

PREPARED FOR:

# Glencore South Africa (Pty) Ltd

PREPARED BY:



## Pre-disturbance Environmental Site Assessment and Site Specific EMP

Site ID:	Glencore Lydenburg CMI Smelter	Contractor:	EIMS
Location:	Lydenburg, Mpumalanga Province	Inspector:	Vukosi Mabunda
Client representative:	Sipho Nkosi	Inspection Date:	23 November 2023

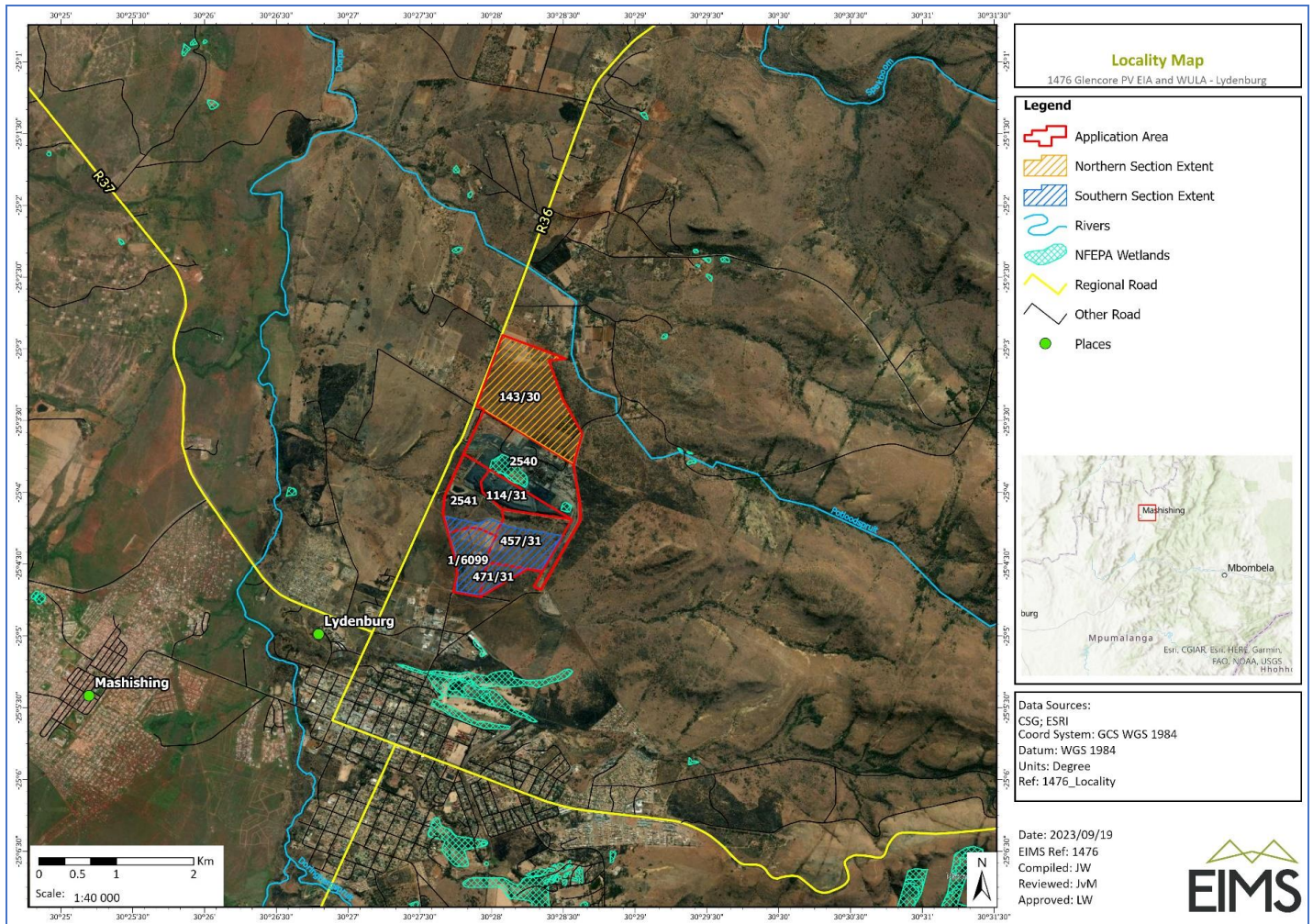
### 1. Background

Background of the project:	<p>Glencore (Pty) Ltd (the applicant) is one of the world’s largest globally diversified natural resource companies. Glencore’s four coal operations are located in the coal-rich province of Mpumalanga, while ferroalloys mines and smelters can be found across the northern part of South Africa, in the North West Province and Limpopo.</p> <p>Glencore proposes to develop a Photo Voltaic (PV) facility in Lydenburg, Mpumalanga Province. Subsequently, Glencore has appointed Environmental Impact Management Services (Pty) Ltd (EIMS) as the independent Environmental Assessment Practitioner (EAP) to assist with undertaking the required authorisation processes (including the statutory public participation), and to compile and submit the required documentation in support of application for Environmental Authorisation (EA) in accordance with the National Environmental Management Act, 1998 (Act 107 of 1998 – NEMA) Environmental Impact Assessment (EIA) Regulations, 2014 as amended. The proposed project involves the development of a PV facility with a capacity of up to 200 megawatts (MW) to provide power to the mining operations. Other possible infrastructure will include an on-site substation / switching station, access roads, battery energy storage system and an 88kV power line. The proposed project is located on Portion 143 of Farm 30 Potloodspruit, Portions 114, 457 and 471 of Farm 31 Townlands of Lydenburg, Portion 1 of Lydenburg Smelter Erf 6099, Lydenburg Smelter Erf 2540 and Lydenburg Smelter Erf 2541 within Thaba Chweu Local Municipality (Ward 12 and 13), Ehlanzeni District Municipality, Mpumalanga Province. The electricity generated from the facility will be used at the Lydenburg smelter or will be wheeled to other Glencore operations.</p>				
Project Aspects:	Yes	No	Details (provide specifications)	Location (DD MM SS)	
				Latitude	Longitude
❖ Mining	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
❖ Energy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>The applicant proposes the development of a Solar Photovoltaic (PV) Energy Generation Facility at the Lydenburg CMI Smelter. The generation capacity will be up to 200MW. The proposed facility will include the following infrastructure:</p> <ul style="list-style-type: none"> <li>• PV Panels;</li> <li>• Power line connection (88kV);</li> <li>• Access roads;</li> <li>• On-site substation / switching station; and</li> <li>• Possibly an on-site battery storage facility.</li> </ul>	<p><b>North:</b> 25° 3'3.27"S <b>West:</b> 25° 3'47.90"S <b>East:</b> 25° 4'9.61"S <b>South:</b> 25° 4'42.43"S</p>	<p><b>North:</b> 30°28'27.04"E <b>West:</b> 30°27'46.53"E <b>East:</b> 30°28'37.46"E <b>South:</b> 30°27'51.93"E</p>
❖ Prospecting /	<input type="checkbox"/>	<input checked="" type="checkbox"/>			



Exploration					
❖ Transportation	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
❖ Chemicals	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
❖ Other:	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

## 2. Site Layout Plan



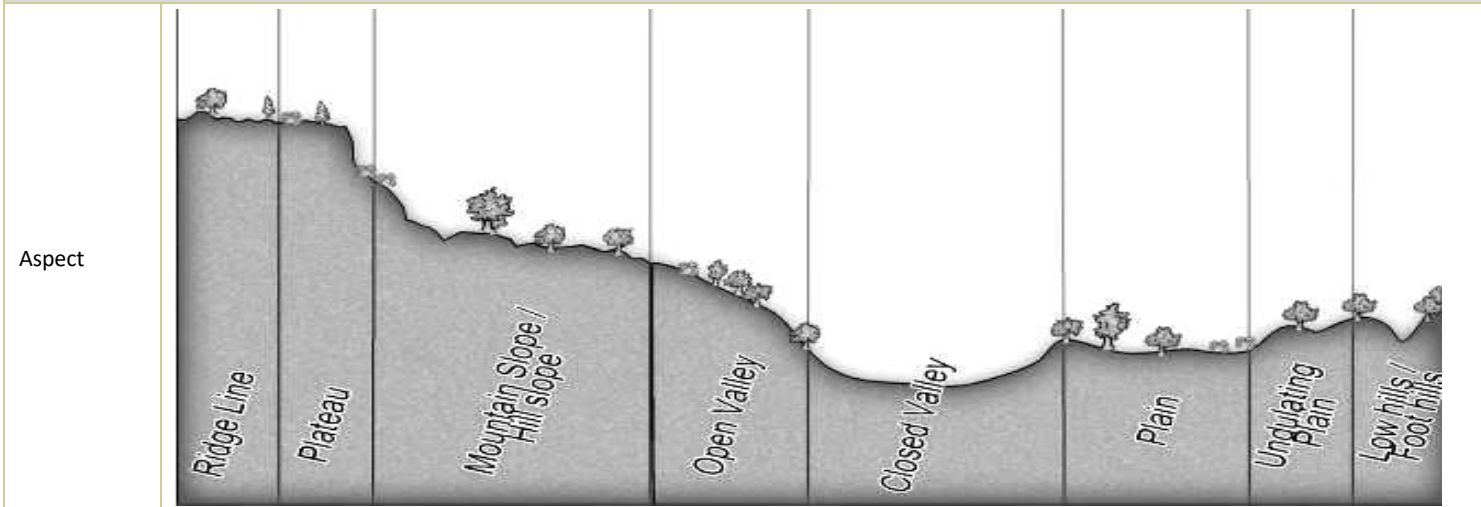
## 2. DEA Screening Tool Assessment

Aspect	Very High	High	Medium	Low
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Avian Theme		X		
Civil Aviation (Solar PV) Theme			X	
Defence Theme				X
Landscape (Solar) Theme	X			
Palaeontology Theme		X		
Plant Species Theme			X	
RFI Theme			X	
Terrestrial Biodiversity Theme	X			



### 3. Site Assessment

#### 3.1 Gradient (indicate the general gradient characteristics of site)



Aspect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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#### Is the site located on or in the immediate vicinity of any of the following:

	Yes	No	Comment
Erosion Channels or areas of severe erosion/ destabilized soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are sections of destabilized soils with evidence of erosion within the southern section.
Wetlands (within 32m)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There is a watercourse running adjacent to the southern section with associated wetlands.
Unstable slopes or geological features (rocky outcrops)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	There are no unstable slopes or geological features. There are rocky outcrops.
Bare areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Several bare areas around site proposed for PV facility.
Other Sensitive or risk areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The areas around the southern section are pristine and have a rich ecosystem. There is a stone wall within the Smelter, but it is outside the proposed development footprint.
Are any existing servitudes and structures directly or indirectly affected by the proposed sites and routes (e.g., Eskom, public road servitudes and restrictions 60m from National Road, farmer's water/irrigation supplies, etc.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	There are Eskom powerlines in the northern section.

#### 3.2 Vegetation

Which of the listed descriptions best describes the general groundcover on and around the site?

Natural veld - good condition <input type="checkbox"/>	Natural veld with scattered aliens <input checked="" type="checkbox"/>	Natural veld with heavy infestation <input type="checkbox"/>	Veld dominated by alien species <input type="checkbox"/>	Gardens <input type="checkbox"/>
Sport field <input type="checkbox"/>	Cultivated land <input checked="" type="checkbox"/>	Paved surface <input type="checkbox"/>	Building or other structure <input checked="" type="checkbox"/>	Bare soil <input checked="" type="checkbox"/>

Comments on vegetation composition:	Site is mostly grassland with scattered areas that are disturbed and degraded due to anthropogenic activities, such as clearing of vegetation, presence of alien and invasive plant species, and fragmentation due to the presence of the mining infrastructure such as the existing CMI Smelter and access roads.
Comments on weed species/type	It appears that an amount of alien and invasive plant species is present on site. The exact type and species will be confirmed during the EIA specialist study.



**Land cover/ use description: Describe the land uses on the site**

**Site area** Significantly transformed land previously used for the mining and agricultural activities.

**4. General Comments and Recommendations**

The area can be best separated into three different areas which all have defined boundaries, the southern section (PV area), the central area (smelter area), and the northern section (PV area). It must be noted that the proposed PV development is limited to the southern and northern sections. In general, the southern section appears to be of medium-low ecological sensitivity due to its proximity to mining areas and disturbance and degradation to the site areas due to current mining activities. The central area has been significantly disturbed through the mining related activities and continues to be further transformed through the ongoing expansions such as the construction of additional control dams. The northern section is generally a grazing area, has several farmhouses and/or mining houses and the area largely consists of low laying grassland. Several flora and fauna species were noted in the area, especially in central area along the unknown watercourse these included a variety of bird species and mammals. Previously identified heritage feature (stone wall) was noted largely hidden in the thick intact vegetation on the southwestern portion of the central area between the control dam and the southern section. It can be concluded that overall, the study area has medium ecological sensitivity and can have a good site ecological importance due to the proximity of the nearby pristine areas falling within a protected area. An ecologist will be appointed to undertake Terrestrial and Aquatic Biodiversity Assessment to identify the habitats, confirm the sensitive species that may occur on the site footprint as well as provide mitigation measures / recommendations. Agricultural Impact study will be undertaken to identify potential impacts and mitigation measures on agricultural potential. Heritage Impact Assessment will also be undertaken due to confirm and identify heritage features, their importance and applicable protective measures.











Site Photos

<p>Aspect: General Smelter area</p>			
<p>Describe area and adjacent land use:</p>	<p><b>View from the central area of the smelter looking towards the east. Surfaced main access road and adjacent land uses including an Eskom Substation. Maintained grass and groups of guinea fowls noted along the access road.</b></p>	<p><b>View from the central area of the smelter looking towards the south-east. The central areas of the smelter consisting of build-up areas (buildings, facilities, roads, etc.). Isolated trees and scattered aliens were noted in the surrounding areas.</b></p>	<p><b>View of the smelter from the control building. Surrounding area consists of gravel access roads, pockets of trees, disturbed alien vegetation and control dam.</b></p>
<p>Aspect: General Smelter area</p>			
<p>Describe area and adjacent land use:</p>	<p><b>View north-east from the southern portion of the smelter area. The tailings of the byproducts can be seen at the far end. Adjacent land uses include smelter facilities and control dam.</b></p>	<p><b>View from the western area of the smelter looking towards the east. The control dam embankment can be seen on the left of the image, the gravel access road on the center and thick intact vegetation with a variety of flora and fauna species on the right.</b></p>	<p><b>Previously identified heritage feature (stone wall) noted largely hidden in the thick intact vegetation between the control dam and the southern section where the development of the PV facility is proposed.</b></p>














<p>Aspect: General South PV area</p>				
<p>Describe area and adjacent land use:</p>	<p><b>Northern view from the center of the southern section. The only adjacent land use is mining. The area has a large scar of cleared vegetation and exposed soil (bare land).</b></p>	<p><b>Erosion from the exposed soil within the southern section. The surrounding area consists of areas of low laying grassland with alien vegetation and areas of thick intact vegetation.</b></p>	<p><b>The general characteristics of the vegetation in the southern section consisting of areas of low laying grassland with alien vegetation towards the center and areas of thick intact vegetation towards the edges.</b></p>	<p></p>
<p>Aspect: General South PV area</p>				
<p>Describe area and adjacent land use:</p>	<p><b>Eastern view from the center of the southern section. The view shows the disturbed vegetation within the development footprint and the pristine area adjacent to the proposed development footprint.</b></p>	<p><b>Western view from the edge of the southern section. The area consists of thick intact vegetation which links to the vegetation of the nature reserve adjacent to the study area.</b></p>	<p><b>Southern view from the edge of the smelter footprint looking towards the southern section. The view shows the rocky outcrops which were noted along the fence of the southern section.</b></p>	<p></p>





<p>Aspect: General Habitats in the Southern area</p>			
<p>Describe area and adjacent land use:</p>	<p>Several flora and fauna species noted in the central area along an unknown watercourse including a variety of bird species and mammals.</p>	<p>Bird species spotted in the waterlogged area adjacent to the control dam.</p>	<p>Several monkeys spotted in within the thick vegetation area adjacent to the control dam.</p>
<p>Aspect: General North PV area</p>			
<p>Describe area and adjacent land use:</p>	<p>The northern section generally consists of several farmhouses and/or mining houses (left image – northern view), a grazing area for sheep and cattle (centre image – northern view), and the area largely consists of low laying grassland with thick vegetation confined to the edges of the footprint (right image – southern view).</p>		



<p>Aspect: General North PV area</p>			
<p>Describe area and adjacent land use:</p>	<p><b>Western view from the center of the northern section. The view shows the disturbed vegetation consisting largely of low laying grass within the development footprint.</b></p>	<p><b>Eastern view from towards to edge of the northern section. The view shows the thick intact vegetation within the the disturbed low laying grass.</b></p>	<p><b>Northern view of the site from the main access road. Fragments of buildings and ruined buildings were noted adjacent access road.</b></p>





**7. Verification findings and motivation:**

Assessment for specialist studies and motivation:					
Screening Tool Specialist Study Required:	Level of Sensitivity:	Suggested Sensitivity:	Required Assessment	level of	Motivation
Aquatic Biodiversity	Very High	Moderate	None.	<input type="checkbox"/>	Based on potential impacts on surface and groundwater through the establishment of the 375ha PV facility and associated infrastructure such as battery energy storage system, the EAP recommends that an Aquatic Biodiversity Assessment be undertaken.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other		
Archaeological and Cultural Heritage	Low	Moderate	None.	<input type="checkbox"/>	There are potential stone walled sites some of which could be of high significance based on the Relative Archaeological and Cultural Heritage sensitivity of the area and previous heritage studies. Therefore, a Heritage Impact Assessment (HIA) is recommended by the EAP to identify the heritage features and provide mitigation measures (if any).
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other		
Paleontology	Medium	Low	None.	<input type="checkbox"/>	Although no deep drilling or excavations will be required for construction of the PV facility, due to the extent of the development footprint and the high palaeo-sensitivity rating, it is consequently the EAPs recommendation that a Palaeontological Impact Assessment be undertaken for the project
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other		
Agriculture Theme	Very High	Moderate	None.	<input type="checkbox"/>	The northern section is largely an agricultural area used for a variety of agricultural activities. A soils assessment is therefore required as part of the EA to assess potential impacts on soils and agriculture.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other		
Terrestrial Biodiversity	High	Moderate	None.	<input type="checkbox"/>	Full assessment will be undertaken as part of the EIA due to the pre-identified very high sensitivity and clearance of vegetation which will be required within NEMBA listed sensitive ecosystem.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other		



Animal Species	Medium	Moderate	None.	<input type="checkbox"/>	Sections of thick intact vegetation, potential habitats of fauna species were noted in the area. Several fauna species were also noted during the site assessment. Therefore, animal species assessment is required. This will be covered by the terrestrial biodiversity assessment.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other	<input type="checkbox"/>	
Plant Species	Low	Moderate	None.	<input type="checkbox"/>	Sections of thick intact vegetation were noted in the area. Plant species assessment is therefore required. This will be covered by the terrestrial biodiversity assessment.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other	<input type="checkbox"/>	
Civil Aviation	High	Low	None.	<input type="checkbox"/>	The proposed project entails the development of large solar panels arrays to generate up to 200MW of electricity for the smelter. Solar panels do reflect light which may have an impact on civil aviation. Therefore, the construction of the PV facility within close proximity of Lydenburg Airport was assessed to have a medium impact on Civil Aviation. The EAP recommends a Civil Aviation Compliance Statement be undertaken for the project
			Compliance Statement	<input checked="" type="checkbox"/>	
			Full Assessment	<input type="checkbox"/>	
			Other	<input type="checkbox"/>	
Defence	Medium	low	None.	<input checked="" type="checkbox"/>	Defense Impact Assessment will not be undertaken. There are no military bases / facilities present within the vicinity of the project site. The nearest military base is the Army Support Base, located approximately 100 km southeast of the project site.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input type="checkbox"/>	
			Other	<input type="checkbox"/>	

Guidance notes:

- An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified by the screening tool as being of “very high” or “high” sensitivity for terrestrial animal species must submit a Terrestrial Animal Species Specialist Assessment Report.
- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of “medium sensitivity” for terrestrial animal species must submit either a Terrestrial Animal Species Specialist Assessment Report or a Terrestrial Animal Species Compliance Statement, depending on the outcome of a site inspection undertaken in accordance with paragraph 4.
- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified by the screening tool as being of “low” sensitivity for terrestrial animal species must submit a Terrestrial Animal Species Compliance Statement.
- Where the information gathered from the site sensitivity verification differs from the screening tool designation of “very high” or “high”, for terrestrial animal species sensitivity and it is found to be of a “low” sensitivity, then a Terrestrial Animal Species Compliance Statement must be submitted.
- Where the information gathered from the site sensitivity verification differs from the screening tool designation of “low” terrestrial animal species sensitivity and it is found to be of a “very high” or “high” terrestrial animal species sensitivity, a Terrestrial Animal Species Specialist Assessment must be conducted.
- If any part of the development falls within an area of confirmed “very high” or “high” sensitivity, the assessment and reporting requirements prescribed for the “very high” or “high” sensitivity, apply to the entire development footprint. Development footprint in the context of this protocol means, the area on which the proposed development will take place and includes the area that will be disturbed or impacted.