



# Eneabba Mineral Sands Mine IPL North Proposal

## Part IV – Referral Form

2012





Referral of a Proposal by the Proponent to the Environmental Protection Authority under Section 38(1) of the Environmental Protection Act 1986.

PURPOSE OF THIS FORM

Section 38(1) of the Environmental Protection Act 1986 (EP Act) provides that where a development proposal is likely to have a significant effect on the environment, a proponent may refer the proposal to the Environmental Protection Authority (EPA) for a decision on whether or not it requires assessment under the EP Act. This form sets out the information requirements for the referral of a proposal by a proponent.

Proponents are encouraged to familiarise themselves with the EPA's General Guide on Referral of Proposals [see Environmental Impact Assessment/Referral of Proposals and Schemes] before completing this form.

A referral under section 38(1) of the EP Act by a proponent to the EPA must be made on this form. A request to the EPA for a declaration under section 39B (derived proposal) must be made on this form. This form will be treated as a referral provided all information required by Part A has been included and all information requested by Part B has been provided to the extent that it is pertinent to the proposal being referred. Referral documents are to be submitted in two formats – hard copy and electronic copy. The electronic copy of the referral will be provided for public comment for a period of 7 days, prior to the EPA making its decision on whether or not to assess the proposal.

CHECKLIST

Before you submit this form, please check that you have:


Table with 3 columns: Description, Yes, No. Rows include: Completed all the questions in Part A (essential), Completed all applicable questions in Part B, Included Attachment 1 – location maps, Included Attachment 2 – additional document(s) the proponent wishes to provide (if applicable), Included Attachment 3 – confidential information (if applicable), Enclosed an electronic copy of all referral information, including spatial data and contextual mapping but excluding confidential information.

Following a review of the information presented in this form, please consider the following question (a response is optional).

Do you consider the proposal requires formal environmental impact assessment?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not sure
If yes, what level of assessment?		
<input type="checkbox"/> Assessment on Proponent Information	<input checked="" type="checkbox"/> Public Environmental Review	

**PROPONENT DECLARATION** (to be completed by the proponent)

I, CHRIS LEE....., (full name) declare that I am authorised on behalf of..... (being the person responsible for the proposal) to submit this form and further declare that the information contained in this form is true and not misleading.

Signature		Name (print)	CHRIS LEE
Position	CHIEF MINING ENGINEER	Company	ILUKA RESOURCES LTD
Date	28/5/12.		

## PART A - PROPONENT AND PROPOSAL INFORMATION

(All fields of Part A must be completed for this document to be treated as a referral)

### 1 PROPONENT AND PROPOSAL INFORMATION

#### 1.1 Proponent

Name	Iluka Resources Limited (Iluka)
Joint Venture parties (if applicable)	Not applicable
Australian Company Number (if applicable)	008675018
Postal Address (where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State)	GPO Box U1988 Perth WA 6845
Key proponent contact for the proposal: <ul style="list-style-type: none"><li>• name</li><li>• address</li><li>• phone</li><li>• email</li></ul>	Anél Joubert Level 23, 140 St George's Terrace PERTH WA 6000 Phone: 08 9360 4697 Email: <a href="mailto:anel.joubert@iluka.com">anel.joubert@iluka.com</a>
Consultant for the proposal (if applicable): <ul style="list-style-type: none"><li>• name</li><li>• address</li><li>• phone</li><li>• email</li></ul>	Not applicable

#### 1.2 Proposal

Title	Eneabba Mineral Sands Mine IPL North Proposal
Description	<p>Open cut mining over approximately six years will extract over 2.1Mt of heavy mineral concentrate (HMC) (mostly zircon and titanium minerals) from the IPL North mineral deposit. Mining is proposed to commence at the most southern end of the deposit and progress to the north at an average advance rate of approximately 3m/day. It is expected that mining will occur 24 hours/day for the majority of the Proposal.</p> <p>All overburden will be returned to the mined-out void with the majority directly returned as mining progresses, i.e. not stockpiled. The sand tails fraction of the mining by-products will be placed in the mined-out void. The clay/slime fraction will be co-disposed with the remaining</p>

	<p>sand tails in tailings storage facilities within existing operational areas. Rehabilitation will occur on the reinstated land surface behind the advanced open cut.</p> <p>Ore will undergo initial onsite processing to produce HMC. Further processing of the HMC will take place at Iluka's mineral separation plant (MSP) at Narngulu. The MSP will produce commercial products (largely rutile and zircon) for export to overseas markets. By-products from the MSP will either be sold or transported back to the Iluka Eneabba Mineral Sands Mine to be buried within the existing approved storage facility.</p> <p>The Proposal does not involve any increase to the mine throughput, and hence there will be no increase to unit (i.e. daily) water consumption, unit electricity consumption, unit waste and wastewater production. The Proposal will have a processing rate of approximately 600tph (which is 50% of the Newman WCP capacity), will produce around 350kta of HMC and use approximately 8GL per year (GL/yr) of water for processing.</p> <p>Further details of the Proposal are provided in the Supporting Document.</p>
Extent (area) of proposed ground disturbance.	<p>The Proposal area covers an area of 545ha and includes areas of native vegetation as well as previously and/or currently disturbed areas such as the railway line, gas pipeline, existing roads, motocross, etc. The proposed locations for the topsoil stockpiles are on existing disturbed land.</p> <p>The potential disturbance area of 350ha within the proposal area is still under investigation and subject to further design.</p> <p>Further details of the potential disturbance areas are provided in the Supporting Document.</p>

<p>Timeframe in which the activity or development is proposed to occur (including start and finish dates where applicable).</p>	<p>Subject to obtaining all necessary approvals and licences, stripping of soil and overburden is scheduled to begin at the south end of the deposit in Q1 2015. Processing of the ore through the MUP, the wet concentrator plant (WCP), the South Secondary Concentrator (SSC) and transport of HMC to Narngulu will begin in Q2 2015. Processing at the deposit is expected to conclude in Q2 2021.</p> <p>Topsoil replacement over the deposit is expected to occur progressively throughout the life of the operations.</p>
<p>Details of any staging of the proposal.</p>	<p>Not applicable</p>
<p>Is the proposal a strategic proposal?</p>	<p>No</p>
<p>Is the proponent requesting a declaration that the proposal is a derived proposal? If so, provide the following information on the strategic assessment within which the referred proposal was identified:</p> <ul style="list-style-type: none"> <li>• title of the strategic assessment; and</li> <li>• Ministerial Statement number.</li> </ul>	<p>No</p>
<p>Please indicate whether, and in what way, the proposal is related to other proposals in the region.</p>	<p>The Proposal is the expansion of existing mining operations at the Eneabba Mineral Sands Mine. The Eneabba Mineral Sands Mine commenced in the 1970s and Iluka conducts the mining operations in accordance with the provisions of the <i>Mineral Sands (Eneabba) State Agreement Act 1975 (MSSAA)</i>.</p> <p>The Iluka Eneabba operations were restarted in December 2011 with the mining of the Twin Hills deposit.</p> <p>The mining of the Proposal will extend the life of the Iluka Eneabba operations by approximately six years. The IPL North mineral deposit is the highest grade heavy mineral (HM) deposit at the Eneabba Mineral Sands Mine.</p>
<p>Does the proponent own the land on which the proposal is to be established? If not, what other arrangements have been established to access the land?</p>	<p>Part of the Proposal is on Lot 10 which is owned by Iluka with the remainder located on Crown Reserve and Vacant Crown Land.</p> <p>Development of the Proposal is within mineral sands agreement tenement</p>

	<p>(AM70/267) and Mining Lease (M70/879).</p> <p>Further details are provided in the Supporting Document.</p>																					
<p>What is the current land use on the property, and the extent (area in hectares) of the property?</p>	<p><b>Table 1: Land use, owners and extent of property</b></p> <table border="1"> <thead> <tr> <th data-bbox="909 338 1104 384">Allotment &amp; owner</th> <th data-bbox="1104 338 1263 384">Land use</th> <th data-bbox="1263 338 1401 384">Proposal area (ha)*</th> </tr> </thead> <tbody> <tr> <td data-bbox="909 384 1104 501">Crown Reserve (R26075), Eneabba Town Lot 75 – State of WA</td> <td data-bbox="1104 384 1263 501">water reserve – town water supply &amp; native vegetation</td> <td data-bbox="1263 384 1401 501">19.4</td> </tr> <tr> <td data-bbox="909 501 1104 638">Vacant Crown Land, Eneabba Town Lot 396 – State of WA</td> <td data-bbox="1104 501 1263 638">water reserve – town water supply &amp; native vegetation, motocross</td> <td data-bbox="1263 501 1401 638">48.8</td> </tr> <tr> <td data-bbox="909 638 1104 730">Vacant Crown Land – State of WA</td> <td data-bbox="1104 638 1263 730">Native vegetation, gas pipeline &amp; railway line</td> <td data-bbox="1263 638 1401 730">325.5</td> </tr> <tr> <td data-bbox="909 730 1104 869">Lot 10 on Plan 18828 – private property (RGC Mineral Sands Ltd)</td> <td data-bbox="1104 730 1263 869">Native vegetation, existing &amp; previous mining operations</td> <td data-bbox="1263 730 1401 869">107.4</td> </tr> <tr> <td data-bbox="909 869 1104 898">Roads</td> <td data-bbox="1104 869 1263 898"></td> <td data-bbox="1263 869 1401 898">44.4</td> </tr> <tr> <td data-bbox="909 898 1104 919"><b>TOTAL</b></td> <td data-bbox="1104 898 1263 919"></td> <td data-bbox="1263 898 1401 919"><b>545</b></td> </tr> </tbody> </table> <p>*Includes Mine Access Road, gas pipeline &amp; railway line reserves</p>	Allotment & owner	Land use	Proposal area (ha)*	Crown Reserve (R26075), Eneabba Town Lot 75 – State of WA	water reserve – town water supply & native vegetation	19.4	Vacant Crown Land, Eneabba Town Lot 396 – State of WA	water reserve – town water supply & native vegetation, motocross	48.8	Vacant Crown Land – State of WA	Native vegetation, gas pipeline & railway line	325.5	Lot 10 on Plan 18828 – private property (RGC Mineral Sands Ltd)	Native vegetation, existing & previous mining operations	107.4	Roads		44.4	<b>TOTAL</b>		<b>545</b>
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### 1.3 Location

Name of the Shire in which the proposal is located.	Shire of Carnamah
For urban areas: <ul style="list-style-type: none"> <li>• street address;</li> <li>• lot number;</li> <li>• suburb; and</li> <li>• nearest road intersection.</li> </ul>	Eneabba, Western Australia
For remote localities: <ul style="list-style-type: none"> <li>• nearest town; and</li> <li>• distance and direction from that town to the proposal site.</li> </ul>	Not applicable
Electronic copy of spatial data - GIS or CAD, geo-referenced and conforming to the following parameters: <ul style="list-style-type: none"> <li>• GIS: polygons representing all activities and named;</li> <li>• CAD: simple closed polygons representing all activities and named;</li> <li>• datum: GDA94;</li> <li>• projection: Geographic (latitude/longitude) or Map Grid of Australia (MGA);</li> <li>• format: Arcview shapefile, Arcinfo coverages, Microstation or AutoCAD.</li> </ul>	Enclosed?: <b>Yes / No</b>

### 1.4 Confidential Information

Does the proponent wish to request the EPA to allow any part of the referral information to be treated as confidential?	Yes / <b>No</b>
If yes, is confidential information attached as a separate document in hard copy?	Yes ./ <b>No</b>

### 1.5 Government Approvals

Is rezoning of any land required before the proposal can be implemented? If yes, please provide details.	Yes / <b>No</b>		
Is approval required from any Commonwealth or State Government agency or Local Authority for any part of the proposal? If yes, please complete the table below.	<b>Yes / No</b>		
Agency/Authority	Approval required	Application lodged Yes / No	Agency/Local Authority contact(s) for proposal
Environmental Protection Authority (EPA)	This Referral is being made under Part IV of the <i>Environment Protection Act 1986</i> .	Yes – this submission	
Department of Environment and	A Works Approval and Licence	No	Daniel Coffey 17 Dick Perry

Conservation (DEC)	will be required from the DEC under Part V the EP Act.		Ave Kensington WA 6983 Phone: (08) 9219 8000
Department of Water (DoW)	Approval is required for mining within P1 Water Reserve Area and Well Head Protection Zone.  Proclamation of a water protection plan around the area of a temporary water supply.	No	Katherine Bozanich PO Box 73 Geraldton WA 6531 Phone: (08) 9965 7400
Department of Mines and Petroleum (DMP)	The DMP will require Iluka to submit a Mining Proposal, including a Mine Closure Plan, under the <i>Mining Act 1978</i> (Mining Act) for the Proposal.	No	To be determined  100 Plain Street East Perth WA Phone: (08) 9222 3851
Department of State Development (DSD)	Approval is required under the <i>Mineral Sands State Agreement Act 1975</i> (MSSAA)	No	Sal Belardo Level 6, 1 Adelaide Terrace East Perth WA Phone: (08) 9222 0915
Department of Sustainability, Environment, Water, Population and Communities (SEWPAC)	A Referral will be submitted under the <i>Environment Protection and Biodiversity Act 1999</i> (EPBC Act).	No	To be determined

## PART B - ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

### 2. ENVIRONMENTAL IMPACTS

Describe the impacts of the proposal on the following elements of the environment, by answering the questions contained in Sections 2.1-2.11:

- 2.1 flora and vegetation;
- 2.2 fauna;
- 2.3 rivers, creeks, wetlands and estuaries;
- 2.4 significant areas and/ or land features;
- 2.5 coastal zone areas;
- 2.6 marine areas and biota;
- 2.7 water supply and drainage catchments;
- 2.8 pollution;
- 2.9 greenhouse gas emissions;
- 2.10 contamination; and
- 2.11 social surroundings.

These features should be shown on the site plan, where appropriate.

For all information, please indicate:

- (a) the source of the information; and
- (b) the currency of the information.

#### 2.1 Flora and Vegetation

2.1.1 Do you propose to clear any native flora and vegetation as a part of this proposal?

[A proposal to clear native vegetation may require a clearing permit under Part V of the EP Act (Environmental Protection (Clearing of Native Vegetation) Regulations 2004)]. Please contact the Department of Environment and Conservation (DEC) for more information.

- (please tick)     Yes            **If yes**, complete the rest of this section.  
                          No                **If no**, go to the next section

2.1.2 How much vegetation are you proposing to clear (in hectares)?

The Proposal area covers an area of approximately 545ha and includes areas of native vegetation as well as previously and/or currently disturbed areas such as the railway line, gas pipeline, existing roads, motocross, etc. The proposed locations for the topsoil stockpiles are on existing disturbed land.

Iluka proposes to clear approximately 350ha of native flora and vegetation within the total proposal area however the potential disturbance areas are still under investigation and subject to further design.

Further details are provided in the Supporting Document.

2.1.3 Have you submitted an application to clear native vegetation to the DEC (unless you are exempt from such a requirement)?

Yes

No

**If yes**, on what date and to which office was the application submitted of the DEC?

2.1.4 Are you aware of any recent flora surveys carried out over the area to be disturbed by this proposal?

Yes

No

**If yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

**If no**, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

Since 2001 Woodman Environmental Consulting Pty Ltd (Woodman Environmental) has carried out several programmes of vegetation surveys within areas identified for future mining. These surveys occurred in 2001, 2005, 2006, 2007 and 2009 and included both proposed impact and buffer areas around mining operations (Woodman Environmental 2012). Regional floristic mapping of the Northern Sandplains area (which includes the Iluka Eneabba lease areas as well as the Tiwest Dongara lease area) undertaken by Woodman Environmental in 2007/2008 considered a total of 810 taxa during the statistical analysis to determine the Floristic Community Types (FCTs) within this area. A total of 42 FCTs were identified during the statistical analysis of the regional dataset, 30 of which were recorded within the Iluka lease areas (Woodman Environmental 2012). The study methodology was developed in consultation with the DEC and is consistent with the EPA Guidance Statement No. 51 (EPA 2004).

During 2010, Woodman Environmental surveyed established quadrats to improve the accuracy of the dataset and record any herbaceous annual or perennial species that may not have been recorded during the initial survey in 2007/2008. Previously disturbed areas including pastureland, rehabilitation and land cleared of vegetation for mining and infrastructure have been collectively categorised as being 'cleared'.

Further details are provided in the Supporting Document.

2.1.5 Has a search of DEC records for known occurrences of rare or priority flora or threatened ecological communities been conducted for the site?

Yes

No

If you are proposing to clear native vegetation for any part of your proposal, a search of DEC records of known occurrences of rare or priority flora and threatened ecological communities will be required. Please contact DEC for more information.

A total of 11 DRF species (as defined by the *Wildlife Conservation Act 1950*) and 79 Priority flora species have been recorded within the Iluka mining leases by Woodman Environmental, the Department of Environment and Conservation (DEC)

and other environmental consultants up to December 2011 (Woodman Environmental 2012). Of these species only one DRF species is known to occur within the Proposal area, namely:

- *Paracaleana dixonii*: FCT1a, FCT1b, FCT2a and FCT6b

Targeted searches for new populations of Priority flora were undertaken in late October – early November 2011 which is the most appropriate time to identify some of the cryptic species of the region including annual orchid species *Paracaleana dixonii*. Surveys were conducted using 50m grid lines, however when Priority flora were identified, the immediate area at that location was also searched for additional populations/individuals. This resulted in an additional 67,332 plants being added to the Iluka Project Priority flora database.

No Threatened Ecological Communities (TEC) listed under the EPBC Act or under the *Wildlife Conservation Act 1950* (WC Act) were identified during the desktop assessment or recorded during the various surveys within the Proposal area.

Further details are provided in the Appendix A of Supporting Document.

2.1.6 Are there any known occurrences of rare or priority flora or threatened ecological communities on the site?

- Yes       No      **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

The Threatened, Declared Rare and Priority Flora known to occur within the Proposal area are listed in Table .

**Table 2 Threatened, Declared Rare and Priority Flora within the Proposal area**

Taxon Name	State Conservation Code*	Commonwealth classification
<i>Calytrix eneabbensis</i>	P4	
<i>Calytrix superba</i>	P4	
<i>Desmocladius elongates</i>	P3	
<i>Eucalyptus macrocarpa</i> subsp. <i>elacantha</i>	P3	
<i>Grevillea rudis</i>	P4	
<i>Haemodorum loratum</i>	P3	
<i>Hermiandra</i> sp. Eneabba (H. Demarz 3687)	P3	
<i>Hypocalymma gardneri</i>	P3	
<i>Mesomelaena stygia</i> subsp. <i>deflexa</i>	P3	
<i>Paracaleana dixonii</i>	T	Endangered
<i>Persoonia filiformis</i>	P2	
<i>Pityrodia viscida</i>	P4	
<i>Schoenus</i> sp. Eneabba (F. Obbens & C. Godden 1154)	P2	
<i>Verticordia argentea</i>	P2	
<i>Verticordia aurea</i>	P4	

Taxon Name	State Conservation Code*	Commonwealth classification
<i>Verticordia fragrans</i>	P3	

\*Source: Woodman Environmental Consulting (2012)

Further details are provided in the Appendix A of Supporting Document.

2.1.7 If located within the Perth Metropolitan Region, is the proposed development within or adjacent to a listed Bush Forever Site? (You will need to contact the Bush Forever Office, at the Department for Planning and Infrastructure)

Yes       No      **If yes**, please indicate which Bush Forever Site is affected (site number and name of site where appropriate).

Not applicable.

2.1.8 What is the condition of the vegetation at the site?

The condition of the vegetation in the Proposal area is generally in very good condition although more disturbances from mining associated activities are present (Woodman Environmental 2012).

## 2.2 Fauna

2.2.1 Do you expect that any fauna or fauna habitat will be impacted by the proposal?

(please tick)       Yes      **If yes**, complete the rest of this section.  
 No      **If no**, go to the next section.

2.2.2 Describe the nature and extent of the expected impact.

Construction and operation of the Proposal have the potential to impact the native fauna in the area. Potential impacts associated with the Proposal include:

- Removal of fauna habitat through the clearance of native vegetation which provides food, shelter and breeding sites.
- Contamination of fauna habitat through operational activities such as diesel spills, etc.
- Fragmentation and isolation of fauna habitat due to the loss of connectivity to other habitat areas.
- General disturbance through increased human activities, light, dust and noise.
- Increase in fauna mortality due to collisions with mining vehicles.
- Increase in threatening processes including establishment of weeds, introduction of feral animals and altered fire regimes.

The extent of these impacts is partly mitigated through the rehabilitation back to native vegetation over time and the occurrence of similar habitats in the area.

Clearance of native vegetation will be progressive to allow fauna time to adapt to reductions in available habitat.

Further details are provided in the Supporting Document.

2.2.3 Are you aware of any recent fauna surveys carried out over the area to be disturbed by this proposal?

Yes

No

**If yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey(s).

**If no**, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.

It is expected that Eneabba region has up to 264 vertebrate species, consisting of three freshwater fish, 12 frogs, 60 reptiles, 160 birds and 29 mammals. Of the 264 species of that may occur within the vicinity of the Iluka lease areas, three reptiles, 24 birds, two mammals and four invertebrate species of conservation significance (under the WC Act and *Environment Protection and Biodiversity Conservation Act 1999*) have been identified as occurring or potentially occurring in the vicinity of the Iluka Eneabba leases (Bamford Consulting Ecologists 2009).

Many of these species would not be encountered in the Proposal area as the species are either migratory vagrants or there is no suitable habitat.

Fauna of the Eneabba region is well document as a consequence of mining being established since the 1970s. Numerous baseline, research and assessment studies have been undertaken since this time. Bancroft and Bamford (2006) undertook a literature review of the baseline fauna studies undertaken up to 2006 whilst Bamford Consulting Ecologists (2007a, 2007b, 2009) expanded on potential impacts to fauna from habitat loss due to mining activities at Eneabba.

During 2009, Johnstone *et. al.*(2009) conducted an assessment of the significance of habitat for Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) in the Eneabba Region.

Further details are provided in Appendix B of the Supporting Document.

2.2.4 Has a search of DEC records for known occurrences of Specially Protected (threatened) fauna been conducted for the site?

Yes

No (please tick)

2.2.5 Are there any known occurrences of Specially Protected (threatened) fauna on the site?

Yes       No      **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

Bamford Consulting Ecologists was commissioned in 2008 to undertake fauna investigations at Eneabba which included the Proposal area. A targeted approach was used due to the well documented fauna assemblages (Bamford Consulting Ecologists 2009). The investigations for the 2009 included searches for species of conservation significance with the emphasis on identifying vegetation types of importance for these species. Species of particular interest include the Western Ground Parrot, Carnaby's Black-Cockatoo, Rufous Field-wren, Crested Bellbird, the phasmid-mimic cricket *Phasmodes jeeba*, the scorpion-fly *Austromerope poultoni* and the Shield-backed Trapdoor Spider *Idiosoma nigrum*.

Carnaby's Black Cockatoo, Rufous Field-wren are known to occur within the Eneabba region and within the Iluka mineral leases.

Further details are provided in the Supporting Document.

### 2.3 Rivers, Creeks, Wetlands and Estuaries

2.3.1 Will the development occur within 200 metres of a river, creek, wetland or estuary?

(please tick)       Yes      **If yes**, complete the rest of this section.  
 No      **If no**, go to the next section.

Soil Water Consultants (2009) conducted a study on the potential impacts on surface, subsurface and groundwater dependent ecosystems (GDEs) within the Iluka Eneabba operations area. The study involved the identification of surface water flow regimes within the Eneabba area and stated that surface water flows are generally considered to be low in the region due to the predominantly sandy nature of the surface soils and their corresponding high infiltration rates (SWC 2009). Around the Proposal area, groundwater levels are typically between 30-35m (AECOM 2012). No GDEs have been identified within or adjacent to the Proposal area.

The main watercourses in the vicinity of the Proposal area are the Arrowsmith River and the Eneabba Creek. The Arrowsmith River is located to the north of the Proposal area, commences north-west of Three Springs and flows westerly for approximately 85km towards the coast near Cliff Head. The Eneabba Creek runs adjacent to the Three Springs Road. The Eneabba Creek is a proclaimed surface water area under the *Rights in Water and Irrigation Act 1914* (RWI Act).

The Proposal area is outside the mapping areas of the following State datasets:

- *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992*
- Geomorphic Wetlands of the Swan Coastal Plain (DEC)



In addition, the Proposal area does not contain any wetlands listed in the Register of Protected Wetlands<sup>1</sup>, under the *Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998*.

Further details are provided in the Supporting Document.

2.3.2 Will the development result in the clearing of vegetation within the 200 metre zone?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

2.3.3 Will the development result in the filling or excavation of a river, creek, wetland or estuary?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

2.3.4 Will the development result in the impoundment of a river, creek, wetland or estuary?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

2.3.5 Will the development result in draining to a river, creek, wetland or estuary?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

2.3.6 Are you aware if the proposal will impact on a river, creek, wetland or estuary (or its buffer) within one of the following categories? (please tick)

Conservation Category Wetland	<input type="checkbox"/> Yes	✓ No	<input type="checkbox"/> Unsure
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	<input type="checkbox"/> Yes	✓ No	<input type="checkbox"/> Unsure
Perth's Bush Forever site	<input type="checkbox"/> Yes	✓ No	<input type="checkbox"/> Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	<input type="checkbox"/> Yes	✓ No	<input type="checkbox"/> Unsure
The management area as defined in s4(1) of the <i>Swan River Trust Act 1988</i>	<input type="checkbox"/> Yes	✓ No	<input type="checkbox"/> Unsure
Which is subject to an international agreement, because of the importance of the wetland for waterbirds and waterbird habitats (e.g. Ramsar, JAMBA, CAMBA)	<input type="checkbox"/> Yes	✓ No	<input type="checkbox"/> Unsure

<sup>1</sup> As per EPA website <http://www.epa.wa.gov.au/article.asp?ID=1087&area=Policies&CID=20&Category=Environmental+Protection+Policies+%28EPP%29> (7 July 2008) and EPA Guidance Statement No. 33 (2008).

## 2.4 Significant Areas and/ or Land Features

2.4.1 Is the proposed development located within or adjacent to an existing or proposed National Park or Nature Reserve?

Yes       No      **If yes**, please provide details.

Areas of significant flora and unique landscapes occur in the region and are protected in National Parks and other nature conservation reserves. Iluka's mineral tenements stretch into the South Eneabba Nature Reserve (SENR).

The Proposal is adjacent to Crown Reserve 26001; Victoria Location 10231 which is a Nature Reserve for the purposes of camping, conservation and protection of flora. Three Springs Road separates the Proposal and this reserve. The Proposal will not have an impact on this nature reserve.

Further details are provided in the Supporting Document.

2.4.2 Are you aware of any Environmentally Sensitive Areas (as declared by the Minister under section 51B of the EP Act) that will be impacted by the proposed development?

Yes       No      **If yes**, please provide details.

The DRF *Paracaleana dixonii* is present within the Proposal area and areas within 50m of DRF are considered Environmentally Sensitive Areas (ESA) under the Clearing Regulations.

2.4.3 Are you aware of any significant natural land features (e.g. caves, ranges etc) that will be impacted by the proposed development?

Yes       No      **If yes**, please provide details.

## 2.5 Coastal Zone Areas (Coastal Dunes and Beaches)

2.5.1 Will the development occur within 300metres of a coastal area?

(please tick)       Yes      **If yes**, complete the rest of this section.  
 No      **If no**, go to the next section.

2.5.2 What is the expected setback of the development from the high tide level and from the primary dune?

Not applicable.

2.5.3 Will the development impact on coastal areas with significant landforms including beach ridge plain, cusped headland, coastal dunes or karst?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

2.5.4 Is the development likely to impact on mangroves?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

Not applicable.

## 2.6 Marine Areas and Biota

2.6.1 Is the development likely to impact on an area of sensitive benthic communities, such as seagrasses, coral reefs or mangroves?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

Not applicable.

2.6.2 Is the development likely to impact on marine conservation reserves or areas recommended for reservation (as described in *A Representative Marine Reserve System for Western Australia*, CALM, 1994)?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact.

Not applicable.

2.6.3 Is the development likely to impact on marine areas used extensively for recreation or for commercial fishing activities?

Yes      ✓ No      **If yes**, please describe the extent of the expected impact, and provide any written advice from relevant agencies (e.g. Fisheries WA).

Not applicable.

## 2.7 Water Supply and Drainage Catchments

2.7.1 Are you in a proclaimed or proposed groundwater or surface water protection area?  
(You may need to contact the Department of Water (DoW) for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

✓ Yes       No      **If yes**, please describe what category of area.

The Iluka Eneabba operations are located within the Arrowsmith Groundwater area, including the Eneabba Plains sub-area and the Twin Hill sub-area. Water supply for the Iluka Eneabba operations is drawn predominantly from the deeper Yarragadee aquifer.

Further details are provided in the Supporting Document.

2.7.2 Are you in an existing or proposed Underground Water Supply and Pollution Control area?

(You may need to contact the DoW for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

Yes      ✓ No      **If yes**, please describe what category of area.

2.7.3 Are you in a Public Drinking Water Supply Area (PDWSA)?

(You may need to contact the DoW for more information or refer to the DoW website. A proposal to clear vegetation within a PDWSA requires approval from DoW.)

✓ Yes       No      **If yes**, please describe what category of area.

The Eneabba Water Reserve was proclaimed in 1992 under the *Country Areas Water Supply Act 1947* (CAWS Act) for the purpose of protecting the public drinking water source from potential contamination (DoW 2008). The Eneabba townsite is supplied with drinking water from one Water Corporation bore (bore 1/89) located in the Eneabba Water Reserve, east of the town. A new town water supply bore (bore 1/11) was installed in 2011 north of the Proposal area.

The Proposal includes mining within the Priority 1 and Priority 2 water reserve areas.

Further details are provided in the Supporting Document.

2.7.4 Is there sufficient water available for the proposal?

(Please consult with the DoW as to whether approvals are required to source water as you propose. Where necessary, please provide a letter of intent from the DoW)

✓ Yes       No      (please tick)

Groundwater abstraction from the Yarragadee Aquifer at Eneabba is licensed under two groundwater well licences (GWL) issued by the DoW. Originally water abstraction for mining was licensed to take a total of 21GL per year, however in 2008 this was reduced to 16GL when regional water allocations were reviewed.

Iluka's groundwater allocation is split between two GWLs because the mine traverses two groundwater management sub-areas with the Arrowsmith Groundwater Area, namely the Twin Hills sub-area and the Eneabba Plains sub-area. A maximum of 12GL can be abstracted under GWL104700 from 22 bores in the Eneabba Plains sub-area and a maximum of 4GL from GWL104709 from six bores in the Twin Hills sub-area (Iluka Resources Limited 2012).

The East Mine operates under the conditions of DEC Licence 5646/8, which includes some licence conditions relating to groundwater.

Further details are provided in the Supporting Document.

2.7.5 Will the proposal require drainage of the land?

- Yes      ✓ No      **If yes**, how is the site to be drained and will the drainage be connected to an existing Local Authority or Water Corporation drainage system? Please provide details.

Mining will not occur below groundwater level.

- 2.7.6 Is there a water requirement for the construction and/ or operation of this proposal?  
(please tick)      ✓ Yes      **If yes**, complete the rest of this section.  
 No      **If no**, go to the next section.

- 2.7.7 What is the water requirement for the construction and operation of this proposal, in kilolitres per year?

The Proposal will require the abstraction of 8GL per annum (8,000,000 kl/year).

- 2.7.8 What is the proposed source of water for the proposal? (e.g. dam, bore, surface water etc.)

Five production bores draw water from the deep aquifer and 11 production bores from the shallow aquifer at East Mine. Production and monitoring bores have been constructed to satisfy the evolving water supply and monitoring requirements.

## 2.8 Pollution

- 2.8.1 Is there likely to be any discharge of pollutants from this development, such as noise, vibration, gaseous emissions, dust, liquid effluent, solid waste or other pollutants?

(please tick)      ✓ Yes      **If yes**, complete the rest of this section.  
 No      **If no**, go to the next section.

- 2.8.2 Is the proposal a prescribed premise, under the Environmental Protection Regulations 1987?

(Refer to the EPA's *General Guide for Referral of Proposals to the EPA under section 38(1) of the EP Act 1986* for more information)

✓ Yes       No      **If yes**, please describe what category of prescribed premise.

The Proposal is located within an existing licensed Category 8 prescribed premises (Mineral Sands Mining or Processing, greater than 5,000 tonnes per year) and has an existing DEC Licence 5646/8.

- 2.8.3 Will the proposal result in gaseous emissions to air?

✓ Yes       No      **If yes**, please briefly describe.

Electricity, natural gas and diesel fuel used by mining equipment are the main sources of greenhouse gas (GHG) emissions at Eneabba. The Iluka Eneabba operations currently have a shortfall of 12MW as the supply of additional electrical power from the Western Power Corporation (WPC) grid has been limited. No spare capacity will be available until power supply lines are upgraded in the Midwest region. As a result, a temporary on-site power generation system was constructed during 2011 utilizing gas fired reciprocating engines to supply the 12MW shortfall. Construction and commissioning work for the power station was undertaken under DEC Works Approval W5057/2011/1. The Proposal will utilise this temporary on-site power generation until the upgrade of the power supply lines are complete (date currently unknown).

2.8.4 Have you done any modelling or analysis to demonstrate that air quality standards will be met, including consideration of cumulative impacts from other emission sources?

Yes       No      **If yes**, please briefly describe.

Dry mining operations typically generate fugitive dust associated with mining, processing and transport activities.

Dust monitoring is undertaken in accordance with DEC Licence 5646/8, on a continual basis at the Iluka Eneabba operation using both ambient particulate monitoring (PM<sub>10</sub>) and total suspended particulates (TSP) methods. Continuous Particulate Dust Monitoring (PM<sub>10</sub>) is undertaken at the location of the 'most sensitive receiver' (the Eneabba townsite) to monitor respirable dust conditions. A network of depositional dust gauges has also been deployed to monitor nuisance dust conditions along the property boundary and sensitive vegetation locations.

The ambient airborne dust concentration limit prescribed in the DEC licence continuous monitoring of dust levels over a 24 hour period with reporting required if levels exceed 50ug/m<sup>3</sup> within the period. A total of 5 excursions above this limit are allowable under the licence in any one calendar year.

Further details are provided in the Supporting Document.

2.8.5 Will the proposal result in liquid effluent discharge?

Yes       No      **If yes**, please briefly describe the nature, concentrations and receiving environment.

2.8.6 If there is likely to be discharges to a watercourse or marine environment, has any analysis been done to demonstrate that the State Water Quality Management Strategy or other appropriate standards will be able to be met?

Yes       No      **If yes**, please describe.

2.8.7 Will the proposal produce or result in solid wastes?

Yes

No

**If yes**, please briefly describe the nature, concentrations and disposal location/ method.

Solid waste produced by the Proposal can be divided into process waste and tailings and non-process waste.

Process waste is waste produced as a result of the mining process and includes the following:

- Green waste – where possible, vegetation will be mulched prior to clearing and utilised during the rehabilitation process.
- Overburden – non-mineralised waste will be stockpiled or directly returned to the mine void during mining. Stockpiled overburden will be returned to the mine void during the rehabilitation phase.
- Oversize - the wet concentration process requires all particles greater than approximately 2.4mm to be removed from the ore. All material greater than 2.4mm will be removed in the screening process, in a number of stages. The oversize will be treated as overburden and returned to the mining void or utilised for dust suppression and road maintenance activities.
- Clay fines and sand tails - clay fines will be removed from the ore prior to wet concentrator processing by hydro-cyclones. Sand tailings will be produced in the mine site wet-concentrator. The sand tails fraction of the mining by-products will be placed in the mined-out void. The clay/slime fraction will be co-disposed with the remaining sand tails in an off-path tailings storage facility.

Iluka maintains a detailed waste inventory of all waste disposal at Eneabba and all waste disposal at the Iluka Eneabba operations is in accordance with DEC Licence 5646/8. Non-process waste is waste produced as a result of the day to day operations of the Proposal and includes the following:

- Hydrocarbon products – all waste oils will be collected by the contractor as part of Iluka's waste management system. Hydrocarbon contaminated soil resulting from spills are treated in a bioremediation facility ('landfarm') on-site. This is regulated through DEC Licence 5646/8. All other hydrocarbon-contaminated waste will be removed from site and disposed of according to DEC requirements.
- Structural waste – some structural waste will be generated from maintenance activities. Inert waste is permitted to be disposed of at designated mine voids in accordance with DEC Licence 5646/8. Scarp steel is recycled through a scrap metal merchant where possible.
- Domestic waste – rubbish generated on site such as food scraps, food wrappings and waste paper is collected and disposed of at the Eneabba Class II landfill facility (DEC Licence 6945/10).

2.8.8 Will the proposal result in significant off-site noise emissions?

Yes       No      **If yes**, please briefly describe.

2.8.9 Will the development be subject to the Environmental Protection (Noise) Regulations 1997?

Yes       No      **If yes**, has any analysis been carried out to demonstrate that the proposal will comply with the Regulations?

Please attach the analysis.

The Proposal involves mining of the northern section of the IPL North deposit which is located in close proximity to the Eneabba townsite. Mining of the northern portion of the Proposal area therefore has the greatest potential to impact on nearby residents. The primary noise emitters for the Proposal will be the fixed plant and mobile mining equipment.

Further details are provided in the Supporting Document.

2.8.10 Does the proposal have the potential to generate off-site, air quality impacts, dust, odour or another pollutant that may affect the amenity of residents and other “sensitive premises” such as schools and hospitals (proposals in this category may include intensive agriculture, aquaculture, marinas, mines and quarries etc.)?

Yes       No      **If yes**, please describe and provide the distance to residences and other “sensitive premises”.

Mining operations may give rise to dust emissions and carbon monoxide, particulate and nitrogen oxides emissions from standard diesel and petrol combustion engines. The South Secondary Concentrator (SSC) generates emissions from two driers which are fuelled with natural gas, in two separate stacks. Emissions are sampled quarterly by qualified consultants, with results reported annually in the Annual Environment Report (AER). Contaminants include particulates, carbon dioxide, uranium and thorium, all of which are below guideline levels. All fugitive and point source emissions to air are reported in the National Pollutant Inventory.

2.8.11 If the proposal has a residential component or involves “sensitive premises”, is it located near a land use that may discharge a pollutant?

Yes       No       Not Applicable

**If yes**, please describe and provide the distance to the potential pollution source

## 2.9 Greenhouse Gas Emissions

2.9.1 Is this proposal likely to result in substantial greenhouse gas emissions (greater than 100 000 tonnes per annum of carbon dioxide equivalent emissions)?



Yes

No

**If yes**, please provide an estimate of the annual gross emissions in absolute and in carbon dioxide equivalent figures.

Electricity, natural gas and diesel are the main sources of greenhouse gas (GHG) emissions at Iluka's Eneabba operations. Electricity is generally supplied from the WPC grid and used for powering of concentrators, field generators, groundwater production bores and for general use in the administration buildings and workshops. GHGs are directly emitted from the use of natural gas in the drying process at the SSC. Diesel fuel is used to run the heavy vehicle mining fleet, mobile pumps, generators and light vehicles.

Due to the shortfall in the supply of additional electrical power from the WPC grid, it is envisaged that a temporary on-site power generation system will be required. There is currently an existing on-site power generations system utilizing gas fired reciprocation engines to supply the existing shortfall. It is expected that there will be an increase in increase in natural gas consumption until the electrical power shortfall is rectified with the upgrading of the WPC power grid.

- 2.9.2 Further, if yes, please describe proposed measures to minimise emissions, and any sink enhancement actions proposed to offset emissions.

Iluka has a range of management measures in place to optimise energy use and reduce GHG emissions. Iluka maintains an annual inventory of GHG emissions and energy consumption in line with the National Greenhouse and Energy Reporting Act 2007. Additionally, Iluka has participated in the Federal Government's Energy Efficiency Opportunities (EEO) programme since 1999, the purpose of which is to assess energy use and process efficiencies at operational sites, and to identify and implement opportunities to work in a more energy efficient manner. During the current EEO reporting cycle, 99.1% of Iluka's total energy consumption was assessed, exceeding the requirements of the programme.

During 2011, Iluka identified, implemented and pursued a range of energy efficiency projects that deliver gains in energy efficiency and performance. Overall, the energy efficiency opportunities that were operational during 2010 – 2011 equated to a reduction in energy usage of 0.76 petajoules or 8% of Iluka's total energy consumption. Iluka remains focused on sustaining the gains from these energy efficiency opportunities and are committed to ensuring that energy efficiency remains embedded in its operations as part of its continuous improvement process.

## 2.10 Contamination

- 2.10.1 Has the property on which the proposal is to be located been used in the past for activities which may have caused soil or groundwater contamination?

Yes

No

Unsure

**If yes**, please describe.

Mining has occurred at Eneabba since the 1970s and Iluka reported all known and suspected contaminated sites at its Eneabba operations in May 2007 to the DEC under the *Contaminated Sites Act 2003*. Included in this submission were the completed Form 1's, associated Certificates of Title and supporting reports. A

Contaminated Site Status Report – Eneabba Operations was submitted to the DEC during August 2010 and provides a status update on the known and suspected contaminated sites, including the classification, investigations, monitoring and future plans.

2.10.2 Has any assessment been done for soil or groundwater contamination on the site?

Yes       No      **If yes, please describe.**

Groundwater monitoring is carried out for all the known or suspected contaminated sites in accordance with the Eneabba Groundwater Licence Operating Strategy (GLOS) as regulated by the Department of Water (DoW). Soil analysis at one of the known contaminated sites was carried out to determine the levels of hydrocarbon contamination. Hydrocarbon impacted soils were excavated and transferred to the site bioremediation facility, where all contaminated soil on-site is remediated in accordance with DEC licence conditions. Details of soil and groundwater contamination assessments are discussed in the Contaminated Sites Status Report – Eneabba Operations as submitted to the DEC during 2010.

2.10.3 Has the site been registered as a contaminated site under the *Contaminated Sites Act 2003*? (on finalisation of the CS Regulations and proclamation of the CS Act)

Yes       No      **If yes, please describe.**

The contaminated sites were reported in the Contaminated Sites Status Report – Eneabba Operations as submitted to the DEC during 2010.

## 2.11 Social Surroundings

2.11.1 Is the proposal on a property which contains or is near a site of Aboriginal ethnographic or archaeological significance that may be disturbed?

Yes       No       Unsure      **If yes, please describe.**

### Native Title

The Proposal area falls within one registered native title claim namely, Amangu native title claimant group (WC04/2).

### Aboriginal heritage

Archaeological and ethnographic surveys have been conducted on a number of Iluka Eneabba tenements (AM70/267, M70/821, M70/1039, E70/2634, M70/872, M70/879, M70/1039 and M70/1061).

An archaeological survey of AM70/267 discovered one site comprising a small quartz artefact scatter bordering the northwest corner of the South Eneabba Wetland (McDonald *et al.*, 1992) and has remained undisturbed due to the conservation of the wetland by Iluka. This site is not within the Proposal area.

A search of the DIA Register of Aboriginal sites during March 2012 indicated that there are no registered sites within the Proposal area.

Further details are provided in the Supporting Document.

2.11.2 Is the proposal on a property which contains or is near a site of high public interest (e.g. a major recreation area or natural scenic feature)?

Yes       No      **If yes**, please describe.

Iluka will work continuously with the community of Eneabba regarding mining operations within the Proposal area.

2.11.3 Will the proposal result in or require substantial transport of goods, which may affect the amenity of the local area?

Yes       No      **If yes**, please describe.

### 3. PROPOSED MANAGEMENT

#### 3.1 Principles of Environmental Protection

3.1.1 Have you considered how your project gives attention to the following Principles, as set out in section 4A of the EP Act? (For information on the Principles of Environmental Protection, please see EPA Position Statement No. 7, available on the EPA website)

- |  |   |                             |
|--|---|-----------------------------|
| 1. The precautionary principle.  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. The principle of intergenerational equity.  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. The principle of the conservation of biological diversity and ecological integrity. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Principles relating to improved valuation, pricing and incentive mechanisms.        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. The principle of waste minimisation.  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

Further details are provided in the Supporting Document.

3.1.2 Is the proposal consistent with the EPA's Environmental Protection Bulletins/Position Statements and Environmental Assessment Guidelines/Guidance Statements (available on the EPA website)?

- Yes       No

The following EPA position and guidance statements are relevant to this Proposal and have been considered in this Referral and in the Supporting Document:

- EPA Position Statement No. 2: Environmental Protection of Native Vegetation
- EPA Position Statement No. 3: Terrestrial Biological Surveys
- EPA Position Statement No. 6: Towards Sustainability
- EPA Position Statement No. 7: Principles of Environmental Protection
- EPA Position Statement No 8: Environmental Protection in Natural Resource Management
- EPA Position Statement No. 9: Environmental Offsets
- EPA Guidance Statement No. 6: Rehabilitation of Terrestrial Ecosystems
- EPA Draft Guidance Statement No. 8 – Environmental Noise.
- EPA Guidance Statement No. 10: Proposals Affecting Natural Areas
- EPA Guidance Statement No. 12: Minimising Greenhouse Gas Emissions
- EPA Guidance Statement No. 18: Prevention of Air Quality Impacts from Land Development Sites
- EPA Guidance Statement No 19: Environmental Offsets
- EPA Guidance Statement No. 33: Environmental Guidance for Planning and Development
- EPA Guidance Statement No. 41: Assessment of Aboriginal Heritage
- EPA Guidance Statement No. 51: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia.

- EPA Guidance Statement No. 55: Implementing Best Practice in proposals submitted to the environment impact assessment process.
- EPA Guidance Statement No. 56: Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia.
- EPA Draft Environmental Assessment Guidelines No. 1: Defining a Proposal

### 3.2 Consultation

3.2.1 Has public consultation taken place (such as with other government agencies, community groups or neighbours), or is it intended that consultation shall take place?

- Yes       No      **If yes**, please list those consulted and attach comments or summarise response on a separate sheet.

Stakeholders in the immediate surrounds of the Proposal include residents, business owners in the town of Eneabba, people within the local shire, special interest groups (including research organisations), other mining proponents and Decision Making Authorities.

**Table 3 Key stakeholders**

Group	Stakeholders
Federal government	Department of Sustainability, Environment, Water, Population and Communities (SEWPAC)
State government	Environmental Protection Authority (EPA)
	Department of Environment and Conservation (DEC)
	Department of Mines and Petroleum (DMP)
	Department of State Development (DSD)
	Department of Water (DoW)
	Department of Indigenous Affairs (DIA)
	Mineral Sands Agreement Rehabilitation Coordination Committee (MSARCC)
	Main Roads Western Australia (MRWA)
Utilities	Water Corporation
	Verve Energy
	QR National
Local Government	Shire of Carnamah
	City of Greater Geraldton
Aboriginal groups	Amangu (Yamatji Land and Sea Council)
Non-governmental organisations (NGOs)	Conservation Council of WA
	Wildflower Society of WA
Community	Eneabba town residents and nearby landholders
	Eneabba Progress Association
	Irwin Land Care Group
Research organisations/partners	Kings Park and Botanical Gardens Authority
	University of Western Australia
	Greening WA
	Murdoch University (Centre for <i>Phytophthora</i> Science and Management)

Iluka has consulted with the DEC, OEPA, DMP, DSD, DoW and Water Corporation regarding the Proposal. Discussions points at these briefings have included, but not limited to, those summarised below:

- The Proposal and mine schedule.
- Additional approvals likely to be required under legislation.
- The key environmental impacts associated with mining the IPL North deposit including impact to DRF and Priority flora, fauna, noise and dust within proximity

to the Eneabba townsite, protection of the town water supply and rehabilitation of the disturbed areas.

Iluka has also consulted with the Shire of Carnamah, Eneabba Progress Association and the Eneabba community regarding the Proposal. An information session was held at the Eneabba Recreation Centre on Monday, 14th May 2012 to discuss current and future mining at the Iluka Eneabba operations. In general, concerns raised included the increase of dust with regard to mining in the vicinity of the Eneabba townsite.

Outcomes and response of stakeholders consulted prior to the submission of this Referral is detailed in the Supporting Document.

## REFERENCES

AECOM (2012) Eneabba East Mine: 2011 Annual Aquifer Review. Unpublished report prepared for Iluka Resources Limited.

Bamford Consulting Ecologists (2007a) Fauna Values of Proposed Future Mining Areas in the Eneabba Region. Unpublished report prepared for Iluka Resources Limited.

Bamford Consulting Ecologists (2007b) Survey for the Shield-backed Trapdoor Spider (*Idiosoma nigrum*) in Iluka lease areas at Eneabba. Unpublished report prepared for Iluka Resources Limited.

Bamford Consulting Ecologists (2009) Fauna Investigations of Iluka's Proposed Eneabba Future Mining Operations with a focus on IPL North and IPL South Deposits. Unpublished report prepared for Iluka Resources Limited.

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Environmental Protection Authority (EPA) (2004) Guidance for the Assessment of Environmental Factors No. 51: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia.

Iluka Resources Limited (2012) Annual Environmental Report – Midwest Operations 2011.

Johnstone, R.E. and Kirkby, T. (2009) Further Assessment of Significant Habitat for Carnaby's Cockatoo (*Calyptorhynchus latirostris*) in the Eneabba Region. Unpublished report prepared for Iluka Resources Limited.

McDonald, Hales & Associates (1992) Archaeological and ethnographic survey for Aboriginal sites – AMC Mineral Sands Project, Eneabba.

Soil Water Consultants (SWC) (2009) Rehabilitation Review for the Eneabba Minesite. Unpublished report prepared for Iluka Resources Limited.

Woodman Environmental Consulting (2012) Eneabba: Summary report of Flora and Vegetation Studies 2001 to 2011. Report prepared for Iluka Resources Limited.