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Imperial Oil and Gas EMP submission

The Arid Lands Environment Centre (ALEC) is Central Australia's peak community environmental organisation that has been advocating for the protection of nature and ecologically sustainable development of the arid lands since 1980. ALEC actively contributes to the development of energy and resources policy through regulatory reform, written submissions, community education and advocacy within the community.

ALEC welcomes the opportunity to make a comment on Imperial Oil and Gas's (Imperial) Environment Management Plan (EMP).

ALEC strongly opposes the Imperial EMP and its proposal to hydraulic fracture (frack) seven wells in the McArthur Basin at EP187. ALEC considers Imperial's proposed actions to have the potential to cause a significant impact to the environment. It is vital that the Minister for the Environment refers these shale gas activities to the Northern Territory Environment Protection Authority (NT EPA) to conduct an Environment Impact Assessment (EIA) under s.50 of the *Environment Protection Act* 2019 (EP Act).

ALEC's submission focuses on: scientific uncertainty, baseline data, cumulative impacts and 'exploration creep'; water resources; and, threatened species.

1. Scientific uncertainty - lack of baseline data

The Beetaloo Sub-basin and greater McArthur basin represent greenfield petroleum resources. This means it is a region with limited baseline data (ecological as well as geologic). The Strategic Regional Environment and Baseline Assessments (SREBA) is a key structure of the Fracking Inquiry recommendations and involves the completion of 6 baseline studies advised to occur over a 3-5 year period.[1] After the completion of the SREBA, this baseline data and additional scientific information, will enable a Final Risk Assessment to be conducted.[2] This will determine whether the shale gas industry in the Beetaloo Sub-Basin is viable.

EP187, the site of Imperial's proposed new fracking activities lies outside of the Beetaloo Sub-Basin. The SREBA has primarily been conducted within the Beetaloo Sub-Basin, with research also completed in the Beetaloo GBA extended region. EP187 lies outside of both of these boundaries in the McArthur Basin. It is a region with extremely limited existing data.

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[1] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.451-452.
[2] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.39.

Much of the information conducted in the SREBA is likely to not be transferable to EP187, namely: terrestrial ecosystems, social, cultural and economic and aquatic ecosystem baselines. In addition, to understand the impacts of the proposed actions, further research is necessary around water quality and quantity, greenhouse gas emission and environmental health.

The Imperial EMP conducted one ecological assessment in March 2021. It is far from best practice scientific research, for such a limited pool of data to inform a baseline. Additionally, although there is a methods section, the EMP does not outline the scientific methods that were adopted to conduct this research, nor are timelines provided for the number of days spent in the field.[3] It remains unclear whether these baselines are replicable. The results from March 2021 tell us information from that particular point in time - one dataset of results does not provide enough evidence to inform a baseline. This is particularly true in the tropics, where time of year will significantly impact the species that are identified. Further research is essential to ensure that a genuine ecological baseline is conducted. Without it, there is substantial potential that significant impacts will occur to the environment. It is vital that the proposed actions are referred to the NT EPA, so a comprehensive EIA can be conducted.

It should also be noted that conducting baselines for the region in 2021, will inherently ignore changes that have already occurred as a result of climate change impacts, invasive species and changed fire regimes.

The EMP also relies heavily on desktop research to understand potentially significant impacts. There is very limited existing research conducted for this region. It is therefore unsurprising that the proponent would state: “Imperial believe the proposed activity does not represent any potential impact on the environment; therefore, it does not require an EIA”.[4] There is a huge amount of information, data and knowledge missing from the proponents EMP. For example, there has been limited field work, the proponent hasn’t ground-truthed the watercourses near the selected sites of their well-pads,[5] nor has any comprehensive water testing been completed on EP187. Reliance upon desktop data, in a region which has limited to no existing data across various environmental, social and cultural factors is deeply concerning. The potential impacts can’t be emphasised in a risk matrix, if the data does not exist. An EIA is essential to ensure a comprehensive analysis of the development site is conducted.

Recommendation 1: Under s.50 of the EP Act Environment Minister Eva Lawler refers, Imperial’s proposed actions to the NT EPA to undergo an EIA.

Recommendation 2: Further field work is required to generate an ecological baseline around EP187.

Recommendation 3: The SREBA is expanded and baseline assessments are conducted across the greater McArthur Basin.

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[3] Imperial OG 2021-2023 EP187 Program - Appendices 01-05, p.76-104.
[4] Environment Management Plan Imperial Oil & Gas: 2021-2025 EP187 Work Program NT Exploration Permit (EP) 187, p.28.
[5] Environment Management Plan Imperial Oil & Gas: 2021-2025 EP187 Work Program NT Exploration Permit (EP) 187, p.45.

2. Cumulative impacts and 'exploration creep'

Justice Rachel Pepper in handing down her recommendations from the Scientific Inquiry into Hydraulic Fracturing in the Northern Territory (Fracking Inquiry) emphasised that strong safeguards are needed to prevent 'exploration creep' from occurring.[6] Exploration creep is when a large number of wells are drilled and fracked under the conditions of an exploration licence. To overcome exploration creep, the Fracking Inquiry clearly stated that emphasis be placed on the assessment of cumulative impacts.

Schedule 1 s.3(2)(b) of the *Petroleum (Environment) Regulations 2016* clearly states that EMPs must report cumulative impacts.[7] It is vital that these cumulative impacts outlined in Imperial's EMP are assessed in conjunction with other shale gas activities in the Beetaloo Sub-Basin and greater McArthur Basin. Currently, no shale gas activities in the Beetaloo Sub-Basin/ McArthur Basin have been referred to the NT EPA to undergo an EIA. These proposed actions in this EMP represent the largest fracking operation in the Northern Territory to date. It is vital that activities that have the potential to cause significant impact to the environment, be subject to the full and comprehensive EIA. These shale gas activities have not occurred at this scale in the Northern Territory. It is prudent that the regulators are engaged with a new industry as it continues to undergo expansion.

ALEC also holds significant concern at the continued greenhouse gas (GHG) emissions that are created as a result of the exploration wells, whilst no plan exists on how these emissions are going to be offset.

Recommendation 4: A cumulative impact assessment is conducted as part of an EIA.

Recommendation 5: A plan to offset GHG emissions is created, as per recommendation 9.8 of the Fracking Inquiry.

3. Impacts upon water resources

The proposed actions on EP187 will primarily impact the Gum Ridge Aquifer water resource. It is a shallow water resource, with the Carpentaria 1 well, showing that the resource is 50-150m below the surface.[8]

Preliminary water study results from SREBA have shown that stygofauna are present in the Cambrian Limestone Aquifer in the Beetaloo Sub-Basin.[9] This includes the Gum Ridge Formation. Through the presence of Parisia unguis, it has been shown that there is high connectivity between groundwater systems in the Beetaloo Sub-Basin. This has substantial implications for water resources, with fracking spills having the potential to impact environments far removed from the spill site.

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[6] Scientific Inquiry into Hydraulic Fracturing in the Northern Territory *Final Report*, p.413-414, p.451
[7] *Petroleum (Environment) Regulations* 2016, p.35.
[8] Environment Management Plan Imperial Oil & Gas: 2021-2025 EP187 Work Program NT Exploration Permit (EP) 187, p.59.
[9] Rees, G, Oberprieler, S, Nielsen, D, Watson, F, Shackleton, M, Davis, J, 2020. Characterisation of the stygofauna and microbial assemblages of the Beetaloo Sub-basin, Northern Territory. GISERA.

No water studies have been conducted around EP187 as it lies outside of the jurisdiction of the SREBA. It is vital that water resources are not put at risk prior to the completion of scientific studies so that baselines are determined and understood. There is limited knowledge of how the groundwater system at EP187 functions. The expansion of shale gas activities must not occur when there are so many unanswered questions around water resources. An EIA is integral to ensure the protection of water resources, and so that the development of shale gas activities can occur in a way which is informed and supported by the best available science.

Recommendation 6: Water quality and quantity studies are completed in the Greater McArthur Basin, including at EP187.

Recommendation 7: Water studies are completed to investigate whether subterranean groundwater dependent ecosystems such as stygofauna exist in the water resources around EP187.

4. Threatened species

The EMP has identified a number of threatened species present under the *Environment Protection and Biodiversity Conservation Act* 1999. This includes 13 threatened species and 14 migratory species (although 8 are specialist marine species).[10] In March 2021 during Imperial's ecological assessment with DEPWS staff, the Gouldian Finch, an endangered species was observed.

ALEC holds significant concerns around the limited field work that has been conducted. Best practice scientific research is required which is rigorous, replicable and conducted over multiple seasons and years. The most effective way to ensure that the full impacts of this development are understood is to conduct an EIA. Otherwise, there is substantial potential for significant environmental harm as a result of these proposed actions.

Recommendation 8: Extensive flora and fauna surveys are conducted across EP187 to build a baseline.

Alexander Vaughan - Policy Officer

[10] Environment Management Plan Imperial Oil & Gas: 2021-2025 EP187 Work Program NT Exploration Permit (EP) 187, p.11.