



NT Environment Protection Authority
GPO Box 3675
Darwin NT 0801

20th December 2021

Submitted online via the NT EPA Consultation portal

Re: Submission on Finnis Lithium Project BP33 Underground Mine Supplementary Environment Report

The Environment Centre NT (ECNT) is the peak community sector environment organisation in the Northern Territory, raising awareness amongst community, government, business, and industry about environmental issues and supporting community members to participate in decision making processes and action. ECNT welcomes the opportunity to comment on the Supplementary Environmental Report (SER) for the Finnis Lithium Project BP33 Underground Mine submitted by Core Lithium Ltd (the Project).

We would firstly like to acknowledge the comments provided by Core Lithium on page 32-38 of the Supplementary Environment Report responding to our concerns raised during the referral stage of the Project.

ECNT would like to reiterate our position that assessment of Core Lithium's mining operations as a whole is preferable to piecemeal consideration of different "stages" of its operations. The separation of different components of Core Lithium's operations for assessment and approval purposes is artificial and inhibits wholistic consideration of risks and impacts. Moreover, it impairs the public's ability to be comprehensively informed about Core Lithium's operations, and to be appropriately engaged in statutory consultation processes. We believe that if Core Lithium presented the full extent of the plans for lithium extraction and processing on the Cox Peninsula at the outset, identifying (for example) plans up-front for an open pit mine, processing facility, and underground mine, there would be increased community interest and engagement in Core Lithium's operations, and a more thorough investigation of the overall environmental impacts and risks could be undertaken.

We outline our key concerns below.

Impacts of a changing climate

The SER concludes that *"the impacts of a changing climate are not expected to affect the BP33 Project due to the short mine life of four years proposed from commencement of construction to mine closure"*. While the life of mining at the Project is relatively short, ECNT notes that unplanned closure is the rule rather than the exception for mining projects in Australia. There is a real risk that rehabilitation and closure will not occur as planned by Core Lithium (noting the limitations in the data provided in the SER about mine closure in any case, see further below). Significant mine infrastructure and residual environmental risks could remain on the site if this occurs. These risks must be addressed by Core Lithium. For example, noting that Core Lithium's operations are located

very close to Bynoe and Darwin Harbours, there may be significant risks that would arise as a result of sea level rise and the impacts of saltwater intrusion into groundwater aquifers in the vicinity of the mine site. Further, there may be risks associated with the inundation of mine infrastructure if the mine was in care and maintenance for an extended period of time. These must be addressed by Core Lithium.

Key uncertainties and information gaps

The SER Main Report has identified a number of significant information gaps, including:

- Investigate if increase on internal water storages is possible in the current footprint
- Investigate if pumping rate to Grants pit can be increased
- If dilution ratio cannot be achieved in stream, investigate treatment options of water, to discharge water
- Investigate the suitability of this water management system for the proposal
- Investigate feasibility of daily pumping rate to Grants pit

In ECNT's view, there is thus a considerable amount of uncertainty about the key risks associated with the Project. For example, some of these knowledge gaps concern the storage and discharge of water into the receiving environment, identified as a key risk associated with the Project. It is not clear how these uncertainties will be resolved, including how increased knowledge might impact environmental management at the site. ECNT requests that any reports required to address these knowledge gaps be publicly disclosed as part of the conditioning for the Project, including any changes to proposed environmental management as a consequence.

Contingencies

ECNT is concerned that plans to manage water impacts are highly dependent on assumptions made about the timeline for the Grants project. This underscores the risk of allowing piecemeal approval for projects instead of overall or holistic approvals. ECNT submits that the proponent should be required to evaluate the risks of, and develop contingency plans for, changes in the timeline of the Grants component of the project. For instance, in Appendix A it is mentioned that *Most of the groundwater inflows received by the BP33 WMS would be transferred to the Grants WMS and stored in the finished Grants OC void*. Should there be even a minor disruption to the Grants project timeline the implications for the BP33 groundwater inflows would be significant, yet there is no accommodation for this possibility in the Water Management Plan.

Terrestrial ecosystems

ECNT acknowledges that surveys appear to have been undertaken with respect to *stylidium ensatum*. However, no targeted fauna surveys appear to have been undertaken. There are a large number of threatened species occurring within the footprint of the Project, and within its vicinity. ECNT attaches a "protected matters search" showing matters of national environmental significance that may be impacted by the Project. The lack of targeted surveys is inadequate and appears to be inconsistent with the requirements of the Northern Territory EPA with respect to terrestrial biodiversity surveys. Furthermore, there should be a referral made under the EPBC Act for Core Lithium's operations as a whole.

ECNT is very concerned by the approach taken with respect to preventing impacts of the Project on significant vegetation communities and ecosystems (including groundwater dependent ecosystems). According to the GDE Atlas, there are a number of groundwater dependent ecosystems along the

Charlotte River catchment, some with significant conservation value. There are pockets of monsoon rainforest along the river, which the Northern Territory Government has indicated are sensitive and warrant particular protection. For example, the Northern Territory's guidance on monsoon rainforests shows that only 0.2% of the Northern Territory is covered by monsoon rainforests, yet it provides the habitat for 13% of the Northern Territory's fauna. Instead of demonstrating how these values will be protected, there is a commitment to monitoring impacts on them (by which stage it may be too late to take appropriate remedial action).

ECNT is concerned about the possible effects on riparian vegetation degradation and requests that the Core's commitments, such as the monitoring activities and recording or surface water discharge to downstream watercourses, are publicly and regularly reported on. Greater detail around timeframes and requirement for monitoring would help to instil a greater level of confidence that the risks to riparian vegetation are being managed. Additionally, further detail around how Core will be "offsetting impacts if they do occur" is requested.

Mine closure and rehabilitation

The social impact study undertaken as part of the SER noted that "rehabilitation and closure was a key topic raised during consultation". However, very little information is provided in relation to the closure and rehabilitation of the project, or unplanned closure options. The SER states that a mine closure plan will be provided as part of the mining management plan. This is inadequate, and inconsistent with current good practice mining regulation (which requires closure and rehabilitation to be addressed at the environmental assessment stage). It is not possible to adequately assess the Project without a mine closure plan provided as part of the SER.

ECNT is also concerned about significant environmental impacts in the case of unplanned closure. For example, if waste rock dumps remain on the surface and are not used to backfill the underground mine, then the SER indicates that contaminants could move towards drainage lines and contaminate groundwater and marine environments. This is a significant risk that must be addressed.

Groundwater and surface water impacts

ECNT remains concerned about potential impacts to groundwater and surface water from the Project.

This includes the risks associated with saltwater incursion into groundwater aquifers in coastal areas due to climate change, which would be exacerbated by the dewatering proposed to be undertaken by Core Lithium.

ECNT also notes the considerable contamination risk to groundwater associated with metalliferous drainage. The SER states that geochemical testing for the Project indicates that elevated concentrations of metals/metalloids, primarily Al and As, but also Co, Cr, Cu, U and Zn, could occur beneath the waste rock dumps and from the backfilled materials after the mine is closed. The SER acknowledges there is a risk of widespread and /or long-term impacts associated with metalliferous drainage, and notes that further testing is needed "to improve the certainty of this assessment and the results will inform detailed mine design and closure requirements". In ECNT's view, to approve the Project with such significant uncertainties regarding the modelling poses an unacceptable risk.

Given the closeness of the mine to saltwater creeks and mangrove ecosystems, the possibility identified in the SER of “elevated concentrations of metals/metalloids” being released to ground and surface waters surrounding the mine site is concerning. Further detail is requested concerning the “design and operational controls” that will be implemented to mitigate this risk. As it currently stands, this is a concerningly vague risk management strategy. Timelines and stringent requirements for the “further testing” are required as part of the conditioning for the Project to determine the potential for metalliferous drainage, including public disclosure of any studies.

Appendix H to the SER states that the results from static and kinetic geochemical testing should be used to conduct an ARD/NMD risk assessment which can be applied in developing an ARD/NMD management plan for the operation. ECNT believes this ARD/NMD management plan should be publicly disclosed as a condition of the approval.

In relation to cumulative impacts to groundwater, ECNT notes that *“the modelling indicates there is no interaction between the groundwater drawdown cones associated with each of the mines and therefore there is no potential for cumulative impacts to occur”*. However, we believe this is a misreading of our concerns. For example, it is not necessary for the drawdown cones to interact for there to be a summative impact, for instance on habitat values. Further, we note that Core Lithium’s operations now impact two catchments, rather than one, significantly increasing the impacts of Core Lithium’s operations assessed cumulatively.

ECNT notes that a considerable risk of the Project appears to be that surplus water in the Project footprint might pose a problem for water management. However, in both the Appendix and Main Document, the “other options” for managing disposal of excess water are vague and under-developed. More detail is required about how this will be managed and particularly how the intersecting timelines of the operations of different components of the project (i.e. the BP33 mine and the Grants mine) may impact the management of excess water. There are numerous references throughout the SER about the proposal to apply for a waste discharge license under the *Water Act*, however, little information (beyond volumes of water to be discharged) is given about the risks associated with waste discharges into the Charlotte River or contingencies if uncontrolled discharge is necessary (due to, for instance, overflowing water storages).

ECNT notes that Core Lithium does not propose to apply for a water extraction licence for its dewatering operations. This is a requirement of the *Water Act*. If Core Lithium does not obtain a groundwater extraction licence for these operations, then it may be guilty of an offence under the *Water Act*.

Downstream impacts on Charlotte River catchment and Bynoe Harbour

ECNT is concerned by the potential risk to the Charlotte River catchment and Bynoe Harbour from surface water contamination (including through controlled release or uncontrolled release of contaminated water from mining infrastructure into the Charlotte River), and potential connectivity between contaminants from the underground mine and Charlotte River. As noted in the social impact assessment for the Project, the Charlotte River and Bynoe Harbour are highly valued by Territorians for fishing and recreational activities. There are a number of pearling leases operated by Paspaley in Bynoe Harbour due to the pristine nature of the marine environment there. Crab Claw Island is a highly successful tourism operation in the vicinity of the Project. There are a number of sacred sites in Bynoe Harbour, and it is highly valued by the Traditional Owners for these reasons. Any contamination at all of the Charlotte River and downstream into the marine environment would be viewed as unacceptable by a range of stakeholders. In ECNT’s view, there appears to be

significant uncertainty, and inadequate information provided as part of the SER to adequately assess changes in downstream water flow or water quality and their impacts on aquatic habitats.

The ECNT would like to acknowledge Justin Tutty for his assistance in preparing this submission.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Shar Molloy', with a large loop at the end.

Shar Molloy, Co-Director Environment Centre NT

A handwritten signature in blue ink, appearing to read 'Kirsty Howey', with a long, sweeping horizontal line.

Kirsty Howey, Co-Director Environment Centre NT