

# EAP's ENVIRONMENTAL IMPACT ASSESSMENT - QUALITATIVE

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 Date: 25 September 2015 to 23 October 2015

		B. ENVIRONMENTAL ASSESSMENT RELATED TO RELEVANT ANTICIPATED ENVIRONMENTAL ATTRIBUTES							
APPLICABLE to the specific environment on site	PROSPECTING RIGHTS	ENVIRONMENTAL ATTRIBUTE GROUP	Environmental Attribute	Description	PHASE	INVASIVE	EXTENT		Manage, Mitigate, Avoid
					Phase of the planned Activity	Invasive (I) or Non-invasive (N) Prospecting Methods	Area	Depth	
YES	Prospecting Rights # 209		Watercourses / Pans	Specific to the bulk sample area: no surface watercourses are shown. The presence of a sinkhole suggests sub-surface dolomitic water may be present close to the bulk sample area. In the focus area: a large pan, De Pan on the farm De Pan as well as a series of small pans/dams on the north-western boundary of the prospecting right, for the purposes of this document these are called "The Sand-Mine Dam". Out of the focus area: The Wonderfonteinspruit and MooiRiviersloop to the south. A number of smaller pans are dotted around.	Operational Phase	INVASIVE	As marked on the plan Note: not on bulk sample area	surface	Avoid
YES	Prospecting Rights # 194		Wetlands	Small, very localised wetland associated with "The Sand Mine Dam" which has prolific birdlife and is unofficially used by locals for fishing. No anticipated impacts of the activity on this environmental aspect as the area can be avoided by any invasive prospecting methods/technologies. If, at a later stage, this becomes a challenge - then the necessary environmental permits and authorisations will be sought.	Operational Phase	INVASIVE	As marked on the plan Note: not on bulk sample area	surface	Avoid
YES	Prospecting Rights # 209		Ground-water	Trenching and bulk sampling operations are anticipated to reach the maximum depth of bedrock (dolomite) within 3 to 4m which is above the water-table. Ground-water flows through tunnels formed in weaknesses within the dolomite rock. Prospecting is therefore not expected to impact on the groundwater. SEF details that the groundwater water table has been depressed to depths of 300m and 500m are mentioned. The farmer on Wildfontein abstracts borehole water from between 80m and 100m. This operation is too small and according to the PWP and WRE does not involve the significant use of -, pumping out of -, or redistribution of groundwater.	Operational Phase	INVASIVE	As marked on the plan Note: not on bulk sample area	Below 400m	Avoid

YES	n g R R i g h t # 1 9 R 9 8 3 P r o s p e c t i n g R i g h t R 9 8 3 # 2 0
YES	
YES	
YES	

Physical & Biological Environmental Aspects

Sink holes	<p>Sinkholes and the sudden collapse thereof are a common feature in the area. Both the commercial farmer on the proposed bulk sample site and other interested and affected parties in the area were concerned about the use of groundwater for prospecting because of (i) the availability of groundwater, and (ii) the potential of sink-holes forming.</p> <p>The site visit as well as consultations with interested and affected parties confirmed the presence of sink holes in the dolomites which may form in this area and care should be exercised not to exacerbate this situation as well as for safety reasons during bulk sampling and processing. If necessary, the rock strength investigations of the underlying dolomite-rock should be done. It is noted that this is a regularly ploughed /ripped cultivated field and farm machinery is routinely used. At the same time, the site visit revealed a sink-hole in this or the adjacent field so this safety precaution is real and must be emphasised</p>	Operational Phase	INVASIVE	All areas underlain by dolomite including the site of the proposed bulk sample	surface & sub-surface	Mitigate
Biodiversity	<p>The coverage is predominantly comprised of areas that "no longer remain natural" with some remaining natural areas which are used for grazing. The Gauteng Conservation Pan 3.3 marks the area surrounding certain pans and dams as Critical Biodiversity areas (irreplaceable) and buffer zones supporting those areas. SEF identifies small pockets of remaining threatened vegetation types (see the Environmental Base Plan for detailed information).</p> <p>No anticipated significant impacts of the activity on this environmental aspect is anticipated as the pans are avoided and in addition, the area impacted by any invasive prospecting methods/technologies will be small compared to the overall coverage of the vulnerable vegetated area/s. The vegetation will most likely recover from any invasive prospecting planned.</p>	Operational Phase	INVASIVE	Prospecting area	surface	Manage
Protected Fauna & Flora in terms of NEMBA (2007)	<p>List as per Baseline Study. No anticipated impacts of the activity on this environmental aspect as invasive prospecting can be planned to avoid any known areas. Also the area of each impact is relatively small so as not to cause permanent damage to all of the species should it be inadvertently damaged.</p>	Operational Phase	INVASIVE	Prospecting area	surface	Manage & Avoid
Protected areas - National Parks, etc.	<p>Nil on the planned bulk sample area. Nil on the Focus Area. For the granted prospecting right, part of The Abe Bailey Nature Reserve overlaps part of the right. In terms of NEMA, commercial prospecting is not legal within the reserve. No prospecting is planned on the surface within the reserve boundary.</p>	Operational Phase	N/A	As marked on the plan Note: not on bulk sample area	surface	<b>AVOID</b>

YES	+ R 9 8 4 # 1 9		I&AP Concern: Groundwater	I&AP's are concerned about the impact of prospecting on the groundwater resources. The impact on groundwater resources is expected to be minimal as water is not planned to be abstracted from groundwater at this stage; if water is abstracted it will be of relatively low volumes compared to that required for mining or farming.[SEF, 2008]	Operational Phase	Addressed above	Addressed above	<400m	Addressed above
YES			I&AP Concern: Sinkholes	I&AP's are concerned about the formation of sinkholes due to prospecting. While the formation of sinkholes is not anticipated due to water abstraction for prospecting; the formation of sinkholes must be considered when planning and operating during prospecting operations.[SEF, 2008]	Operational Phase	Addressed above	Addressed above	surface & sub-surface	Addressed above
YES			I&AP Concern: Nil						
YES	P r o s p e c t i n g R i g h t # 1 9 R 9 8 3 # 2 0	Socio-economic Environmental Aspects	Prospecting on an existing area of commercial farming cultivated land and controlled grazing of specialised cattle.	Operations will directly impact the commercial farming of the land owner. Trenching, bulk sampling and associated structures are planned straddling land that is presently used as a cultivated field for maize and controlled camps for specialised cattle. A land user and compensation agreement is being negotiated with the land owner, followed by consultation. At the time of preparation of the amended EMPlan, the land owner was only available to set up a meeting at the end of September 2015 (Shango Solutions, September 2015). This is an important consultation and will form part of this report either included here or as a separate report.	Planning, Operational & Decommission Phases	INVASIVE	Wildfontein 52 IQ portion 7 1 to 9 Ha	surface	Manage & Mitigate
YES			Prospecting on an existing area traversed by Eskom powerlines	The servitude for three Eskom power lines intersect the proposed bulk sample area (see 1.2). Consultation (by Shango Solutions on behalf of the prospecting right holder, WRE, 19 January 2015) with Eskom determined that Eskom allows mining within 6m of powerlines (Shango Solutions). The trench positions will be planned to comply. Consultation so ongoing.	Planning, Operational & Decommission Phases	INVASIVE	Wildfontein 52 IQ portion 7 1 to 9 Ha	surface	Avoid
CAUTIONARY			known Socio-Economic / Land use concerns - Game & Hunting	If Game on the farms. Need to manage access in conjunction with the surface owners – this includes the sport of hunting where it occurs.	Operational Phase	INVASIVE	No known areas; I&AP's did not note any specific occurrences	surface	Manage
YES			Support of local business	On a small scale, a community-conscious right holder will endeavour to use local businesses where possible and may employ a few unskilled labour. Labour may also under go training and up skilling. Rental agreements etc. are often undertaken with the land user for accommodation or use of equipment, etc. Local hardware and grocery stores are usually used and even transport companies or entrepreneurial outfits.	Operational Phase	N/A	N/A	-	Manage

YES	+ R 9 8 4  P r o s p e c t i n g  R i g h t  R 9 8 3  # 2 0  +  R 9 8 4
YES	
YES	
YES	
YES	
YES	
YES	
YES	
YES	
POTENTIAL	

		While it is understood that prospecting is capital intensive and is expense based not income based; on a small scale, a community-conscious right holder will endeavour to assist communities in small ways such as career advice to learners, talks on scientific and social concerns, small contributions to community requirements such as computers, paper, monetary contributions, assisting the poor, etc. When working in an area the right holder often has the opportunity to informally ascertain community needs from the community itself.	Operational Phase	N/A	N/A	-	Manage
	I&AP Concern: Loss of agricultural land with high potential - Loss of Income	I&APs are concerned about the loss of high potential agricultural land. Any land disturbed by invasive prospecting will be rehabilitated. Compensation must be agreed with surface owners/land users where agricultural land is damaged.[SEF, 2008]	Operational Phase	INVASIVE	Damaged areas in agricultural land	surface	Addresses above
	I&AP Concern: Topsoil Damage	I&APs are concerned about the damage to topsoil. Any land disturbed by invasive prospecting will be rehabilitated. Compensation must be agreed with surface owners/land users where agricultural land is damaged.[SEF, 2008]	Operational Phase	INVASIVE	Damaged areas in agricultural land	surface	Addresses above
	I&AP Concern: Lowering of property values	This is an issue that has been raised by I&APs. Past experience indicates that property values would not be affected however it is not possible to determine the impact on property values at this stage (SEF). At this point, property purchase by the prospector is not anticipated.[SEF, 2008]	Operational Phase	N/A	Prospecting right area	surface	N/A
	Cultural Environmental Aspects						
	Known Cultural concerns	No known cultural concerns	Operational Phase	INVASIVE	N/A	N/A	N/A
	I&AP Concern: Nil		Operational Phase				
	Heritage Environmental Aspects						
	Farm Graveyards / gravesites	Small gravesites may occur on farms. Invasive prospecting will avoid all gravesites. No gravesites are known to occur in the area of the invasive trenching and bulk-sampling site.	Operational Phase	INVASIVE	Do occur but exact positions unknown at this stage but should be well marked.	surface	Avoid
	known Heritage sites	No known heritage sites. SAHRA classifies the area as having potential palaeontological significance due to the underlying geological dolomite formation. Specific to this EMPlan Amendment for Bulk Sampling. It is not expected that heritage artefacts would be found on the bulk-sample area as the area is flat, has no caves and is either completely cultivated or the land is composed of small camps used for controlled grazing of specialised cattle breeds and is extensively worked and grazed. ESKOM powerlines also cut through. There are no anticipated impacts of the activity on this environmental aspect as the invasive prospecting is planned on a distinct area which is previously disturbed and the likelihood of heritage remaining is very low. SAHRA has been contacted to determine if they require a Heritage Assessment. It is noted that the area is > 5Ha; but the excavation area is < 5ha.	Operational Phase	INVASIVE	No known occurrences	surface	Manage & Avoid

YES
YES

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	I&AP Concern: Damage to geological outcrops	I&AP's are concerned about the impact of prospecting on the geological outcrops. No protected geological outcrops occur in the area where invasive prospecting is planned. [SEF, 2008]	Operational Phase	INVASIVE	prospecting right area or part thereof. It is thought that this is related to Black Reef outcrops in the southern portion of the right	surface	N/A
<b>C. OTHER - ASPECTS RAISED BY INTERESTED AND AFFECTED PARTIES THAT</b>							
Other I&AP Concerns	I&AP Concern: Nil						