

Statement of Reasons

CORE LITHIUM LIMITED – GRANTS LITHIUM PROJECT NOTICE OF AN ALTERATION – CLAUSE 14(A)

PROPOSAL

The Core Lithium Limited (the Proponent) Grants Lithium Project (the Proposal) was assessed under the *Environmental Assessment Act 1982* at the level of an Environmental Impact Statement. Assessment Report 89 was completed by the Northern Territory Environment Protection Authority (NT EPA) and provided to the Minister on 17 June 2019.

The Proposal is to develop and operate an open-cut lithium mine and processing facility on mineral lease 31726 on the Cox Peninsula approximately 25 km south of Darwin and 22 km west of Berry Springs. The main components of the Proposal that were considered by the NT EPA in Assessment Report 89 include:

- open cut mine of the Grants deposit with associated waste rock dump (WRD) and tailings storage facility (TSF)
- a mine processing area
- two water storage dams and a water supply pipeline
- ancillary infrastructure

The Proposal would operate for about 3-4 years (including 2-3 years of processing 2.03 million tonnes of ore), producing up to one million tonnes per annum (MTPA) of lithium oxide concentrate for export.

The Proponent submitted a notification to the NT EPA on 30 April 2020, to alter the Proposal, in accordance with Clause 14A of the Environmental Assessment Administrative Procedures 1984 (EAAP).

ALTERED PROPOSAL

The Proponent is proposing to operate the processing facility for approximately seven years, an additional 4-5 years compared to the original, assessed Proposal. The changes included in the proposed alteration are summarised in Table 1.

The processing facility would potentially accommodate processing and export of ore mined from a number of nearby ore deposits associated with the Finniss Lithium Project tenements¹. The NT EPA has completed Assessment Report 89 associated with the Grants proposal. A referral for an underground mine (BP33) about 3.5 km south-east of the Proposal, has been submitted to the NT EPA. In accordance with transitional arrangements associated with the new *Environment Protection Act 2019* (EP Act) commencing 28 June 2020, the Notice of Intent for BP33 will be considered as a referral under the EP Act following its commencement.

¹ Finniss Lithium Project includes Grants, BP33, Carlton, Sandras, Hang Gong and Lees Booths deposits according to Proponent's web page: <https://corelithium.com.au/finniss-lithium-project>. The Proponent's feasibility studies, planning and approvals associated with the tenements and potential mining activities would occur progressively over the next two to three years.

Table 1: Alterations to the Proposal since it was assessed in 2019

Aspect	Assessed Proposal	Altered proposal
Processing facility period of operation	~2-3 years of processing	~7 years (an additional 4-5 years of processing)
Tailings disposal	Tailings from Grants disposed of in the TSF within the integrated TSF/WRD landform	Tailings from Grants and BP33 disposed of in the TSF within the integrated TSF/WRD landform. Additional capacity achieved by raising TSF embankments.
Roads and traffic	10 return quad road train trips per day for ~3 years	10 return quad road train trips per day for ~7 years
Daily water demand	2,018 kL for first ~4 years	2,018 kL for first ~4 years, then ~1,500 kL for remaining operations
Water storage	<p>Mine Site Dam (MSD) and Observation Hill Dam (OHD) in use for 3–4 years.</p> <p>The MSD was initially proposed to be decommissioned at closure following depletion of the Grants resource, to re-establish natural flow regimes downstream; and while the OHD was proposed to remain in place post closure, it was predicted that ceasing water extraction would restore wet season flows to some extent.</p>	Increase the duration of use of the MSD and OHD for water supply, from 3-4 years to about 7 years.
Water management	Offsite discharge of excess water during wet season	No offsite discharge required once mining of Grants deposit ceases
Greenhouse gas emissions	<p>Transport: 55,664 tCO₂-e</p> <p>Stationary: 4,489 tCO₂-e</p> <p>Land clearing: 18,323 tCO₂-e</p> <p>Total estimate emissions: 78,476 tCO₂-e</p> <p>Portion of NT annual emissions: 0.47% over ~3 years.</p>	<p>Emissions will continue from operation of processing facility and transport of product to Port.</p> <p>Project share of NT annual emissions will decrease after ~3 years when mining activities cease.</p> <p>Emissions from processing facility and transport will be less than 0.1% of NT annual emissions.</p>
Employment	Period of employment up to three years	Period of employment ~7 years
Economic value	<p>Tax contribution of \$37.5 million</p> <p>Royalties paid to NT ~\$32.3 million</p>	Taxes and royalties would increase commensurate with extended production

CONSULTATION

The notification of the altered Proposal was reviewed in consultation with Northern Territory (NT) Government advisory bodies (see Attachment 1) and the responsible Minister as required by clause 14A(3) of the EAAP.

JUSTIFICATION

The NT EPA acknowledges that the Proposal has been altered from that previously assessed at the level of an EIS as outlined in the Proponent's notification and summarised above. The altered Proposal was assessed against the NT EPA's environmental factors and objectives to reconsider the environmental significance of the altered Proposal. The NT EPA identified five environmental factors that could be significantly impacted by the altered components of the Proposal (Table 2).

Table 2: Key environmental factors considered for this assessment

Theme	Key Environmental Factor	Objective
Land	1. Terrestrial environmental quality	Maintain the quality of land and soils so that environmental values are protected.
	2. Terrestrial flora and fauna	Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.
Water	3. Hydrological processes	Maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.
	4. Inland water environmental quality	Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected.
People and Communities	5. Social, economic and cultural surroundings	Protect the rich social, economic, cultural and heritage values of the Northern Territory.

1. Hydrological processes

Objective: Maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.

The NT EPA's Assessment Report 89 identified that changes to surface water flow volumes, regimes and pathways of the ephemeral watercourses downstream of the mine site and OHD, would potentially result in significant impact to surface water hydrology. The altered proposal would result in an extended duration of reduced surface water flows into West Arm (Darwin Harbour catchment) and the Charlotte River (Bynoe Harbour catchment), associated with the prolonged use of the MSD and OHD. Wastewater discharge flows from the mine site (primarily from pit dewatering), that could partially compensate for the predicted surface water flow reductions during mining of the Grants deposit, would not occur during the extended operating period.

The ephemeral creek line downstream of the mine site that would be affected by the MSD discharges to West Arm during the wet season. The modelled reduction in average wet season discharges from the creek to the upper tidal limit ranges from 2-24% over the wet season and the impact on monthly flows into West Arm proper is less than 13%.

The ephemeral creek line downstream of OHD that would be affected discharges to the Charlotte River. The Proponent's modelled reduction in average wet season discharges from the creek into Charlotte River is 20-30%; however, the impact on flows in the Charlotte River is predicted to be less than 3%.

In both catchments, there are no other users downstream that would be affected by the predicted reduction in flows from the dams being in use for the extended period of operations, and predictions indicate there would be no impact to recreational users. The potential impact to riparian and mangrove habitats associated with an extended period of reduced flow are considered in section 4 Terrestrial flora and fauna.

Assessment Report 89 acknowledged that the predicted surface water flow reductions and delays in the onset of wet seasons flows as the dam fills, from both the MSD and OHD, were not considered likely to significantly impact on the ephemeral drainage areas and creeks, and associated vegetation communities (mangroves and riparian rainforest) downstream. Recommendation 5 requires measures to monitor downstream surface water volume and flow to be incorporated into a Water Management Plan and ongoing reporting of monitoring and assessment results in Water Management Reports.

The TSF capacity would be increased to accommodate the additional tailings from the extended period of ore processing associated with the altered Proposal. Assessment Report 89 recognised that while the TSF would be designed, constructed and operated to minimise the rate and volume of seepage to groundwater, seepage was predicted to be 100kL per month. The TSF would be constructed with a low permeability base and under drainage collection system. While the alteration would extend the duration of seepage to groundwater, it is not expected to increase the rate of seepage. Recommendation 5 requires the Proponent to monitor groundwater at sites that would potentially be impacted by TSF seepage, for the duration of the Proposal. As the TSF is located within the mine dewatering induced drawdown area of the pit, and the groundwater levels would be recovering during the extended duration of the altered Proposal, the NT EPA considers it unlikely that seepage would lead to significant impacts on groundwater flows.

The NT EPA considers that the Proposal has changed in relation to this factor due to the extended duration of surface water flow reduction from water supply dams, and seepage from the TSF. However, the recommendations in Assessment Report 89, combined with water extraction licensing requirements under the *Water Act 1992*, provide appropriate mechanisms to avoid significant impacts. The NT EPA is satisfied that with application of the recommendations in Assessment Report 89 and the Proponent's commitments, potential impacts to surface water and groundwater hydrology can be managed such that the NT EPA's objective for hydrological processes is likely to be met.

2. Inland water environmental quality

Objective: Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected.

The altered Proposal includes the storage of tailings from the Grants deposit and other nearby deposits such as BP33, in the TSF within the integrated WRD/TSF landform at the processing hub². The extended duration of processing, tailings deposition and the increased tailings storage volume could increase the potential for water quality impacts from overflow or seepage of tailings liquor and stored process water.

Assessment Report 89 acknowledged the potential for acid and metalliferous or saline drainage (AMD) from the TSF, and the potential for mobilisation of contaminants from tailings to receiving waters. It included Recommendation 6 requiring the Proponent to develop an Acid and Metalliferous

² If the TSF reaches capacity, an alternative tailings disposal strategy would be developed by the Proponent and referred to the Department of Primary Industry and Resources (DPIR) and the NT EPA for consideration.

Drainage Management Plan (AMDMP) prior to mining that includes a program for ongoing geochemical testing and classification of waste rock and tailings (solids, leachates and decant water), and mechanisms for adaptive management of AMD if detected. Recommendation 9 requires the Proponent to install a low permeability cover on the TSF if monitoring confirms that seepage is a potential source of contamination to groundwater or surface waters; and to engage a suitably qualified and experienced auditor to undertake an independent audit of the groundwater quality monitoring program after two years of tailings deposition and then annually. The appointment of the auditor is to be endorsed by the relevant regulator and the auditor is to report to the relevant regulator.

The NT EPA considers that the implementation of these recommendations, combined with the Proponent's commitment to design and construct the TSF to contain a 1% annual exceedance probability (AEP) event, with a spillway to withstand a 0.1% AEP flood event, would minimise the risk of any seepage, overflow or failure of the TSF and subsequent potential impacts on water quality.

In the notification of the altered proposal the Proponent recognised the potential for discharge of mine-affected water, fuel and chemical spills and soil erosion and sedimentation from land disturbance activities to result in impacts to surface water quality. The NT EPA acknowledges that the altered Proposal would not result in any change to the significance of these impacts, as there would be no increase in the volume or duration of discharges, no additional fuel or chemical substances stored onsite and no additional land clearing that would result in an increased erosion risk.

The NT EPA considers that the Proposal may be changed in relation to this factor due to the increased volume of tailings and duration of tailings deposition, and the risk of potential AMD impacts associated with processing ore that has not undergone adequate geochemical analysis to verify material characteristics. However, the NT EPA considers that with adherence to the recommendations in Assessment Report 89 and the Proponent's commitment to ongoing water quality monitoring and management of potential impacts, the NT EPA's objective for inland water environmental quality is likely to be met.

3. Terrestrial environmental quality

Objective: Maintain the quality of land and soils so that environmental values are protected.

The alterations to the Proposal would increase the duration of operations and delay closure and rehabilitation of the mine site, resulting in extended duration of soil exposure, topsoil storage time, and an increased likelihood of loss of topsoil structure and a viable seed bank for use in rehabilitation.

Assessment Report 89 recognised the potential for the Proposal to impact the quality of land and soils through land disturbance, soil erosion and contamination; and the importance of mine closure planning to achieve the post mining land use closure objectives. Recommendations 12, 16 and 17 were made to provide independent expert review of closure of the integrated TSF/WRD, improve the proposed rehabilitation strategy and Mine Closure Plan, ensure closure objectives and site specific closure criteria are met, and provide for ongoing monitoring and maintenance of the site post-mining until the site is relinquished. Recommendation 8 requires the Proponent to monitor, assess and treat any soil contamination on the site in line with the *National Environment Protection (Assessment of Site Contamination) Measure 1999*³ prior to mine closure.

The Proponent committed to managing erosion and sedimentation risks through the implementation of an erosion and sediment control plan designed in accordance with the Best Practice Erosion and

³ ASC NEPM, available at: [National Environment Protection \(Assessment of Site Contamination\) Measure](#)

Sediment Control Guidelines (IECA 2008)⁴, including collecting all mine site runoff in sediment basins and use of flocculants to reduce suspended solids in the water column to levels suitable for discharge.

In the notification of the altered Proposal the Proponent recognised that there would likely be an increased requirement for soil ameliorants, seeding, and tubestock planting to maximise rehabilitation success, considering that stored topsoil would be unlikely to contain a viable seed bank for rehabilitation and loss of soil structure is likely to occur. The Proponent's mine closure strategy would remain similar to the original Proposal, however, the closure schedule would change with closure and rehabilitation of the integrated WRD/TSF landform and processing areas commencing once the TSF reaches capacity (4-5 years later than planned).

The NT EPA considers that the environmental significance of the Proposal has not changed in relation to this factor, and that with the application of recommendations in Assessment Report 89 and the Proponent's commitments to implement best practice erosion and sediment control management, the NT EPA's objective for terrestrial environmental quality is likely to be met.

4. Terrestrial flora and fauna

Objective: Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.

The alterations to the Proposal would result in extended duration of altered surface water flows due to prolonged use of two water supply dams, the OHD and the MSD, as discussed under the hydrological processes factor. This would potentially impact on downstream riparian and mangrove vegetation communities.

Assessment Report 89 acknowledged that altered surface water flows as a result of the MSD (West Arm Catchment) and OHD (Charlotte River Catchment) may result in the ephemeral creeks remaining dry for longer, and that this change could stress the downstream riparian and/or mangrove vegetation. However, the NT EPA concluded that significant impacts were unlikely due to the short duration of the Proposal, as well as the assumption that these vegetation communities were adapted to the low/no-flow conditions of ephemeral creeks and should be sufficiently resilient to tolerate reduced surface water flows for up to three years, and that the vegetation would have the opportunity to recover at the end of Proposal life when flows are restored.

In the notification of the altered Proposal, the Proponent recognised that resilience of the downstream riparian and mangrove habitats to longer-term modification of surface water flows and cumulative water quality impacts is unknown. The Proponent committed to update the approved Water Management Plan for the Proposal to incorporate monitoring of downstream impacts associated with altered surface water flows, which will include monitoring and measurement of flows and habitat condition in both the West Arm and Charlotte River catchments, as well as management and reporting of any identified impacts.

As the proposed alteration does not involve any additional land clearing or other activities that would result in habitat loss or degradation, and Assessment Report 89 concluded that the Proposal is not likely to result in a significant impact on fauna, the NT EPA considers it is unlikely that there would be an increase in the impact to terrestrial fauna values.

The NT EPA considers that the potential impacts and risks to downstream vegetation communities may be increased as a result of the alteration. The NT EPA considers these increased potential impacts and risks can be addressed through the recommendations in Assessment Report 89 and by the measures to monitor, mitigate and report any impacts to the health of downstream vegetation communities, as committed to by the Proponent. As a result, the NT EPA considers that the altered

⁴ International Erosion Control Association (IECA) Australasian Chapter 2008. [Best Practice Erosion and Sediment Control](#). Picton NSW.

proposal is unlikely to have a significant impact on downstream vegetation communities in the West Arm (Darwin harbour) and Charlotte River (Bynoe Harbour) sub-catchments. The NT EPA concludes that the NT EPA's objective for terrestrial flora and fauna is likely to be met.

5. Social, economic and cultural surroundings

Objective: Protect the rich social, economic, cultural and heritage values of the Northern Territory.

The altered Proposal would extend the duration of traffic movements associated with 24 hour haulage of the processed ore in road trains along public roads from the Proposal to Darwin Port from ~2-3 years to ~7 years. The frequency of road train passes along the haul route, with consideration of the peak school hour restrictions in accordance with Recommendation 14 from Assessment Report 89, is equivalent to one road train every 66 minutes. The number of daily traffic movements would remain the same, and there would be no change to the proposed temporary road closures (as blasting is associated with mining the Grants deposit, not the extended operation of the processing facility). The Proponent stated in the notification of the altered Proposal that the Traffic Management Plan and proposed mitigation measures, including speed restrictions through Berry Springs, a process for public feedback and complaints and ongoing liaison with the Department of Infrastructure, Planning and Logistics regarding road usage and truck movements, would continue.

In Assessment Report 89, the NT EPA acknowledged the risk that night time noise from haulage activities could cause disturbance to residents on Cox Peninsula Road. The NT EPA stated that road train hauling activities must be managed by the Proponent to avoid the risk of night time truck traffic noise causing sleep disturbance to residents, and that any noise related complaints should be managed and addressed in accordance with the Proponent's complaints handling process. Recommendation 15 was made to highlight the need for the Proponent to work with the local community to minimise negative impacts. It requires the Proponent to develop and implement a Community and Stakeholder Engagement Plan, regularly update the Social Impact Management Plan (SIMP), particularly in relation to noise management, and report on the effectiveness of the SIMP to manage the social impacts of the Proposal.

The altered Proposal would potentially provide additional social and community benefits through extended duration of employment and contracting opportunities, increased contribution of taxes, and increased mineral royalties that would be paid to the NT government under the *Mineral Royalty Act 1982*.

No impacts to known sacred sites are anticipated as a result of alterations to the Proposal.

The predicted energy demand would increase due to the continued operation of the processing facility and transport of product to Darwin Port. The Proponent estimated that the greenhouse gas emissions from the altered Proposal would contribute less than 0.1% of the NT's annual emissions (based on 2017 data) and did not consider that this would change the significance of the Proposal.

The NT EPA considers that with adherence to the recommendations in Assessment Report 89, the community would be appropriately informed, the Proponent would be able to address any concerns raised regarding the altered Proposal and the NT EPA's objective for social, economic and cultural surroundings is likely to be met. The environmental significance of the Proposal in relation to this factor remains unchanged from the previously assessed Proposal.

SUMMARY

The NT EPA acknowledges that the Proposal has been altered from that previously assessed at the level of an EIS as outlined in the Proponent's notification and summarised above. The altered Proposal was assessed against the NT EPA's environmental factors and objectives to reconsider the environmental significance of the altered Proposal.

The NT EPA considers that the environmental significance of the proposed action has not changed. The NT EPA considers that its objectives for all environmental factors are likely to be met, provided the Recommendations made in Assessment Report 89 are applied to the altered Proposal. Therefore, the NT EPA considers that further assessment at the level of a Public Environmental Report or Environmental Impact Statement is not required.

DECISION

The NT EPA has decided, in accordance with the *Environmental Assessment Act 1982*, that the Grants Lithium Project has been altered in such a manner that its environmental significance has not changed. The NT EPA considers that the recommendations made in Assessment Report 89 adequately address the potentially significant environmental impacts and therefore a Public Environmental Report or Environmental Impact Statement is not required. The administrative procedures are at an end with respect to the proposed action.



DR PAUL VOGEL AM MAICD

CHAIRPERSON

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

25 JUNE 2020

Attachment 1 - Northern Territory Government Advisory bodies consulted on the Notice of Alteration

Department	Division
Department of Environment and Natural Resources	Flora and Fauna Water Resources Weeds Environment Bushfires NT Rangelands
Department of Infrastructure, Planning and Logistics	Lands Planning Infrastructure Transport Civil Services
Department of Primary Industry and Resources	Fisheries Mining Compliance Petroleum Primary Industry
Department of Tourism, Sport and Culture	Heritage Tourism NT Arts and Museums Parks and Wildlife
NT Police, Fire and Emergency Services	Business Improvement and Planning
Department of Health	Environmental Health Medical Entomology
Department of Trade, Business and Innovation	Economics and Policy Strategic Policy and Research
Department of Local Government, Housing and Community Development	Maintenance Planning Housing supply
Power and Water Corporation	
Aboriginal Areas Protection Authority	Technical
Department of the Attorney-General and Justice	Commercial Division NT Worksafe
Land Development Corporation	
Department of the Chief Minister	Economic and Environmental Policy