

ASSESSMENT REPORT 57

Frances Creek Project

Territory Iron Limited

ENVIRONMENTAL ASSESSMENT REPORT

November 2006



Environment Protection Agency (EPA) Program



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Abbreviations

| | |
|-----------------|--|
| AAPA | Aboriginal Areas Protection Authority |
| AGT | Australian Groundwater Technologies |
| AHD | Australian Height Datum |
| ANZECC | Australian and New Zealand Environment and Conservation Council |
| ARD | Acid Rock Drainage |
| AUSRIVAS | Australian River Assessment Scheme |
| DBERD | Department of Business, Economic and Regional Development |
| DPIFM | Department of Primary Industry, Fisheries and Mines |
| DEH | Department of the Environment and Heritage (Australian Government) |
| DHCS | Northern Territory Department of Health and Community Services |
| DPI | Northern Territory Department of Planning and Infrastructure |
| EPA | Environment Protection Agency (Northern Territory) |
| EMP | Environmental Management Plan |
| EPBC | <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Australian Government) |
| ha | Hectares |
| HCS | Heritage Conservation Services |
| IMETF | Indigenous Mining and Enterprise Taskforce |
| IUCN | The World Conservation Union |
| kL | kilolitre |
| km | Kilometres |
| km ² | Square kilometres |
| L/s | Litres per second |
| m | Metres |
| m ³ | Cubic metres |
| MAGNT | Museums and Art Gallery of the Northern Territory |
| ML | Megalitres (1ML = 1 million litres) |
| mm | Millimetres |
| MMP | Mining Management Plan |
| mSv | millisieverts |
| Mt | Million tonnes |
| NAF | Non-acid Forming |
| NAPP | Net Acid Producing Potential |
| NAR | North Australian Railway |
| NLC | Northern Land Council |
| NOI | Notice of Intent |

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| NRETA | Department of Natural Resources, Environment and the Arts (Northern Territory) |
| NT | Northern Territory |
| PAF | Potentially Acid Forming |
| PER | Public Environmental Report |
| Ppm | Parts per million |
| ROM | Run of Mine |
| t | Tonnes |
| TEC | Threatened Ecological Community |
| TDS | Total Dissolved Solids |
| TPWC Act | Territory Parks and Wildlife Conservation Act |
| TSF | Tailings Storage Facility |
| WQO | Water Quality Objectives |
| WQT | Water Quality Targets |

EXECUTIVE SUMMARY

This report assesses the environmental impacts of the proposal by Territory Iron Limited ('the proponent') for an open cut iron ore mine that would involve redeveloping of the historic Frances Creek Mine. Territory Iron Limited proposes to expand the mine by developing two new open pits and extending three existing open pits. The mine is expected to produce up to 1.5 Mt of product a year with a project life of three years. The ore is to be crushed and screened, a process which would not require the use of chemicals. A new railway siding (Roney Siding) would be constructed adjacent to the Alice Springs to Darwin Railway to allow transport of product to East Arm Wharf at Darwin Port.

This Assessment Report reviews the Public Environmental Report (PER) and the proponent's Supplement to the PER. Information, comments and advice provided by Northern Territory Government agencies and previous studies undertaken in the region have also been used in the preparation of this report. No submissions were received from the public.

Environmental assessment is the process of defining those elements of the environment which may be affected by a development proposal and of determining the significance, risk and consequences of the potential impacts of the proposal. Recommendations arising from the assessment address methods to mitigate these impacts.

Major Issues

The environmental issues associated with the proposal are:

1. The characterisation, prevention and management of acid rock drainage (ARD) from waste rock material.
2. Water management in a wet-dry tropical environment.
3. Placement of waste rock stockpiles and overburden.
4. Management of detectable levels of uranium, thorium and radon gas.
5. Management of social impacts.
6. Rehabilitation, in particular the Thelma 2 pit and waste rock stockpile; mine closure and post mine monitoring.

Conclusions

The Northern Territory Environment Protection Agency Program (EPA Program) considers that the environmental issues associated with the proposed project have been adequately identified. Appropriate environmental management of a number of these issues has been resolved through the assessment process, while the remainder will be addressed through monitoring and management actions detailed in issue-based management plans proposed to be developed for the project.

The final management plans for the proposal will be subject to review prior to their incorporation into the Mining Management Plan (MMP). The management plans would be working documents for the life of the project and would require continual review in response to operational experience and changed circumstances.

Based on its review of the PER and the proponent's response to submissions from relevant Northern Territory Government agencies, the EPA Program considers that the project can be managed without causing unacceptable environmental impacts. This is provided that the environmental commitments and recommendations detailed in the PER, the Supplement, this Assessment Report and in the final management plans are implemented and managed under the environmental management system for the project and are subject to regular reporting and compliance auditing.

LIST OF RECOMMENDATIONS

Recommendation 1

The proponent shall ensure that the proposal is implemented in accordance with the environmental commitments and safeguards identified in the Frances Creek Project, Public Environmental Report and Supplement to the Public Environmental Report and recommended in this Assessment Report (No. 57).

All safeguards and mitigation measures outlined in the Public Environmental Report and Supplement are considered commitments by Territory Iron Limited and are included in Appendix 1 of this report.

Recommendation 2

In accordance with clause 14A of the Administrative Procedures of the Environmental Assessment Act, the proponent shall advise the Minister of any changes to the proposal for determination of whether or not further environmental impact assessment is required.

Recommendation 3

Waste rock characterisation, together with multi-element data and kinetic testing is to occur over the life of the mine. Should additional test work determine significant variations from those described in the PER and Supplement, the proponent will revise waste rock management strategies to ensure appropriate ARD management strategies are adopted.

Recommendation 4

It is recommended that Territory Iron Limited provide further details of the stockpile design and management of the Thelma Rosemary Pit in the MMP to demonstrate that successful remediation of the Thelma 2 waste rock stockpile can be achieved as this has not been illustrated in Figure A3-4 of Appendix 3 of the PER.

Recommendation 5

Water entering the surrounding environment from mining operations should be subject to a water management hierarchy approach, including avoidance of discharge, re-use, recycling or treatment before disposal.

Recommendation 6

Monitoring results need be reviewed against ANZECC trigger values for protection of freshwater ecosystems.

Recommendation 7

Drainage from the waste rock stockpiles must be directed to the nearest pit rather than the receiving environment.

Recommendation 8

The water monitoring program needs to incorporate management and prevention strategies.

Recommendation 9

High turbidity groundwater should be addressed by pumping to a temporary surface storage area to permit settlement of fines before discharging to the environment.

Recommendation 10

Discharges from any pit dewatering should only be released to surface waters if the quality is acceptable to 95% aquatic ecosystem protection levels.

Recommendation 11

During operations and after mine closure, pit voids and waste rock stockpiles should undergo geotechnical assessment and design to stabilise disturbed areas and prevent collapse or landslides.

Recommendation 12

Territory Iron Limited is to provide commitment in its MMP to backfill new and non-contaminated historic pits in preference to creating waste-rock stockpiles.

Recommendation 13

Territory Iron Limited is to consult with relevant stakeholders including the pastoral leaseholder to establish agreed designs and locations for waste rock stockpiles, and provide an opportunity for stakeholder input into rehabilitation and closure plans for the mine.

Recommendation 14

A Flora and Fauna Management Plan should be developed which includes, but is not limited to, strategies which remove or mitigate risk to wildlife and vegetation, with particular reference to species of conservation significance. The management plan should include, but not be limited to, the species listed in Appendix 7 of the PER.

The plan should identify likely locations of suitable habitat (including food resources, nest locations and breeding seasonality) and the potential impacts that may result from any operations. Strategies must be developed which stipulate how the impacts will be managed and what commitment will be made to enhancing nearby degraded habitat to offset disturbance during operations. The management plan should include a monitoring and adaptive management component and refer to employee site induction as per Commitment S2.

Recommendation 15

A Feral Animal Management Plan should be developed which includes, but is not limited to, strategies which assist with regional and local control programs in association with the Pastoral Lease Holders, Indigenous community and Parks Australia programs for Kakadu National Park.

The Plan should identify existing feral animal control programs in the local and regional area and stipulate how Territory Iron Limited will participate on partnership basis. In the event that minimal local and regional control is being undertaken, Territory Iron Limited should show initiative in demonstrating good governance and prepare strategies to reduce feral animal impacts on habitat and native species. Specific strategies must be developed for each of the species listed Section 6.7.2 of the PER and must comply with ethical standards of control.

Recommendation 16

A Weed Management Plan for the control and management of weeds should be prepared. The plan must identify, but not be limited to, location and species of weeds in and around the project location and outline methods for controlling existing infestations. It must identify actions to prevent introduction of new weed species from vehicles, machinery, freight trains or any other method.

Recommendation 17

Siting and design of Helene 5 waste rock piles over the existing tailings storage facility should maintain existing surface water flow paths and retain the more permanent water pools. Leachate and runoff from the waste rock pile should be monitored to ensure water quality targets are met.

Recommendation 18

Putrescible waste should be covered within a day of dumping to avoid health hazards. In selecting a land-fill site, consideration needs to be given as to potential future uses of the site (eg. further mining) to avoid future disturbance of the site.

Glass and aluminium should be separated from waste streams of the mine and accommodation village and arrangements made with contractors for their collection for recycling.

Recommendation 19

Territory Iron Limited is to develop a communication strategy to ensure the public and surrounding community, including the Wagiman group are informed about changes to access to this site.

Recommendation 20

A Cultural Heritage Management Plan for the protection of sites from any disturbance should be prepared to the satisfaction of Department of Natural Resources, environment and the Arts. The Plan must include employee and contractor induction and awareness of the significance of site protection and obligations under the *Heritage Conservation Act*.

Recommendation 21

Territory Iron Limited should engage the services of the Indigenous Mining and Enterprise Taskforce (IMETF) and the Economic Development Committee (administered by DBERD) to assist with managing employment opportunities for indigenous workers.

Recommendation 22

Collection of local indigenous seed stocks, establishment of a local nursery and on-site growing trials should be initiated prior to mining and continued until mine relinquishment. These roles are to be carried out in consultation with local conservation groups (Greening Australia, NT Native Plant Society) and traditional owners and provide opportunities for local indigenous employment. Rehabilitation and propagation trials should be continued through the mine's life to refine rehabilitation and closure plans.

Recommendation 23

The following issue-based plans are developed in consultation with the relevant agencies and incorporated into the Mining Management Plan:

- Flora and Fauna Management Plan**
- Fire Management Plan**
- Feral Animal Control**
- Cultural Heritage Management Plan**

Recommendation 24

Revised issue-based management plans covering construction and operation of the Frances Creek Project are to be submitted to Department of Primary Industry, Fisheries and Mines for approval prior to commencement of construction and operation. The management plans will be included as an appendix within the MMP.

In preparing each issue-based management plan, the proponent will include any additional measures for environmental protection and monitoring contained in this Assessment Report and recommendations made by the Northern Territory Government with respect to the proposal. The plans shall be referred to relevant NT Government Agencies for review prior to finalization. The plans shall form the basis for approvals and licences issued under relevant NT legislation.