Northern Territory Government
Office of Environment and Heritage

PART A

INFORMATION FOR THE PUBLIC

GUIDELINES FOR PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT STATEMENT

Matilda Minerals Ltd
Andranangoo Creek West and Lethbridge Bay West Mineral Sand Mining Proposal
Melville Island NT

August 2005

1 INTRODUCTION

These Guidelines have been developed to assist Matilda Minerals Ltd in preparing a Draft Environmental Impact Statement (DEIS) for the Andranangoo Creek West and Lethbridge Bay West Mineral Sands Proposal on Melville Island NT in accordance with Clause 8 of the Environmental Assessment Administrative Procedures of the *Environmental Assessment Act (1982)* of the Northern Territory.

These (draft) Guidelines consist of two sections:

- Part A (this section) is the introduction and description of the project and the EIS process; and
- Part B (attached) details the type and extent of information to be included in the DEIS. The list includes issues and concerns that were identified before the public and Government review period (for the Draft Guidelines).

2 PROPOSAL

The proponent is Matilda Minerals Ltd.

The project is located on Melville Island, approximately 60 km north of Darwin and 153 km east of Port Melville.

The mining tenements to be utilised are detailed below, and displayed in Figure 1.

MLA 24510	Andranangoo Creek West
MLA 24511	Lethbridge Bay West

The proposal is for the extraction of 773,000 t of mineral sands from Andranangoo Creek West and 256,000 t of mineral sands from Lethbridge Bay West to yield approximately 10,000 t of zircon and 6,000 t of rutile annually. Operations are expected to commence at Andranangoo Creek West where mining would occur for a period of 18 months. Lethbridge Bay West would then be mined for a period of 12 months.

Approvals Required/Applicable Legislation

This proposal was referred to the Office of Environment and Heritage (OEH) by the Department of Business and Primary Industry (DBIRD) for determination of assessment requirements under the *Environmental Assessment Act*.

The proponent has also referred the proposal to the Australian Government Department of Environment and Heritage for determination of assessment requirements under the *Environment Protection and Biodiversity Conservation Act.*

If the proposal were to proceed, the project would require approval under the *Mining Act* and *Mining Management Act* by DBIRD following the environmental assessment process.

Other approvals which may be required include:

- *Approvals from the Tiwi Land Council and traditional owners of project areas.*
- *A Waste Discharge Licence.*
- *An Aboriginal Areas Protection Authority Certificate.*
- A Permit to Take or Interfere with Wildlife.

History

Heavy Minerals (HM) were first recorded on the Tiwi Islands in 1955 by the Bureau of Mineral Resources (now Geosciences Australia) on behalf of Central Uranium NL. Subsequent exploration that occurred in the 1960s and 1990s identified HM deposits on the Tiwi Islands, however these were not considered viable at the time. During that time, only limited exploration was undertaken on the younger Quaternary coastal plains, with the primary focus being the Tertiary sandstone.

In 2003, Matilda began evaluating the potential of Bathurst and Melville Islands for high value zircon and rutile-rich deposits. Preliminary studies identified the existing known resources and a number of high priority targets suitable for exploration using magnetic mapping techniques (Matilda, 2004a).

To date no mining has occurred on the Tiwi Islands.

Geology

The heavy mineral deposits occur within the Quaternary Strand Plain along the northern coast of Melville Island. The Andranangoo Creek West deposit consists of multiple strands of mineralisation lines between 20 and 200m wide and up to 2m thickness, occurring over a 2.5km strike. The Lethbridge Bay West deposit is 40 to 70m wide and 3 to 5m deep over a 1.3km strike. As is typical in mineral sands deposits, low levels of uranium and thorium are associated with mineral sands t Andranangoo Creek West and Lethbridge Bay West.

Biophysical Environment

The vegetation communities which would be impacted by the proposal include Melaleuca woodland/open forest and dense vine thicket occurring on the coastal sand plains and dunes, and dense eucalypt and acacia woodland in the hinterland and in the western portion of the Andranangoo Creek West prospect. One threatened flora species was recorded during the single vegetation survey undertaken, however other threatened species may be present.

Flatback and Olive Ridley Sea Turtles are known to use the beaches adjacent to the proposed mining areas.

Mining activities at Andranangoo Creek West would be located predominantly within a natural drainage line. Drainage migrates westward towards freshwater wetlands/damplands and tidal mangroves associated with the Andranangoo Creek. Mining activities at Lethbridge Bay West would be located on a plateau. The western portion of the deposits drain southward towards wetlands/damplands and similarly in

the eastern extent of the deposit. To effectively achieve dry mining conditions and pit wall stability, local dewatering may be required in the vicinity of the mine slot.

Cultural

One prescribed archaeological place (a background shell scatter) has been identified in the proposed areas of disturbance. Permission will be sought from the Minister for Natural Resources, Environment and Heritage if there is a need to disturb or destroy the archaeological site.

No historical European or cultural heritage sites have been identified in the project area.

Mining

The ore would be mined by an open cut slot method whereby a front-end loader would be used to progressively excavate the mineralised sand along the strand line. If dewatering is required, the dewatering bores would be progressively moved within the mining zone to ensure that mining in the pit is maintained in a suitable dry state to enable mining to occur.

The proposed area of disturbance for mineral sand mining at Andranangoo Creek West is 20.29 ha. The proposed area of disturbance for mineral sand mining at Lethbridge Bay West is 189.3 ha. Mining in each of the prospects is proposed to occur in the mineralisation areas approximately 500-600 m from the high water mark, however there is potential for disturbance to occur up to 200 m from the high water mark in each prospect.

Mining Waste

The tailings will consist of sand with the heavy mineral fraction removed. Mineralisation is coarse and therefore low in slimes. Tailings would be pumped back into the mining slot via dewatering cyclones. Progressive rehabilitation would occur close behind the mining face as tailings are backfilled into the slot. Topsoil overlying the mineralised zones would be stockpiled for use in the rehabilitation of the backfilled slot.

To date geological results have not revealed the presence of any pyritic materials associated with the Lethbridge and Andranangoo deposits in the loose sand above the water table. However, preliminary investigations have detected some pyrite in samples from below the water table. As the mining corridors for both Andranangoo and Lethbridge prospects are close to wetlands and damplands, it is likely that local dewatering will be required. Potential acid sulphate soils would be identified prior to dewatering or excavation activities.

Ore Processing

Processing of the mineralised sand would be limited to gravity separation. No chemicals would be used in the processing plant. The sand would be slurried using

water and pumped to a wet concentrator plant. The heavy mineral would be separated using spirals and the concentrate stockpiled for later trucking to the port terminal.

Prior to transportation ore will be stockpiled in a covered shed with a bunded concrete floor. The shed will have removable walls to facilitate drying of the concentrate, and ensure that there are no environmental releases of concentrate during periods of high winds and rainfall or cyclonic weather conditions.

Ore transported to Port Melville would be shipped for export elsewhere for final product separation. The material would be stored at the port under a canopy. Ore shipments would be in consignments of 4-8,000 t at a time, approximately every two months.

Infrastructure, Consumables and Workforce

Infrastructure that would be constructed:

- Mobile plant and equipment.
- Upgrade of approximately 76km of 4WD track.
- Camp and infrastructure at each site eg power and water supply.
- HM concentrate storage, truck parking, fuel storage etc at each site.
- HM concentrate storage area at Port Melville.
- Demountable workshop, truck parking and fuel storage at Port Melville.

Consumables that would be stored on site:

- Diesel fuel.
- Lube oils.
- Waste oil.
- Explosives (if required for road construction).

The workforce for the project during normal operations is expected to be in the order of 6 – 8 process workers, with additional personnel required for short periods such as during rehabilitation work and shutdowns. The maximum number of people on site at any one time would normally be no more than 20. The proponent has proposed with the Tiwi Land Council (TLC) that they will set up a plant nursery on the island for rehabilitation purposes and to introduce a training programme to employ the local people to collect seed. The TLC are supportive of this proposal.

Decommissioning

A Closure and Rehabilitation Plan would be developed in consultation with the Landowners, TLC and DBIRD, prior to commencement of mining activities, with due consideration to post mining land uses.

The backfill and rehabilitation of the mining slot would be undertaken continuously as part of the mining operation. Rehabilitation of areas associated with camp accommodation would be carried out at the completion of mining unless the landowners wish to keep these facilities. Discussions by Matilda with landowners to date have indicated that the landowners would like to retain the camp facilities and access roads for the development of tourism enterprises. Facilities would be of a

suitable quality to facilitate this. Areas would be made safe and stable and litter will be removed (Matilda, 2004c).

3 PURPOSE OF THE DEIS

The DEIS aims to provide:

- a source of information from which individuals and groups may gain an understanding of the proposal, the need for the proposal, the economic and other benefits that might arise from the proposal, the alternatives, the environment that it would affect, the impacts that may occur and the measures taken to minimise those impacts;

- a basis for public consultation and informed comment on the proposal; and

- a framework against which decision-makers in conjunction with traditional landowners can consider the environmental aspects of the proposal, set conditions for approval to ensure environmentally sound development and recommend an environmental management and monitoring program.

The object of these Guidelines is to identify those matters that should be addressed in the DEIS. The Guidelines are based on the initial outline of the proposal in the Notice of Intent. Not all matters indicated in the Guidelines may be relevant to all aspects of the proposal. Only those matters that are relevant to the proposal should be addressed. The Guidelines, however, are not necessarily exhaustive. They should not be interpreted as excluding from consideration any matters which are currently unforeseen that emerge as important or significant from scientific studies or otherwise during the preparation of the DEIS, the public consultation process and the preparation of the Supplement to the DEIS (response to submissions).

The proposal has been declared a controlled action under the Commonwealth *EPBC Act* because of the potential for significant impacts on listed threatened species and communities, and listed migratory species. The proposal will be assessed in accordance with Schedule 1 to the "Agreement between the Commonwealth of Australia and the Northern Territory under s.45 of the *EPBC Act* relating to Environmental Impact Assessment" (the Bilateral Agreement). The impacts on the controlling actions should be focused on in the EIS to provide adequate information for the Commonwealth Minister to make a decision on approval of the action.

The DEIS should be a self-contained and comprehensive document written in a clear, concise style that is easily understood by the general reader. Being mindful that the major stakeholders in the DEIS process will be Aboriginal communities, the DEIS should be able to be presented in such a way as to enable the Aboriginal community to properly understand the nature of the proposal and provide informed comment. Cross-referencing should be used to avoid unnecessary duplication of text. Text should be supported where appropriate by easily interpretable maps, plans, diagrams or other descriptive material. Detailed technical information and baseline surveys should be included as appendices.

Content in the DEIS should include both quantitative and qualitative analysis as appropriate. Impacts should not just be treated as adverse; beneficial effects should also be identified.

The justification of the project in the manner proposed should be consistent with the principles of ecologically sustainable development. Assessment of the environmental impacts of the proposal and alternatives should be comprehensive. For the purpose of these Guidelines, the "principles of ecologically sustainable development" are as follows:

- the precautionary principle - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

- inter- and intra-generational equity - namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations;

- conservation of biological diversity and ecological integrity; and

- improved valuation and pricing of environmental resources.

4 EIS PROCESS

The EIS process, as described by the Administrative Procedures of the *Environmental Assessment Act 1982* (*EA Act*) of the Northern Territory, is displayed in Figure 2.

Overview of the Process

Once the Minister has determined that an EIS is required, the OEH prepares Draft Guidelines for Preparation of an EIS, after consulting with relevant advisory bodies.

These draft Guidelines are then subject to public review for a 14-day period. At the end of this period, OEH will finalise the draft Guidelines within 14 days for Ministerial approval. When approved, final Guidelines are forwarded to the proponent.

When the proponent has prepared a DEIS to a publishable standard, this document is exhibited for public review and comment for a minimum of 28 days, during which time advisory bodies also comment on the document.

Issues raised in the public comment period are addressed by the proponent in a Supplement to the DEIS. The Commonwealth process requires that the Final EIS be of an adequate standard before publishing to ensure that each matter protected by controlling actions has sufficient information for the Minister/delegate to make a decision. NT advisory bodies review the Supplement.

The NT OEH then has 35 days to prepare an Environmental Assessment Report and Recommendations based on the DEIS and Supplement. If the Minister approves the

Report and Recommendations, these are forwarded to the responsible (consent) Minister(s) for inclusion in permit, lease or license conditions and in relevant management procedures (eg. Environmental Management Plans) and the Australian Government Department of the Environment and Heritage under the *EPBC Act.*

The Assessment Report and Recommendations are included on the OEH website and hard copies are provided to respondents and selected public libraries and viewing sites.

5 ADMINISTRATION

The Project Officer is Ms Denise Montgomery from the Office of Environment and Heritage, Department of Natural Resources, Environment and the Arts (phone [08] 8924 4004; facsimile [08] 8924 4053, e-mail: denise.montgomery@nt.gov.au).

Approximately 28 bound copies of the DEIS will be required for distribution to the Australian and NT Government and advisory bodies. In addition, 8 CD ROM copies (in ADOBE*.pdf format) plus two unsecured Microsoft Word copies should be submitted (to allow placement on the Office's Internet site and to facilitate production of the Assessment Report and Recommendations).

The proponent has the responsibility of advertising the public exhibition of the DEIS in Territory and National newspapers. The proponent is required to place the DEIS on public exhibition for an 8 week period. The DEIS is to be made available for public viewing at the following locations:

- Northern Territory Library, Parliament House, Cnr Bennett and Mitchell Streets, Darwin NT;
- Darwin Public Library, Civic Centre, Harry Chan Avenue, Darwin NT;
- Casuarina Public Library, Bradshaw Terrace, Casuarina, NT;
- Palmerston Public Library, Civic Plaza, Cnr University Avenue and Chung Wah Terrace, Palmerston, NT;
- Commonwealth Department of the Environment and Heritage Library, John Gorton Building, King Edward Terrace, Parkes, ACT;
- Information NT, Palmerston Shopping Centre;
- Department of Planning and Infrastructure, Cavenagh House, Cavenagh Street, Darwin, NT; and
- locations on the Tiwi Islands as advised by the Office of Environment and Heritage.

In accordance with clause 8(6(c)) of the Environmental Assessment Administrative Procedures, the proponent shall also provide a copy of the DEIS to the following organisations and persons for comment:

- The Environment Centre of the Northern Territory;
- The Tiwi Land Council;
- Sylvatech Pty Ltd;
- Australian Aboriginal Protection Authority;

- The Tiwi Islands Local Government; and
- The Department of the Environment and Heritage (Australian Government).

The proponent should also consider producing at least several copies for direct sale to the public, on request.

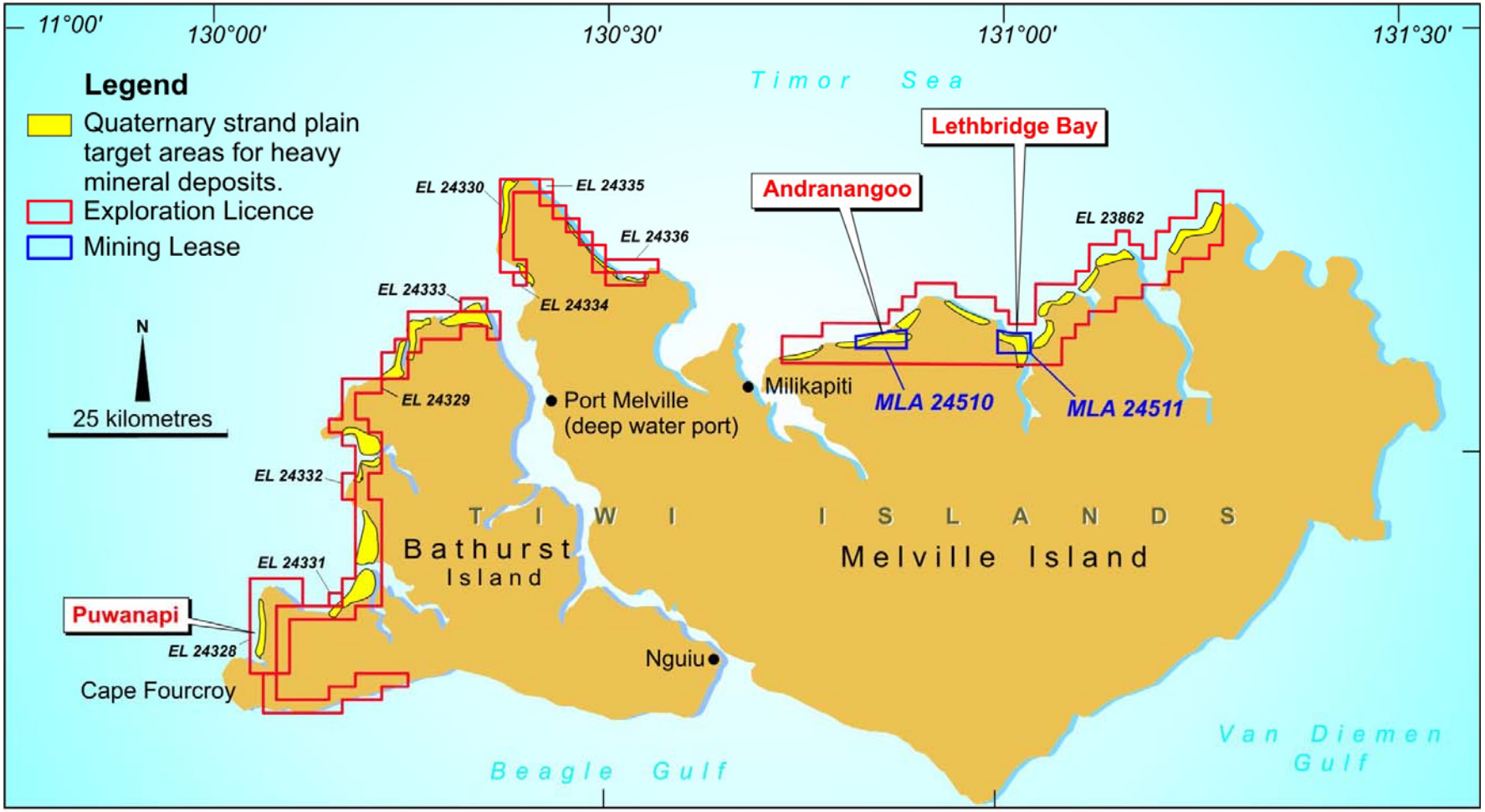

FIGURE 1

Location of Andranangoo Creek West and Lethbridge Bay West Mineral Sands Project

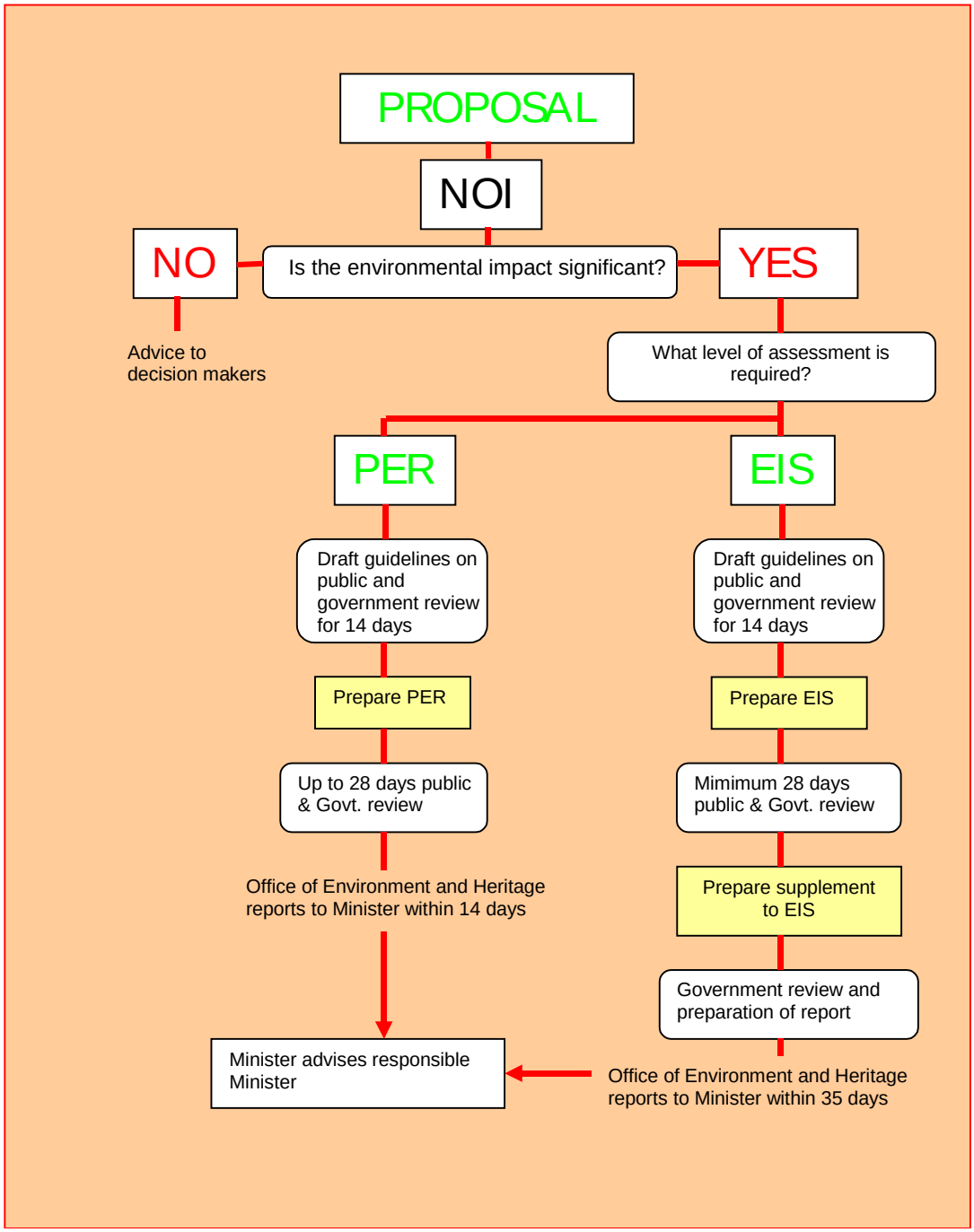

FIGURE 2

The Northern Territory Environmental Assessment Process.