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30 July 2024

Jarrad Donald

Environment and Permitting Manager – Havieron

Newmont

Dear Jarrad,

Please find below a memo summarising Biologic Environmental Survey's (Biologic) response to select Environmental Protection Authority (EPA) comments requesting additional information relating to vertebrate fauna on the Telfer – Havieron Gold Mining Project (the Project) proposal referral documentation (EO Ref No. APP-0000338).

This memo specifically addresses required amendments number 11, 12, 13, and 14 of EPA's notice requiring information for assessment for the Project.

Yours sincerely,

RYAN ELLIS

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1 BACKGROUND

Newmont is progressing the Telfer – Havieron Gold Mining Project (the Project) proposal and pursuant to section 40(2)a of the *Environmental Protection Acct 1986* (EP Act), the Environmental Protection Authority (EPA) has requested additional information for proposal referral documentation (EO Ref No. APP-0000338) to support the assessment of the proposal. The EPA's request for additional information includes 36 requirements for additional information, of which 16 relate to terrestrial fauna.

To support their response to EPA's request for additional information, Newmont commissioned Biologic Environmental Survey (Biologic) to review and respond to select comments (required amendments number 11, 12, 13, and 14) relating to vertebrate fauna surveys completed by Biologic (2020, 2021)

2 RESPONSE TO EPA REQUIREMENTS FOR ADDITIONAL INFORMATION

2.1 EPA REQUIREMENT: 11

Comments – RSD Appendix D – Biologic 2020; 2021

The terrestrial fauna survey reports (Biologic, 2020, 2021) in RSD Appendix D, state access restrictions and the occurrence of a large-scale fire restricted the locations of the trapping sites (Biologic, 2020, P.54; 2021, p.43).

However, it is not clear how this limited the survey design and effort and the impact of fire on fauna habitats has not been illustrated spatially or quantified.

Action

- Provide figures to demonstrate the areas impacted by fire and identify any access restrictions

Biologic Response

Biologic (2020) (Havieron mine site and surrounds) highlighted fire as only a partial limitation to the survey in section *5.3.2 Potential Limitations and Constraints* (p.86). This was due to the occurrence of fire over broad areas having the potential to influence the occurrence of some species, due to the temporary removal of habitat and/or resources from loss of vegetation cover. This was overcome by focusing sampling effort in areas not affected by recent fire, particularly those considered likely to best represent the broader fauna habitats mapped within the Study Area and faunal assemblages of these habitats.

While fire is likely to have had a greater effect on species occurrence and diversity within recently burnt areas, fire was only considered a partial limitation for the survey overall. This is due to the habitats within the Study Area, and more broadly in the vicinity of, being relatively homogeneous, and that sampling could focus on areas not affected by recent fires to collect sufficient data for the survey. The occurrence of recent fires throughout parts of the Study Area is not considered to have significantly impacted the overall results of the survey, in particular the recording of significant species and their habitats potentially occurring within the Study Area, or their treatment (i.e. assessment of their likelihood of occurrence) if not recorded. Table 1 shows sampling effort completed within the Study Area by Biologic (2020) with observed fire history from habitat assessments completed at all sampling locations.

Access during the Biologic (2020) survey was not considered a limitation as the Study Area was accessible by vehicle (light vehicle or ATV) or on foot. It was possible to complete sufficient sampling throughout the Study Area to achieve representative sampling across the Study Area and all broad fauna habitat types occurring (see *Figure 4.2: Vertebrate fauna sampling within the Study Area* in Biologic (2020).

For the Biologic (2021) survey (infrastructure corridor), neither fire or access were considered a limitation (see section *5.3.2 Potential Limitations and Constraints* (p.91)). Large scale fires throughout parts of the Study Area and broader region in recent years had resulted in a poorer condition of vegetation and fauna habitats in parts of the Study Area; however, it was not considered to have had a substantial impact on the results of the survey or treatment of significant species potentially occurring within the Study Area. This was due to the presence of representative areas of habitats not affected by recent fires which facilitated sufficient sampling. Table 1 shows sampling effort completed within the Study Area by Biologic (2021) with observed fire history from habitat assessments completed at all sampling locations. Additionally, the Study Area was largely accessible by vehicle (light vehicle or ATV) or on foot. Sufficient sampling coverage and survey effort could be achieved throughout the Study Area and all broad fauna habitat types occurring (see *Figure 4.2: Vertebrate fauna sampling* in Biologic (2021).

Northern Australia Fire Information (NAFI) fire scar mapping shows widespread occurrence of fire over parts of the Biologic (2020) and Biologic (2021) study areas in 2017–2019 (Figure 1; Figure 2); however, it should be noted that the broad scale of this mapping can result in overrepresentation of affected areas. The observed first history across the study areas (see Appendix E (p.138) of Biologic (2020) and Appendix E (p.146) of Biologic (2021)), as determined from on-ground habitat assessments, shown in Figure 1 and Figure 2 show that there was a broader occurrence of areas which could be sampled that were not affected by the recent fires. Based on the on-ground habitat assessments (including all sampling locations), including fire history, undertaken within the Biologic (2020, 2021) study areas, a total of 28% of sites were located within areas where first age was assessed as old (6+ years since fire) (n = 92 sites), 32% as moderate (3–5 years since fire) (n = 104 sites) and 40% as recent (2–5 years

since fire) (n = 131 sites) (Table 1). Sampling within these areas facilitated sufficient sampling within the study areas to achieve the overarching objectives of the surveys as collection of contextual data, with a focus on significant species, required to inform the Project's environmental approvals.

2.2 EPA REQUIREMENT: 12

Comments – Night parrot

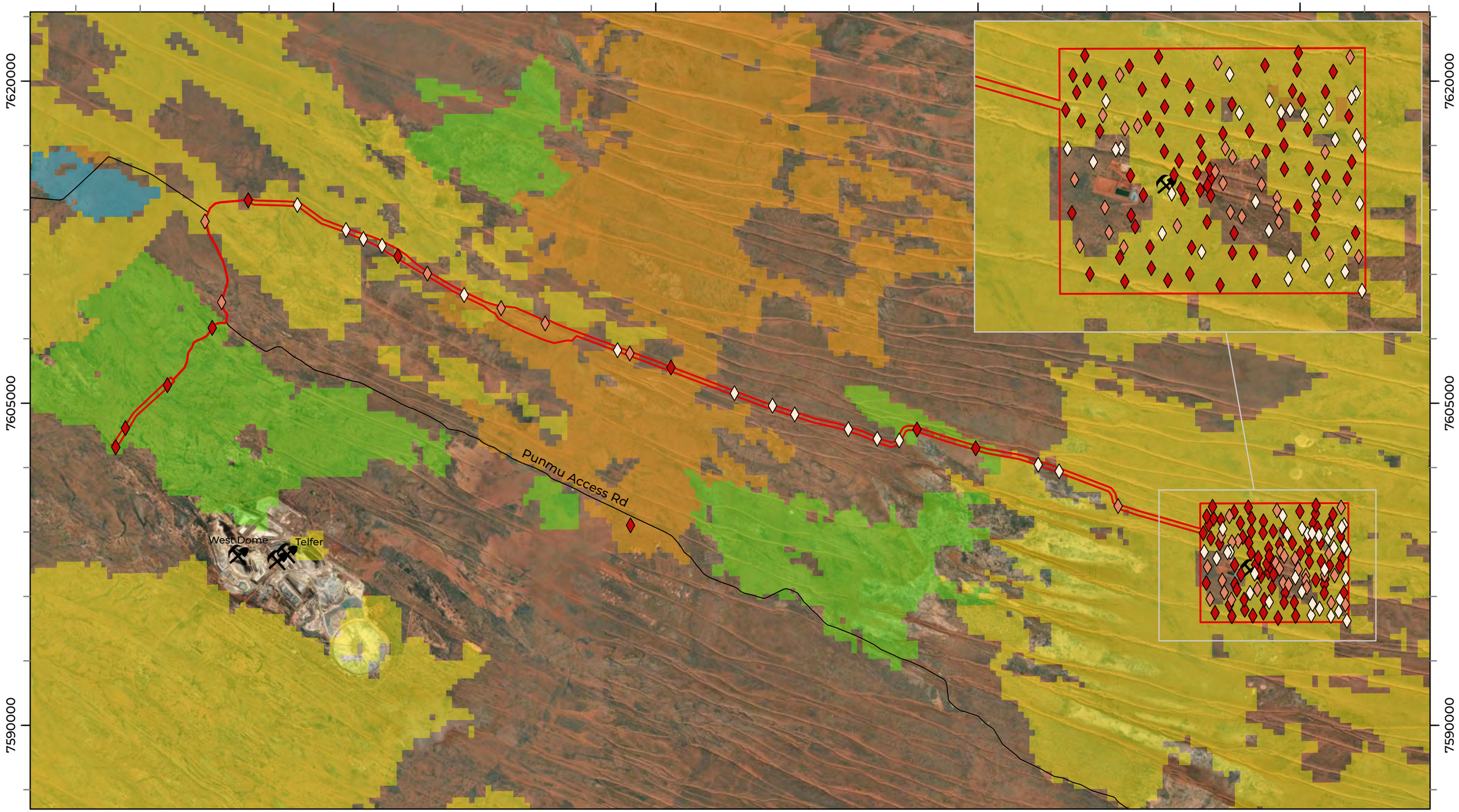
Given the positive identification of the night parrot and considering the widespread presence of suitable habitat, the development envelope and surrounding areas could be highly prospective for night parrot. Additional surveys would provide greater certainty of roosting locations and how the night parrot are using the habitats within and adjacent to the haul road (e.g. identify flyways).

Actions

- Undertake surveys of additional sites around positive night parrot locations to determine the importance of the area and the potential impacts on the local population. Further surveys should focus on where there is the potential for roosting and nesting to occur, e.g. up to a 10 kilometre (km) radius from the locations of the confirmed and potential night parrot calls and as identified during the future habitat assessments. These surveys should include listening surveys and consider the installation of camera traps and searches for signs and feathers. Alternatively, provide information to address the above to understand the worst case impacts to Night Parrot and how the impacts will be mitigated.
- Further information is required on the placement of SM4 acoustic recorders (e.g. Biologic 2021, Figure 4.2). Justification should be provided for the placement and density of the SM4s including a specific map for night parrot. The map should include:
    - night parrot habitat as the base layer
    - development envelope and direct impact areas
    - fire impacts
    - SM4 locations (with site identifications) from both surveys
    - SM4 locations of confirmed and potential night parrot calls

Table 1: Fire history of sites sampled during Biologic (2020) and Biologic (2021)

Fire History	Habitat Assessments		Systematic Trapping		Ultrasonic Recorder		Acoustic Recorder		Bilby Plot		Mole Trench	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Biologic (2020)												
Old (6+ years)	**46**	**28%**	1	17%	4	20%	5	38%	39	33%	1	13%
Moderate (3–5 years)	**35**	**21%**	5	83%	14	70%	8	62%	29	24%	0	0%
Recent (2–5 years)	**85**	**51%**	0	0%	2	10%	0	0%	52	43%	7	88%
Total (Biologic, 2020)	**166**	**100%**	6	100%	20	100%	13	100%	120	100%	8	100%
Biologic (2021)												
Old (6+ years)	**46**	**29%**	3	50%	7	47%	25	68%	24	28%	1	13%
Moderate (3–5 years)	**69**	**43%**	3	50%	5	33%	9	24%	40	46%	4	50%
Recent (2–5 years)	**46**	**29%**	0	0%	3	20%	3	8%	23	26%	3	38%
Total (Biologic, 2021)	**161**	**100%**	6	100%	15	100%	37	100%	87	100%	8	100%
Combined Surveys												
Old (6+ years)	**92**	**28%**	4	33%	11	31%	30	60%	63	30%	2	13%
Moderate (3–5 years)	**104**	**32%**	8	67%	19	54%	17	34%	69	33%	4	25%
Recent (2–5 years)	**131**	**40%**	0	0%	5	14%	3	6%	75	36%	10	63%
Total	**327**	**100%**	**12**	**100%**	**35**	**100%**	**50**	**100%**	**##**	**100%**	**16**	**100%**



LEGEND

- Study Area (Biologic, 2020)
- Operating Mine
- Local Road

Fire Scar (NAFI)

- 2020
- 2019
- 2018
- 2017

Last Fire at Sampling Site

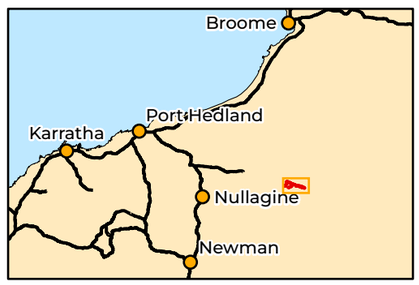
- 0-2 years
- 3-5 years
- 6+ years

Biologic

Scale 1:165,000

0 2 4 6 Km

Coordinate System: GDA 1994 MGA Zone 51 Transverse Mercator Created: 29/07/2024



NEWMONT

Telfer - Havieron Project Vertebrate Fauna EPA Responses

Figure 1: Extent of fire affected areas and sampling during the Biologic (2020) survey

420000
435000
450000
7620000
7605000
7590000
Punmu Access Rd
West Dome
Telfer
Havieron
LEGEND
Study Area (Biologic, 2021)
Operating Mine
Local Road
Fire Scar (NAFI)
2020
2019
2018
2017
Last Fire at Sampling Site
0-2 years
3-5 years
6+ years
Biologic
Scale 1:145,000
0 2 4 6 Km
Coordinate System: GDA 1994 MGA Zone 51 Transverse Mercator
Created: 29/07/2024
Broome
Port Hedland
Karratha
Nullagine
Newman
NEWMONT
Telfer - Havieron Project
Vertebrate Fauna EPA Responses
Figure 2: Extent of fire affected areas and sampling during the Biologic (2021) survey

Biologic Response

Initial sampling for night parrot during the Biologic (2020) and Biologic (2021) surveys aligned with DPaW (2017) *Interim guideline for preliminary surveys of night parrot (Pezoporus occidentalis) in Western Australia*, which was the current guidance for the species at the time of the surveys. DPaW (2017) acknowledged that there was, at that time, no single survey or sampling technique that can irrefutably demonstrate absence of night parrot; therefore, habitat assessments were considered most important as habitat utilisation may vary seasonally and over time. Acoustic recording units were recommended as the most effective sampling technique for the species due to their ability to sample within optimal sampling periods with minimal potential disturbance to the species. No minimum sampling requirements for night parrot are stipulated by DPaW (2017).

Active avifauna surveys (observational and listening surveys) and camera trapping may also be used to supplement acoustic recorders; however, DPaW (2017) noted that these methods had limitations with adequately targeting the species. Transect foot/targeted searches were not recommended in general, due to the potential for disturbance of nesting or roosting birds.

Sampling across all surveys undertaken by Biologic for the Project equates to 415 sampling nights across 50 locations, with sampling sites revisited following the completion of analysis of sampled sites (by Nigel Jackett and Nick Leseberg) to refine targeted sampling locations where necessary (i.e. focus targeted sampling on areas of higher prospective value or in response to additional detections of the species if recorded). Sampling for the species across both surveys included:

- 13 locations during Biologic (2020) surveys, over 6–7 consecutive nights, totalling 79 recording nights
- 37 locations during Biologic (2021) surveys, over four to 29 consecutive nights, totalling 336 recording nights.

The species was first detected via calls from acoustic recorder during the Biologic (2021) phase 1 survey Havieron project Infrastructure Corridor detailed vertebrate and SRE invertebrate fauna survey (23 October–7 November 2020). The records (analysed by Nigel Jacket and confirmed by Nick Leseberg) comprised two calls detected at VHIC-003, one at 0128 on 26 October 2020 (comprising seven calls) and the second at 0416 on 25 October 2020 (comprising one call) (Biologic, 2021). The timing and characteristics of the calls (i.e. decreasing in volume with each call) recorded on 26 October, suggest the individual was flying over the site. Although the direction of the call cannot be determined, based on habitats present at the site and in the broader vicinity, the species' occurrence is likely to be attributed to dispersal or resource-searching behaviour (i.e. in transit to or searching for food or water resources) by an individual. The timing of the single call recorded on 25 October

(approximately one hour after sunrise), suggests the species may have roosted within relatively close proximity to the recorder's location; however, this could not be confirmed.

Following the confirmed detection of night parrot, additional acoustic sampling was undertaken at various locations prior to and during the phase 2 survey (26 April–7 May 2021) where suitable habitat was present. Prior to additional deployments, the sampling approach and intensity was determined in consultation with subject matter experts, including Nigel Jackett and Allen Burbidge, due to the limited knowledge of the species general ecology and habitat preferences, as well as sampling requirements for the species. The placement of recorders focused on areas where potential nesting/ roosting habitat was provided in which the species may use, as well as broader coverage to include sampling within potential foraging habitat and flyways between areas of suitable habitat within and outside of the study areas.

This information was also discussed at a stakeholder engagement meeting with representatives from Newcrest Mining Limited (now Newmont; Tara Garrod, Louise Whitley), Department of Biodiversity, Conservation and Attractions (DBCA; Allan Burbidge, Michelle Corbellini, Charlotte Patrick, Juanita Renwick), Department of Water and Environmental Regulation (DWER) EPA Services (Troy Sinclair, Claire Stephenson, Gareth Watkins), and Biologic (Ryan Ellis) on 4 March 2021. During the meeting it was highlighted that there was a limited understanding of the species and best approaches to sampling strategies or survey effort, with completed and proposed sampling and survey effort considered adequate for the purposes of the Project at that time. It is therefore considered that sampling undertaken for the Biologic (2020, 2021) surveys was adequate for the detection of the species, in addition to the broad-scale assessment of critical habitat occurrence throughout the study areas, and that additional sampling is unlikely to provide any additional information that would result in alternative treatment of the species' likelihood of occurence, suitability of habitat, and/or treatment of species from an impact assessment and/or management perspective.

It should be noted that a number of sites sampled during Biologic (2021) surveys included sampling within areas inside and outside of the Study Area, where prospective nesting/ roosting habitat was present. This also includes areas considered critical nesting/ roosting habitat for the species which were subsequently removed from the Project to avoid potential disturbance of critical habitat for the species ((see *Figure 4.2: Vertebrate fauna sampling* in Biologic (2021).

Following the refined targeted sampling for the species, it was only detected on one occasion following the initial records during he Biologic (2021) phase 1 survey; however, as it comprised only a faint single call, confirmation of the identification was not possible. As the record comprised only a single call over six nights of recording, it was deemed to be most likely attributed to a dispersal and forging individual and was not indicative of nesting/ roosting in the vicinity of the recorder's location.

Additionally, since the initial records of night parrot during the Biologic (2021) survey, additional sampling by Spectrum (2021, 2022, 2023) for targeted and monitoring surveys in the vicinity of Telfer, including at the location of the Biologic (2021) records, have not detected the species again.

2.3 EPA REQUIREMENT: 13

Comments – Night parrot

The call analysis was performed by known nigh parrot experts (i.e. Nigel Jackett and Nick Leseberg), however, there is no information on the methodology or the results of the analysis.

Action

- Include the third-party report of the night parrot call analysis as part of the referral information documentation

Biologic Response

Third-party provided reports (Jackett, 2020a, 2020b, 2020c, 2021a, 2021b, 2021c) detailing the results of acoustic analysis are provided in Appendix A–F . it should be noted that detailed methods are not provided in all third-party analysis reports; however, reference to sampling methods is consistent across all analyses completed.

Respective field surveys for third party analysis reports provided in Appendix A–F are provided below:

- Biologic (2020)
    - Phase 1 survey: Jackett (2020a) 1934 Newcrest Havieron Terrestrial Fauna Phase 1 Acoustic Analysis – April 2020 (Appendix A)
    - Phase 2 survey: Jackett (2020b) 1934 Newcrest Havieron Terrestrial Fauna Phase 2 Acoustic Analysis – July 2020 (Appendix B)
- Biologic (2021)
    - Phase 1 survey: Jackett (2020c) 20061 Newcrest Havieron Terrestrial Fauna Phase 1 Acoustic Analysis – December 2020 (Appendix C)
    - Additional interphase deployments 1: Jackett (2021a) 20061 Newcrest Havieron Additional Deployments Acoustic Analysis 1 – January 2021 (Appendix D)
    - Additional interphase deployments 2: Jackett (2021b) 20061 Newcrest Havieron Additional Deployments Acoustic Analysis 2 – February 2021 (Appendix E)
    - Phase 2 survey: Jackett (2021c) 20061 Newcrest Havieron Terrestrial Fauna Phase 2 Acoustic Analysis – April/May 2021 (Appendix F)

2.4 EPA REQUIREMENT: 14

Comments – Night parrot and greater bilby

It is noted that habitat for both the night parrot and greater bilby, has been broadly classified into two groups, either 'primary' or 'secondary'. With 'primary' habitat representing foraging, breeding, roosting and/or dispersal habitat 'critical' for the species, and 'secondary' habitat identified as being of lesser importance (i.e. not 'critical'). On this basis, it is difficult to confirm the significance of the proposal for night parrot and greater bilby in a local and regional context.

Actions (Relate to both species)

- Provide further information on the use and/or characterisation of specific habitat for both species (i.e. foraging, breeding, roosting or dispersal).
- Provide a map with the following details:
    - fauna habitat types (RSE Figure 6-2)
    - DE and direct impact areas
    - fire impacts
    - sampling sites (with site IDs) Figure 4.2a and 4.2b Biologic 2020
    - survey results, fauna records

Biologic Response

The definition of habitat significance in relation to night parrot and bilby was classified as primary and secondary in Biologic (2020, 2021), which are recognised as providing primary habitat (i.e. critical habitat as per the DoE (2013) definition of areas being necessary "for activities such as foraging, breeding, roosting, or dispersal"), or secondary habitat (i.e. supporting habitats not critical for foraging, breeding, roosting or dispersal, but may support such activities and/ or habitats of marginal suitability for such activities). The main difference being primary habitat was deemed to be of higher value as the species is likely to be reliant on it for its persistence at a local (and possibly regional) scale. Whereas, supporting habitat is unlikely to be dependent upon by the species for local (and possibly regional) persistence, and/or is only likely to provide suitable habitat for the species occasionally (i.e. seasonally following rainfall) or for activities such as foraging and/or dispersal which are often less reliant on specific habitat characteristics, compared to activities such as breeding, nesting, roosting.

Within the context of DoE (2013), areas deemed as primary habitat by Biologic (2020, 2021) align with the DoE (2013) classification of critical habitat, and can be considered as such. Similarly, areas deemed as secondary habitat, can broadly be considered supporting habitat, as they provide habitat for the species but are unlikely to be relied upon for them, or are only likely to be used occasionally for activities such as foraging and/or dispersal.

For greater bilby, critical and supporting habitat (referred to as primary and secondary habitat in Biologic (2020, 2021) within the study areas is defined in section *5.1.4 Fauna of Conservation Significance – Confirmed in the Study Area – Greater Bilby (Macrotis lagotis) – Vulnerable (EPBC/ BC Act)* of Biologic (2020, p.67) and Biologic (2021, p.65) respectively. While some areas of greater bilby habitat were classified as supporting)(secondary) by Biologic (2020, 2021) due to condition following recent fires, it is noted that these areas are subject to improvement in quality over time following natural post-fire regrowth, particularly if good rainfall occurs over the area.

For night parrot, critical and supporting habitat (referred to as primary and secondary habitat in Biologic (2021) within the study areas is defined in section *5.1.4 Fauna of Conservation Significance – Confirmed in the Study Area – Night Parrot (Pezoporus occidentalis) – Endangered/ Critically Endangered (EPBC/ BC Act)* of Biologic (2021, p.73).

3 References

Biologic. (2020). *Havieron Project detailed vertebrate and SRE invertebrate fauna survey*. Unpublished report prepared for Newcrest Mining Limited. Biologic Environmental Survey, East Perth, WA.

Biologic. (2021). *Havieron Project Infrastructure Corridor detailed vertebrate and SRE invertebrate fauna survey*. Unpublished report prepared for Newcrest Mining Limited. Biologic Environmental Survey, East Perth, WA.

DoE, Department of the Environment. (2013). *Significant Impact Guidelines 1.1: Matters of National Environmental Significance*. DoE,, Department of the Environment, Canberra, Western Australia.

DPaW, Department of Parks and Wildlife. (2017). *Interim guideline for preliminary surveys of night parrot (Pezoporus occidentalis) in Western Australia*. Department of Parks and Wildlife, Kensington, Western Australia.

Jackett, N. A. (2020a). *1934 Newcrest Havieron Terrestrial Fauna Phase 1 Acoustic Analysis – April 2020*. Unpublished report prepared for Biologic. Broome, WA.

Jackett, N. A. (2020b). *1934 Newcrest Havieron Terrestrial Fauna Phase 2 Acoustic Analysis – July 2020*. Unpublished report prepared for Biologic. Broome, WA.

Jackett, N. A. (2020c). *20061 Newcrest Havieron Terrestrial Fauna Phase 1 Acoustic Analysis – December 2020*. Unpublished report prepared for Biologic. Broome, WA.

Jackett, N. A. (2021a). *20061 Newcrest Havieron Additional Deployments Acoustic Analysis 1 – January 2021*. Unpublished report prepared for Biologic. Broome, WA.

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Jackett, N. A. (2021c). *20061 Newcrest Havieron Terrestrial Fauna Phase 2 Acoustic Analysis – April/May 2021*. Unpublished report prepared for Biologic. Adaptive NRM, Broome, WA.

Spectrum, Ecology & Spatial. (2021). *Telfer Operations conservation significant species assessment*. Unpublished report prepared for Newcrest Mining.

Spectrum, Ecology & Spatial. (2022). *Telfer Operations night parrot monitoring 2022*. Unpublished report prepared for Newcrest Mining.

Spectrum, Ecology & Spatial. (2023). *Telfer Operations significant fauna monitoring*. Unpublished report prepared for Newcrest Mining.

4 Appendices

Appendix A: Jackett (2020a) 1934 Newcrest Havieron Terrestrial Fauna Phase 1 Acoustic Analysis – April 2020

Appendix B: Jackett (2020b) 1934 Newcrest Havieron Terrestrial Fauna Phase 2 Acoustic Analysis – July 2020

Appendix C: Jackett (2020c) 20061 Newcrest Havieron Terrestrial Fauna Phase 1 Acoustic Analysis – December 2020

Appendix D: Jackett (2021a) 20061 Newcrest Havieron Additional Deployments Acoustic Analysis 1 – January 2021

Appendix E: Jackett (2021b) 20061 Newcrest Havieron Additional Deployments Acoustic Analysis 2 – February 2021

Appendix F: Jackett (2021c) 20061 Newcrest Havieron Terrestrial Fauna Phase 2 Acoustic Analysis – April/May 2021