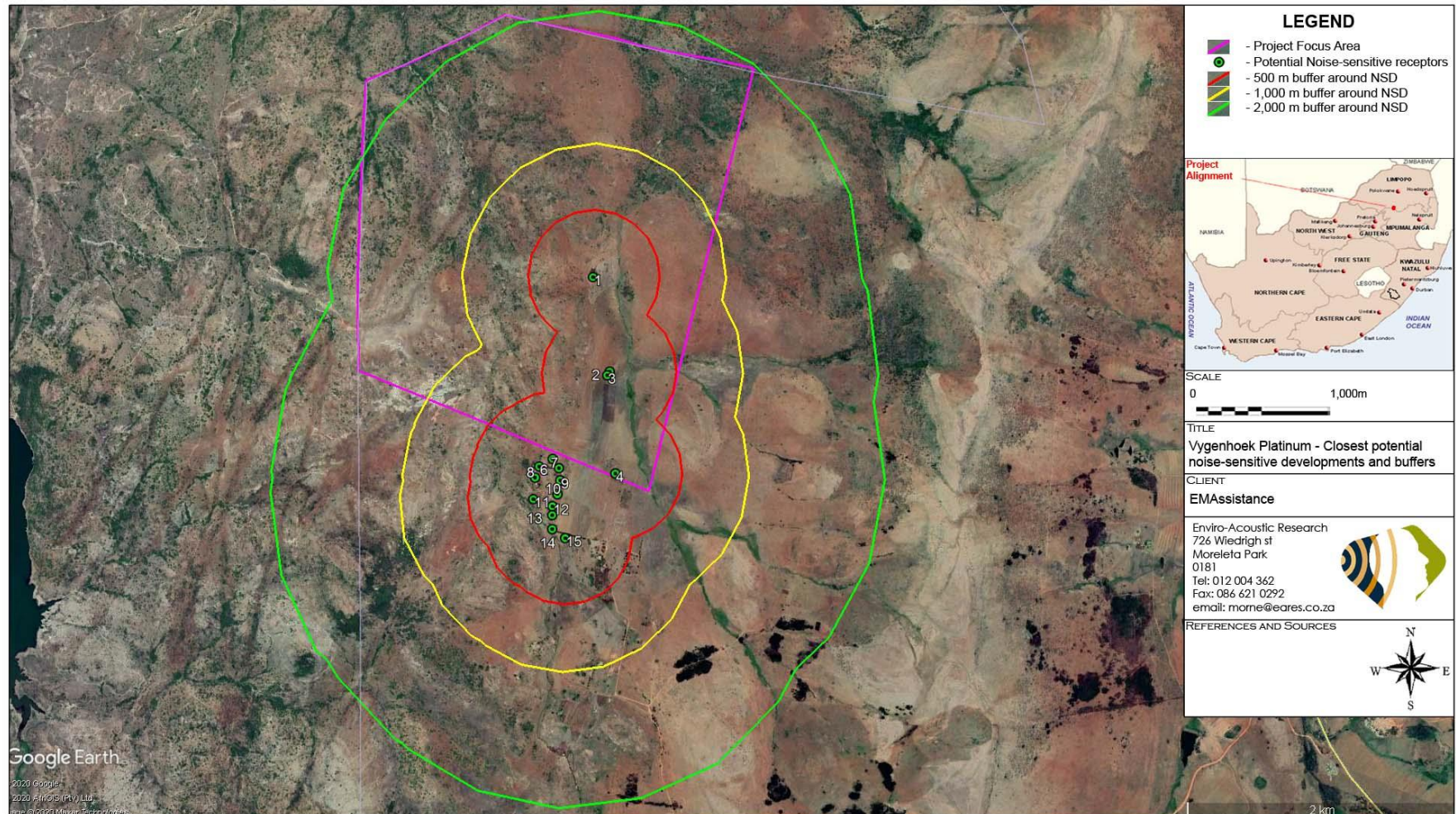


Figure 1: Closest potential noise-sensitive developments and potential buffer areas

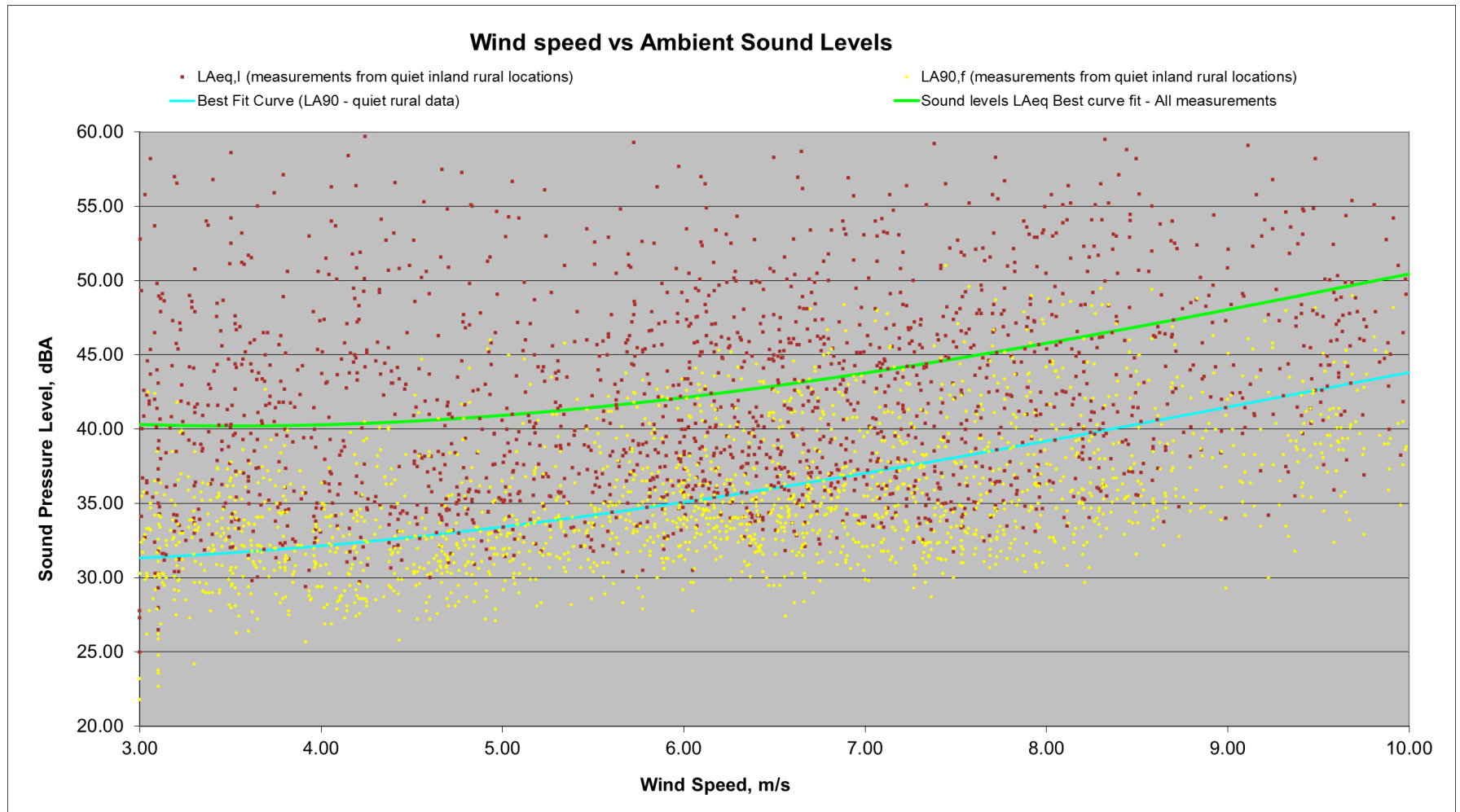


Figure 2: Potential ambient sound levels in quiet inland locations