Appendix B4

EDS - Summary of evidence - Ecology (Evidence of Nick Head)

Issue	Summary of EDS evidence	Reference
Vegetation values assessment	• Lacks assessment of non-vascular flora, riparian margins not adequately surveyed, not able to verify whether spring annual surveys complete. • Results in risk of undervaluing high-quality sites, missing high values and creates concerns re applicant-led monitoring. • Extent of impact on conservation covenant cannot be ascertained as no assessment of covenanted values distinct from broader site.	Paragraphs [31] – [36]
Assessment of ecological effects	• Ecological significance of affected sites and adverse effects from their loss understated • EIANZ ecological impact assessment framework not appropriate for rare and unique values on site and downgrades ecological values and magnitude of effects • Establishes low baseline for mitigation/ offsetting • Assertion that degraded current state is in decline not supported by evidence.	Paragraphs [37] - [63]
Assessment of effects on individual species	• Severity and permanence of species impacts understated. • Under accepted ecological practice, type of likely effects normally characterised as high to very high. • Effects underestimated by relying on factors that do not materially reduce effect, eg presence of species elsewhere and future management methods (conflates with proposed mitigation)	Paragraphs [64] – [70]
Proposed offsetting and compensation	• Offsetting / compensation package flawed due to underestimated effects • Package does not meet offsetting requirements – more in nature of compensation which reiterates that cannot offset substantial ecological loss • Most habitats cannot be offset, not just cushionfields. • Package does not meet principles of NPS-IB – exceed limits of offsetting and compensation. • Over reliance on speculative or uncertain gains, research-dependent actions and benefits outside mine footprint – this creates impression that package is more robust and capable of addressing residual effects. • Lack of clarity between offsetting and compensation obscures fact that offsetting cannot be achieved and is used to justify habitat loss rather than respond to residual effects after application of effects management hierarchy. • Like-for -like replacement not properly addressed – cannot authentically recreate dryland plant communities through planting or habitat enhancement elsewhere; proposed offsets cannot replicate ecological composition, struction, function of lost ecosystem.	Paragraphs [71] – [89]

	• Not aware of well-documented exampls of successful restoration of comparable dryland ecosystems and associated species assemblages at scale proposed – experimental. • In NPS-IB terms, avoiding activity affecting indigenous biodiversity is warranted.	
Financial contribution to DoC	• General financial contribution cannot meaningfully address ecological consequences of proposal - shifts responsibility for addressing ecological outcomes to third party rather than protecting or restoring indigenous biodiversity. • Cannot be considered compensatio nbecause no clear link between residual effects and actions proposed in response. • Outcomes funded by contribution uncertain and contingent on range of factors. • Should be treated explicitly as discretionary enhancement funding.	Paragraphs [90] – [94]
Compensation and "trading up"	• Compensation not a credible or sufficient response to ecological issues re this proposal – where there is permanent loss of irreplaceable values, compensation not appropriate in terms of NPS-IB. • Exceeds limits to compensation – avoidance and minimisation must remain primary management responses. Treating offsetting/ compensation as principal solution materially understates the permanence and significance of the loss, and is inconsistent with established ecological principles and NPS-IB/ effects management hierarchy. • If proposal to proceed, should acknowledge that not possible to offset/ compensate and respond by "trading-up" by securing and permanently protecting other nationally significant dryland ecosystems that are currently vulnerable to loss or degradation, commensurate with the scale of loss.	Paragraphs [95] – [102]
Conditions and monitoring	• Ecological management not controlled directly through enforceable outcome-based conditions that generally do not specify clear limits, thresholds or decision points that would constrain further ecological loss if outcomes are not achieved. • CIT pit conditions (i.e., to delay until it can be shown that populations of certain species are less than 1%) do not provide for any independent verification (including by the council); suggest that presence of specified elsewhere reduces significance of CIT pit site and does not reflect conservation value of CIT pit site – risk of undervaluing high-quality population at this site. • Could be strengthened by:	Paragraphs [103] – [121]

	○ Conditions containing clear, measurable ecological outcomes, with management plans limited to describing how those outcomes will be implemented; ○ approval of management plan via independent peer review that tests whether proposed methods are ecologically credible and capable of achieving outcomes; ○ independent panel of experts to approve management plan, review annual monitoring and rehabilitation reports, critique progress against performance standards and advise consent authority on whether outcomes being achieved; ○ provide a means for approving mining of CIT (not applicant decision) ○ separate reporting of offsetting, compensation and non-offsetable residual loss so permanent ecological loss is acknowledged.	