

Gulkula – The Indigenous Mine Pioneering Sustainability in the Aluminium Supply Chain

A report by the University of the Sunshine Coast for the Aluminium Stewardship Initiative

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Aerial view of the Gulkula mine in East Arnhem Land, northern Australia.

Background

Gulkula Mining Company (Gulkula) is the world's first Indigenous-owned and -operated bauxite mine. Located in East Arnhem Land, in the Northern Territory in Australia, the mine is situated on the Dhupuma Plateau – the traditional land of the Yolngu People (Figure 1). The Gulkula mine is 100 percent owned by the Gumatj clan, one of the Yolngu Traditional Owner groups of East Arnhem Land. Yolngu ancestry traces back more than 65,000 years. Bauxite mining has been practiced on their land and throughout the broader region for over 40 years.

Operations at the Gulkula mine commenced in late 2017 with progressive mine rehabilitation being undertaken as mining advances across the plateau. More an instrument of social change than a mining operation, Gulkula has been striving to empower the local Indigenous communities since its inception. Local Yolngu People, often with no formal qualifications, are employed by Gulkula and then trained to operate machinery (Figure 2), undertake maintenance activities, perform Workplace Health & Safety (WHS) duties, and assist in environmental management practices. On-the-job training therefore aids the development of work readiness in addition to practical workplace skills.

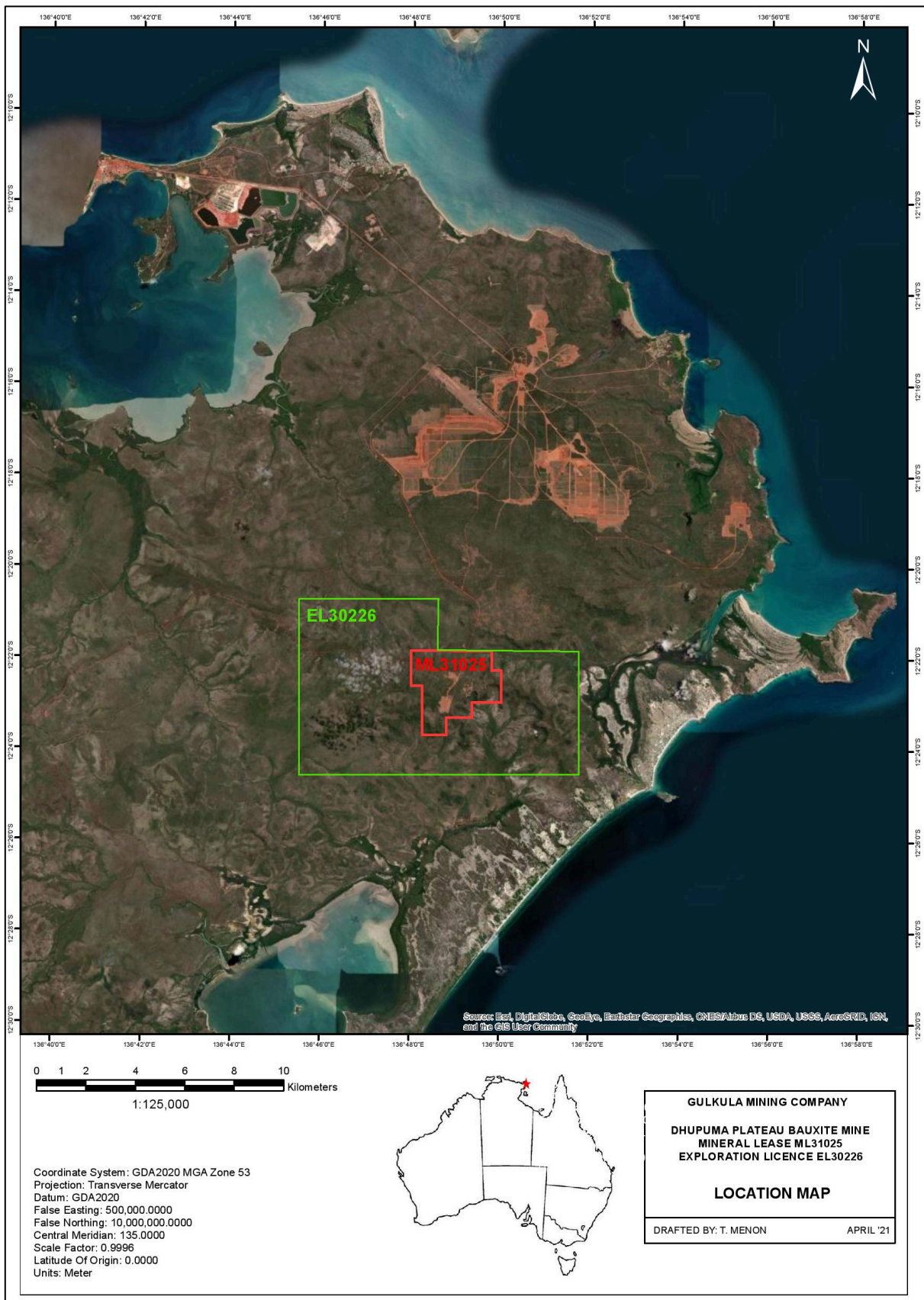


Figure 1. Location of the Gulkula bauxite mine in East Arnhem Land in northern Australia.

The Gulkula mining operation is the primary income generator that enables the company to build capacity of East Arnhem Land's local Indigenous communities. In 2019, it was recognised that, to ensure a sustained business operating under best-practice, Gulkula would need to formally proclaim that it is on par with many of the aluminium industry's bigger players. This would also assure customers of the integrity of its operations. The Aluminium Stewardship Initiative (ASI) Certification Program was identified as the pathway that would allow Gulkula to realize this vision.



Figure 2. Operator Ramsey Gurruwiwi who successfully completed nationally recognised training to conduct articulated haul truck operations.

Aluminium Stewardship Initiative (ASI)¹

The ASI Certification Program was developed through an extensive multi-stakeholder consultation process and is the only comprehensive voluntary sustainability standard initiative for the aluminium value chain. The ASI Performance Standard defines three sustainability pillars – Governance, Environment and Social – through principles and criteria, with the aim to address sustainability issues in the aluminium value chain. It sets out 59 criteria that consider key issues such as biodiversity, Indigenous Peoples rights, and greenhouse gas emissions.

The ASI Indigenous Peoples Advisory Forum (IPAF)

In addition to the Certification Program, ASI has a formal engagement mechanism with Indigenous communities affected by or involved with the aluminium value chain. In late 2016, the ASI Board approved the Terms of Reference for the Indigenous Peoples Advisory Forum (IPAF) that formally established the IPAF's role and purpose within ASI's broader governance structure². Key features are:

- The IPAF elects two of its members to serve on the ASI Standards Committee that develops the core standards and oversees the development of implementation guidance;

¹ <https://aluminium-stewardship.org/>

² See the ASI Governance Handbook <https://aluminium-stewardship.org/wp-content/uploads/2019/09/ASI-Governance-Handbook-v2-September2019.pdf>

- The IPAF provides an advisory function for complaints impacting on Indigenous Peoples if such complaints are received; and
- The IPAF meets regularly to discuss issues relevant to Indigenous Peoples and the aluminium supply chain, and to undertake research and documentation as decided by IPAF members.

The IPAF is a platform for exchange, learning, support, and development of opportunities for Indigenous communities affected by or involved with the aluminium value chain. It aims to ensure the voices and desires of Indigenous communities in bauxite mining regions are effectively addressed. It has representatives from various regions around the world, who attend a yearly, in-person meeting to work on practical actions to protect Indigenous communities' rights (note that the Covid-19 pandemic has prevented international in-person meetings in 2020 and 2021). IPAF meetings provide participants with the opportunity to learn from Indigenous communities, to draw comparisons, and create connections with representatives from other bauxite mining countries across the globe, including Australia. The 2017 IPAF meeting was hosted by Gulkula. The 2018 meeting was held in Suriname (Figure 3) and the 2019 meeting was held in India.

The IPAF is a model that can empower Indigenous communities by providing them with relevant support and information. IPAF members can support each other to better understand Free, Prior and Informed Consent principles and strengthen their contribution to sustainable development. Best-practice initiatives need to build guidelines and initiatives with local communities' involvement. The IPAF connects bauxite mining communities globally, and empowers them by facilitating exchanges, and offering communities a space to raise their voice. With Indigenous communities' engagement in mining operations, mining activities can better align with socio-cultural values and respect traditional land while also contributing to the development of a self-sustaining local economy.



Figure 3. IPAF meeting in Suriname in 2018.

Gulkula – A Revolutionary Mining Model

In early 2020, three years after mining operations commenced, Gulkula became the first Indigenous-owned and -operated mine to achieve ASI Performance Standard provisional certification. This achievement formally declared Gulkula's commitment to sustainability.

Gulkula's environmental protocols consider the limitations posed by remoteness of location and access to resources while planning for Indigenous upskilling and minimal impact from the mining operation. In that regard, the following examples showcase Gulkula's environmental efforts:

- Gulkula's land clearing procedure does not permit the burning of native forest. Rather, it specifies the salvage of timber products prior to the mulching of remaining forest residues. The mulch is then utilised in progressive mine rehabilitation where it aids the establishment of a suitable growth media complete with nutrient-cycling capabilities. A trial plot has been established to demonstrate the effects of mulch addition on soil physicochemical conditions and tree growth, versus the traditional method of overburden and topsoil replacement without mulch (Figure 4). This study is being undertaken in conjunction with researchers from the University of the Sunshine Coast.

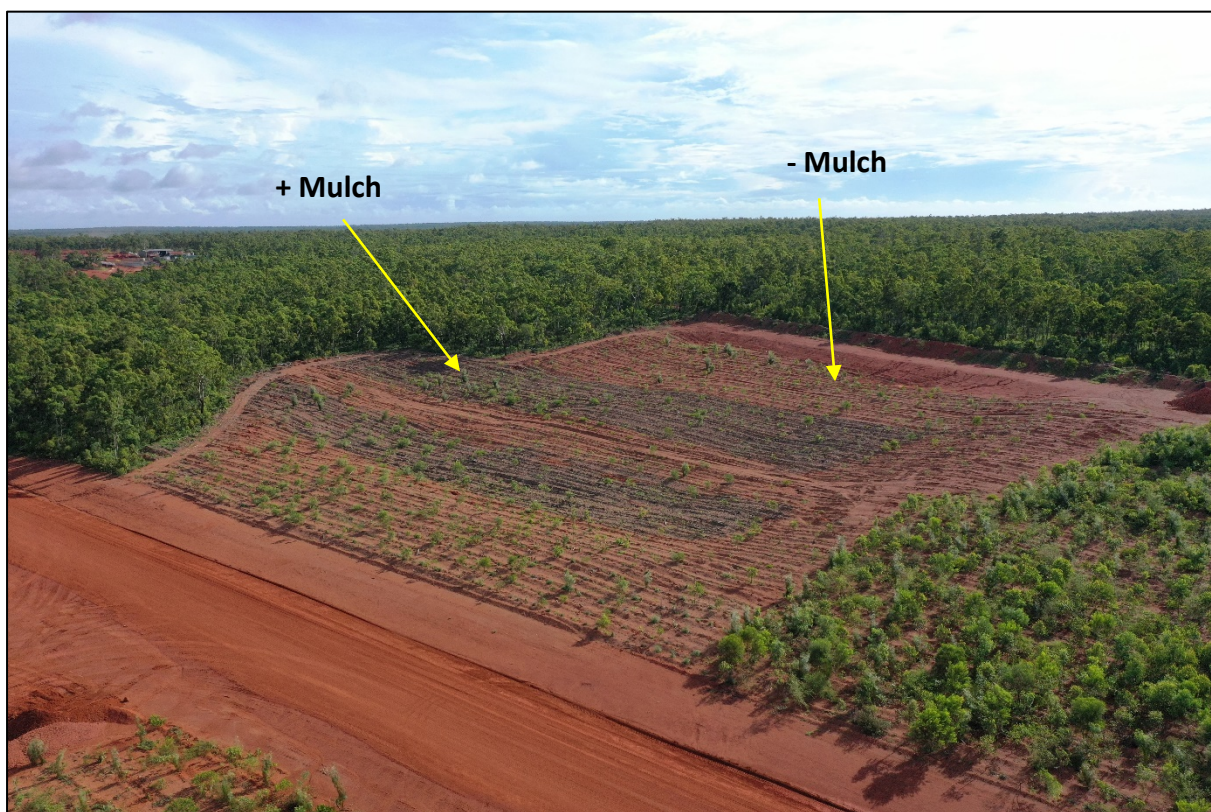


Figure 4. Trial mine rehabilitation plot to assess the effects of mulch addition on soil physicochemical conditions and tree growth.

- Gulkula has developed its own nursery that achieved accreditation under the Nursery Industry Accreditation Scheme Australia (NIASA) in 2019 (Figure 5). The nursery supports native seed collection and tubestock propagation for mine rehabilitation as well as the commercial supply of native plants in the region. Employees are trained in good propagation techniques that ensure a high plant survival rate post transplanting, taking into account the stress posed by

severe weather conditions. Such measures are critical for successful rehabilitation in the wet-dry tropics of northern Australia.



Figure 5. Staff propagating native species at the Gulkula NIASA-accredited nursery.

Backed by ASI and IPAF principles, Gulkula develops and executes initiatives that benefit the broader Indigenous community. There are a range of approaches that Gulkula has embedded in its strategies that work to build capacity for Indigenous Peoples, as part of a long-term vision that seeks to maximise the benefit of mining against its impacts. Several practical examples are given below.

- In recognition of the lack of language, literacy, and numeracy (LLN) skills among Yolngu employees and how this inhibits access to other potential learning opportunities and career advancements, Gulkula delivers targeted LLN training to further upskill the workforce. Real-life mining scenarios form the basis of such training to allow practical application of LLN skills while employees perform their daily tasks.
- Gulkula has also observed a dearth of understanding of the road rules and limited knowledge/poor hazard perception among Yolngu learner drivers. To address this issue, Gulkula offers accredited driver training to help expand their comprehension of driving regulations. This approach has proven effective in propagating safe driving strategies among Gulkula's Indigenous staff, with all learners passing their theory test and then attaining their driver's license within a period of 8 months (Figure 6). Driver training has since been made available to the broader Yolngu community.

- Gulkula works with the Arnhem Land Progress Aboriginal Corporation (ALPA) Community Development Program to deliver relevant work experience activities (Figure 7), LLN and driver training to young adults. By providing the benefit of stable employment, Gulkula aims to build capacity of its Yolngu workforce such that non-Indigenous personnel function only as consultants. By imparting LLN as well as practical operational skills to its employees, it is anticipated that Yolngu may be empowered to operate and manage the business independently, thus serving as pioneers among other Indigenous groups undertaking mining or natural resource management in Australia.



Figure 6. Gulkula crew on successfully passing their driving test.



Figure 7. Gulkula and ALPA crews undertaking mine rehabilitation activities in 2021 using plants grown at the Gulkula nursery.

Outcomes from ASI Certification

The ASI audit and certification process triggered a review and evaluation of Gulkula's management and business systems. One tangible benefit was improved discipline in data collection, record-keeping and reporting. This, in turn, informed an internal audit that presented opportunities for refining existing business practices. Subscribing to the principle of continuous improvement, Gulkula has implemented procedures to address identified discrepancies. A few examples are as follows:

- The primary fuel used at Gulkula for transport and the generation of electricity is diesel. Analyses undertaken in 2018-19 revealed that fuel combustion for transport was the major source of greenhouse gas emissions at Gulkula. Since then, Gulkula has committed to procuring Heavy Mining Equipment and other vehicles consistent with the Euro IV emission standard or higher to ensure that all exhaust emissions are within acceptable levels. Further, Gulkula has also adopted the AdBlue® technique for older vehicles in order to reduce diesel exhaust emissions. The effectiveness of these measures is currently being tracked using a site-specific carbon emissions register.
- Waste management procedures were improved by site-specific measures such as (a) the addition of paper and cardboard waste to mulch for use in rehabilitation, (b) composting of food materials, and (c) recycling of plastic and aluminium cans/containers under the 'Containers for Change' initiative.
- A review and analysis of the WHS management system engendered better asset management via the implementation of tracking systems, a dedicated maintenance database, and instant non-conformance reports and alerts. Such measures are proving effective as evidenced by the monthly WHS reporting program.
- The Gulkula delegation at the ASI AGM in Norway in 2019 enabled Traditional Owners to share the Gulkula model with all ASI members, providing a great opportunity to engage with and inform downstream members and NGOs, while also informing upstream members of a different model for mining operations.

Where To From Here?

The Gulkula mine is a demonstration of a new, community-backed model that is leading the way for Indigenous communities' participation and engagement in bauxite mining. The Gulkula mine demonstrates that through effective collaboration, it is possible to support Indigenous communities in developing mining operations that address their cultural, social, economic, and environmental needs and aspirations. As a member of ASI, Gulkula enables other member organisations to learn from their own experiences in how mining can empower Indigenous communities. By actively engaging in ASI activities, it is anticipated that Gulkula's model may be emulated by other members.

In late 2020, Gulkula staff visited Traditional Owners in Cape York Peninsula in northern Queensland to discuss the potential for collaboration on resolving socio-cultural and economic issues related to local bauxite mining. Gulkula shared their experience with small-scale mining, describing how the Traditional Owners established their mine, and the management and operating systems themselves (Figure 8). It

is anticipated that Gulkula will offer the delivery of training to such groups thereby empowering and building capacity of other Indigenous communities.



Figure 8. The Gulkula team sharing their experience with Traditional Owners of Cape York (Queensland) on bauxite mining issues.

The Gulkula operation is a demonstration of a mining model that can build a more sustainable aluminium industry – one that uses alternative and more inclusive approaches for engaging community members and Indigenous Peoples in all aspects of mining operations.

The Gulkula model gives hope to Indigenous people regionally, nationally, and globally.