APPENDIX J – IMPACT ASSESSMENT

PROJECT IMPACT ASSESSMENT, SIGNIFICANCE AND MITIGATION MEASURES SUMMARY

The following impact rating approach used by EnviroAfrica cc is a basic exponential rating system to assess actual and potential negative and positive environmental impacts.

Environmental activities or aspects are identified, based on:

- the phases of the project,
- the nature (or description) of the actual and potential impacts of the activities.

For every project activity or aspect, various environmental impacts are listed. Every negative impact is allocated a -value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Consequence (Receiving Environment)
- Magnitude (Intensity/severity)

Every positive impact is allocated a +value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Magnitude (Intensity/severity)

Once a value is allocated for each of the criterion, the scores are averaged to determine the final impact rating see Table 1 below.

EnviroAfrica then further assesses environmental significance, based on the nature of the impact, as per the score and colour key which forms part of Table 1 below. This results in impacts having either a low (indicated in green), medium (indicated in yellow) or high (indicated in orange and red) negative significance, and a low (light blue), medium (blue) or a high (dark blue) positive significance

Note: i. As a baseline, impact rating values/scores are allocated taking the **worst-case** scenario into account i.e. with no mitigation. The baseline rating is compared with those after mitigation has been taken into account i.e. the post-mitigation rating. Post mitigation rating is used for the actual impact assessment.

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SIGNIFICANCE CRITIERIA	Very High	High	Medium	Low	Negligible (very low)
Value	**16**	**8**	**4**	**2**	**1**
Probability (likelihood) **(P)**		Definite. Impact will definitely occur (impact will occur regardless of any prevention measures)	Highly probable. Very likely for impact to occur.	Probable. Impact may likely occur.	Improbable. Low likelihood/unlikely for impact to occur.
Extent (E)	Impact potentially reaches beyond national boundaries	Impact has definite provincial/potential national consequences	Impact confined to regional area/ town	Impact confined to local region and impact on neighbouring properties	Impact confined to project property / site
Duration (D)		Permanent The impact is expected to have a permanent impact, with very little to no rehabilitation possible	Long-Term The impact is expected to last for a long time after construction with rehabilitation expected to be 15-50 years. Impact is reversible but only with long-term mitigation	Medium-term The impact is expected to last for some time after construction with rehabilitation expected to be 2 - 15 years. Impact is reversible but only with on-going mitigation	Short-term / temporary The impact is expected to be temporary or last for a relatively short time with rehabilitation expected to be <2years. The impact is reversible through natural process and/or some mitigation.
Magnitude (Intensity/ Severity) **(M)**	It is expected that the activity will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible	It is expected that the activity will have a severe impact on the surrounding environment. Functioning may be severely impaired and may be temporarily cease. Rehabilitation will be needed to restore system integrity	It is expected that the activity will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the activity will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the impact will have little or no effect on the integrity of the surrounding environment
Receiving environment (Consequence): **(RE)**	Very sensitive, pristine area – protected site or species permanently or seasonally present	Unused area containing only indigenous fauna / flora species	Unused area containing indigenous and alien fauna / flora species	Semi-disturbed area already rehabilitated / recovered from prior impact, or with moderate alien vegetation	Disturbed area/ transformed/ heavy alien vegetation

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ENVIRONMENTAL RATING SIGNIFICANCE KEY:

Negative Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-11 to -16
Significant	High	-7 to <-11
Increasing Significance	Medium	≥-5 to <-7
	Medium Low	-4 to ≤-5
Insignificant	Low	-3 to <-4
	Very Low	-1 to <-2

Positive Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	4 to <10
Insignificant	Low	1 to <4

Table 1. Environmental Significance Rating Methodology (rating criteria and significance key)

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
CONSTRUCTION PHASE					
1	Biodiversity	**Special habitats**: Potential impact on special habitats (e.g. true quartz or "heuweltjies")	**Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
2		**Vegetation status**: Loss of vulnerable or endangered vegetation and associated habitat.	**Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
3		**Conservation priority:** Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	**Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
4		**Connectivity:** Potential loss of ecological migration corridors.	**Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
5		**Plant SoCC (Protected Plant Species):** Potential impact on threatened or protected plant species.	**Very Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
6		**Fauna SoCC:** Potential impact on mammals, reptiles & amphibians.	**Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
7		**Cumulative** impact associated with proposed activity.	**Low (Negative)**	Ensure that the construction activities do not result in any additional impact on the surrounding natural vegetation (especially the larger indigenous trees).	**Very Low (Negative)**
8		**The "No-Go" option:** Potential impact associated with the No-Go alternative.	**Low (Negative)**	The site is already degraded, and the current land use will continue. As a result, the No-Go alternative will not necessarily result in NO further impact. The site will still be used for agricultural related practices. • A suitably qualified environmental control officer (ECO) should be appointed to oversee the construction phase, including laydown areas selection and waste- and wastewater management	

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				• The green & yellow area in Figure 7 in the Terrestrial Biodiversity Assessment (Appendix G2) are considered of botanical significance and should be protected and regarded as No-Go areas during the construction phase • The construction site must be demarcated (approved by the ECO) and all construction activities must remain within this demarcated area • No additional impact must be allowed on the remaining indigenous vegetation (Refer to Figure 7 the Terrestrial Biodiversity Assessment (Appendix G2))	
9	Agriculture	No impacts expected		No further mitigation is recommended concerning these resources.	
10	Freshwater	No impacts expected		• The farm roads on the property serve storm water preferential flow paths. Erosion was evident during the site visit • During the construction phase, when the foundations are made, no more land must be disturbed that is necessary, as loose sand and sediments will be washed downhill along the farm roads and will eventually end up in the downstream aquatic habitat. Deposition and infilling may further downgrade aquatic habitat even more than it already is • The farm roads must be provided with berms and whatever stormwater management infrastructure is required to divert runoff from the roads. Sediment transport down the slope must be prevented as far as possible • Construction must be concluded in the dry summer months • Heavy heaving of several cubic metres of concrete up the steep incline is bound to happen. The access road is about to take punishment during this operation. The road must be kept in a good state of repair. It must be immediately repaired following damage dome by heavy vehicles and earth-moving machinery. The access road must not be allowed to form even deeper trenches	
11	Heritage	No impacts expected		No further mitigation is recommended concerning these resources.	
12	Archaeological	No impacts expected		No further mitigation is recommended concerning these resources.	
13	Palaeontology	No impacts expected		No further mitigation is recommended concerning these resources.	

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14	Visual	Construction Impacts	**Low (Negative)**	During construction, various types of vehicles will transport equipment to the site and work on the site. This will impact on the general experience for viewers. These impacts are however temporary and not uncommon during the construction of infrastructure. Communities have fairly high tolerance levels for such activities if it contribute to the infrastructure of the area and are of short duration.	**Low (Negative)**
15	Visual	Cumulative Impacts	**Low (Negative)**	During construction, various types of vehicles will transport equipment to the site and work on the site. This will impact on the general experience for viewers. These impacts are however temporary and not uncommon during the construction of infrastructure. Communities have fairly high tolerance levels for such activities if it contribute to the infrastructure of the area and are of short duration.	**Low (Negative)**
OPERATIONAL PHASE					
1	Visual	Operational	**Medium Low (Negative)**	The mast is to be kept grey for the duration of the operational phase of the mast, thus maintenance should be done frequently.	**Medium Low (Negative)**