

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 negative 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

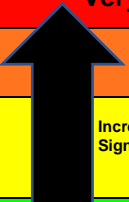
Note: i. As a baseline, impact rating values/scores are allocated taking the **worst case** scenario into account i.e. with no mitigation. The baseline rating is compared with those after mitigation has been taken into account i.e. the post-mitigation rating. Post mitigation rating is used for the actual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

| SIGNIFICANCE CRITERIA | Very High | High | Medium | Low | Negligible (very-low) | Score |
|--|---|---|---|--|--|--------------|
| 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. Impact may occur. Distinct Possibility | 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 | Long-Term | Medium-term | Short-term | Very short/ temporary | |
| 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 | |
| FINAL RATING (average score) | | | | | | |

ENVIRONMENTAL RATING SIGNIFICANCE KEY:

Negative Impacts

| SIGNIFICANCE | RATING | Final rating score / value range |
|-------------------------|-----------|----------------------------------|
| Very Significant | Very High | -12 to -16 |
| Significant | High | -7 to <-12 |
| Increasing Significance | Medium | -4 to <-7 |
| Insignificant | Low | -2 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)

| No. | ASPECT | IMPACT | WITHOUT MITIGATION | | | | | | WITH MITIGATION | | | | | | Short Description of some of the pertinent mitigation/enhancement measures |
|-----|-----------|--|--------------------|--------|----------|-----------|-----------------------|-------------------------------------|-----------------|--------|----------|-----------|-----------------------|---|--|
| | | | Probability | Extent | Duration | Magnitude | Receiving Environment | Without Mitigation Score (Baseline) | Probability | Extent | Duration | Magnitude | Receiving Environment | With Mitigation Score (Impact assessment) | |
| 1 | Botanical | Geology & soils: Potential impact on special habitats (e.g. true quartz or "heuweltjies") | -8 | -4 | -16 | -4 | -4 | -7 | -2 | -2 | -8 | -2 | -4 | -3 | No mitigation proposed |
| 2 | | Landuse and cover: Potential impact on socio-economic activities. | -8 | -2 | -16 | -2 | -4 | -6 | -2 | -1 | -8 | -1 | -4 | -3 | Potential positive socio-economic impact |
| 3 | | Vegetation status: Loss of vulnerable or endangered vegetation and associated habitat. | -8 | -4 | -16 | -4 | -4 | -7 | -2 | -2 | -2 | -2 | -4 | -2 | Protect all significant indigenous tree species and search & rescue other potentially significant protected plant species. |
| 4 | | Conservation priority: Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism. | -8 | -4 | -16 | -4 | -8 | -8 | -2 | -2 | -8 | -2 | -8 | -4 | Minimise the disturbance footprint during construction through good environmental control during construction. Protect all significant indigenous trees. |
| 5 | | Connectivity: Potential loss of ecological migration corridors. | -8 | -4 | -16 | -4 | -4 | -7 | -2 | -2 | -2 | -2 | -4 | -2 | Minimise the disturbance footprint during construction through good environmental control during construction. Protect all significant indigenous trees. |

| No. | ASPECT | IMPACT | WITHOUT MITIGATION | | | | | Without Mitigation Score (Baseline) | WITH MITIGATION | | | | | With Mitigation Score (Impact assessment) | Short Description of some of the pertinent mitigation/enhancement measures |
|-----|------------------|---|--------------------|--------|----------|-----------|-----------------------|-------------------------------------|-----------------|--------|----------|-----------|-----------------------|---|---|
| | | | Probability | Extent | Duration | Magnitude | Receiving Environment | | Probability | Extent | Duration | Magnitude | Receiving Environment | | |
| 7 | | Protected & endangered plant species: Potential impact on threatened or protected plant species. | -8 | -4 | -16 | -4 | -8 | -8 | -2 | -1 | -8 | -2 | -8 | -4 | Protect all significant indigenous tree species and search & rescue other potentially significant protected plant species. |
| 8 | | Invasive alien plant species: Potential invasive plant infestation as a result of the activities. | -4 | -4 | -8 | -4 | -8 | -6 | -1 | -1 | -2 | -1 | -8 | -3 | For most of the property, only the occasional Prosopis trees were observed. However, near the Hartbees River dense stands of Prosopis were observed. Special care must be taken during their removal (in order to avoid re-sprouting). |
| 9 | | Veld fire risk: Potential risk of veld fires as a result of the activities. | -2 | -4 | -4 | -2 | -1 | -3 | -1 | -1 | -1 | -1 | -4 | -1.6 | Address fire danger throughout construction. See EMP |
| 10 | | Cumulative impacts: Cumulative impact associated with proposed activity. | -8 | -4 | -16 | -4 | -8 | -8 | -2 | -2 | -8 | -2 | -8 | -4 | Refer to all the mitigation recommendations above. |
| 11 | Heritage | Loss of Heritage resources | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | No specific mitigation. Please see EMP |
| 10 | Palaeontological | Loss of Palaeontological heritage resources | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | No specific mitigation. Please see EMP |

| | ASPECT | IMPACT | WITHOUT MITIGATION | | | | | | Without Mitigation Score (Baseline) | WITH MITIGATION | | | | | With Mitigation Score (Impact assessment) | Short Description of some of the pertinent mitigation/enhancement measures |
|----|----------------|--|--------------------|--------|----------|-----------|-----------------------|-------------|-------------------------------------|-----------------|----------|-----------|-----------------------|------|--|--|
| | | | Probability | Extent | Duration | Magnitude | Receiving Environment | Probability | | Extent | Duration | Magnitude | Receiving Environment | | | |
| 11 | Freshwater | Tilling of new land, washing of soil down the drainage lines and into the Hartbees River during a storm event. | -4 | -4 | -4 | -4 | -4 | -4 | -2 | -2 | -2 | -2 | -2 | -2 | See specific recommendations in Section 10.3.3 and 12 of the EIR | |
| 12 | | Construction of berms, drainage swales and storm water management infrastructure. | -4 | -4 | -4 | -4 | -4 | -4 | -2 | -2 | -2 | -2 | -2 | -2 | | |
| 13 | | Construction of irrigation infrastructure | -4 | -4 | -4 | -4 | -4 | -4 | -2 | -2 | -2 | -2 | -2 | -2 | | |
| 14 | | Operation of new farming venture Irrigation of crops | -4 | -4 | -4 | -4 | -8 | -5 | -2 | -2 | -8 | -2 | -2 | -3.2 | | |
| 15 | Socio-economic | Job Creation – Construction phase | 16 | 4 | 2 | 2 | | 6 | | | | | | | | |
| 16 | Socio-economic | Job Creation – Operational phase | 16 | 4 | 8 | 2 | | 7.5 | | | | | | | | |
| 17 | Visual | Potential visual impact on the area | -4 | -2 | -8 | -2 | -2 | -3.6 | -4 | -2 | -8 | -1 | -2 | -3.4 | Construction of development according to the EMP. | |

| | | | | | | | | | | | | | | | |
|----|-------------|---|----|----|----|----|----|------|----|----|----|----|----|------|---|
| 18 | Dust | Potential impact of dust from construction activities | -8 | -2 | -4 | -2 | -2 | -3.6 | -4 | -2 | -4 | -1 | -2 | -2.6 | The proposed development should be phased and site clearing confined to the specific areas under construction. Dust suppression measures must be implemented. Construction in accordance with the EMP |
|----|-------------|---|----|----|----|----|----|------|----|----|----|----|----|------|---|