

**SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS
REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE
ENVIRONMENTAL SENSITIVITY**

EIA Reference number:

Project name: Nooitgedacht Pipelines

Project title: Nooitgedacht Pipelines

Date screening report generated: 02/08/2024 10:29:35

Applicant: Harmong Gold

Compiler: John von Mayer (EIMS)

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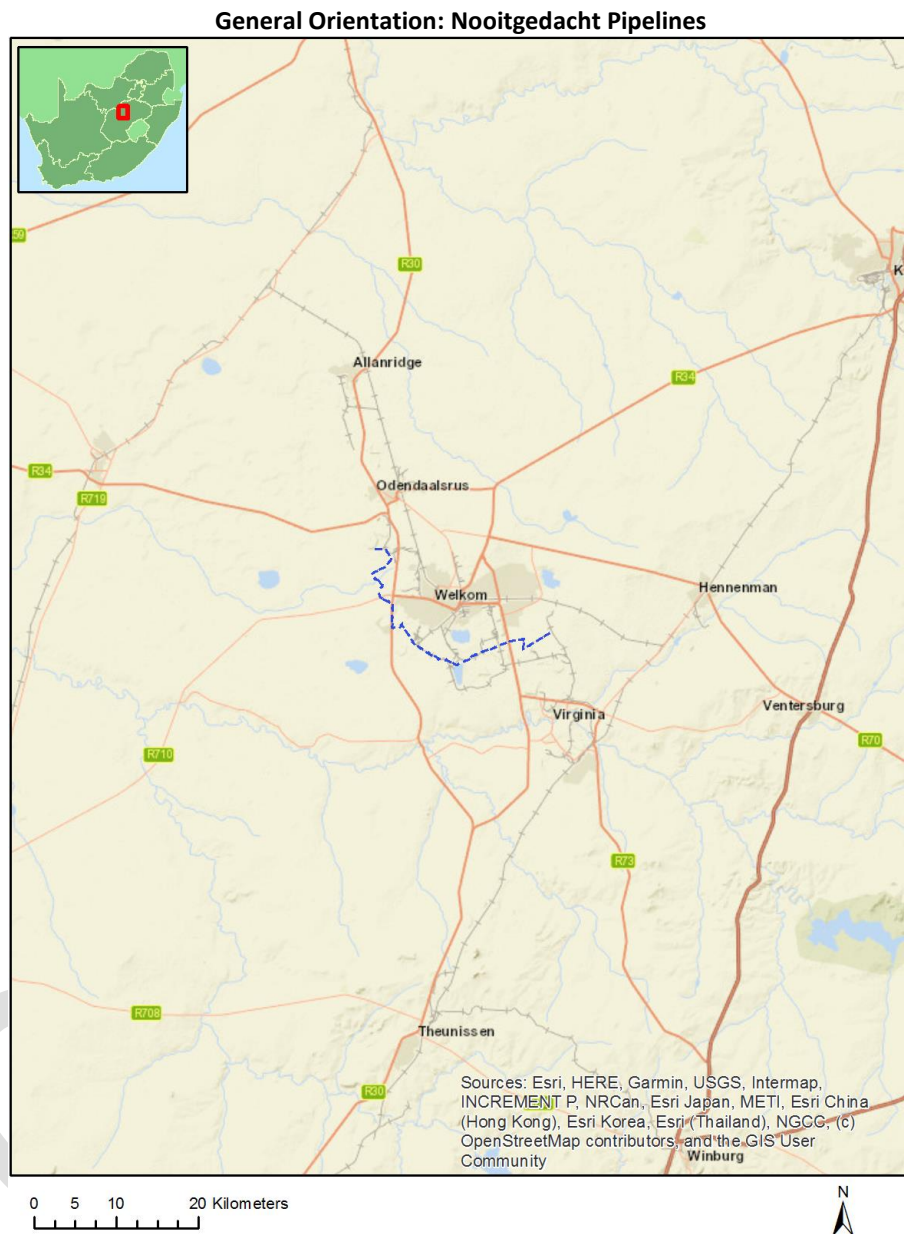
Application Category: Mining|Beneficiation|Mineral

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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	HENDRIK SE NIJL	106	0	27°57'24.28S	26°38'55.05E	Farm
2	TORONTO	115	0	27°59'33.06S	26°42'26.36E	Farm
3	KLIPPAN	14	0	28°1'45.3S	26°47'57.94E	Farm
4	THERONIA	71	0	27°59'58.33S	26°40'28.8E	Farm
5	WELKOM	41	0	27°58'51.49S	26°44'6.85E	Farm
6	STUIRMANS PAN	92	0	28°2'34.67S	26°46'12.39E	Farm
7	MIJANNIE	66	0	27°56'8.11S	26°41'9.62E	Farm
8	JACOBASRUST	118	0	27°58'24.55S	26°40'43.3E	Farm
9	MARMAGELI	20	0	28°1'50.89S	26°45'11.21E	Farm
10	NOOITGEDACHT	50	0	27°56'17.31S	26°40'3.88E	Farm
11	GOEDGEDACHT	53	0	27°57'7.27S	26°40'13.9E	Farm
12	BIESIEKUIL	19	0	27°57'59.53S	26°39'56.91E	Farm
13	RIETPAN	17	0	27°55'5.39S	26°40'39.52E	Farm
14	RIETPAN	17	0	27°55'2.6S	26°40'40.22E	Farm
15	VLAKEPLAATS	125	0	28°0'36.6S	26°42'59.69E	Farm
16	OUDERS GIFT	48	0	27°54'58.27S	26°39'47.07E	Farm
17	SAAIPLAAS	690	0	28°0'45.62S	26°50'20.29E	Farm
18	ST. HELENA	42	0	28°1'55.57S	26°42'43.43E	Farm
19	RHEEDERS DAM	31	0	27°56'26.49S	26°40'42.48E	Farm
20	KAAL VALLEI DIAMOND MINE	12	0	28°1'59.59S	26°49'27.23E	Farm
21	TORONTO	115	7	27°59'23.4S	26°41'19.21E	Farm Portion
22	ST. HELENA	42	2	28°1'26.02S	26°42'49.38E	Farm Portion
23	NOOITGEDACHT	50	0	27°56'17.31S	26°40'3.88E	Farm Portion
24	BIESIEKUIL	19	0	27°57'59.53S	26°39'56.91E	Farm Portion
25	ST. HELENA	42	3	28°2'13.11S	26°43'53.48E	Farm Portion
26	GOEDGEDACHT	53	0	27°57'7.27S	26°40'13.9E	Farm Portion

27	THERONIA	71	7	27°59'30.44S	26°41'5.5E	Farm Portion
28	HENDRIK SE NIJL	106	0	27°57'24.28S	26°38'55.05E	Farm Portion
29	VLAKPLAATS	125	5	28°1'7.42S	26°42'53.41E	Farm Portion
30	THERONIA	71	1	28°0'7.91S	26°41'22.94E	Farm Portion
31	VLAKPLAATS	125	4	28°0'43.92S	26°42'50.87E	Farm Portion
32	ST. HELENA	42	0	28°1'41.57S	26°44'0.6E	Farm Portion
33	STUIRMANS PAN	92	1	28°2'57.2S	26°45'45.05E	Farm Portion
34	SAAIPLAAS	690	11	28°0'54.05S	26°48'50.2E	Farm Portion
35	KLIPPAN	14	1	28°0'45.06S	26°48'27.71E	Farm Portion
36	KLIPPAN	14	2	28°2'10.14S	26°47'43.56E	Farm Portion
37	SAAIPLAAS	690	12	28°1'11.36S	26°48'54.69E	Farm Portion
38	MARMAGELI	20	0	28°1'49.66S	26°45'15.56E	Farm Portion
39	VLAKPLAATS	125	3	28°0'18.64S	26°42'7.06E	Farm Portion
40	TORONTO	115	0	27°59'40.6S	26°41'52.25E	Farm Portion
41	SAAIPLAAS	690	4	28°0'20.02S	26°51'7.96E	Farm Portion
42	KLIPPAN	14	15	28°0'40.38S	26°48'45.56E	Farm Portion
43	STUIRMANS PAN	92	0	28°1'57.91S	26°46'22.14E	Farm Portion
44	MIJANNIE	66	0	27°55'56.85S	26°40'59.01E	Farm Portion
45	KAAL VALLEI DIAMOND MINE	12	0	28°1'55.82S	26°49'30.2E	Farm Portion
46	JACOBASRUST	118	0	27°58'23.36S	26°40'43.49E	Farm Portion
47	WELKOM	41	20	27°58'44.11S	26°41'15.27E	Farm Portion
48	OUDERS GIFT	48	0	27°54'58.54S	26°39'51.09E	Farm Portion
49	RIETPAN	17	0	27°55'25.36S	26°40'42.17E	Farm Portion
50	KAAL VALLEI DIAMOND MINE	12	1	28°1'38.79S	26°49'42.25E	Farm Portion
51	SAAIPLAAS	690	15	28°0'58.41S	26°50'13.91E	Farm Portion
52	SAAIPLAAS	690	8	28°1'7.11S	26°49'3.51E	Farm Portion
53	RHEEDERS DAM	31	0	27°56'23.42S	26°40'48.35E	Farm Portion
54	SAAIPLAAS	690	10	28°1'11.38S	26°49'7.54E	Farm Portion
55	STUIRMANS PAN	92	0	28°1'59.96S	26°46'23.7E	Farm Portion
56	SAAIPLAAS	690	1	28°0'57.18S	26°49'5.28E	Farm Portion
57	SAAIPLAAS	690	0	28°1'27.86S	26°49'51.07E	Farm Portion
58	RIETPAN	17	0	27°55'7.69S	26°40'46.82E	Farm Portion
59	SAAIPLAAS	690	9	28°1'2.11S	26°49'39.74E	Farm Portion

Development footprint¹ vertices:
No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/376/2/AM6	Solar PV	Approved	24.7
2	14/12/16/3/3/2/2100	Solar PV	Approved	27.5
3	14/12/16/3/3/2/2217	Solar PV	Approved	17.1
4	14/12/16/3/3/2/2219	Solar PV	Approved	14.9
5	14/12/16/3/3/2/2283	Solar PV	Approved	15.7

¹ “development footprint”, means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

6	14/12/16/3/3/1/1322	Solar PV	Approved	22.2
7	14/12/16/3/3/1/1472	Solar PV	Approved	2.1
8	14/12/16/3/3/2/376/1	Solar PV	Approved	24.7
9	14/12/16/3/3/1/2772	Solar PV	Approved	18.5
10	14/12/16/3/3/2/2233	Solar PV	Approved	13.2
11	14/12/16/3/3/2/2099	Solar PV	Approved	27.5
12	12/12/20/2668	Solar PV	Approved	26.6
13	12/12/20/2667	Solar PV	Approved	26.6
14	14/12/16/3/3/2/2221	Solar PV	Approved	14.9
15	14/12/16/3/3/2/2215	Solar PV	Approved	19.4
16	14/12/16/3/3/2/2218	Solar PV	Approved	13
17	14/12/16/3/3/2/2101	Solar PV	Approved	27.5
18	12/12/20/2669	Solar PV	Approved	12.5
19	14/12/16/3/3/2/2220	Solar PV	Approved	9.6
20	12/12/20/2669/A	Solar PV	Approved	12.5
21	14/12/16/3/3/2/2087	Solar PV	Approved	18.5
22	14/12/16/3/3/2/2091	Solar PV	Approved	2.2
23	12/12/20/2666	Solar PV	Approved	18.7
24	14/12/16/3/3/2/2322	Solar PV	Approved	18.2
25	14/12/16/3/3/2/2163	Solar PV	Approved	15.2
26	14/12/16/3/3/2/2230	Solar PV	Approved	13
27	14/12/16/3/3/3/1/644	Solar PV	Approved	24.7
28	14/12/16/3/3/2/376/AM2	Solar PV	Approved	24.7
29	14/12/16/3/3/2/2299	Solar PV	Approved	15.7
30	14/12/16/3/3/1/1471	Solar PV	Approved	0
31	14/12/16/3/3/1/1471/AM1	Solar PV	Approved	0
32	12/12/20/2666/A	Solar PV	Approved	18.7
33	14/12/16/3/3/1/2410	Solar PV	Approved	0
34	14/12/16/3/3/1/2499	Solar PV	Approved	24.7
35	14/12/16/3/3/1/2399	Solar PV	Approved	26.6
36	14/12/16/3/3/2/2297	Solar PV	Approved	15.7
37	14/12/16/3/3/1/1444	Solar PV	Approved	7.6
38	14/12/16/3/3/3/1/644/AM1	Solar PV	Approved	24.7
39	14/12/16/3/3/2/512	Solar PV	Approved	12
40	14/12/16/3/3/2/2214	Solar PV	Approved	15.7
41	14/12/16/3/3/2/376/2	Solar PV	Approved	24.7

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

Mining | Beneficiation | Mineral.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-Central corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf
Main Electricity Distribution Substation	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Distribution_Transmission.pdf

Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X
Paleontology Theme	X			
Plant Species Theme	X			
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the known impacts associated with the proposed development, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

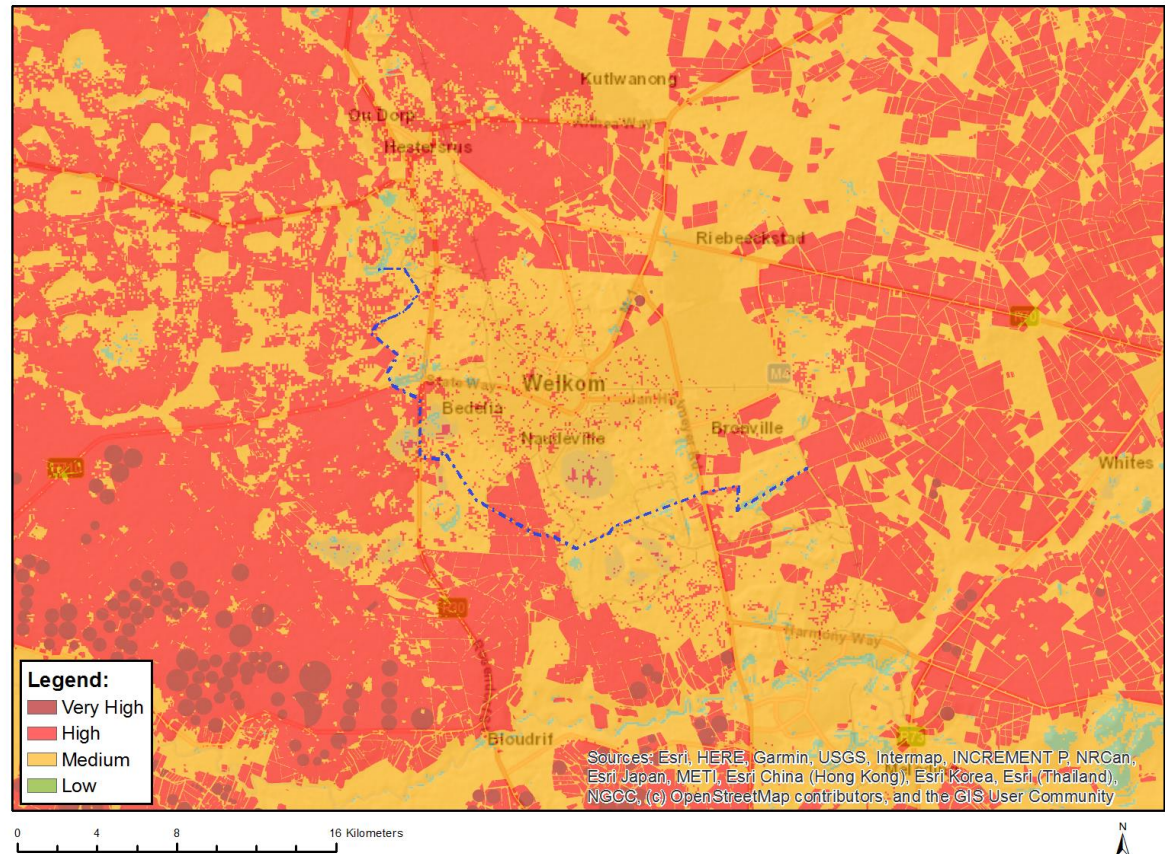
No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf

	Impact Assessment	ssmentProtocols/Gazetted Aquatic Biodiversity Assessment Protocols.pdf
6	Hydrology Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
7	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Noise Impacts Assessment Protocol.pdf
8	Traffic Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
9	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
10	Climate Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
11	Health Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
12	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
13	Ambient Air Quality Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
14	Air Quality Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
15	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Plant Species Assessment Protocols.pdf
16	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Animal Species Assessment Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

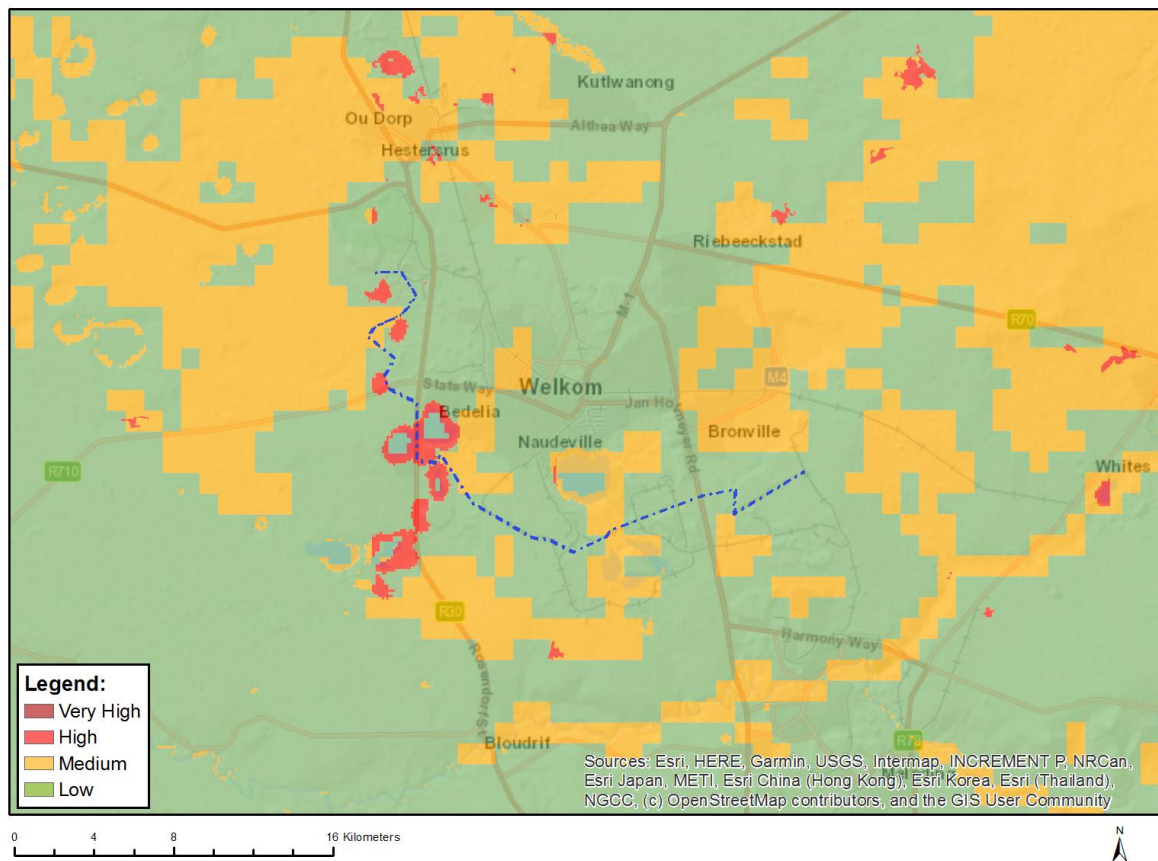


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;09. Moderate-High/10. Moderate-High
High	Old Fields;Land capability;09. Moderate-High/10. Moderate-High
High	Old Fields;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



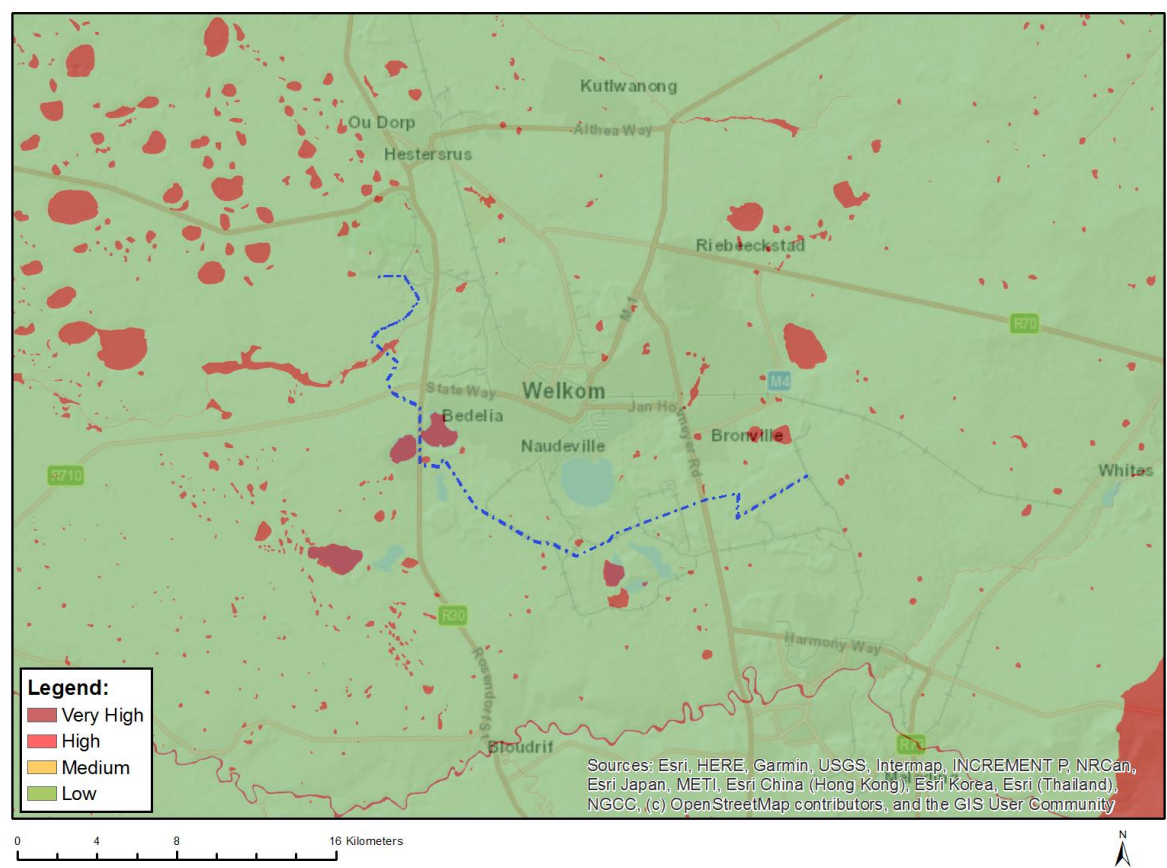
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Mycteria ibis
Low	Subject to confirmation
Medium	Aves-Hydroprogne caspia
Medium	Mammalia-Hydrictis maculicollis
Medium	Sensitive species 15

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

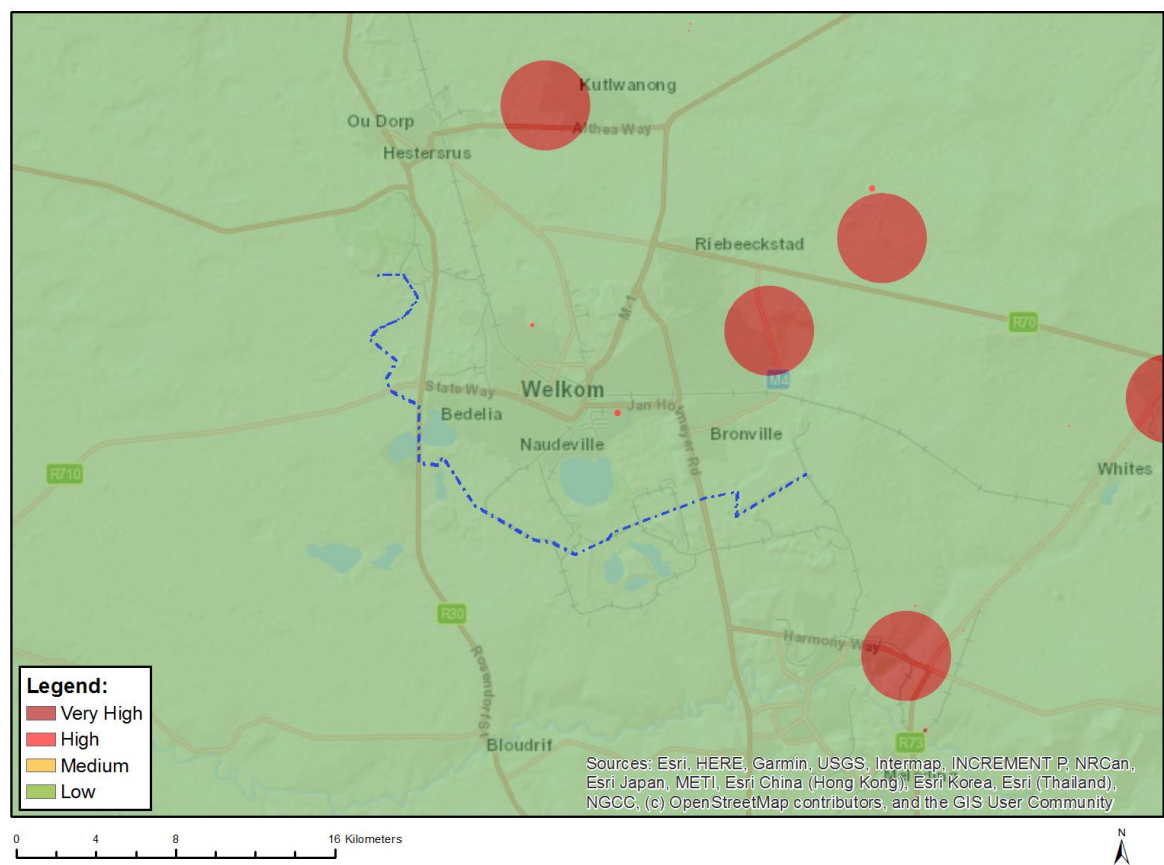


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Rivers_Z
Very High	Wetlands_Dry Highveld Grassland Bioregion (Valley-bottom)

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

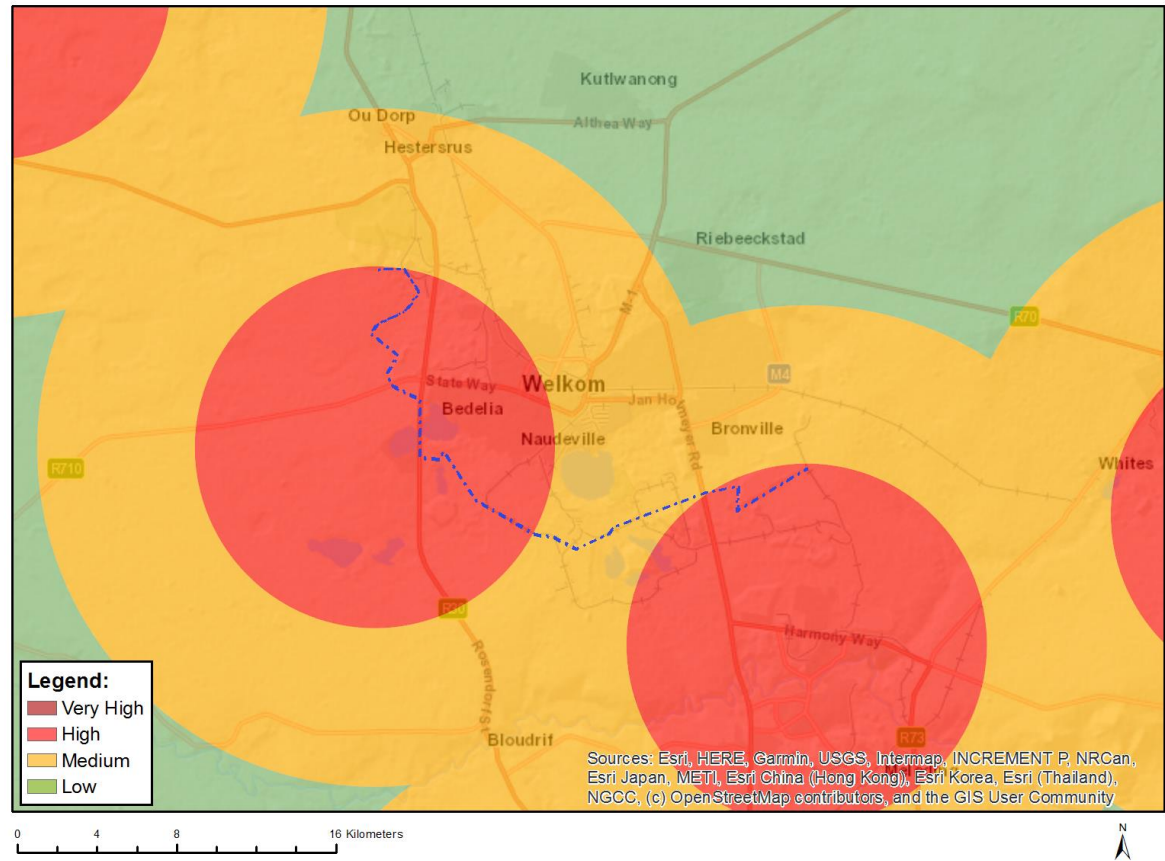


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

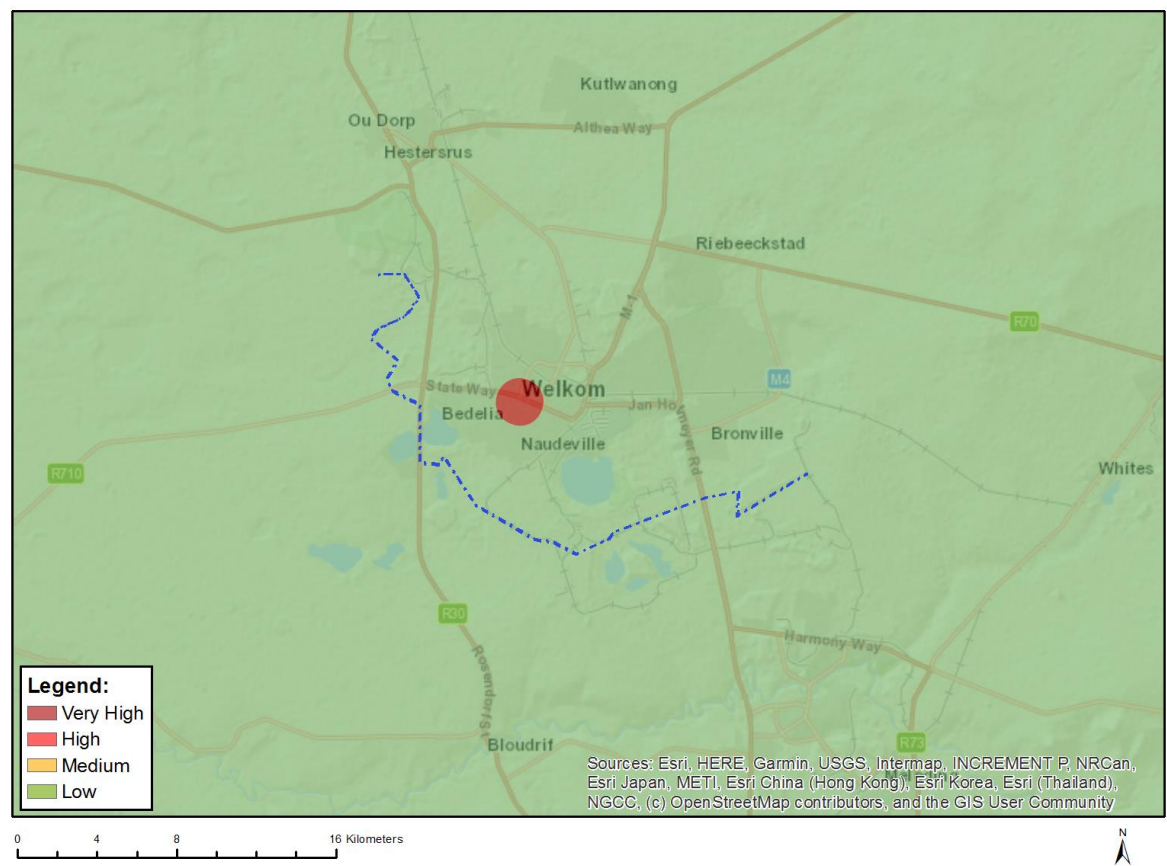


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome
Medium	Within 5 km of an air traffic control or navigation site
Medium	Between 8 and 15 km of other civil aviation aerodrome

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

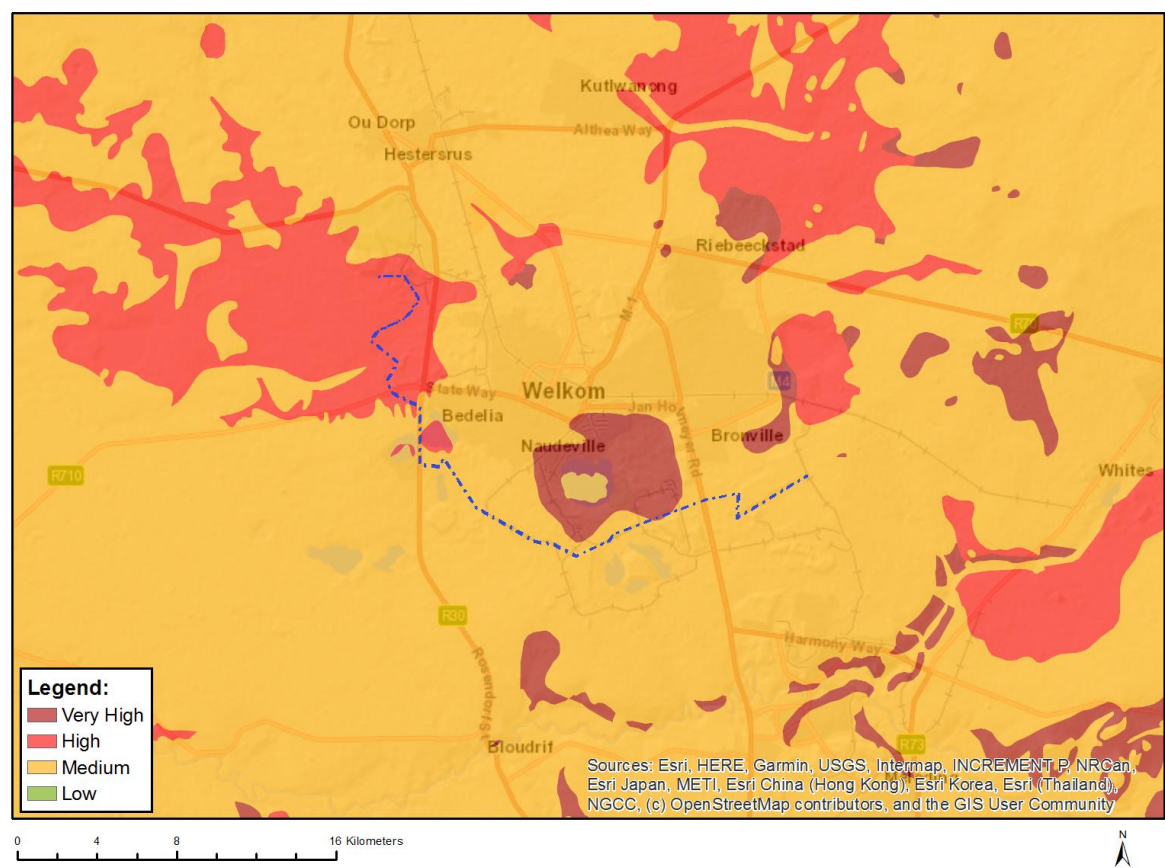


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

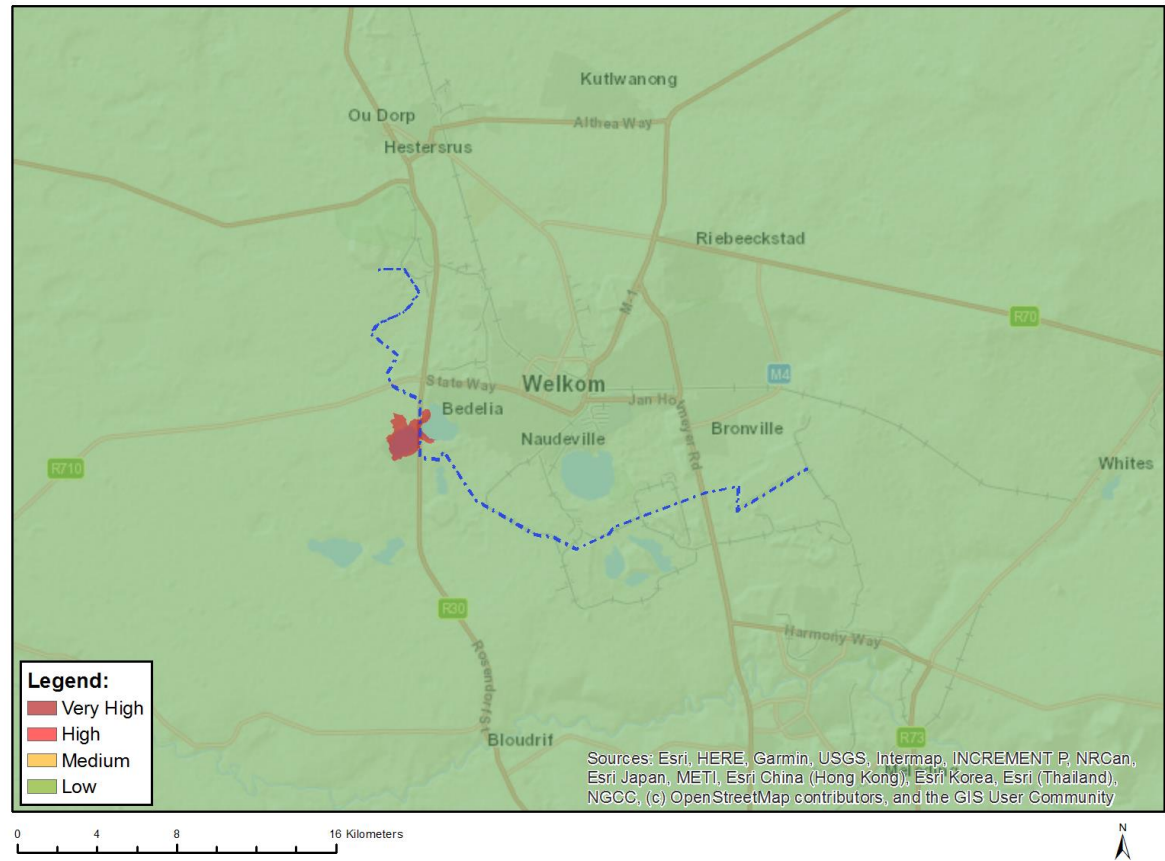


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



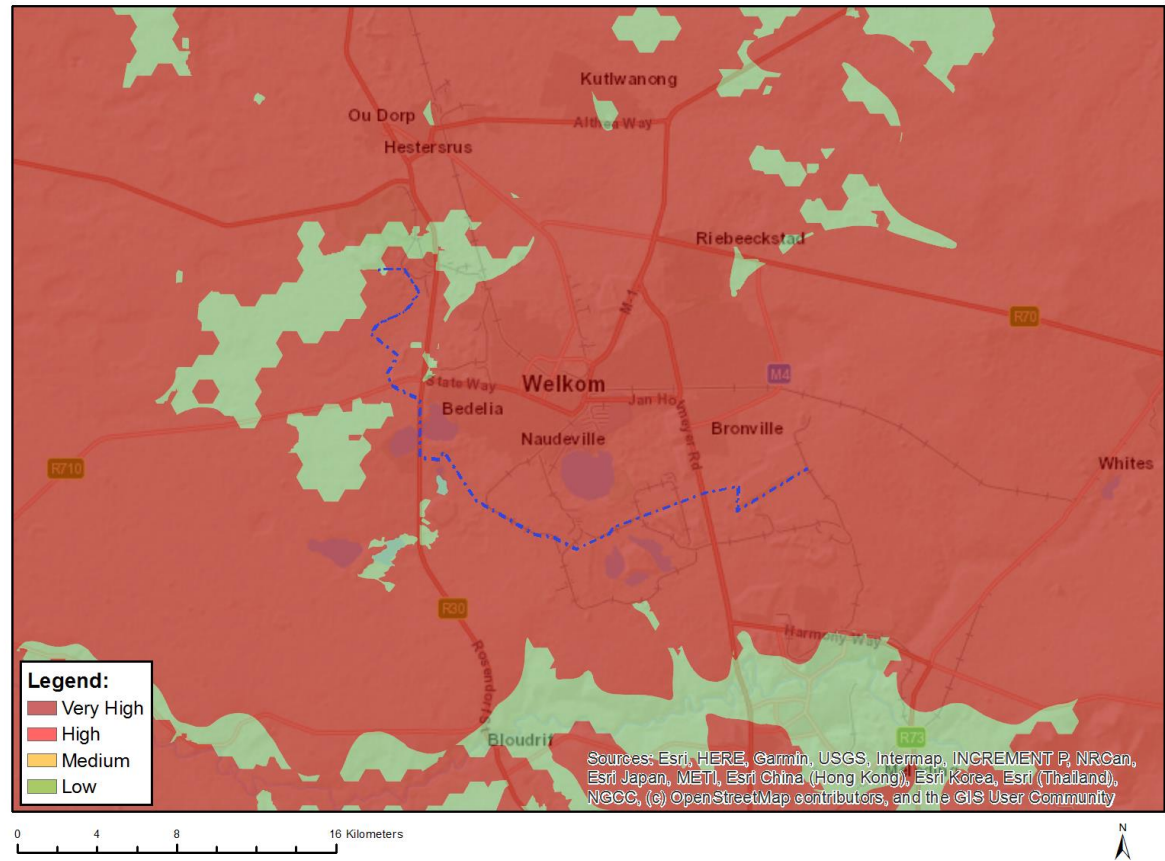
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Sensitive species 164

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	CBA 1
Very High	ESA 1
Very High	ESA 2
Very High	EN_Vaal-Vet Sandy Grassland



PREPARED FOR:



PREPARED BY:



Environmental Site Sensitivity and Verification Assessment

Site ID:	Harmony FSN1 Pipelines Project	Contractor:	EIMS
Location:	Welkom area, Free State Province	Inspector:	Sinalo Matshona
Client representative:	Brian Whitfield	Inspection Date:	26 January 2023

1. Background					
Background of the project:	<p>Harmony One Plant is located south of the town Welkom. Harmony One Plant is currently depositing half of its tailings onto the Free State South (FSS) 2 Tailings Storage Facility (TSF) and the other half onto the recommissioned St. Helena 4 TSF.</p> <p>These two facilities have deposition capacity until the end of June 2024 at which time another deposition site will be required to accept the tailings from Harmony One Plant. The existing Free State North (FSN) 1 TSF has been selected as the next deposition site.</p> <p>Harmony Gold Mining Company is planning to construct new pipelines and associated infrastructure to be utilised for the transport tailings and return water as indicated in the below section.</p>				
Project Aspects:	Yes	No	Details (provide specifications)	Location (DD MM SS)	
				Latitude	Longitude
❖ Return water pipelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Two new return water pipelines (with a 600mm diameter and an average flow rate of 500 l/s), from FSN1 Tailings Storage Facility (TSF) Return Water Dam to D-Dam complex and two new return water pipelines (with a 600mm diameter and an average flow rate of 500 l/s) from D-Dam complex to Dam 13. The estimated length of the proposed return water pipelines is approximately 23.5 km. The pipelines will be flanged steel pipeline and installed above-ground on pre-cast concrete plinths.	Return water pipeline from Harmony FSN1 Return Water Dam to D-Dam Complex	
				<u>Start Point</u> 27°55'45.17"S	26°39'16.60"E
				<u>Mid-Point</u> 27°56'7.66"S	26°40'23.18"E
				<u>End point</u> 27°56'31.02"S	26°41'0.66"E
				Return water pipeline from D-Dam Complex to Dam 13	
				<u>Start Point</u> 27°57'3.65"S	26°41'5.38"E

				<u>Mid-Point</u> 28° 1'27.39"S	26°43'3.46"E
				<u>End point</u> 28° 2'15.88"S	26°47'37.24"E
❖ Slurry pipelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Three new tailings pipelines (with a 450mm diameter and an average flow rate of 250 l/s), from Harmony One Plant to FSN 1 TSF. The estimated length of each of the proposed slurry pipelines is approximately 23 km and running along the same route/servitude. One tailings pipeline (with a 550mm diameter and an average flow rate of 390 l/s), from Saaiplaas Plant, currently depositing onto St. Helena TSF will be extended in future to the FSN1 TSF complex. The pipelines will be flanged steel pipeline and installed above-ground on pre-cast concrete plinths.	<u>Start Point</u> 28° 1'27.39"S	26°43'3.46"E
				<u>Mid-point</u> 27°58'53.52"S	26°41'15.74"E
				<u>End point</u> 27°55'44.57"S	26°40'6.45"E
❖ Access road	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A 3.5m wide access road, adjacent to the pipelines, will be cleared/graded to provide access for construction, maintenance and inspections.	<u>Start Point</u> 27°55'45.08"S	26°39'16.20"E
				<u>Mid-Point</u> 27°59'45.00"S	26°41'14.57"E
				<u>End point</u> 28° 2'15.90"S	26°47'37.31"E
❖ Booster pump station	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A booster pump station will be constructed at St Helena TSF Complex. The booster pump station will consist of pumps and electrical infrastructure to supply the pumps with power. The footprint of the proposed booster pump station will be less than a 1 ha.	<u>Approximate point:</u> 28° 1'27.39"S	26°43'3.46"E

Commented [LW1]: Are we sure about the distance? I find it difficult to understand that the RW pipelines are the same distance as the SP?

Commented [SM2R1]: BW may you please confirm the distances for the pipelines with HGM, I followed the routes on google earth an it shows me the slurry pipe is just below 15km in length while the total length of the return water pipelines is about 20km.



Locality Map

1549 Harmony FSN 1 Pipelines Project

Legend

- Rivers (NEFEPA)
- FSN 1 TSP Pipelines
- Existing Tailings H1 Plant to St.H 123
- FSN1 RWD to Ddam
- New Tailings Harmony 1 to FSN1
- RW Ddam to 13 dam
- Wetlands



Data Sources:
CSG; ESR
Coord System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Ref: 1549_Locality Map_20230119

Date: 2023/01/19
EIMS Ref: 1549
Compiled: CM
Reviewed: SM
Approved: LW

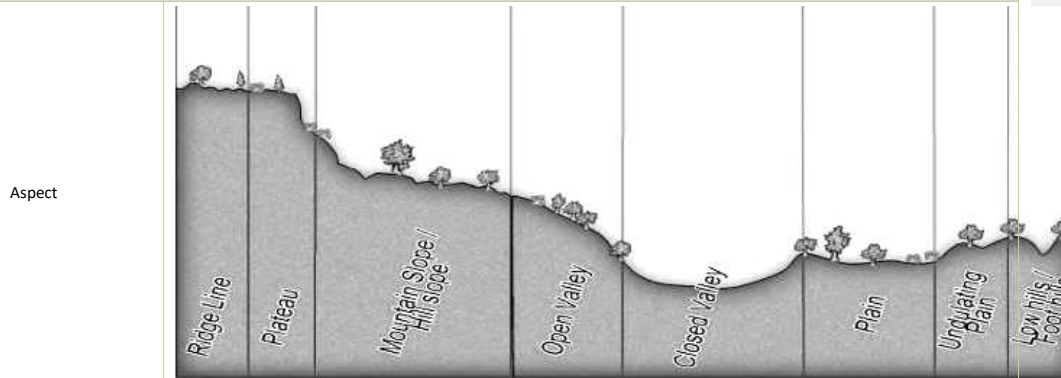


2. DEA Screening Tool Assessment

Pipeline and associated infrastructure	Very High	High	Medium	Low
Agriculture Theme		X		
Animal species		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X
Palaeontology Theme	X			
Plant Species Theme	X			
Terrestrial Biodiversity Theme	X			

3.1 Site Assessment (Pipelines and associated infrastructure)

3.1.1 Gradient (indicate the general gradient characteristics of site)



Pipeline infrastructure area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	No severe erosion was observed onsite.
Wetlands (within 32m)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A number of water courses occurs within close proximity to the pipeline route, this includes artificial wetlands such as return water dams. The pipeline also directly crosses a stream with an associated floodplain wetland and a depression wetland (Toronto Pan) will also be traversed.
Unstable slopes or geological features (rocky outcrops)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No rocky outcrops were observed along the pipeline route.
Bare areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bare soil was observed for the areas which have been cleared to create access roads used for maintenance and inspections as may be required by the Applicant.
Other Sensitive or risk areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A sensitive ecological species habitat was identified along the pipeline route and it is recommended that this area be avoided completely. The other social risk associated with the current route include the concerns which were raised by the communities residing at the Theronia hostel near the sewage water treatment works. The communities raised that the pipeline may lead to difficulties with access into their houses and may cause traffic issues and collision accidents for motorists. It was also indicated that the pipelines may damage the kraals as they will be passing close to them.
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"/>	The following existing servitudes were identified at different sections along the proposed pipeline route: <ul style="list-style-type: none"> Existing tailings and/or return water pipelines were identified along the pipeline route. Some sections of the pipeline route are along the provincial road (R30). The pipelines will remain adjacent to the

			<p>existing road servitudes and a few road crossings have been identified (the provincial roads authority and South African National Roads Authority (SANRAL) will be consulted in this regard).</p> <ul style="list-style-type: none">• The pipeline will pass near existing local access roads (paved and unpaved).• It was indicated that there a Sedibeng Water pipeline servitude exists along the pipeline route and this will be confirmed through consultation with Sedibeng Water.• Some overhead powerlines were also noted along the pipeline route.	
3.1.2 Vegetation				
Which of the listed descriptions best describes the general groundcover on and around the site?				
Natural veld - good condition <input checked="" type="checkbox"/>	Natural veld with scattered aliens <input checked="" type="checkbox"/>	Natural veld with heavy alien 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 checked="" type="checkbox"/>	Building or other structure <input checked="" type="checkbox"/>	Bare soil <input checked="" type="checkbox"/>
Comments on vegetation composition:	The vegetation along and around the proposed pipeline route is mostly regarded as degraded grasslands with scattered alien vegetation.			
Comments on weed species/type	The vegetation onsite consists of a natural veld in some areas with scattered alien vegetation. The exact type and species will be confirmed in the Terrestrial Biodiversity Assessment which will thoroughly study the plant species theme onsite.			
3.1.3 Land cover/ use description: Describe the land uses on the site				
Pipelines and associated infrastructure	<p>The pipeline route falls within a landscape that contains pipelines and other mining activities, thus the area can be described as largely disturbed. Parts of the surrounding landscape is used for informal cattle grazing. Other elements of disturbance identified within the study area include local access roads (paved and unpaved) and provincial roads and other infrastructure associated with the existing pipelines and other mining activities (including pump stations, return water dams, tailings storage facilities and maintenance access roads).</p> <p>The pipeline route mostly falls near existing provincial roads as well as local access roads (paved and unpaved).</p> <p>A watercourse (pan) exists near the pipeline route where local fishing activities have been noted.</p> <p>The pipeline crosses near residential properties with kraals for cattle.</p> <p>Cultivated land was also noted near the pipeline route.</p>			
4. General Comments and Recommendations				
<p>The following recommendations have been made by the specialists and the EAP:</p> <ul style="list-style-type: none">• The avoidance of the identified sensitive species area is recommended by the Terrestrial Biodiversity Specialist.• The avoidance and spanning of the Toronto pan by moving the pipeline to the western side of the road is recommended as this is the least sensitive area.• A desktop paleontological study has been recommended by the heritage specialist and is required by SAHRA as the site falls within high and very high paleontological sensitive areas as indicated in the SAHRA PaleoMap.• Consultation with the provincial roads authority, affected residents, local municipality and other parties with existing servitudes in the areas is recommended.				



5. Site Photos

Slurry and Return Water Pipelines Start: 26/01/2023 10:05; GPS Coordinates: -27.9290868, 26.6547448

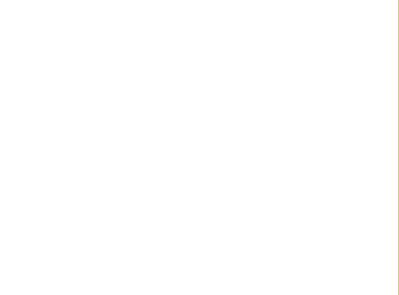


Return Water Pipelines Middle/ Slurry Pipelines End: 26/01/2023 11:43; GPS Coordinates: -28.0238889, 26.7175000



Return Water Pipeline End (near Dam 13): 26/01/2023 12:16; **GPS Coordinates:** -28.0308333, 26.7819444





Area within the vicinity of the stream crossing: 31/01/2023 10:32; **GPS Coordinates:** -27.9508333, 26.6850000



Return Water and Slurry Pipelines Route: 26/01/2023 09:56:10; **GPS Coordinates:** -28.0369444, 26.7661111



General Site Photos Including Observed Land uses:



Tailings storage facility and return water dam



Access road



Open veld with overhead powerlines



Existing pump station infrastructure



Welkom cemetery



Fishing activities at the Toronto Pan



Theronia Hostel near the proposed pipeline route



R30 road



Existing pipeline road crossing



Overhead powerlines



Access road near St Helena TSF



Proposed location for booster pump station



Trees planted as wind breaks



Road crossing example



6. Verification findings and motivation:

The following table provides a ranking of actual sensitivity observed on site against the sensitivity suggested by the National DFFE Screening Tool. A list of the specialist studies to be undertaken was also generated by the Screening Tool, the level of assessment which will be undertaken is shown below and motivation is also provided specifically where the Screening Tool suggested studies are deemed not applicable to this project and therefore will not be undertaken.

Assessment for specialist studies and motivation:				
Screening Tool Specialist Study Required:	Level of sensitivity suggested by the screening tool:	Level of sensitivity suggested from site screening and sensitivity verification:	Required level of Assessment	Motivation
Landscape/Visual Impact Assessment	Low	Low	None.	<input checked="" type="checkbox"/> The site sensitivity verification has confirmed that the proposed pipelines and associated infrastructure will have a low visual impact as the proposed project is currently in line and complements the existing land-uses which are mainly mining activities, hence an impact assessment is not deemed necessary for this particular activity.
			Compliance Statement	
			Full Assessment	
			Other	
Archaeological and Cultural Heritage	Low	Low	None.	<input type="checkbox"/> A full DFFE protocol compliant specialist Heritage Impact Assessment has been undertaken for the proposed project.
			Compliance Statement	
			Full Assessment	
			Other	
Palaeontology	Very High	Low	None.	<input type="checkbox"/> A desktop palaeontological study is recommended by SAHRA. It should be noted that the pipelines will be above ground and will require no excavation with the exception of road crossings and the booster pump station construction which will have a footprint less than 1 hectare. Due to the avoidance of excavations no detailed Palaeontology is required.
			Compliance Statement	
			Full Assessment	
			Other	
Terrestrial Biodiversity	Very High	Low	None.	<input type="checkbox"/> A full DFFE protocol compliant specialist Terrestrial Biodiversity Impact Assessment will be undertaken.
			Compliance Statement	
			Full Assessment	
			Other	
Aquatic Biodiversity Impact Assessment	Very High	Very High	None.	<input type="checkbox"/> A full DFFE protocol compliant specialist Agricultural Impact Assessment will be undertaken.
			Compliance Statement	

Assessment for specialist studies and motivation:					
Screening Tool Specialist Study Required:	Level of sensitivity suggested by the screening tool:	Level of sensitivity suggested from site screening and sensitivity verification:	Required level of Assessment		Motivation
			Full Assessment	<input checked="" type="checkbox"/>	
			Other	<input type="checkbox"/>	
Hydrology Assessment	Very High	High	None.	<input type="checkbox"/>	A full DFFE protocol compliant specialist Hydrology Assessment will be undertaken.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other	<input type="checkbox"/>	
Socio Economic Assessment	Low	Low	None.	<input checked="" type="checkbox"/>	A description of the social and economic background of the area will be provided in the Basic Assessment. The proposed pipeline project is small in scale and is not anticipated to have major economic spin-offs. A public participation process is also being undertaken to ensure that any socio-economic comments and or concerns are taken into consideration.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input type="checkbox"/>	
			Other	<input type="checkbox"/>	
Plant Species Assessment	Very High	High	None.	<input type="checkbox"/>	A full DFFE protocol compliant specialist Terrestrial Biodiversity Impact Assessment will be undertaken.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other	<input type="checkbox"/>	
Animal Species Assessment	High	Very High	None.	<input type="checkbox"/>	A full DFFE protocol compliant specialist Terrestrial Biodiversity Impact Assessment will be undertaken.
			Compliance Statement	<input type="checkbox"/>	
			Full Assessment	<input checked="" type="checkbox"/>	
			Other	<input type="checkbox"/>	
Guidance notes:					
<ul style="list-style-type: none">• 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.					

Assessment for specialist studies and motivation:				
Screening Tool Specialist Study Required:	Level of sensitivity suggested by the screening tool:	Level of sensitivity suggested from site screening and sensitivity verification:	Required level of Assessment	Motivation
<ul style="list-style-type: none">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.				