

Thursday, August 20, 2026



**Re: Bendigo-Ophir Gold Project (FTAA-2507-1089) –
Response to RFI-8 (Vehicle Lighting), Cosgroves/Xyst letters dated 12 June 2026**

To: The Fast-track Expert Panel, c/- Environmental Protection Authority

I am an expert witness for Sustainable Tarras on the lighting / dark sky topic. I have previously prepared evidence including the Joint Witness Statement (JWS) dated 26 May 2026 and my own evidence dated 25 March 2026. This letter responds to the Applicant's RFI-8 response of 12 June 2026 (Cosgroves covering letter and Xyst supporting statement). Having reviewed that response against both the JWS and the findings of my on-site lighting trial, I do not consider it discharges the Panel's request, and I set out below why further, properly modelled information is required.

1. The assessment is generic, not site-specific, and my own field trial shows why that matters.

The Xyst statement relies on manufacturer datasheets for a single Hella headlamp and a single Komatsu PC3400 excavator, each treated as an isolated point source at fixed mounting heights. Xyst is referencing a single source on a stationary excavator and does not call into account any of the many more light sources commonly found on a mine site. My previously submitted evidence quantifies what a real dump truck lighting array may look like: Using Larson Electronics data for a Komatsu 830E LED light package, the combined illuminance at three metres is approximately 14,150 lux. The lights used in my field simulation produced only 4,790 lux at three metres from two fixtures – a deliberately conservative stand-in, excluding headlights, rear lighting and ancillary beacons entirely. Even that conservative simulation was clearly visible to the naked eye and recorded on long-exposure photography from an observer 6.46 km away, with substantial disruption to both the night sky and surrounding terrain. A single-headlamp datasheet calculation cannot be reconciled with this measured, real-world result.

2. Skyglow, not just point illuminance, is the relevant dark sky metric – and it was directly observed.

The RFI response addresses only horizontal/vertical illuminance at a receptor. My trial measured and photographed the scattered, reflected skyward component directly: lighting towers of a scale comparable to the Applicant's proposed temporary towers produced discernible sky and landscape illumination at distances up to 10 km, under both inward- and outward-facing orientations. It is reasonable to infer that additional plant, buildings and lighting density would increase skyglow proportionally. This is inconsistent with treating vehicle and mobile lighting as a residual, unquantified effect while fixed lighting is held to a zero-uplight, 3,000K standard (JWS paras 11–14).

3. Exclusion from AS/NZS 4282:2023 is a scope carve-out, not an effects finding.

Both Cosgroves and Xyst rely on the Standard's exclusion of headlights and working lights as grounds for treating vehicle and mobile lighting as unmanageable within the Lighting Management Plan. That exclusion reflects the Standard's compliance scope only; it does not relieve the Applicant of assessing the actual environmental effect on an Outstanding Natural Landscape.

4. Proposed mitigation is conceptual and, in places, unavailable in practice.

The ELF bunding in Figures 3 and 4 is expressly “indicative” and “not to scale.” No modelling demonstrates it intercepts light from the actual vehicle and machinery at any point during mine development, and these landforms take years to build while lighting impacts begin on day one.

Excavators, dump trucks and other site vehicles must not be outside of the LMP scope, especially as they do not have retrofittable lights with 3,000K warm-white sources with zero upward illumination. By their very nature they are mobile and rely on humans to operate them as their beams flash light across the nights sky. They must be calculated based on multiple real world scenarios, ie number of vehicles in constant rotation, mapped and assessed.

5. “Temporary and minor” is an assertion, contradicted by measured field evidence.

This characterisation is inconsistent with the JWS, where all experts agreed there was insufficient information to quantify vehicle lighting effects (para 36), and with my trial results, which recorded clear, repeated and far-reaching light pollution using lighting deliberately weaker than actual mining equipment. Real operational lighting would be expected to produce materially greater effects.

Given the site's ONL status, the dark sky values recorded in the JWS, and the measured field results summarised above, professional best practice requires a site-specific mobile and vehicle lighting impact assessment – full photometric and skyglow modelling for fixed and mobile lighting, night-time visual simulations from key viewpoints, and assessment of cumulative effects across all project stages – before the Panel can rely on the proposed conditions and Lighting Management Plan. I recommend that the Panel require the Applicant to commission and provide that study.

Nāku noa, nā



Expert Witness – Lighting / Dark Sky, for Sustainable Tarras

Marc Simpson

Managing Director

Toulouse Limited

M [REDACTED]