GOVERNMENT OF WESTERN AUSTRALIA

Environmental Protection Authority

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Project Manager
Northern Mineral Limited
PO Box 669
WEST PERTH WA 6872

Our Ref: *ER04-2013-0001, 2013-0000204593*
Enquiries: Ben Miles, 6145 0833
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Dear Mr Jones

PROPOSAL:	**Browns Range Rare Earths Project**
LOCALITY:	**Approximately 160 km south-east of Halls Creek, Shire of Halls Creek**
PROPONENT:	**Northern Minerals Limited**
DECISION:	**Assessment on Proponent Information (Assessment No. 1973)**
PROCEDURE:	**Category A – EPA-prepared scoping guideline**

The Environmental Protection Authority (EPA) has set level of assessment on the above proposal as Assessment on Proponent Information – Category A.

Further to your correspondence provided on 3 May 2013 please find attached the EPA Prepared Scoping Guideline for the above proposal. The Office of the Environmental Protection Authority is available to meet with you in the near future to discuss the form and content of the API Environmental Review document.

If you have any queries about the assessment please contact the Project Officer Ben Miles on telephone number 6145 0833.

Yours sincerely

Dr Paul Vogel
CHAIRMAN

26 July 2013

Encl.: EPA prepared Scoping Guidelines

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EPA PREPARED SCOPING GUIDELINE

PROPOSAL:	**Browns Range Project**
LOCALITY:	**Shire of Halls Creek**
PROPONENT:	**Northern Minerals Limited**
DECISION:	**Assess: Assessment on Proponent Information (Assessment No. 1973)**
PROCEDURE:	**Category A – EPA-prepared scoping guideline**

The Environmental Protection Authority (EPA) has set the level of assessment on the above proposal as Assessment on Proponent Information (API) - Category A which was advertised on 27 May 2013.

The procedure for an API - Category A is described in the *Environmental Impact Assessment - Administrative Procedures 2010*. The proponent should have regard to the Administrative Procedures when preparing the API document. This level of assessment provides for the assessment of a proposal where:

1. the proposal raises a limited number of significant environmental factors that can be readily managed, and for which there is an established condition-setting framework;

2. the proposal is consistent with established environmental policy frameworks, guidelines and standards;

3. the proponent can demonstrate that it has conducted appropriate and effective stakeholder consultation; and

4. there is limited, or local, interest only in the proposal.

You are required to prepare an Environmental Review (ER) document in accordance with this scoping guideline.

Proposal

The Browns Range Project is a proposed heavy rare earth elements (HREE) mine and ore processing facility at Browns Range, approximately 160 kilometres (km) southeast of Halls Creek in the Shire of Halls Creek. The proposal has a disturbance envelope of 925 hectares (ha) within a development envelope of 5,800 ha. The proposed operational mine life is up to 10 years.

The proposal would produce approximately 4,000 tonnes per annum (tpa) of high purity mixed rare earth oxide by an on-site beneficiation plant and hydrometallurgical plant. The beneficiation plant involves crushing, grinding, magnetic separation and flotation of the xenotime ore. The hydrometallurgical plant involves a sulphation bake and water leach step using sulphuric acid to liberate and leach the rare earths into solution. This leach liquor would then be purified to remove any thorium and uranium present prior to precipitation of the rare earths using oxalic acid. The rare earth rich oxalate precipitate would then be calcined to produce a mixed rare earth oxide.

Waste products from the mining and mineral processing operation would include waste rock and tailings. The waste rock would be stored in above ground waste landforms and the combined tailings would be deposited in a purpose-built, engineered tailings storage facility (TSF).

In addition, the proposal would involve the construction and use of:

- a borefield for water supply;
- access and haul roads; and
- support infrastructure, including an accommodation village, workshops, stormwater management infrastructure, evaporation ponds, telecommunications infrastructure, diesel power supply and an extension of an existing exploration airstrip.

It is proposed that the mixed rare earths oxide will be transported from the site in shipping containers using public roads to either Darwin or Wyndham port for export.

The ER document needs to include a clear definition of the proposal and all its components.

A key characteristics table and supporting figures will need to be developed in accordance with Environmental Assessment Guideline No. 1 *Defining the Key Characteristics of a Proposal*. Table 1 below shows the appropriate format of the key characteristics table.

Table 1: Key Characteristics Table

Summary of the proposal

Proposal Title	**Brown Range Project**
Proponent Name	**Northern Minerals Limited**
Short Description	The Browns Range Project is a proposed heavy rare earth elements (HREE) mine and ore processing facility at Browns Range, approximately 160 km southeast of Halls Creek in the Shire of Halls Creek.

Physical Elements

Element	Location	Proposed Extent Authorised
Mine Area	Figure/s	Clearing not more than XX hectares within a XX ha development envelope
Haul Road	Figure/s	Clearing not more than XX hectares within a XX ha development envelope
Backfilling of mine pits	Figure/s	

Operational Elements

Element	Location	Proposed Extent Authorised
Water abstraction	Figure X	Groundwater abstraction not more than XX GL/pa

All technical reports, modelling and referenced documents (not currently in the public domain) used in the preparation of the ER document should be included as appendices to the document.

Preliminary Key Environmental Factors

The EPA has identified the following preliminary key environmental factors as being relevant to the proposal to be reported to the EPA in the ER:

- inland waters environmental quality
- flora and vegetation
- terrestrial fauna
- subterranean fauna
- rehabilitation and closure.

1. Inland Waters Environmental Quality

The proposal has the potential to impact water quality by acid and/or metalliferrous drainage, hydrocarbon spills and contamination of downstream waters.

The EPA's environmental objective for this factor is to:

- Maintain the quality of groundwater and surface water, sediment and/or biota so that the environmental values, both ecological and social, are protected.

Work and output required

- Complete waste characterisation studies including those on waste rock and other materials.
- Identify and assess potential sources of contamination from the proposal that could impact groundwater or surface water bodies.
- Identify sensitive receptors in the area and provide information on the quality and potential beneficial uses of surface and groundwater in the area.
- Describe management and monitoring protocols to be implemented during construction, operation and closure to ensure the EPA's objective for this factor is met.
- Describe contingencies in the event that monitoring indicates potential for contaminants to reach groundwater or surface water bodies.

2. *Flora and vegetation*

The proposal has the potential to impact flora and vegetation through clearing.

The EPA's environmental objective for this factor is to:
- Maintain the representation, diversity, viability and ecological functions at the species, population and community level.

Work and output required

The referral document and supporting studies have been reviewed and it is noted that the project is a greenfields proposal located in a remote part of the State where little contextual information is available. This should be considered when addressing the following points in the ER document or technical appendices:

- Describe the impacts associated with the proposal, including direct impacts and indirect impacts of dust deposition, spread of weeds, altered surface and groundwater hydrology.
- Complete the Level 2 flora and vegetation of all areas likely to be directly or indirectly impacted by the proposal in accordance with EPA (2004) Guidance Statement No. 51.
- Identify and assess the values and significance of flora and vegetation communities within the proposal area, and define the extent of impact. For significant flora this includes those statutory listed as well as those defined in EPA Guidance Statement 51, such as range extensions, disjunct populations or those at the extreme of the known range. Since the development envelope occurs within a bioregion that straddles state boundaries, impacts to distribution should be assessed within the broader bioregion as well as within state jurisdiction. Where insufficient information is available and the potential impacts to a species is likely to change its conservation

status, further targeted surveys of significant flora should be undertaken outside the impact to facilitate the assessment of the potential impact of the proposal.

- Undertake analysis to include the area and percentage of clearing to determine the direct and indirect impacts to flora populations and vegetation communities, including conservation significant flora and vegetation and impacts at the local and regional scale. Detailed counts are required for Priority 1 or Threatened Flora while an estimate may be sufficient for other significant flora that are likely to have their conservation status changed by implementation of the proposal. Similarly if the proposal is likely to have a significant impact on any new species, targeted surveys outside development envelope in known habitat should be undertaken.
- Classify floristic vegetation using appropriate analysis techniques, and rationale for data treatments and interpretations should be provided. Given that no TECs or PECs are listed for the Tanami, the significance of the vegetation within the development envelope should be assessed using Guidance 51.
- Describe management and monitoring protocols to be implemented during construction, operation and closure that will ensure the EPA's objectives are met.

3. Terrestrial Fauna

The proposal has the potential to impact restricted short-range endemic (SREs) fauna species and their habitats through vegetation clearing and groundwater drawdown.

The EPA's environmental objective for this factor is to:

- Maintain representation, diversity, viability and ecological function at the species, population and assemblage level.

Work and output required

The referral document and supporting studies have been reviewed and it is considered that the following points should be addressed in the ER document:

- Describe the expected impacts to both vertebrate and Short Range Endemic invertebrate fauna (includes aquatic ecosystems) and habitat from the proposal.
- Undertake surveys of all areas likely to be directly or indirectly impacted by the proposal should be undertaken in accordance with Guidance Statement No. 56 (EPA 2004) and Technical Guide for Terrestrial Fauna Surveys (EPA and DEC 2010) for vertebrate fauna and Guidance Statement No. 20 (EPA 2009) in the case of Short Range Endemic invertebrate fauna.
- Decide the level of survey required using Table 3, Appendix 2 (EPA 2004) for vertebrate fauna. A decision on the level, intensity, methods and faunal groups sampled for Short Range Endemic invertebrate fauna should be based on and consistent with criteria in Guidance Statement No. 20 (EPA 2009).
- Describe the habitats present, comprehensively list fauna known or likely to occur in the habitats present, and identify conservation significant fauna species likely to

occur in the area. Important, rare or unusual habitat types should be identified. Where previous surveys are not available, or are not adequate based on the relevant EPA guidance, comprehensive Level 2 surveys are to be conducted in accordance with Guidance Statements 20 and 56.

- Describe management and monitoring protocols to be implemented during construction, operation and closure to ensure the EPA's objectives are met.

4. Subterranean Fauna

The proposal has the potential to subterranean fauna through habitat removal and groundwater drawdown.

The EPA's environmental objective for this factor is to:

- Maintain representation, diversity, viability and ecological function at the species, population and assemblage level.

Work and output required

The referral document and supporting studies have been reviewed and it is considered that the following points should be addressed in the ER document:

- Describe the expected impacts from the proposal including direct impacts (i.e. excavation and removal of rock or other material likely to contain subterranean fauna habitat, and/or dewatering of an orebody or water extraction from a borefield) and indirect impacts (i.e. groundwater drawdown).
- Assess all areas likely to be directly or indirectly impacted by the proposal should be in accordance with Guidance Statement 54a (EPA 2007) and Environmental Assessment Guideline 12 - Consideration of subterranean fauna in environmental impact assessment in Western Australia.

5. Rehabilitation and Closure

Poor mine closure practises could cause significant legacy issues.

The EPA's environmental objective for this factor is to:

- Ensure that premises can be closed, decommissioned and rehabilitated in an ecologically sustainable manner, consistent with agreed outcomes and land uses, and without unacceptable liability to the State.

Work and output required:

- Provide waste characterisation studies of tailings and waste rock material.
- Provide information regarding proposed management of final pit voids, waste rock landforms and tailing storage facilities at the conclusion of mining.

Offsets

The proposal could potentially result in residual environmental impacts after all efforts to avoid and minimise environmental impacts have been made. Where significant environmental impacts still remain (residual impacts), then offsets should be considered. The proponent shall include a completed Environmental Offsets Reporting Form and discuss any offsets proposed in the API.

ER Document Content and Layout

The ER document will be made publicly available when the EPA releases its report and recommendations, and must contain the following information:

a. Description of the proposal and relevant information on the receiving environment and its conservation values in a regional and local setting. Figures should show the project regional location and disturbance envelopes. Describe any alternatives that have been considered. Provide proponent contact details.

b. Description of the key characteristics as described in Table 1: Key Characteristics Table (as shown above).

c. A table that summarises all completed environmental studies undertaken and those committed to. The table should note who undertook the survey, when it was undertaken and the name of the report produced. Provide a separate table showing a timeline of when the studies were undertaken and completed.

d. A table that lists the EPA Guidance Statements, Environmental Assessment Guidelines and/or Policies that were applicable to the proposal and how they were addressed.

e. A brief summary of the key findings of each environmental factor. Include figures that help illustrate these findings and cross references to source information within the appendices.

f. Details of the consultation process and outcomes. Identify how issues raised during the stakeholder consultation have been responded to, and any subsequent adjustments made to the proposal.

g. Assessment of the key environmental factors to demonstrate, succinctly, that the proposed management, mitigation and offsets of the potential impacts of the proposal can meet the EPA's environmental objectives. This should be presented in a table which includes the following headings: Factor, EPA Objective, Existing Environment, Potential Impact (without mitigation), Management and Outcome.

The findings of any surveys and investigations undertaken to support this assessment should be included, with the technical reports provided as appendices.

h. Identification of other potential impacts or activities of the proposal that can be regulated by other government agencies, under other statutes and a commitment to comply with their requirements.

i. A completed checklist for documents submitted for EIA on terrestrial biodiversity, as detailed on the EPA website www.epa.wa.gov.au.

j. Spatial datasets, information products and databases required.

Once a satisfactory ER document is received, the EPA will proceed to assess the proposal and provide an assessment report and recommendations to the Minister for Environment in accordance with section 44 of the EP Act. The EPA recommends that the proponent meet with the Office of the EPA to discuss the format of the ER document.

The EPA considers that as a minimum, the following stakeholders should be consulted during the preparation of the ER document:

- Department of Environment and Conservation;
- Department of Mines and Petroleum;
- Department of Water; and
- Shire of Halls Creek.

Policy Frameworks, Guidelines and Standards

The EPA has identified the following policy framework, guidelines and standards that are likely to be relevant to your proposal and may provide guidance for preparation of the Environmental Review Document.

EPA Guidance Statements and Environmental Assessment Guidelines:

- Environmental Assessment Guideline No. 1 - Defining the Key Characteristics of a Proposal.
- Environmental Assessment Guideline No. 6 - Timelines for Environmental Impact Assessment of Proposal.

- Environmental Assessment Guideline No. 12 - Consideration of subterranean fauna in environmental impact assessment in Western Australia.
- EPA Guidance Statement No. 51 - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (June 2004).
- EPA Guidance Statement No. 56 - Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia (June 2004).
- Technical guide - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (September 2010).
- EPA Guidance Statement No. 6 - Rehabilitation of Terrestrial Ecosystems (June 2006).
- EPA Guidance Statement No. 20 - Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia (May 2009).
- EPA Guidance Statement No. 54a - Sampling methods and survey considerations for subterranean fauna in Western Australia (August 2007).
- EPA and DMP Guidelines for Preparing Mine Closure Plans (June 2011).
- EPA Guidance Statement No. 19 – Environmental Offsets (September 2008).
- Environmental Protection Bulletin No. 1 - Environmental Offsets – Biodiversity (September 2008).
- Checklist for documents submitted for EIA on marine and terrestrial biodiversity (Appendix 2 of the EPA's Draft Environmental Assessment Guideline No. 6)

The EPA also brings to the proponent's attention the Department of Water's draft *Statewide Water in Mining Guideline* that is available at www.water.wa.gov.au.

Target Timeframe for the Assessment

The timelines below has been developed in accordance with Environmental Assessment Guideline 6: Timelines for environmental impact assessment proposals. Failure to provide appropriate levels of documentation by the dates detailed below may result in a revision of the timeline.

Level of Assessment set as API:	27 May 2013
API Scoping Guideline issued:	1 July 2013

Proponent submits ER document and associated surveys:	late January 2014
EPA considers draft report (within 7 weeks from receipt of acceptable ER document):	late March 2014
Consultation on Draft Conditions (2 weeks):	mid April 2014
EPA Publishes the Report (2 weeks)*:	late April 2014
Appeal period closes (2 weeks):	mid May 2014

* Should the EPA require additional information, the report would be published 4 weeks from receipt of that information.