



Environmental Protection Authority

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

EPA REFERRAL
FORM
PROPONENT

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:

	Yes	No
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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not sure
If yes, what level of assessment?		
<input type="checkbox"/> Assessment on Proponent Information	<input type="checkbox"/> Public Environmental Review	

PROPONENT DECLARATION (to be completed by the proponent)

I, Tim Dobson, declare that I am authorised on behalf of Southern Cross Goldfields Ltd (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: Tim Dobson
Position: Manager – Project Development	Company: Southern Cross Goldfields Ltd
Date: 3 January 2014	

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	Southern Cross Goldfields Ltd
Joint Venture parties (if applicable)	N/A
Australian Company Number (if applicable)	ABN 71 124 374 321
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)	Southern Cross Goldfields Ltd PO Box 708 West Perth WA 6872
Key proponent contact for the proposal: <ul style="list-style-type: none">• name• address• phone• email	Mr Tim Dobson Manager – Project Development Southern Cross Goldfields Ltd Unit 16, 162 Colin Street West Perth WA 6005 Tel: 08 9215 7600 Email: TimD@scross.com.au
Consultant for the proposal (if applicable): <ul style="list-style-type: none">• name• address• phone• email	Ms Sonia Finucane Bioscope Environmental Consulting PO Box 1256 East Victoria Park WA 6101 Tel: 08 6460 8151 Email: sonia.finucane@biosenv.com.au

1.2 Proposal

Title	Marda Gold Project
Description	SXG proposes to develop an open pit mining operation and gold processing plant approximately 150 km north of Southern Cross in WA's Yilgarn Mineral Province. Mining is proposed to occur at six deposits in three locations (Marda Central, King Brown and Golden Orb). Ore will be processed at the Marda Central processing plant, with tailings disposed of to an adjacent Tailings Storage Facility. Support infrastructure includes an accommodation camp and an airstrip. The Proposal has an operational life of 2.5 years.

Extent (area) of proposed ground disturbance.	Up to 190 ha, approximately half of which occurs within land managed by the Department of Parks and Wildlife (DPaW) within a proposed 5(1)(h) dual purpose Conservation and Mining Reserve.
Timeframe in which the activity or development is proposed to occur (including start and finish dates where applicable).	It is proposed that construction commence in June 2014, with operations commencing in October 2014. The operational life of the Proposal is 2.5 years, with decommissioning and closure commencing in 2017.
Details of any staging of the proposal.	The Proposal will not be staged, although the timing of mining and ore haulage from the six pits varies throughout the Project life.
Is the proposal a strategic proposal?	No
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: <ul style="list-style-type: none"> • title of the strategic assessment; and • Ministerial Statement number. 	No
Please indicate whether, and in what way, the proposal is related to other proposals in the region.	The Proposal is independent of other proposals in the region. It is possible that SXG will be able to, subject to commercial agreements being reached, share infrastructure with nearby mining operations owned by Cliffs Natural Resources..
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?	The Proposal will be developed on tenements held by SXG (M77/394, M77/646, M77/931, M77/962, L77/239, L77/240, L77/241, L77/258, L77/259 and L77/260).
What is the current land use on the property, and the extent (area in hectares) of the property?	The total area of the tenements listed above is 2,817 ha. The Marda Central pits, processing plant and Tailings Storage Facility (TSF) are located within DPaW-managed land. The King Brown, Golden Orb, accommodation camp and airstrip components are located on the Mt Jackson pastoral lease which is owned by Cliffs Natural Resources.

1.3 Location

Name of the Shire in which the proposal is located.	Shire of Yilgarn
For urban areas: <ul style="list-style-type: none"> • street address; • lot number; • suburb; and • nearest road intersection. 	N/A
For remote localities: <ul style="list-style-type: none"> • nearest town; and • distance and direction from that town to the proposal site. 	The towns of Bullfinch and Southern Cross are located ~100 km and ~120 km south of the Project Area, respectively.
Electronic copy of spatial data - GIS or CAD, geo-referenced and conforming to the following parameters: <ul style="list-style-type: none"> • GIS: polygons representing all activities and named; • CAD: simple closed polygons representing all activities and named; • datum: GDA94; • projection: Geographic (latitude/longitude) or Map Grid of Australia (MGA); • format: Arcview shapefile, Arcinfo coverages, Microstation or AutoCAD. 	Enclosed?: Provided under separate cover

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?	No
If yes, is confidential information attached as a separate document in hard copy?	N/A

1.5 Government Approvals

Is rezoning of any land required before the proposal can be implemented? If yes, please provide details.	No								
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.	Yes								
<table border="1"> <thead> <tr> <th>Agency/Authority</th> <th>Approval required</th> <th>Application lodged Yes / No</th> <th>Agency/Local Authority contact(s) for proposal</th> </tr> </thead> <tbody> <tr> <td>Department of Mines and Petroleum</td> <td>Mining Proposal (<i>Mining Act 1978</i>)</td> <td>No</td> <td>Clare Grosser, Department of Mines and Petroleum</td> </tr> </tbody> </table>	Agency/Authority	Approval required	Application lodged Yes / No	Agency/Local Authority contact(s) for proposal	Department of Mines and Petroleum	Mining Proposal (<i>Mining Act 1978</i>)	No	Clare Grosser, Department of Mines and Petroleum	
Agency/Authority	Approval required	Application lodged Yes / No	Agency/Local Authority contact(s) for proposal						
Department of Mines and Petroleum	Mining Proposal (<i>Mining Act 1978</i>)	No	Clare Grosser, Department of Mines and Petroleum						

Department of Mines and Petroleum	Native Vegetation Clearing Permit (Section 51E of the <i>Environmental Protection Act 1986</i>)	No	Clare Grosser, Department of Mines and Petroleum
Department of Environmental Regulation	Works Approval and Licence	Works Approval: No Licence: No	Rachael Brown, Department of Environmental Regulation
Department of Water	Section 5C Licence to Take Water (<i>Rights in Water and Irrigation Act 1914</i>)	No	Briony Lions, Department of Water

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)?

Up to 190 ha

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.

Flora and vegetation surveys have been conducted in the Project Area in support of a Mining Proposal being prepared by SXG for submission to the DMP. The surveys were completed by Botanica (in November 2010) and Rapallo (in September 2011 and November 2012). Rapallo's report on the Level 2 survey of Marda Central, Golden Orb and King Brown is provided as Appendix A of the Environmental Referral Support Document (ERSD).

Review of Project environmental baseline reports has been conducted by DPaW.

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.

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.

No Threatened Ecological Communities (TECs) are present in the Project Area. One Priority Ecological Community (PEC) occurs within the Project Area. This is the Mt Jackson Range Vegetation Complex PEC which has a DPaW-mapped area in the region of more than 44,000 ha. The eastern corner of the Marda Central tenement overlaps with the DPaW-mapped buffer zone of this PEC, but none of the proposed Project footprint occurs within the buffer zone (see Figure 4-7 of the ERSD).

One of the plant communities present at Golden Orb is considered to be potentially analogous with a vegetation assemblage that forms part of the Mt Jackson Range Vegetation Complex PEC (*Eucalyptus ebbanoensis* Mallee Woodland over *Olearia muelleri* and *Westringia cephalantha* Low Open Shrubland). Rapallo has mapped this community as part of Plant Community 5ikl. It has been calculated that 0.25 ha of this community will be cleared in the Project footprint (see Figure 4-5 of the ERSD).

No flora species listed as DRF pursuant to Schedule 1 of the *Wildlife Conservation Act 1950* or listed as Threatened pursuant to the *Environment Protection and Biodiversity Act 1999* (EPBC Act) have been recorded in the Project Area. A number of Priority Flora species have been recorded in the Project Area, as shown on Figure 4-7 to 4-11 of the ERSD. Of these, only the following occur within the Project footprint:

- *Lepidosperma jacksonense* (Priority 1), which was collected on the King Brown haul road (see Figure 4-10 of the ERSD). One population of this species is likely to be cleared during haul road construction.
- *Gnephosis* sp. Norseman (K.R. Newbey 8096) (Priority 3), which was collected on the King Brown haul road (see Figure 4-10 of the ERSD). It is estimated that <8% of the local population will be cleared during haul road construction.
- *Stenanthemum newbeyi* (Priority 3) was recorded on a hill slope and crest at Golden Orb (Figure 4-11 of the ERSD). It is estimated that <8% of the local population will be cleared during development of the Golden Orb pit and abandonment bund.

A review of the Project's environmental baseline reports has been conducted by DPaW.

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).

N/A

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

The average Keighery (1994) vegetation condition rating for the Project Area was very Excellent to Good with the most common disturbances in the Project Area resulting from historical small-scale mining, exploration (recent and historical), vehicle tracks and grazing by cattle and horses. Grazing and trampling impacts are particularly evident at King Brown.

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.

Vegetation clearing will result in the localised loss of fauna habitat, including small areas of potential Malleefowl habitat at Golden Orb. Larger mammals and reptiles as well as birds are expected to move to adjacent areas once land clearing commences, but clearing of native vegetation is likely to result in the loss of small animals that are unable to move away during the clearing process. The impacts of the Proposal on the fauna assemblage are expected to be negligible due to the small loss of habitat, which is otherwise largely continuous and wide spread in the region.

There is also potential for indirect impact on fauna assemblages in the Project Area as a result of noise, vibration, dust, vehicle movements, etc. However, the likelihood of these impacts occurring and the potential for significant impact are low.

Of the potential Short Range Endemic (SRE) taxa recorded in the Project Area, only one occurrence of land snail *Bothriembryon* sp. was identified in the vicinity of the proposed Project footprint. This species was recorded in a shallow ephemeral drainage line that will be traversed by the Goldstream haul road. Impacts to this drainage line will be limited to earthworks to develop the haul road. No changes to downstream or upstream drainage patterns are expected as a result of haul road development.

The main source of potential impact on stygofauna is likely to be groundwater drawdown due to pit dewatering. However, given the depauperate stygofauna community and the small groundwater drawdown cones predicted to be associated with the proposed Project, no significant impact on stygofauna is expected to occur.

There is potential for impact on any troglofauna species within the Project Area due to mine pit excavation. However, it is considered highly unlikely that the proposed mining operations would threaten the persistence of any species because of the small size of the proposed mine pits.

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.

Vertebrate fauna surveys have been conducted in the Project Area in support of a Mining Proposal being prepared by SXG for submission to the DMP. These were conducted by Rapallo (September 2011), Bamford Consulting Ecologists (November 2012) and Terrestrial Ecosystems (December 2010 and September 2011). See Appendix C of the ERSD.

Studies for SREs have been conducted by Rapallo (September 2011) and Terrestrial Ecosystems (January 2013). See Appendix D of the ERSD.

Stygofauna sampling of a bore at Marda Central was conducted by Rapallo in 2011 and a subterranean fauna risk assessment was conducted by Bennelongia in February 2013. See Appendix B of the ERSD.

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.

A number of conservation-significant vertebrate fauna species occur, or may occur, in the Project Area. Of particular interest are:

- Malleefowl (*Leipoa ocellata*) which is listed as Vulnerable under *Wildlife Conservation Act 1950* and *Environment Protection and Wildlife Conservation Act 1999*. A study by Bamford Consulting Ecologists indicates that approximately 400 ha of potential Malleefowl breeding habitat occurs within the Project Area, but is mainly outside of the proposed Project footprint except at Golden Orb (see Figure 4-

15 of the ERSD). No Malleefowl have been sighted in the Project Area. Some old Malleefowl mounds recorded in the Project Area appear to have been inactive for considerable time (20 to >100 years). It is noted that most of the Malleefowl habitat actively being used by this species occurs along the Mt Jackson Range.

- Major Mitchell's Cockatoo (*Lophochroa leadbeateri*) which is listed under Schedule 4 (Other Specially Protected Fauna) of the *Wildlife Conservation Act 1950*. To comply with a request of the DPaW, a survey was undertaken by Terrestrial Ecosystems in September 2011 to assess breeding habitat for Major Mitchell's Cockatoo in the Project Area. No Major Mitchell's Cockatoos were seen flying or nesting in the Project Area during the survey and there was no evidence to suggest that any of these areas were currently being used as nesting sites by this species. The Project Area was considered to contain similar habitat for this species to adjacent areas which contained abundant healthy trees (for flowers and fruits) and trees with suitable nesting hollows.

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.

Surface drainage in the Project Area is poorly defined and consists mainly of broad sheet wash following short duration high intensity storms. Occasional shallow, ephemeral drainage channels are present on rises but these are mostly short, running a few hundred metres down the slopes (see Figures 4-18 of the ERSD). Some of these creek lines will be traversed by haul roads and access tracks. Floodways or culverts will be installed, where required.

The King Brown tenement partially overlies a claypan, although none of the claypan will be disturbed by the Proposal.

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.

Very limited clearing of vegetation within 200 m of shallow ephemeral creek lines will be required to allow installation of floodways and culverts on haul roads and access tracks.

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	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
Perth's Bush Forever site	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unsure

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.

The Proposal is not located within or adjacent to a National Park or Nature Reserve, but the Marda Central area is located within a proposed 5(1)(h) dual purpose Conservation and Mining Reserve.

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.

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.

Mining will extract oxide (weathered) ore and waste rock which is typically hosted in Banded Iron Formations (BIF) geological formations. However, no part of the Proposal is located on, or impacts, BIF ridges.

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?

N/A

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.

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.

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.

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).

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 Marda Water Reserve (17009) borders the south side of Marda Central tenement M77/394 (see Figure 3-3 of the ERSD). The reserve contains the disused Marda Dam which is located approximately 2 km east of the Bullfinch-Evanston Road and 0.5 km from M77/394. Neither the reserve or the dam will be impacted by the Proposal.

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.

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)

Bore construction licences have been granted by the DoW in accordance with Section 26D of the *Rights in Water and Irrigation Act 1914* for the Marda Central and King Brown areas. On completion of bore construction, hydraulic testing and water quality sampling, SXG will apply for abstraction licences under Section 5C of the Act.

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.

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 water balance is summarised in the table below.

Raw water consumption	Average flow rate (kL/h)	Months	Total abstraction (GL)
Construction	-	8	58
Process plant	68	28	1,182
RO plant	5	30	44
Dust suppression	7	30	110
Bore (raw) water requirement	75	30	1,393

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

Water requirements for the Proposal will be met by pit dewatering (abstracted via dewatering bores and in-pit sumps) where available and groundwater abstraction from dedicated production bores.

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.

Five prescribed premises were identified during a Works Approval scoping meeting with the Department of Environment Regulation (DER) on 27 November 2013, as follows:

- Beneficiation of metallic ore – Conventional processing of up to 750,000 tpa of gold-bearing ore comprising crushing, grinding, gravity concentration, cyanidation, carbon adsorption, elution, electro winning and doré smelting.
- Electric power generation – A 3 MW Diesel-fired power station comprising six generator sets with capacity to produce 56 MW/day.
- Bulk storage of chemicals – Storage of diesel (fuel), quicklime, sodium cyanide, sodium hydroxide, hydrochloric acid, activated carbon and liquefied petroleum gas.
- Sewage facility – Water treatment plant and associated waste water sprinkler irrigation system located adjacent to a 90 person accommodation camp.
- Putrescible landfill – Staged, trench-style landfill located adjacent to the accommodation camp.

Prescribed Premises		Tenement	Capacity
No.	Name		
5	Beneficiation of metallic ore	M77/394	750 ktpa
52	Electric power generation	M77/394	56 Mwh/day
73	Bulk storage of chemicals	M77/394	> 1,000 m ³
85	Sewage facility	L77/260	50 m ³ /day
89	Putrescible landfill	L77/260	400 tpa

Communication with the DER Kalgoorlie regional office indicated that Prescribed Premises Category 6: Mine Dewatering does not apply as the Project will not discharge water to the environment.

2.8.3 Will the proposal result in gaseous emissions to air?

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

Dust will be generated from earthmoving and mineral processing activities, and there will be air emissions from mobile plant, vehicles and the diesel power station. Power generation is the only activity which is classified by the DER as a Prescribed Premises (Category 52). A number of emissions will be generated by the diesel power station including particulate matter, hydrocarbons, nitrogen oxides, carbon dioxide and other greenhouse gases, but these are expected to be minor.

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.

2.8.5 Will the proposal result in liquid effluent discharge?

Yes No

If yes, please briefly describe the nature, concentrations and receiving environment.

A package water treatment plant (Prescribed Premises Category 85) will be installed at the accommodation camp to treat all waste water generated by the camp facilities. A sprinkler reticulation system will be used to dispose of treated water and will be fenced to exclude fauna.

Brines from the Reverse Osmosis Plant will be discharged to the process water pond for use in the processing plant.

2.8.6 If there are 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.

N/A

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.

The Proposal will produce the following solid waste materials:

- Approximately 8.2 Mt of waste rock will be mined during the 2.5 year operational life of the Proposal. This material will be used for construction of roads and bunds, and for capping of the TSF. Excess waste rock will be stored in Waste Rock Landforms (WRLs) adjacent to the mine pits.
- Approximately 720,000 tpa of tailings will be produced by the processing plant and will be disposed of to a TSF adjacent to the processing plant.
- Putrescible and inert wastes will be disposed of to a trench-style landfill located adjacent to the accommodation camp. The landfill will have a capacity of 400 tpa.

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 will result in noise emissions from mining, processing and power generation. Due to the lack of sensitive receptors in the vicinity of the proposed Project Area, impact is considered insignificant.

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”.

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.

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

N/A

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.

Limited historical small scale mining of high grade quartz veins has occurred in the Marda Central area. There has been no modern mining and no old tailings impoundments or stamp batteries are evident in the Project Area. Based on available information and site observations, existing site contamination is considered unlikely.

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

Yes No

If yes, please describe.

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.

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.

Aboriginal heritage surveys of the Project Area have identified a number of Aboriginal heritage sites, none of which are located with the proposed Project footprint.

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.

The Marda Central component of the Proposal is located within a proposed 5(1)(h) dual purpose Conservation and Mining Reserve. The region in which the site is located is frequented by tourists with an interest in wildflowers and landscape values such as the Mt Manning area and the Helena and Aurora Ranges. However, the major recreation areas and natural scenic features are located some distance from the Proposal.

Marda Dam is listed in the Shire of Yilgarn's Municipal Heritage Inventory as being a 'Water Supply Place' of significance (LGA Place No. 59). The relevance of the dam to contemporary pastoral activities has diminished over time, but is still of some interest to local tourists. The dam is located approximately 2 km east of the Bullfinch-Evanston Road and 0.5 km from the boundary of M77/394, and will not be affected by the proposed Project development.

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 |

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

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.

See Section 3.5 of the ERSD for information on SXG's stakeholder engagement process.