

## 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.

**APPENDIX F – IMPACT ASSESSMENT**



<b>SIGNIFICANCE CRITERIA</b>	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Negligible (very-low)</b>
<b>Value</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>
<b>Probability (likelihood) (P)</b>	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.
<b>Extent (E)</b>	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
<b>Duration (D)</b>	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 5 - 15 years. Impact is reversible but only with on-going mitigation	Short-term The impact is expected to last for a relatively short time with rehabilitation expected to be 2-5 years. The impact is reversible through natural process and/or some mitigation.	Very short/ temporary The impact is expected to be temporary and last for a very short time with rehabilitation expected to be less than 2 years. The impact is easily reversible through natural process and/or some mitigation.
<b>Magnitude (Intensity/ Severity) (M)</b>	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
<b>Receiving environment (Consequence): (RE)</b>	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

**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	-4 to <-7
	Low	-2 to <-4
Insignificant	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)

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NAPIER BERRIES														
Nature of Impact			Without Mitigation (Baseline)					Without Mitigation Score (Baseline)	With Mitigation					With Mitigation Score (Impact Assessment)
Number	Aspect	Impact	Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Significance/Consequence)		Probability (Likelihood)	Extent	Duration (Frequency)	Magnitude (Intensity/Severity)	Receiving Environment (Significance/Consequence)	
<b>CONSTRUCTION PHASE</b>														
1	Impact on Cultural, Archaeological Palaeontological, and Heritage	Loss and/or damage to potential fossils and archaeological and historical sites within the construction footprint	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2	Botanical	Loss of Overberg Sandstone Fynbos (Preferred Site)	-8	-2	-8	-4	-8	-6	-8	-1	-8	-1	-1	-3
3		Loss of Overberg Sandstone Fynbos (Alternative Site)	-8	-2	-8	-16	-16	-10	-8	-1	-8	-2	-16	-7
4		No-Go Alternative	-8	-2	-8	-4	-4	-6	0	0	0	0	0	0
5	Freshwater Resources	Potential impacts on freshwater resources	-2	-1	-4	-1	-2	-2	-1	-1	-1	-1	-2	-1
6	Socio-economic	Creation of short-term employment opportunities.	8	4	2	2	8	5	0	0	0	0	0	0
7	Dust	Dust may be generated during the construction of the proposed development which may impact surrounding communities.	-4	-2	-2	-2	-2	-3	-2	-2	-2	-1	-2	-2
8	Visual	Visual impact of construction activities and plant on site	-8	-2	-2	-1	-1	-3	-8	-2	-2	-1	-1	-3
9	Traffic	Increase in trucks and construction plant	-2	-1	-1	-2	-1	-1	-2	-1	-1	-2	-1	-1
10	Noise	Noise will be generated during the construction phase.	-4	-1	-2	-1	-1	-2	-4	-1	-2	-1	-1	-2
<b>OPERATIONAL PHASE</b>														
11	Freshwater Resources	Potential impacts of pesticides on freshwater resources	-2	-2	-2	-2	-2	-2	-1	-1	-2	-1	-1	-1
12	Botanical	Potential impacts of pesticides on surrounding fynbos	-2	-1	-2	-2	-4	-2	-1	-1	-2	-2	-4	-2
13	Impact on Cultural, Archaeological Palaeontological, and Heritage	Loss and/or damage to potential fossils and archaeological and historical sites during operational activities	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
14	Visual	Visual impact of agricultural development with shade netting from town	-8	-2	-4	-2	-4	-4	-8	-2	-4	-2	-2	-3
15	Socio-economic	Creation of long-term employment opportunities.	8	4	8	2	8	6	0	0	0	0	0	0

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)
<b>CONSTRUCTION PHASE</b>					
1	Impact on Cultural, Archaeological Palaeontological, and Heritage	Loss and/or damage to potential fossils and archaeological and historical sites within the construction footprint	Very Low (Negative)	<p>The likelihood of the proposed development negatively impacting on significant archaeological or palaeontological heritage is very low.</p> <p>However, with regard to the proposed development, the following recommendations are made:</p> <ul style="list-style-type: none"> <li>- If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to HWC and must not be disturbed further until the necessary approval has been obtained from HWC.</li> <li>- Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency (021 462 4502) and Heritage Western Cape (021 483 9685). The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the developer.</li> </ul>	Negligible
2	Botanical	Loss of Overberg Sandstone Fynbos (Preferred Site)	Medium (Negative)	<p>The recommended mitigation is that the alien invasive plant species, <i>Pinus radiata</i>*, <i>Leptospermum laevigatum</i>*, <i>Acacia longifolia</i>*, <i>Acacia saligna</i>* and <i>Hakea sericea</i>* should be systematically cleared and removed from the entire part of Portion 3 of Vierfontein 143 i.e. the southern part of the study area and beyond to the higher altitude parts of Portion 3. It is essential that the wood, including all branches, should be removed from the fynbos and destroyed at a designated dumpsite.</p> <p>The mitigation described above would compensate for the loss of the 20 ha of degraded fynbos in the northern part of the study area and would contribute positively to the efforts of the Napier Mountain Conservancy aimed at eradicating the alien vegetation in the catchments of the Groot Sanddrif River. The implementation of this mitigation that should be conditional to issuing Environmental Authorisation</p>	Low (Negative)

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				In addition to the above, a conservation management plan should be drawn up in conjunction with the Napier Mountain Conservancy, to promote the care of the land within this farm portion as part of a community effort to take responsibility for the natural environment around Napier. It is imperative that a monitoring programme to monitor alien invasion should form part of the management plan. When aliens are encountered, they must be systematically removed.	
3		Loss of Overberg Sandstone Fynbos (Alternative Site)	High (Negative)	Mitigation for the loss of the vegetation in the southern 20 ha would be systematic clearing of all the alien invasive plants in the northern part of the study area, as well as in higher altitude areas of Portion 3 of farm Vierfontein 143. This would have high cost implications. The mitigation measures would lower the impact to <b>Medium Negative</b> , that in this ecosystem is still higher than would be desired.	High (Negative)
4		No-Go Alternative	Medium (Negative)		
5	Freshwater Resources	Potential impacts of construction activities on freshwater resources	Low (Negative)	The nearest watercourse is approximately 230m from the proposed site, with impacts unlikely.  However, the following mitigation measures must be implemented: <ul style="list-style-type: none"> <li>- Limit the footprint. Construction footprint to be demarcated, and approved by the ECO</li> <li>- Construct during the dry summer months</li> <li>- Be mindful of the aquatic environment during construction and employ best practices</li> </ul>	Very Low (Negative)
6	Socioeconomic	Creation of short-term employment opportunities.	Medium (Positive)	A strict employment process is followed in line with the Employment Equity plan and report that is submitted annually. The recruitment team is adhering to the Equity requirements and their adherence is reported to the CEO on a quarterly basis.  Non-adherence to the EE Act may result in severe fines and it will influence the Applicant's BBBEE rating negatively. This is in addition to their policy to uplift the surrounding community.	

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7	Dust	Dust may be generated during the construction of the proposed development.	Low (Negative)	<p>The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area).</p> <ul style="list-style-type: none"> <li>- The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause damage to people and property.</li> <li>- The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.</li> </ul>	Low (Negative)
8	Visual	Visual impact of construction activities and plant on site	Low (Negative)	<ul style="list-style-type: none"> <li>- Construction activities limited to within the construction footprint</li> <li>- The contractor may not operate any machinery outside the demarcated area.</li> <li>- Appropriate machinery to be used</li> </ul>	Low (Negative)
9	Traffic	Increase in trucks and construction plant	Very Low (Negative)	Cognisance of traffic and road users on the access road and R316	Very Low (Negative)
10	Noise	Noise will be generated during the construction phase.	Low (Negative)	<p>Any noise generated by construction activities will be a temporary impact however, the following mitigation measures will be implemented:</p> <ul style="list-style-type: none"> <li>- A complaint register to be maintained on-site. Any complaints received must be responded to and rectified accordingly. The ECO must be notified of any complaints;</li> <li>- All construction vehicles must be fitted with standard silencers. All silencers must be maintained. All machinery used on site must have suppressors.</li> <li>- Working hours must be limited to and strictly adhered to standard daylight working hours (08h00-17h00).</li> </ul>	Low (Negative)

OPERATION PHASE					
11	Freshwater Resources	Potential impacts of pesticides	Low (Negative)	<p>Due to the proximity of the proposed development to the nearest watercourse (230m west), impacts are unlikely. Herbicides to control grass/weed is rarely used.</p> <p>Napier Berries have a system that records all pesticide use, which is then audited by an independent company, including all of spray records. All cleaning of equipment and disposal of old products is also audited. An independent company removes all the old products and containers and issues a removal certificate.</p> <p>The following mitigation measures as per the EMP must be followed:</p> <ul style="list-style-type: none"> <li>• Pesticide use must be carefully and sparingly used. Only appropriate pesticides to be used. All precautions as described in the herbicides' Material Safety Data Sheet to be followed.</li> <li>• Cognisance of all natural areas, including the surrounding fynbos and nearby watercourses, must be taken.</li> <li>• Ensure proper storage of pesticides, under lock and key.</li> <li>• Staff/users must be properly trained to ensure they are capable of handling the pesticides in a proper and responsible manner.</li> <li>• Appropriate PPE must be provided to all staff/users</li> <li>• Pesticide use, cleaning and disposal of used equipment, containers must be audited by an independent company on a regular basis.</li> <li>• Empty pesticide containers should be triple rinsed, punctured and disposed of in an environmentally sound manner. Certification of disposal must be received and kept.</li> </ul>	Very Low (Negative)
12	Botanical	Potential impacts of pesticides on surrounding fynbos	Low (Negative)	<p>Herbicides to control grass/weed is rarely used.</p> <p>The pesticide use as per above and the EMP must be followed.</p>	Very Low (Negative)
13	Impact on Cultural, Archaeological, Palaeontological, and Heritage	Loss and/or damage to potential fossils and archaeological and historical sites during operational activities	Very Low (Negative)	<p>The likelihood of the proposed development negatively impacting on significant archaeological or palaeontological heritage is very low.</p> <p>However, with regard to the proposed development, the following recommendations are made:</p> <ul style="list-style-type: none"> <li>- If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to HWC and must not be disturbed further until the necessary approval has been obtained from HWC.</li> </ul>	Negligible to no impact

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				- Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency (021 462 4502) and Heritage Western Cape (021 483 9685). The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the developer.	
14	Visual	Visual impact of agricultural development with shade netting from town	Medium (Negative)	Appropriate colour shade netting to be used	Low (Negative)
15	Socio-economic	Creation of long-term employment opportunities.	Low (Positive)	<p>A strict employment process is followed in line with the Employment Equity plan and report that is submitted annually. The recruitment team is adhering to the Equity requirements and their adherence is reported to the CEO on a quarterly basis.</p> <p>Non-adherence to the EE Act may result in severe fines and it will influence the Applicant's BBBEE rating negatively. This is in addition to their policy to uplift the surrounding community.</p>	