



CRESCENT HEAD ILMENITE STOCKPILE ECONOMIC REHABILITATION PROJECT

State Significant Development - Environmental Impact Statement Submissions Report

October 2022

CRESCENT HEAD ILMENITE STOCKPILE ECONOMIC REHABILITATION PROJECT

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1. EXECUTIVE SUMMARY

The Crescent Head Ilmenite Stockpile Rehabilitation Project (The “Project”) is proposed to be undertaken by Greencoast Environmental Rehabilitation (GER), a 100% Australian owned and operated company, located in South Australia.

GER have a successful business, locating abandoned minerals, often regarded as waste by former operators and removing them for sale and rehabilitating the land. GER plans to undertake an economic restoration of an abandoned ilmenite mineral processing stockpile. The Crescent Head ilmenite dump economic restoration project has two specific goals:

- It seeks to recover an abandoned waste resource for sale into the export market, and
- Achieve site rehabilitation by removing invasive weeds, dumped rubbish and the waste ilmenite pile, and establishing a vegetation cover that will allow natural development of a coastal hind-dune forest typical of the region

The project involves the removal and rehabilitation of an abandoned ilmenite stockpile near the township of Crescent Head to the Port of Newcastle. The stockpile site is located on Crown Land on the eastern side of Point Plomer Road, on Lot 2281 Deposited Plan 1153793.

The stockpile covers an area of approximately two hectares on the site of a former mineral separation plant or ‘dry mill’ that ceased operation in 1985. Ilmenite is an iron-titanium mineral that was a common by-product of former mineral sand mining and processing operations along much of coastal NSW and Queensland.

Raw Ilmenite is typically processed offshore to become a titanium-based product, including flux core welding wire and rods and of titanium sponge, used in a wide variety of applications including aerospace industries, high grade electronics, sunscreen, and high gloss paints.

GER has drawn upon a variety of experts in coastal ecology and the Australian mineral sand mining industry to form a comprehensive project management team.

GER is well placed to successfully remove the Ilmenite stockpile and rehabilitate the site in accordance with best practice guidelines (**referring to best practice guides for mining operations, <https://www.industry.gov.au/data-and-publications/leading-practice-handbooks-for-sustainable-mining>**).

The Crescent Head project is a short-term, one-off project to control the invasive plant species currently colonising the stockpile, remove the former sand mining waste stockpile to natural ground level and then rehabilitate the site to natural bushland.

The restoration of the site is also important for the local indigenous people of the area with the Dhungutti Elders Aboriginal Corporation keen to see the area rehabilitated as it holds cultural significance to them.

Importantly, the project will **not** involve the quarrying of any new material or minerals that require further processing, nor the removal of any of the underlying silica sand.

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GER follows a business philosophy of economic rehabilitation of past mining activities where the income from the sale of a former waste product can achieve enhanced rehabilitation of past mining legacy sites.

This response to submissions report is in response to a single submission and advice received on the Crescent Head Ilmenite Stockpile Economic Rehabilitation Project – State Significant Development, Environmental Impact Statement (SSD-30956841)

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2. INTRODUCTION

The Crescent Head Ilmenite Stockpile Rehabilitation Project (The “Project”) is proposed to be undertaken by GreenCoast Environmental Rehabilitation (GER), a 100% Australian owned and operated company, located at 100 William Street, Norwood South Australia 5067 (ABN60 125 784 189).

The project involves the removal and rehabilitation of an abandoned ilmenite stockpile near the township of Crescent Head to the Port of Newcastle. The stockpile site is located on Crown Land on the eastern side of Point Plomer Road, on Lot 2281 Deposited Plan 1153793.

The stockpile covers an area of approximately two hectares on the site of a former mineral separation plant or ‘dry mill’ that ceased operation in 1985. Ilmenite is an iron-titanium mineral that was a common by-product of former mineral sand mining and processing operations along much of coastal NSW and Queensland.

The Crescent Head project is a short-term, one-off project to control the invasive plant species currently colonising the stockpile, remove the former sand mining waste stockpile to natural ground level and then rehabilitate the site to natural bushland.

Importantly, the project will **not** involve the quarrying of any new material or minerals that require further processing, nor the removal of any of the underlying silica sand. The underlying land surface will not be disturbed.

The project will not disturb any remnant vegetation community with minimal clearing restricted to the weed covered stockpile and access road. Project disturbance will not remove any habitat trees and all existing natural vegetation will be retained.

The project will involve a simple fleet of machinery, namely an excavator and front-end loader, as well as a small fleet of three truck and dog trailers.

Disturbance will be limited to truck and shovel operations for an estimated 130 days, with rehabilitation activities occurring immediately after the stockpile is removed.

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2.1. Location

The Project Site is on Crown Land, approximately 1km from the town centre of Crescent Head. Crescent Head is located on the mid north coast of NSW, within the local government area of Kempsey Shire.

The project is located in a small corner of crown land parcel Lot 2281/DP 115793.

The Project Site is bounded by:

- Goolawah National Park to the east (Lot 7302 / DP 1130597),
- Crown Land to the north (Lot 2281/DP 115793),
- Freehold land to the south (Lot 291/DP 754441) and,
- Point Plomer Road to the west

2.2. Approval Timeline

The Environmental Impact Statement (EIS) went on exhibition 3 August 2022. Exhibition ended on the 30 August 2022.

One submission was received from the general public and non-government sector.

A total of six responses from government agencies were received. No submission was received from Kempsey Shire Council.

This response to submissions report details GER's responses to the submissions and any modifications to the original EIS that are required.

3. ANALYSIS OF SUBMISSIONS

3.1. General Overview of Submissions Received

One Non-government / special interest group submission was received for the project and six agency advice statements were received.

The single submission to the project was in support and will be outlined in more detail in section 3.3. No individual submissions were received.

3.2. Government Organisations

The following government agencies provided advice on the project:

- Biodiversity and Conservation Division (BCD)
- Environmental Protection Agency (EPA)
- Resources Regulator
- Mining and Geosciences Unit (MEG)
- Transport for NSW, and
- Crown Lands

3.3. Non-Government Organisations / Special Interest Groups

The University of Queensland on behalf of the Dhungutti elders provided the following submission, as well as an attachment excerpt paper form a thesis into indigenous occupation and history in the area

"To whom it may concern

The rehabilitation of the former sand processing site and removal of the stockpile is an important development. Research by the University of Queensland (see attachment) highlights that the area is one of cultural significance to the Dunghutti.

In addition, there is the possibility that stone artefacts that are resilient to destruction may still be located in the stockpile, depending on the nature of the filtration process associated with mineral extraction.

The site holds great potential to be repurposed as an education and cultural centre that provides the Dunghutti with an opportunity to reconnect with the landscape and play a more direct role in the interpretation of the landscape. The UQ is keen to continue supporting the Dunghutti in interpreting this landscape and providing opportunities for young people to re-engage with the area through conservation work, education and ultimately cultural tourism.

We hope that the rehabilitation works will provide an important opportunity for reconciliation and education around the cultural values of this landscape."

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3.4. Individual Submissions

There were no individual submissions received.

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4. ACTIONS TAKEN SINCE EXHIBITION

Since submission of the EIS, there have been no significant changes to the project or activities on site. The ilmenite pile remains in situ, with a significant increase in weed growth due to the favourable season.

A brief site inspection was performed on the 1st of August 2022.

5. RESPONSE TO SUBMISSIONS

5.1. Submission from the University of Queensland on behalf of the Dhungutti Elders

There was only one non-government submission received on the project. GER is aware that the University of Queensland have been working closely with the Dhungutti elders in the Crescent Head region for a number of years to investigate the cultural heritage of the area and record the history of the Dhungutti people.

The submission was in two parts, a brief introductory note and an unpublished paper extracted from a thesis, detailing the elder's connection with Lot 2281 / DP115793 prior to sand mining of the area. The following extract from the introductory note best summarises the submission and the relevance to the proposed activities.

"To whom it may concern

The rehabilitation of the former sand processing site and removal of the stockpile is an important development. Research by the University of Queensland (see attachment) highlights that the area is one of cultural significance to the Dunghutti. In addition, there is the possibility that stone artefacts that are resilient to destruction may still be located in the stockpile, depending on the nature of the filtration process associated with mineral extraction.

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We hope that the rehabilitation works will provide an important opportunity for reconciliation and education around the cultural values of this landscape."

GER Response:

GER and our consultants at Pandanus Environmental have been honoured to have the input of (name withheld) and the Dhungutti elders into our project and look forward to having their assistance with any artefacts that may be uncovered during the pile removal and their supervision of the subsequent rehabilitation program post pile removal.

It is worth noting that due to the extraction methodology, it is unlikely that the pile material will contain any artefacts due to it being a "post processing" pile of material. In short, all mineral in the pile would have first been passed not just through the primary dredge and concentrator units that were mobile plants along the beaches in the area, but also through the separation plant that was located

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permanently on the site. This means all material would have been screened multiple times and down to a very fine level (sand grain size).

Additionally, the Ilmenite material that comprises the pile would also have undergone magnetic separation, meaning only magnetic materials will be located in the pile. This is all confirmed by our drilling records which didn't indicate any foreign material in the pile.

However, it is possible that the base of the pile or the fringes of the pile itself may contain remnant artefacts and this will be monitored closely for any objects that may occur (in accordance with our finds procedure in the Project Execution Plan). Should any material be evident, GER will contact the elders and work with them to determine the significance of the find and what to do with any objects found.

GER are thrilled that this project can assist with restoring the area and go some way to reconciling the past.

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5.2. Agency advice from the Biodiversity and Conservation Division (BCD)

1. The BDAR must be revised to:

- a) **Map the species polygon for the Swift parrot in accordance with section 5.2.5 of the Biodiversity Assessment Method (BAM), and**
- b) **Update the BAM calculator for the impacts of the proposal on the Swift parrot, and**
- c) **Include an assessment for Serious and Irreversible Impact to the Swift parrot in accordance with section 9.1 of the BAM.**

GER Response:

Whilst it is acknowledged that the Important Habitat Map for the Swift Parrot now encompasses the subject site, the following salient points need to be considered in relation to potential impacts on the species:

- a) The original BDAR was submitted in May 2020,
- b) The Important Habitat Map became available on the landing page of the Biodiversity Offsets and Agreements Management System (BOAMS) in October 2020, no copy of the version of this map seems to be available to check whether the subject site was included at this stage,
- c) Comments on the original BDAR were provided in 2021 and were dated 8/03/2021. The comments did not include any reference to the Swift Parrot, or the site being part of the mapped Important Habitat,
- d) BioNet Atlas map shows that the only records of the species in the immediate Crescent Head area and to the north of the subject site comprise the following:
 - i. One record from 2002 of species flying overhead; and
 - ii. One record from 2007 (no sighting notes).

There are two other more distant records:

- i. One record from 2018, approximately 9.5 km to southwest of the site (no sighting notes).; and
 - ii. One record from 1997, approximately 8.5 km to the south (no sighting notes).
- e) It is stated in association with the Important Habitat Map that:

"The NSW State Vegetation Type Map (SVTM), including draft Eastern NSW classification SVTM v1.1.0 (Eastern NSW), was used to select Plant Community Types associated with the swift parrot within the buffers. Any areas of vegetation less than one hectare were excluded."

However, this mapping does not consider the actual vegetation occurring on the subject site, and the fact that the vegetation mapping shown for both the 2020 and 2022 BDARs also does not reflect what is on the ground. Rather, owing to the constraints of the BAM process, and the need to follow the advice sought from BAM Support at the time, it was required that the

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'best fit' PCT still be applied to the site. This was despite the fact that the stockpile represented a completely man-modified system on a man-modified substrate, and that the majority of areas to be cleared supported substantial, and increasing weed development, with smaller patches of predominantly Blady Grass. It is stated in the 2022 BDAR that "The designation of this community thus is quite problematic and the confidence level for PCT determination is very low", and

- f) Further to this, logic would suggest that the site subject to clearing impacts does not represent a PCT at all, and although there are recognised favoured food trees for the Swift Parrot in the immediate environs, these trees are to be retained. A realistic mapped polygon for the Swift Parrot thus would exclude the subject site/clearing area.

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2. The Project Execution Plan must be revised to include:

- a) The identical impact area as indicated in the BDAR, and**
- b) Details of the methods for the stockpile removal that will enable the preservation and stabilisation of the retained vegetation within the stockpile.**

GER Response:

- a) GER notes the departments concerns with the mapping shown in **Appendix Two – Project Execution Plan**. The mapping shown on **page 15, Figure 4 of the Project Execution Plan** is titled “Approximate ilmenite stockpile boundary...” for that very reason it is for illustrative purposes only and the BDAR impact area, similar to the **project application area, EIS section 2.1.1, page 3** and all other remaining figures will be the boundary used for all works and disturbance.
- b) The process for site assessment post stockpile removal and site preparation techniques in outlined in **Appendix Five, pages 16-19**. As indicated in the BDAR and Site Description, the entire site is covered in weeds and contains no topsoil whatsoever. GER understands there may be some confusion given to complete the BDAR assessment using the calculator, a PCT of “best fit” needed to be selected as there is no PCT for such a disturbed (read new) site.

GER has been advised by our specialist rehabilitation consultants, Pandanus Environmental that there is no ecological value from retaining the vegetation on the stockpile and to do so would create serious weed issues with the rehabilitation. As described in Appendix Five – Rehabilitation Strategy, the removed vegetation will be disposed off-site or burned.

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3. The Rehabilitation Strategy must be revised to include the following information:

- a) **The target Plant Community Type proposed for restoration.**
- b) **Grass seed species used for restoration being native endemic species recorded on and surrounding the site.**
- c) **The target stem densities for restoration, which should be significantly greater than the proposed 300 stems per hectare.**
- d) **The process for site assessment post stockpile removal and site preparation techniques.**
- e) **How the rehabilitation of the site is to be carried out in accordance with the Guidelines for restoring Native Vegetation (Biodiversity Conservation Trust, August 2019).**
- f) **Confirmation that if using seeding techniques, then seed must be a mix of each stratum of the target Plant Community Type and sourced from local provenance.**
- g) **Details of the proposed maintenance and monitoring program for the rehabilitation area, including, but not limited to:**
 - i. **Responsibilities of various stakeholders for each component of the rehabilitation works, maintenance, monitoring and reporting over time.**
 - ii. **The duration of the monitoring and maintenance program for a minimum of 5 years.**
 - iii. **Success benchmarks including diversity of species, composition targets, stem densities and minimal signs of erosion.**
 - iv. **Detailed contingency protocols in the event of restoration failure.**
 - v. **Responsible parties for rehabilitation and maintenance of site at the end of the monitoring and maintenance program.**
 - vi. **More frequent monitoring intervals during the early stages of the rehabilitation program.**

GER Response:

Pandanus Solutions (now Pandanus Environmental) prepared a rehabilitation strategy for the site, and this is located in Appendix Five of the EIS. This strategy was developed using previous sand mining restoration experience and knowledge and adapting it to such a small site. GER believe the following excerpts from the report as well as some additional clarification address all of the above concerns.

- a) Rehabilitation of post mining landscapes is often a complicated activity, due to the complete removal of the growing medium, removal of substratum and the changed topography, water availability that comes with such an intensive disturbance of the land. At this location, this is further complicated by the complete lack of any pre-mining datasets for the area relating to what the original vegetation type was prior to mining. Compounding this, the ilmenite pile is situation within an entire region that was disturbed for mining and associated infrastructure. For this reason, as set out in **page 12 of Appendix Five**, three neighbouring vegetation types have been selected as possible post mining vegetation types, the Paperbark Community (PCT1064), Lowland Redgum (PCT1230) and Coastal Complex (PCT1536). The reasoning behind selection of three communities is as follows:

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- i. The sites proximity to the water table is very close and will most likely be saturated at some times of the year,
 - ii. The underlaying sand substrate,
 - iii. The proximity to all three community types and small nature of the site will result in edge encroachment from existing vegetation and seeds,
 - iv. Very stable climatic conditions, and
 - v. The sites location is unlikely to be exposed to regular fire and contains neighbouring vegetation that is not prone to bushfire
- b) **Page 20, Table one of Appendix Five** sets out the proposed seed mix for the site, including seven local endemic grass species found in adjacent land tenures
- c) The target for stem densities of trees and shrubs is 300 per hectare. Trees and shrubs are common grouping for tree species or canopy species and for shrubs over one to two metres in height. All other vegetation is expected to be at a greater density that 300 stems per hectare, hence the completion criteria target of 70% cover due to shrub, forb and grass growth.
- Additionally, the Dhungutti elders describe the original site as an open grassy campsite, and this was taken into consideration with the density of canopy species proposed. It is also worth noting that GER provided the draft site rehabilitation plan to NPWS in November 2020 for their review. In April 2021 NPWS advised that, among other outcomes, 300 stems per hectare was acceptable.
- d) GER has reviewed the Guidelines for restoring Native Vegetation (Biodiversity Conservation Trust, August 2019) and believes **Appendix Five** meets or exceeds the actions listed in the guideline. Pandanus Solutions personnel (now Pandanus Environmental) have successfully rehabilitated more than two thousand hectares of coastal sand dunes after mining and indeed overseen a variety of other restoration programs in other environments. The techniques chosen for this site, and the use of a hydromulch system for seed, mulch, nutrient and stabiliser deliver far exceed techniques used on similar restoration projects.
- e) Seeding techniques are outlined in **Appendix Five, pages 18-19** and the seed source will be either from a local supplier or bush care group. Seed mix is listed on **Appendix Five, page 20, Table one**
- f) Details of the proposed maintenance and monitoring program for the rehabilitation area are set out in **Appendix Five, page 21**. GER will undertake all proposed rehabilitation activities with the Assistance of Pandanus Environmental and a local hydromulch contractor, sourced from nearby Port Macquarie (expected to take only one day).

Success criteria, monitoring and maintenance activities and monitoring frequency are set out in **Appendix Five, page 21** and are summarised as follows:

- i. GER have set clear achievable completion criteria in **Appendix Five, page 21**. These are as follows:

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- At least 70% ground cover (litter and vegetation) measured from 1m in height
- A minimum of 300 stems per hectare for native trees and shrubs, consistent with species from any of the three target vegetation communities, and
- No visible signs of significant erosion

Noting comments from BCD above regarding some form of species presence / absence measure, GER are willing to add an additional criterion as follows:

- at least 75% of seeded species present in the rehabilitation
- ii. Monitoring is proposed for inspection every three months from cessation of the rehabilitation against the above criteria for three years. GER have proposed to assess the success of the rehabilitation at three years, but in reality, monitoring may only conclude at the time agreed by the resource's regulator when application for lease surrender is made. The suggested timeframe of five years is, GER's opinion unnecessary as monitoring of the site will only conclude once lease surrender is successful
- iii. Detailed contingency protocols in the event of restoration failure are outlined in **Appendix Five, page 21**.

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4. **The EIS must be revised to include the following matters regarding the NPWS estate:**
- a) **The proponent be required to continue negotiations with the NPWS for entering into a Mining Lease Compensation Agreement with the Minister administering the National Parks and Wildlife Act 1974, that should include a compensation payment of \$10,000/year, in addition to implementation of the rehabilitation plan.**
 - b) **Details of the history of engagement and consultation with the NPWS in the EIS preparation process.**
 - c) **Amend the incorrect reference to land tenure of the subject land.**
 - d) **The NPWS to be involved in an onsite meeting prior to site establishment and in regular site meetings for the term of the lease.**
 - e) **The area is to be secured by a type of fencing and locked gate to the satisfaction of the NPWS for the duration of the lease period.**
 - f) **Any public signage or community engagement to clearly indicate the land is Crown Reserve and not National Park or Regional Park or gazetted under the National Parks and Wildlife Act 1974.**
 - g) **Written agreement from the NPWS that adequate regeneration has occurred post site rehabilitation and prior to relinquishing the mining lease.**
 - h) **Monitoring intervals for rehabilitation works indicated in the EIS (12 monthly) must be consistent with monitoring intervals indicated in the rehabilitation strategy (3 monthly).**
 - i) **Procedure for unexpected finds (e.g. contaminant materials) that may occur within the stockpile during project activities.**

GER Response:

GER advises that a draft Mining Lease Compensation Agreement is already in place. The agreement was formulated in consultation with the Senior Project Officer, EIA Advisory and the Projects Manager Regional Projects, Land & Asset Management.

GER provided the draft site rehabilitation plan to NPWS in November 2020 for their review. In April 2021 NPWS advised the following:

"I am pleased to state that NPWS is generally happy with the approach in the rehabilitation strategy and agree that seeding and weed control are the best options in this environment.

However, NPWS is concerned that Section 5.5 Maintenance and establishment monitoring does not detail these important stages of the site's rehabilitation. It is the current expectations of the land managers that the site is rehabilitated to a standard that will enable its long-term management as an area of natural bushland that is potentially suitable for addition to Goolawah National Park. The rehabilitation strategy should reflect this outcome.

It is therefore recommended that the rehabilitation strategy be revised with more detail on the timeframe and frequency of maintenance work on the site, for 3 years following the ilmenite removal operations. Such maintenance works will include monitoring and weed control every 3 months and addressing any gaps in

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revegetation through supplementary tube stock plantings in the autumn of each year, with the aim of achieving a minimum stem density of at least 300 trees and shrubs per hectare."

In accordance with the discussions and agreement listed above, GER provide the following additional comments:

- a) GER will amend the incomplete land tenure reference, clearly stating the project is on Crown land reserved R1003268 for Environmental Protection, Public Recreation notified 3 May 2002 (Folio 2618) and the Controlling Body of Lot 2281 DP1153793 is the appointed Crown Land Manager, being the Goolawah Reserves Trust administered by the Minister Administering the National Parks & Wildlife Act 1974 (as described by Crown Lands in their advice on the project).
- b) GER will ensure a site meeting will occur prior to site rehabilitation
- c) As described in **Section 4.1.8 Project Description – Ilmenite Pile Removal, Site delineation and security**, the project area will be gated and fenced during the extraction period and during site rehabilitation works
- d) GER will erect an appropriate sign on the site fencing describing the project and land tenure as described in **Section 4.1.8**
- e) As part of its rehabilitation commitments and in line with requirements of mining lease relinquishment, GER will obtain landowner signoff of the rehabilitation prior to lease surrender
- f) GER apologises for the confusion and inconsistency in the documentation, we can confirm that rehabilitation monitoring will occur at three monthly intervals as outlined in the rehabilitation strategy and as requested by NPWS
- g) Any unexpected finds will be addressed using the process outlined in **section 4.1.9, page 13 of the Project Execution Plan**

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5.3. EPA advice

The NSW EPA have issued advice for the project and have expressed minor matter that is best summarised as follows:

1. Minor matters
 - a) Ilmenite unloaded and temporarily stored at Thurgoods Haulage Site at South Kempsey.

The proponent must confirm if there is development consent for the Thurgood Haulage site to temporarily stockpile ilmenite material on the premises. Details regarding the tonnage of material which will be stockpiled at the premises at any one time are to be included.

Under the POEO Act this ilmenite material is considered a waste. Schedule 1 of the POEO Act prescribes an activity to be scheduled if more than 1,000 tonnes or 1,000 cubic metres of waste is stored on the premises at any one time. If the premises cannot be managed to ensure less than 1,000 tonnes or cubic metres of material is stored at the premises any one time an environment protection licence will be required.

The EPA recommends an assessment for ilmenite stockpiling at Thurgoods Haulage site at South Kempsey.

The Haulage Route Traffic Impact Assessment Plomer Road, Crescent Head to Macleay Valley, Kempsey states: "the material is to be hauled to South Kempsey and stored at the Thurgood Haulage site."

Assessment would need to include mitigation measures for all potential impacts of stockpiling including:

- *Potential impacts of wind and truck movements carrying materials offsite including radiation hazard and dust emissions*
- *Potential impacts from surface water runoff transporting materials offsite"*

GER Response:

As indicated in **Section 4.1.7 Ilmenite Transport, page 22 of the EIS document**, GER no longer intends to use the Thurgood Haulage Site for temporary storage of Ilmenite materials. GER apologise for the confusion and contradiction of the assessment undertaken in **Appendix Four – Traffic Assessment** however the project description had changed post completion of the assessment and GER was unable to provide an updated version of the Traffic Assessment to reflect this due to the sub-contractor no longer being engaged by GER.

In conclusion, all trucking of material will be direct to port facilities and **no temporary storage will occur outside of the chosen port site prior to export.**

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5.4. Resources Regulator advice

The resources regulator provided no further advice or recommendations to amend the EIS.

5.5. MEG advice

The Mining and Geosciences unit provided the following advice as well as an assessment of royalties due from the project once approved.

"The Project has adequately addressed MEG's environmental assessment requirements submitted in November 2021. MEG is satisfied that, should the operational outcomes be achieved, the proposed design and mining method submissions adequately recover resources and will provide an appropriate return to the state.

A development application under the Environmental Planning and Assessment Act 1979 must be approved before a mining lease can be granted. A mining lease will only be granted for activities specified in the development consent. Section 65 states:

The Minister must not grant a mining lease over land if development consent is required for activities to be carried out under the lease unless an appropriate development consent is in force in respect of the carrying out of those activities on the land.

The Mining Lease boundary must be within the project boundary of the development consent. Evidence of this should be submitted with any Mining Lease Application made to MEG, including a diagram that shows the location of the boundaries."

GER Response:

GER agree with the royalty assessment provided by MEG and their direction regarding activities within and outside of a mining lease

5.6. Transport for NSW advice

Transport for NSW provided the following advice:

"TfNSW has reviewed the referred information and provides the following comments to assist the consent authority in making a determination.

1. *Should the Minister for Planning wish to condition the preparation of a Code of Conduct for haulage operators, it is suggested that this include, but not be limited to;*
 - a) *A map of the primary haulage routes highlighting critical locations.*
 - b) *Safety initiatives for haulage through residential areas, school zones and along school bus routes.*
 - c) *An induction process for vehicle operators and regular toolbox meetings.*
 - d) *A complaint resolution and disciplinary procedure.*
 - e) *Any community consultation measures for peak haulage periods.*

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2. *It is noted Appendix 4 of the Haulage Route TIA recognises traffic volumes increase significantly during peak holiday periods, especially during the Christmas/New Year period, along Crescent Head Road. Subsequently, the TIA indicates that haulage works are proposed to operate outside of school holidays periods. TfNSW is supportive of this approach."*

GER Response:

GER acknowledges transport NSW comments and accepts their recommendations. GER have committed to a code of conduct in **Section 17.1.2, page 80 of the EIS** and provide an example of this in **Appendix Four – Traffic**. GER will incorporate the departments recommendations into the code of conduct.

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5.7. Crown Lands advice

Crown lands advice was as follows:

"The Department of Planning and Environment – Crown Lands ("department") has reviewed the proposal.

The rehabilitation proposal affects Lot 2281 DP1153793, being Crown land reserved R1003268 for Environmental Protection, Public Recreation notified 3 May 2002 (Folio 2618).

Controlling Body of Lot 2281 DP1153793 is the appointed Crown Land Manager, being the Goolawah Reserves Trust administered by the Minister Administering the National Parks & Wildlife Act 1974.

Consequently, the Minister Administering the National Parks & Wildlife Act 1974 is considered the "landholder" for the purposes of entering into agreements under sections 81, 141 or 265 of the Mining Act 1992.

The department is supportive of the rehabilitation project and provides no comment at this stage regarding site environmental and cultural impacts."

GER Response:

GER acknowledge that no additional recommendations have been made by the department.

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6. PROJECT JUSTIFICATION

Aside from generation of revenue for GER and state government through lease fees, bonds and royalties, the project will generate the following benefits for the local community and NSW in general.

6.1. Employment

As mentioned above, it is expected that up to 50 FTE will be required for a period of 120 days. Most of these employees will be contract or subcontract employees and GER has committed to sourcing these persons from the Crescent Head and Kempsey Shire area where possible (aside from Port personnel).

6.2. Social Needs

During the current economic climate, sources of employment within the Crescent Head area and the greater Kempsey Shire local government area are reducing due to the current economic recession and the effects of COVID-19 shutdowns and business closures. Of those affected most, casual, contract and part time employees are believed to be the most affected.

This project has the potential benefit of providing a short term, direct employment benefit to the local area and assist with providing more opportunities for local people seeking work.

6.3. Restoration of cultural heritage

GER have been contacted by (name withheld) of the Dhungutti Elders by telephone on several occasions since mid-2020 to discuss the merits of the project.

(Name withheld) on behalf of the elders has been supportive of the project and its objectives and expressed the desire to see the site rehabilitated. The Elders believe the site was once used as a significant women's camping area and they have a desire to rehabilitate the area to natural bushland. GER intend to continue to liaise with Mr Wooderson and involve him and the elders in the rehabilitation phase of the project.

Indeed, the only non-government submission was from the University of Queensland on behalf of the Dhungutti Elders, stressing the importance of restoring the site to the Elders and fostering reconciliation for past events.

6.4. Restoration of Ecosystem Services and amenity

Unlike traditional mining projects, resource recovery projects such as the one proposed have an additional benefit in that they seek to provide economic rehabilitation of an area that would previously be the responsibility of the state or local authority.

The economic rehabilitation model is founded in the genuine goal of economic return from a waste resource AND the rehabilitation of land as key parts of the same process.



Greencoast Environmental Rehabilitation



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The project will restore ecosystem services to the location, improving the overall habitat of the area as well as connectivity of the vegetation. Additionally, it will restore the natural drainage of the site, remove a source of weeds and rubbish, and restore the natural amenity.

7. APPENDICES

- APPENDIX ONE – SUBMISSIONS REGISTER
- APPENDIX TWO – UPDATED MITIGATION MEASURES

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Appendix 1. Submissions Register

Stakeholder Group	Name	Sections where issues addressed in submissions report
Government Authorities	Dept of Planning and Environment North East Branch – Biodiversity and Conservation	Section 5.2, page 12
	EPA	Section 5.3, Page 20
	Resources Regulator	Section 5.4, page 21
	Dept of Mining, Exploration and Geoscience	Section 5.1, page 21
	Transport NSW	Section 5.6, page 21
	Dept of Planning and Environment – Crown Land	Section 5.7, page 23
Non-Government Organisations /Special Interest Groups	The University of Queensland / The Dhungutti Elders	Section 5.1, page 10

Appendix 2. Updated Mitigation Measures

MITIGATION MEASURES TABLE (UPDATES ONLY HIGHLIGHTED)

Specific matters of relevance to the project	Potential Impacts	Mitigation measures proposed
Traffic and parking, Public roads (local and state)	Potential impacts are interaction with local vehicles and pedestrians, increased traffic volumes and vehicles passing a school zone and residences	The potential impact of trucking of the project material from site and, to a lesser extent, the cartage of machinery to and from site may, if not managed appropriately, create traffic related risks. These will be managed by GER and its principal contractor using the following controls: Additional advisory signage: GER will work with Kempsey Shire Council to install appropriate advisory signage on the local roads within the project haulage route. Some signage already exists, however, GER will work with council to install additional truck advisor signs as required. Improve site entrance visibility: The current line of sight for the entrance to the project area is along a straight section of Point Plomer Road. However, the current entrance is lower than the road and shrouded in a heavy overgrowth of weeds. GER will build up the road access point to the stockpile using rock rubble (free draining) and clear weed undergrowth to improve visibility of truck leaving and entering site. The intersection to site will be re-established to comply with Austroad's Guide to Road Design Part 4: Intersections and Crossings – General (Austroads 2017a). Hours of operation: GER will work with the selected contractor to ensure haulage is scheduled so that trucks are not utilising the local road network during the school zone times. Trucking will be prohibited on weekends and public holidays and minimised and / or stopped during school holiday periods.

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		Create and implement a Drivers Code of Conduct: GER and the contractor will ensure all drivers are inducted to site, and that this induction includes drivers signing onto a driver's Code of Conduct prior to working on the project. A Code of Conduct sets out the principles and professional standards of conduct for employees of a particular company. The Code is not generally a comprehensive set of rules, but rather a set of principles that form a framework for conduct and behaviour in the workplace. It provides guidance for staff on how to: • Carry out their duties in a lawful and ethical way, and • Interact with staff and other road users in a fair and courteous manner While a Code of Conduct may vary from workplace to workplace, the key principles should include: • Accountability • Leadership • Openness and objectivity • Honesty The Code will cover all permanent, temporary, casual, skill-hire and contract staff. The Code of Conduct should be relevant to traffic movements generated by the transporting of ilmenite from Crescent Head to South Kempsey and can't be finalised until the conditions of approval are known. GER will develop the drivers code of conduct with the successful contractor based on the sample code provided in APPENDIX FOUR and including the additional advice of NSW Transport received in submissions.
Noise	There is low potential for additional traffic noise and general noise emissions from the project at sensitive receptors	Noise from the Crescent Head Project is not expected to cause an environmental nuisance, at any sensitive or commercial place. GER will utilise the following noise management strategies to reduce the risk of nuisance: • Restriction of haulage and site works to the hours between 6 am and 6 pm, during weekdays. • No haulage will occur on public holidays • The use of low noise emission machinery (front end loader or equivalent) to load trucks

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		- Speed limiting of haul trucks within the built-up area of the Crescent Head community to 40 km/hr GER will conduct noise monitoring in response to complaints from residents (i.e., sensitive places) or following a request from the regulator. Should noise monitoring undertaken in response to a complaint exceed the noise limits as defined in the relevant EPA guideline, GER will implement a risk treatment process which either: - Addresses the complaint including use of appropriate dispute resolution processes if required; or - Implements noise abatement measures so that noise emissions from the activity do not result in further environmental nuisance.
Visual	Removal of the ilmenite pile is expected to create a short-term visual impact. Impact will diminish once revegetation has occurred	Given the distances to surrounding residences, no visual impact is expected on nearby residences. Users of Point Plomer Road will notice some temporal disturbance, however the site will be fenced with security fencing shrouded in shade cloth.
Biodiversity - Terrestrial flora and fauna	The Project may have temporary impacts on native vegetation and threatened species. As no native regrowth is proposed to be disturbed, impacts on biodiversity are expected to be very low. All Koala trees will be retained, some temporary interruption to the movement of Koalas may occur due to site noise	A comprehensive Biodiversity Impact Assessment has been undertaken to identify the presence and status of the EECs and individual species within the area to be disturbed. The disturbance footprint or Impact Area for the project has been kept within the boundaries of the ilmenite pile itself and its existing access track. As outlined in SECTION THIRTEEN, the impacts of the project on the biodiversity values of the lot, if kept within the footprint outlined in FIGURE FOUR will be extremely low. To ensure all site personnel are kept within this boundary, the following measures will be undertaken: - Maintenance and protection of all vegetation outside the impact area and thus within the designated area for conservation. - Prior to the commencement of any construction works on site, clear marking of any trees to be protected in the immediate vicinity of clearing and distinctive marking of trees to be removed, such that there is no room for confusion regarding tree removal/protection.

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		• Clear visual delineation of total Impact Area to avoid any confusion by resource recovery machinery operator/s. • Installation of boundary fencing • Pre-clearing checks by a suitably qualified ecologist to be undertaken immediately prior to clearing activities to ensure there are no fauna issues, such as small ground fauna sheltering in dense grass/ground cover, nesting birds, roosting microbats, requiring specific procedures. In the unlikely scenario of an individual Koala being located in one of the trees adjacent or within the Impact Area immediately prior to clearing, a buffer of 10m will be established around the tree and the Koala left to move on of its own accord. • Supervision of clearing operations by a suitably qualified ecologist/fauna spotter/wildlife carer if potential fauna issues are identified. • Ongoing restriction of resource recovery operations to daylight hours • Ongoing maintenance of best practice on-site biosecurity hygiene measures for machinery and on-site personnel to minimise the risk of introducing or spreading exotic weeds, pests, or diseases, and • Implementation of the approved Rehabilitation Strategy (APPENDIX FIVE), which outlines the effective rehabilitation of the areas to be cleared. The strategy will prescribe management measures, including planting and weed control procedures. KFTs are a priority for proposed plantings post resource recovery. Rehabilitation monitoring will occur every 3 months for three years and then annually if required (noting only required if lease relinquishment is post 3 years)
Biodiversity – Conservation area	Impact on the character and values of the conservation area	The company will not cause an environmental impact, which amounts to environmental harm beyond the boundary of the “nominated ilmenite removal area” outlined in FIGURE FOUR. GER will implement the control strategies detailed in this EIS to not cause environmental harm beyond the nominated ilmenite

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		removal area. Specific control measures may be implemented following any risk assessments, and monitoring systems may be modified as the likelihood of off-site impacts change. As detailed in the Project Execution Plan (APPENDIX TWO) and in SECTION 4, a temporary site boundary barrier will be installed to limit access to site operations. Depending on the identified risk, this barrier may take the form of temporary fencing, portable traffic barriers or in already inaccessible heavily vegetated areas, barrier tape and signage, with a minimum of 6ft high portable cyclone fencing along the boundary with Point Plomer Road, with appropriate signage installed.
Built environment - Public Land	Potential impacts on Crown Land values	The BDAR assessment and proposed rehabilitation of the site has addressed the risk of any potential lessening of crown land values. A rehabilitation management plan has been prepared for the site and the controls proposed are outline in SECTION FIVE and APPENDIX FIVE
Public infrastructure	Potential impacts are interaction with local vehicles, increased traffic volumes and vehicle passing a school zone	The traffic assessment has concluded that the existing road network is suitable for the proposed project without any requirements to upgrade the public infrastructure. As mentioned above, the mitigation measures proposed in the Traffic section will negate the risk to public infrastructure.
Environmental Hazards	None anticipated as below radiation levels of concern	Radiation assessment has been documented in the EIS and assessed as per SEPP 33 and found not to be at levels that pose a risk to human health nor require additional controls
Water impacts Flooding	Site is included in the local flood mapping, namely due to its predominately paperbark community. There is very low risk of flooding on site	No works to occur in the unlikely event the site is flooded by rising groundwater levels. There is no direct flooding risk of the site
Waste	Emphasis will be placed upon avoiding any impacts of hazardous materials on the workforce and persons living/travelling in the vicinity of the Project Site. All chemicals would be transported, stored, and used in accordance with manufacturers' specifications.	All materials will be managed in accordance with the Project Execution Plan (APPENDIX TWO)

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Aboriginal Heritage Historic Heritage	The approach to the management of any identified cultural heritage sites would be developed in consultation with RAPs.	A detailed cultural heritage assessment of the proposed disturbance footprint has been undertaken. No items of cultural heritage are deemed to be present in the area. This is outlined in SECTION FIFTEEN and APPENDIX FIFTEEN and SIXTEEN,
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