



ECO ROUTE ENVIRONMENTAL CONSULTANCY

DRAFT CONSTRUCTION AND OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME

**Honeybush Tea Cultivation, Farm Wittedrift 306/7,
Plettenberg Bay, Western Cape**

DEA&DP Reference: 14/2/1/3/D1/13/0022/16



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This EMPr will need to be amended to contain specific conditions if Environmental Authorisation is granted.

1. INTRODUCTION

In accordance with the Integrated Environmental Management Guidelines published by the Department of Environmental Affairs & Tourism (DEAT) in 1992, the purpose of an Environmental Management Programme (EMPr) is “to describe how negative environmental impacts will be managed, rehabilitated or monitored and how positive impacts will be maximised”.

National Environmental Management Act, (Act 107 of 1998)

(i) Section 28 of NEMA (National Environmental Management Act, Act 107 of 1998) states that:

Duty of care and remediation of environmental damage

"(1) Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimise and rectify such pollution or degradation of the environment"

This EMPr must be read in conjunction with the Section 24G Environmental Impact Assessment Report dated August 2017, and all specialist reports. All recommendations, relevant conditions and mitigation measures provided in these documents must also be adhered to.

This EMPr must form an integral part of the contract documents, as it outlines the methodology & duties required so that the project objectives can be achieved in an environmentally sustainable manner; with particular reference to the prevention and mitigation of environmental impacts caused by operational activities associated with this project.

These requirements will have a financial impact on the projects costings.

This EMPr is a dynamic document that may need to evolve during its implementation period so that it recognises any new issues that may arise; or changes in the parameters of identified issues and can address these issues with the required/amended mitigation.

The Polluter-Pays Principle

This principle provides for “the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.” The Polluter Pays Principle will be rigorously applied throughout the operational phase of this project.

2. PROJECT DETAILS

Eco Route Environmental Consultancy has been appointed as independent environmental practitioners by the proponent, Honeybush Investments Pty Ltd, to ensure rectification of unlawful commencement of an activity in terms of Section 24G of the National Environmental Management Act (Act 107 of 1998) for the expansion of a dam and the clearance of vegetation on Portion 7 of farm Wittedrift no. 306, Plettenberg Bay.

The farm Wittedrift no. 306 is approximately 291.98 ha in extent, and the development footprint is approximately 44 ha. The farm lies within a predominantly Critical Biodiversity Area, bordered by Ecological Support Areas. The project

entails the cultivation of 42ha of Honeybush Tea, expansion of an existing farm dam from 0.5ha to 1.88ha, the proposed construction of two residential dwellings (448m² each), the proposed construction of a shed (200m²), a temporary nursery (1200m²), the construction of a road (approximately 480m in length and 4m wide; except the top and bottom of the road, which are wider than 4m), the proposed construction of a jetty (39m²), and the proposed construction of a borehole and pipeline (2000m in length).

3. IMPACTS ASSOCIATED WITH THE CONSTRUCTION AND OPERATION OF THE ACTIVITY

- (a) Impacts that resulted from the **construction phases** (briefly describe and compare the impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that occurred as a result of the planning, design and construction phases.

Impacts on geographical and physical aspects:	
Nature of impact:	Soil erosion – Construction of the road and expansion of the existing dam
Extent and duration of impact:	Limited to the site – permanent unless rehabilitated
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a time span of 0 to 5 years.
Degree to which the impact may cause irreplaceable loss of resources:	Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means.
Cumulative impact prior to mitigation:	Loss of soil fertility and the formation of erosion runnels
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.
Proposed mitigation:	All erosion runnels must be filled with fertile soil and fynbos vegetation indigenous to the area must be replanted in these areas. Please refer to the appended Rehabilitation Plan for detailed mitigation measures.
Cumulative impact post mitigation:	Decreased erosion, surface water runoff, and sedimentation of

	the dam.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High

Impacts on geographical and physical aspects:	
Nature of impact:	Sedimentation of the dam due to cleared and bare soil
Extent and duration of impact:	Limited to the site – permanent without mitigation
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a time span of 0 to 5 years.
Degree to which the impact may cause irreplaceable loss of resources:	Short-term – Quickly recoverable. The resource can be renewed / recovered with mitigation in a time span of 0 to 5 years.
Cumulative impact prior to mitigation:	The dam gradually loses its ability to store water for the purposes for which it was built.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium-High
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a time span of 0 to 5 years.
Proposed mitigation:	All erosion runnels must be filled with fertile soil and fynbos vegetation indigenous to the area must be replanted in these areas. Please refer to the appended Rehabilitation Plan for detailed mitigation measures.
Cumulative impact post mitigation:	Decreased sedimentation of the dam
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low-Medium

Impacts on geographical and physical aspects:	
Nature of impact:	Erosion of the river bank - Construction of a Jetty

Extent and duration of impact:	Limited to the site – permanent
Probability of occurrence:	Highly probable
Degree to which the impact can be reversed:	Medium term – The impact / effect will be returned to its benchmark state through mitigation or natural processes in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
Degree to which the impact may cause irreplaceable loss of resources:	Medium term –The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span between 5 and 15 years.
Cumulative impact prior to mitigation:	Hydrological and morphological changes to the river
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high
Degree to which the impact can be mitigated:	Medium – long term
Proposed mitigation:	No mitigation exists as the presence of a jetty will inevitably cause accelerated erosion.
Cumulative impact post mitigation:	N/a
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high

Impact on biological aspects:	
Nature of impact:	<p>Vegetation clearance due to:</p> <ul style="list-style-type: none"> • Construction of the road, • Brush cutting for Honeybush Tea cultivation, temporary nursery, shed, and proposed two dwellings, • Clearance for the expansion of the dam, • Clearance for the construction of a jetty, and • Clearance for the installation of a borehole and pipeline.

Extent and duration of impact:	<ul style="list-style-type: none"> • Construction of the road – limited to the site; permanently. • Brush cutting for Honeybush Tea cultivation, temporary nursery, shed, and proposed two dwellings – limited to the site; short term – permanent • Clearance for the expansion of the dam – limited to the site; short term for areas surrounding dam & permanent for the expansion of the dam. • Clearance for the construction of a jetty – limited to the site; permanent if rehabilitation does not occur. • Clearance for the installation of a borehole and pipeline – limited to the local area; permanent for the installation of a borehole & short term for the pipeline as the route will be rehabilitated upon completion.
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	<ul style="list-style-type: none"> • Construction of the road – long term unless the road is rehabilitated to its natural state. • Brush cutting for Honeybush Tea cultivation – medium; fynbos will be allowed to grow naturally between each row of Honeybush tea. • Brush cut area for temporary nursery – medium; fynbos will not re-grow until the nursery is removed.

	<ul style="list-style-type: none"> • Brush cutting for shed – long term; fynbos will not re-grow if the shed is constructed. • Brush cutting for proposed two dwellings and eventually clearance – long term if construction goes ahead. • Clearance for the expansion of the dam – long term unless the dam is rehabilitated to its natural state. • Clearance for the construction of a jetty – long term unless the area is rehabilitated to its natural state. • Clearance for the installation of a borehole and pipeline – medium – long term
<p>Degree to which the impact may cause irreplaceable loss of resources:</p>	<ul style="list-style-type: none"> • Construction of the road – Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means. • Brush cutting for Honeybush Tea cultivation – Medium term – The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span between 5 and 15 years. • Brush cut area for temporary nursery – Medium term –The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span between 5 and 15 years.

	<ul style="list-style-type: none"> • Brush cutting for shed – Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means. • Brush cutting for proposed two dwellings and eventually clearance – Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means. • Clearance for the expansion of the dam – Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means. • Clearance for the construction of a jetty – Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means. • Clearance for the installation of a borehole and pipeline – medium – long term
Cumulative impact prior to mitigation:	Loss of Fynbos vegetation – loss of species diversity
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	<ul style="list-style-type: none"> • Construction of the road – long term unless the road is rehabilitated to its natural state. • Brush cutting for Honeybush Tea cultivation – medium; fynbos will be allowed to grow naturally between each row of Honeybush tea.

	<ul style="list-style-type: none"> • Brush cut area for temporary nursery – medium; fynbos will not re-grow until the nursery is removed. • Brush cutting for shed – long term; fynbos will not re-grow if the shed is constructed. • Brush cutting for proposed two dwellings and eventually clearance – long term if construction goes ahead. • Clearance for the expansion of the dam – long term unless the dam is rehabilitated to its natural state. • Clearance for the construction of a jetty – long term unless the area is rehabilitated to its natural state. • Clearance for the installation of a borehole and pipeline – medium – long term
<p>Proposed mitigation:</p>	<p>All protected plant species should have been identified and transplanted prior to commencement. However, the following mitigation measures can be taken to rehabilitate current environmental impacts and prevent further degradation:</p> <ul style="list-style-type: none"> • Construction of the road – embankments along the road must be rehabilitated following the instructions found in the appended Rehabilitation Plan. • Brush cutting for Honeybush Tea cultivation-fynbos must be allowed to re-establish itself naturally

	<p>between each row of Honeybush tea.</p> <ul style="list-style-type: none"> • Brush cut area for temporary nursery –fynbos will re-establish itself once the nursery is removed. Caution must be taken to avoid erosion in this area during vegetation re-growth. • Brush cutting for shed – fynbos will not re-grow if the shed is constructed. • Brush cutting for proposed two dwellings and eventually clearance – long term if construction goes ahead. Areas surrounding the perimeter of the dwellings must remain natural. • Clearance for the expansion of the dam – long term unless the dam is rehabilitated to its natural state. • Clearance for the construction of a jetty – long term unless the area is rehabilitated to its natural state. • Clearance for the installation of a borehole and pipeline – once the pipe is installed, the pipeline route must be rehabilitated with naturally occurring fynbos vegetation
Cumulative impact post mitigation:	<p>Rehabilitation of the areas noted above will result in an increased ecological status of the property. However, it must be noted that unless the whole property is rehabilitated to its natural state, the ecological status of the property will not be returned to its pre-construction state.</p>
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	<p>Medium - High</p>

Impact on biological aspects:	
Nature of impact:	Loss of faunal habitat
Extent and duration of impact:	Limited to the site – long term
Probability of occurrence:	Highly probable – definite
Degree to which the impact can be reversed:	Medium term – The impact / effect will be returned to its benchmark state through natural processes in a time span between 5 and 15 years. Or Long-term – The impact / effect will never be returned to its benchmark state.
Degree to which the impact may cause irreplaceable loss of resources:	Medium term –The resource can be mitigated through natural process in a span between 5 and 15 years.
Cumulative impact prior to mitigation:	Migration of fauna
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high
Degree to which the impact can be mitigated:	Medium term – The impact / effect will be returned to its benchmark state through natural processes in a time span between 5 and 15 years. Or Long-term – The impact / effect will never be returned to its benchmark state.
Proposed mitigation:	Rehabilitation of the area as much as possible with all activities included, or to rehabilitate the area to a near-natural or natural state
Cumulative impact post mitigation:	Fauna may return to the area
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium – very high

Impact on biological aspects:	
Nature of impact:	Decreased presence of Alien Invasive Plant Species due to land clearance
Extent and duration of impact:	Limited to the site – very short term
Probability of occurrence:	Highly probable

Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through natural processes in a span shorter than any of the phases of the project.
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	Indigenous vegetation can thrive due to the absence of AIPs
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	N/A

Impact on biological aspects:	
Nature of impact:	Water quality – Construction of Jetty
Extent and duration of impact:	Limited to the local area – permanent
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.
Degree to which the impact may cause irreplaceable loss of resources:	Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means.
Cumulative impact prior to mitigation:	Contamination of water with construction materials
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.

Proposed mitigation:	The construction area will need to be screened in order to trap any construction materials from floating into the river.
Cumulative impact post mitigation:	Aquatic fauna and flora will not be harmed
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Noise impacts:

Nature of impact:	Construction machinery
Extent and duration of impact:	Limited to the site – limited to construction works
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short term – noise impacts will only be experienced during construction works
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	Noise will be a nuisance to the locals in the surrounding area
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	Short term – noise impacts will only be experienced during construction works
Proposed mitigation:	Machines should be serviced regularly. Silencers and noise absorption materials should be used to decrease the noise levels
Cumulative impact post mitigation:	Decreased noise levels
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Visual impacts / Sense of Place:

Nature of impact:	The construction of the road is/ will be a negative visual impact to the town of Wittedrift and motorists along the N2
Extent and duration of impact:	Limited to the local area – permanently

Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Medium term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	Decreased visual aesthetics
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
Proposed mitigation:	All embankments must be vegetated and monitored until 100% coverage is established.
Cumulative impact post mitigation:	Decreased visual impact, mainly from the N2
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low – Medium

(b) Impacts that result from the operational phase (briefly describe and compare impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase. Please note that certain impacts from the construction phase are repeated during the operational phase as these are still relevant.

Impacts on geographical and physical aspects:	
Nature of impact:	Soil erosion – road and dam
Extent and duration of impact:	Limited to the site – permanent unless rehabilitated
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a time span of 0 to 5 years.
Degree to which the impact may cause irreplaceable	Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but

loss of resources:	can be mitigated by other means.
Cumulative impact prior to mitigation:	Loss of soil fertility and the formation of erosion runnels
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.
Proposed mitigation:	All erosion runnels must be filled with fertile soil and fynbos vegetation indigenous to the area must be replanted in these areas. Please refer to the appended Rehabilitation Plan for detailed mitigation measures.
Cumulative impact post mitigation:	Decreased erosion, surface water runoff, and sedimentation of the dam.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low - Medium

Impacts on geographical and physical aspects:	
Nature of impact:	Sedimentation of the dam due to cleared and bare soil
Extent and duration of impact:	Limited to the site – permanent without mitigation
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a time span of 0 to 5 years.
Degree to which the impact may cause irreplaceable loss of resources:	Short-term – Quickly recoverable. The resource can be renewed / recovered with mitigation in a time span of 0 to 5 years.
Cumulative impact prior to mitigation:	The dam gradually loses its ability to store water for the purposes for which it was built.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium-High
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a time span of 0 to 5

	years.
Proposed mitigation:	All erosion runnels must be filled with fertile soil and fynbos vegetation indigenous to the area must be replanted in these areas. Please refer to the appended Rehabilitation Plan for detailed mitigation measures.
Cumulative impact post mitigation:	Decreased sedimentation of the dam
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low-Medium

Impacts on geographical and physical aspects:	
Nature of impact:	Erosion of the river bank - Jetty
Extent and duration of impact:	Limited to the site – permanent
Probability of occurrence:	Highly probable
Degree to which the impact can be reversed:	Medium term – The impact / effect will be returned to its benchmark state through mitigation or natural processes in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
Degree to which the impact may cause irreplaceable loss of resources:	Medium term –The resource can be renewed / recovered with mitigation or will be mitigated through natural process in a span between 5 and 15 years.
Cumulative impact prior to mitigation:	Hydrological and morphological changes to the river
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high
Degree to which the impact can be mitigated:	Medium – long term
Proposed mitigation:	No mitigation exists as the presence of a jetty will inevitably cause accelerated erosion.
Cumulative impact post mitigation:	N/a
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High – very high

Impact on biological aspects:	
Nature of impact:	Pollution of water if a chemical wood treatment is used – Jetty
Extent and duration of impact:	Limited to the local area – permanent
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.
Degree to which the impact may cause irreplaceable loss of resources:	Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but can be mitigated by other means.
Cumulative impact prior to mitigation:	Aquatic fauna and flora may be eradicated due to contamination
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project, or in a time span of 0 to 5 years.
Proposed mitigation:	The jetty must be treated with eco-friendly wood treatment.
Cumulative impact post mitigation:	Aquatic fauna and flora will not be harmed
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Impact on biological aspects:	
Nature of impact:	Shading of habitat beneath jetty
Extent and duration of impact:	Limited to the site – permanent
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project
Degree to which the impact may cause irreplaceable loss of resources:	Long-term – The loss of a threatened resource which cannot be renewed / recovered with or through natural process, but

	can be mitigated by other means.
Cumulative impact prior to mitigation:	Eradication of plant life directly underneath the jetty
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium – high
Degree to which the impact can be mitigated:	Short-term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than any of the phases of the project
Proposed mitigation:	The only mitigation measure for this impact would be to omit construction of the jetty
Cumulative impact post mitigation:	Flora can flourish without a jetty
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High

Impacts on the socio-economic aspects:	
Nature of impact:	Permanent employment opportunities
Extent and duration of impact:	Limited to the local area – duration of the project
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Short term – if the project is ceased approximately 40 staff members will be retrenched
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	Empowerment of the local community members living in the area
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation	N/A

(Low, Medium, Medium-High, High, or Very-High)	
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Visual impacts / Sense of Place:	
Nature of impact:	The construction of the road is/will be a negative visual impact to the town of Wittedrift and motorists along the N2
Extent and duration of impact:	Limited to the local area – permanently
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Medium term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	Decreased visual aesthetics
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium term – The impact / effect will be returned to its benchmark state through mitigation in a span shorter than the lifetime of the project, or in a time span between 5 and 15 years.
Proposed mitigation:	All embankments must be vegetated and monitored until 100% coverage is established.
Cumulative impact post mitigation:	Decreased visual impact, mainly from the N2
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low – Medium

4. LEGISLATIVE REQUIREMENTS

4.1 Signing of the EMPr

The acknowledgement form at the back of the approved EMPr is to be signed by the holder of the Environmental Authorisation (the Proponent), the Site Manager and the ECO; acknowledging that all parties are familiar with the requirements of the EMPr. All employees, especially the machine and equipment operators, are to be made aware of the conditions as contained in the EMPr as well as the contractual conditions relating to the environment as contained in the contract document.

4.2 Legislation

Of importance are all national, provincial and municipal by-laws and regulations. Statutes are amended periodically and it is the Proponent's responsibility to identify legislation relevant to the proposed activity.

LEGISLATION	ADMINISTERING AUTHORITY	TYPE Permit/ license/ authorization/comment
NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)	Western Cape Department of Environmental Affairs and Development Planning	AUTHORIZATION
NATIONAL ENVIRONMENTAL MANAGEMENT AMENDMENT ACT (ACT 62 OF 2008)	Western Cape Department of Environmental Affairs and Development Planning	AUTHORIZATION
NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (ACT NO 10 OF 2004)	CapeNature and Department of Agriculture, Fisheries and Forestry	COMMENT
NATIONAL WATER ACT (ACT 36 OF 1998)	Department of Water Affairs	LICENSE
WESTERN CAPE NATURE CONSERVATION LAWS AMENDMENT ACT (ACT 3 OF 2000)	CapeNature	RELEVANT CONSIDERATION
CONSERVATION OF AGRICULTURAL RESOURCES ACT (ACT 43	Department of Agriculture, Fisheries	

OF 1983)	and Forestry	LICENSE
NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)	Heritage Western Cape	RELEVANT CONSIDERATION
OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993)	Department of Health	RELEVANT CONSIDERATION

POLICY/ GUIDELINES	ADMINISTERING AUTHORITY
DEA (2010), Companion to the EIA regulations 2010, Integrated Environmental Management Guideline Series 5, Department of Environmental Affairs, (DEA), Pretoria, South Africa	Department of Environmental Affairs, Republic of South Africa. All provincial Departments that have been identified as Competent Authorities
DEA&DP (2010) Guideline on Public Participation, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs and Development Planning (DEA&DP)	Western Cape Department of Environmental Affairs and Development Planning (DEA&DP)
Guideline for Involving Biodiversity Specialists in EIA Processes, June 2005	Western Cape Department of Environmental Affairs and Development Planning
Guideline for Environmental Management Plans, June 2005	Western Cape Department of Environmental Affairs and Development Planning
Ecosystem Guidelines for Environmental Assessment in The Western Cape	Fynbos Forum

4.3 Project Responsibilities

Responsibility for the implementation of the EMP lies with the Proponent who must retain the services of a suitably experienced Environmental Control Officer (ECO) who will monitor the construction and operational processes and activities periodically.

The ECO's responsibilities must include, *inter alia*:

- ❖ Secure the protection and rehabilitation of the environment.
- ❖ Guide, advise and consult the relevant authority on environmental issues during construction and operation.
- ❖ Guide, advise and consult any sub-contractors, suppliers etc. who will be involved in this project.

- ❖ Revise the EMPr as required and inform the relevant parties of the changes.
- ❖ Ensure that the EMPr has been accepted and understood as a contractually binding document on all parties involved with this project.
- ❖ Ensure that staff operating equipment are adequately trained, certified and sensitised to any potential hazards associated with their tasks.
- ❖ Educate staff as to the need to refrain from indiscriminate waste disposal and/or pollution of local soil and water resources, ensure that they (the staff) have received the necessary safety training, and are aware of the importance of a “clean-site policy.”
- ❖ The management guidelines contained in this document must form part of the contractual agreements between the Proponent, Site Manager and the ECO. A tabulated synopsis of relevant responsibilities is appended hereto.

5. REPORTING PROCEDURES

5.1 Documentation

The following documentation must be kept on site in order to record compliance with the EMPr:

An Environmental File which includes:

- ❖ Copy of the Environmental Authorisation;
- ❖ Copy of the approved EMPr
- ❖ Copy of all other licences/permits;
- ❖ Environmental Method Statements;
- ❖ Non-conformance Reports;
- ❖ Environmental register, which shall include:
 - Communications Register – including records of complaints, minutes and attendance registers of all environmental meetings;
 - Monitoring Results – including environmental monitoring reports, register of audits, non-conformance reports; and
 - Incident book – including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record.
- ❖ Waste Documentation such as, but not necessarily limited to: Waste Manifest Documents, Safe Disposal Certificates (SDCs) and Sewerage Disposal Receipts;
- ❖ Material Safety Data Sheets (MSDSs) for all hazardous substances; and
- ❖ Written Corrective Action Instructions.

5.2 Environmental Register

The Proponent will put in place an Environmental Register and will ensure that the following information is recorded for all complaints / incidents:

- ❖ Nature of complaint / incident.
- ❖ Causes of complaint / incident.
- ❖ Party/parties responsible for causing complaint / incident.
- ❖ Immediate actions undertaken to stop / reduce / contain the causes of the complaint / incident.
- ❖ Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint / incident.
- ❖ Timeframes and the parties responsible for the implementation of the corrective or remedial actions.
- ❖ Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented.
- ❖ Copies of all correspondence received regarding complaints/incidents.

5.3 Non-Conformance Report

A Non-Conformance Report (NCR) will be issued to the Proponent as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be issued by the ECO to the Proponent in writing. Preceding the issuing of a NCR, the Proponent must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of a NCR. The following information should be recorded in the NCR:

- ❖ Details of non-conformance;
- ❖ Any plant or equipment involved;
- ❖ Any chemicals or hazardous substances involved;
- ❖ Work procedures not followed;
- ❖ Any other physical aspects;
- ❖ Nature of the risk;
- ❖ Actions agreed to by all parties following consultation to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account;
- ❖ Agreed timeframe by which the actions documented in the NCR must be carried out; and
- ❖ The ECO should verify that the agreed actions have taken place by the agreed completion date. When completed satisfactorily, the ECO and Proponent should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

5.4 Environmental Emergency Response

The Proponents environmental emergency procedures must ensure appropriate responses to unexpected / accidental actions / incidents that could cause environmental impacts.

The Environmental Emergency Response Plan is separate to the Health and Safety Plan as it is aimed at responding specifically to environmental incidents and must ensure and include the following:

- ❖ Employees shall be adequately trained in terms of incidents and emergency situations;
- ❖ Details of the organisation (i.e. manpower) and responsibilities, accountability and liability of personnel;
- ❖ A list of key personnel and contact numbers;
- ❖ Details of emergency services (e.g. the fire department / on-site fire detail, spill clean-up services) shall be listed;
- ❖ Internal and external communication plans, including prescribed reporting procedures;
- ❖ Actions to be taken in the event of different types of emergencies;
- ❖ Incident recording, progress reporting and remediation measures to be implemented; and
- ❖ Information on any hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

6. COMPLIANCE WITH THE EMPr

6.1 Monitoring and Compliance

The monitoring and compliance of the development should take place as follows:

- ❖ The ECO has the authority to instruct the Proponent to cease a particular operation causing or liable to cause significant environmental damage, and issue fines or penalties for non-compliance of the Environmental Management Programme/ EMPr.
- ❖ An Environmental Control Officer (ECO) must during **construction** activities, audit the site every **fortnight**. Once the project is completely in the **operational** phase, monitoring and audits should be conducted **every 6 months for two years** to ensure compliance.
- ❖ The holder of the environmental authorisation (the Proponent) is responsible to ensure that an environmental audit report is submitted to the Department of Environmental Affairs and Development Planning (DEA&DP) as per the timeframes stipulated in the Environmental Authorisation (EA) for the lifetime of the said activity.

6.3 Auditing Process

The terms of reference for the audits must comprise the following:

- ❖ Develop a checklist against which the criteria can be referenced during the audit.
- ❖ During the audit process, key individuals involved with the management of the project are to be given the opportunity to comment on issues being audited and will be invited to accompany the auditor during the site inspection.
- ❖ Compile an audit report on the implementation of the EMPr and compliance to the Environmental Authorisation and submit this report to the competent authority (DEA&DP).

Compliance ratings against which the listed criteria are assessed are as follows:

Symbol	Rating	Interpretation
Y	Yes	Evidence of compliance
P	Partial	Evidence of partial compliance
N	No	Evidence of non-compliance
NR	Not Relevant	The condition or commitment is not relevant at this stage of the development or it is inappropriate
NA	Not Audited	Not audited

6.4 Non-Compliance

Definition

The non-compliance is defined as, and will be issued for:

- ❖ Any deviation by the Proponent from the environmental conditions and requirements as set out in the EA and EMPr - or;
- ❖ Any contravention by the Proponent of environmental legislation - or;
- ❖ Any unforeseen environmental impact resulting from direct or indirect actions or activities on site that would be considered as a significant impact. Significance will be determined by the Environmental Control Officer (ECO) but will be informed by geographic extent, duration, lasting effects of the impact and extent of remediation to the impact.

Types of non-compliances issued

Two types of non-compliances may be issued:

A. Stop Works Non-Compliance

Stop Works Non-Compliance will require that all works as described in the non-compliance will stop immediately and may only continue on a formal written permission from the ECO.

Stop Works Non-Compliance will be issued under the following conditions:

- ❖ Total disregard by the Proponent to the environmental conditions and requirements listed in the EA and EMPr;
- ❖ An activity that if left unattended will escalate the degree, severity or extent of the environmental impact.

B. General Non-Compliance

A general non-compliance will allow work and activity by the receiving party to continue while the corrective action takes place.

6.5 Issuing a Non-Compliance

Non-compliance may be issued to:

- ❖ The Proponent
- ❖ Any representative of the Proponent

6.6 Process of Issuing Non-Compliance

The appointed Environmental Control Officer (ECO) may issue a formal non-compliance to the Proponent. A copy of the non-compliance issued will be placed in the EMPr file. The Proponent will be responsible for returning a formally signed off corrective action (as per template) to the ECO to be placed in the EMPr file. The ECO will be required to sign-off on the corrective action, indicating that it has been completed within the timeframes and to the satisfaction of the ECO.

6.7 Failure to complete corrective actions

In the event that the Proponent fails or refuses to complete the corrective action, either at all or within the allocated timeframe, the ECO shall,

- ❖ Inform DEA&DP in writing that a condition of approval for the project is not being met.

The DEA&DP office is responsible for resolving the impasse with the Proponent.

The Proponent is deemed not to have complied with the EA and EMPr if:

- ❖ Within the boundaries of the site and site extensions there is evidence of contravention of clauses;
- ❖ Environmental damage occurs due to negligence; inappropriate actions taken by the Proponent or any of his staff.

On receiving a notice of non-compliance the Proponent is required to swiftly address the issue/s taking all corrective actions required to rectify the situation. Penalties will be applied for non-compliant situations. Penalties/fines are advocated to ensure corrective measures are successfully undertaken and the necessary standard of rehabilitation is achieved. The penalties imposed per incident or violation will be as follows:

Table 1: Penalties for Non-Compliance

Penalties associated with a non-compliance is not a set amount but will depend on the nature and extent of the impact. The cost of any soil and /or groundwater monitoring and any soil and /or groundwater remediation required by authorities will be to the Proponent's account.

The imposition of such a penalties / fines shall not preclude the relevant competent authority from applying an additional penalty in accordance with statutory powers.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression as deemed fit.

6.8 Unlawful Activity/ies

Section 28 (15) of NEMA entitles authorities to administer a fine not exceeding R 1 million or to imprisonment for a period not exceeding 1 year or both such a fine and imprisonment.

Section 31N of NEMA entitles environmental authorities to administer a fine not exceeding R 5 million or 10 years imprisonment and/or a fine and imprisonment for a person guilty of an unlawful activity. The Act makes allowance for the rectification of unlawful activity and may charge up to R1 million administration fees over and above the remediation costs.

NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of other environmental statutes. Importantly, NEMA provides for the liability of conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

7. AMENDMENTS TO THE EMPr

This EMPr outlines the environmental practices and mitigation measures to be adhered to during the construction and operational phases, and rehabilitation; in order to curtail and/or minimise potential negative impacts and promote sound environmental practises.

Any significant issues not covered in the EMPr as submitted, will be addressed as an addendum to this EMPr, and submitted for approval. The EMPr is a living document and is subject to change from time to time in consultation with the DEA&DP. Any amendments to the EMPr will require approval from the DEA&DP.

8. ENFORCING THE EMPr

The holder of the Environmental Authorisation (EA) has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes casual labour, etc.). The EA and approved EMPr shall be part of the terms of reference for all stakeholders.

All senior and supervisory staff members shall familiarise themselves with the full contents of the EA and approved EMPr. They shall know and understand the specifications of the EA and approved EMPr and shall be able to assist other staff members in matters relating to the EA and approved EMPr.

TABLE OF RESPONSIBLE PARTIES BELOW:

Responsibility	Name of Responsible Party
Proponent	Mr Mike Mouat
Environmental Control Officer/ ECO	To be appointed
Site Manager	To be appointed

9. ENVIRONMENTAL MANAGEMENT PROGRAMME

9.1 CONSTRUCTION PHASE

Activity	Management / Mitigation	Responsibility	Frequency / Timing
Authorisations, Licences and Permits	Environmental Authorisations		
	All necessary authorisations, permits and licences must be obtained by the Proponent prior to the commencement of construction.	Proponent	Once-off
Appointment of Construction Team	Appointment of Contractor		
	The Developer must ensure that this EMPr forms part of any contractual agreements with a Contractor(s) and sub-contractors for the execution of the proposed project. The Contractor must make adequate provision in their budgets for the implementation of the EMPr.	Developer & Contractor	Once-off
	The Principal Contractor (including sub-contractors and suppliers) must comply with the relevant provisions of the EMPr, applicable environmental legislations, by-laws and associated regulations promulgated in terms of these laws		
	Local labourers should be used for such methods.		
	Appointment of Environmental Control Officer		
	An Independent ECO must be appointed at the Proponent's cost to monitor the implementation of the EMPr.	Proponent, Site Manager & ECO	Once-off
The nomination of the ECO must be given to DEA&DP, in writing. The notification must include contact details for the ECO and details pertaining to the ECO's relevant experience.			
Should the ECO for the development change at any time, this must be communicated, in writing, to DEA&DP, within fourteen (14) days of appointing the new ECO. The notification must include contact details for the ECO, details pertaining to the ECO's relevant experience and reasons for the change in ECO.	As required		
Preparation of Method Statements	Method Statements		
	Method Statements must be submitted by the Proponent to the ECO and must be adhered to by the Proponent. These relate to water and stormwater management requirements, solid waste	Proponent	Once-off

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	management requirements, the storage of hazardous materials (if applicable), and standard emergency procedures.		
	The ECO will monitor the implementation of the Statements.	ECO	On-going
Notifying Relevant I&APs	Notice of Environmental Authorisation (EA)		
	A written notice must be given to all relevant I&APs notifying them of the EA. The notice must include a date on which the EA was received and the reference number for the EA.	Proponent	Once-off – pre-construction
Education of Site Staff on General and Environmental Conduct <i>A general regard for the social and ecological wellbeing of the site and adjacent areas is expected of the site staff.</i>	Environmental Awareness and Training		
	Operational staff must be adequately educated by the ECO as to the provisions included in the EMPr, and in terms of general environmentally-friendly practice.	ECO & Site Manager	Once-off and as required
	The ECO & Site Manager must ensure that all staff, and if applicable, Contractors / Sub-contractors / Suppliers / Service Providers are trained on the environmental, occupational safety and/or legal responsibilities expected from them. The training must take into account language and literacy requirements as well as measures to determine the effectiveness of the training. Proof of training must be attached to the ECO's audit reports.		
	Consideration of the implications of the EA and EMPr must form part of the formal site induction for all contractors, sub-contractors and casual labourers, preferably in their native language.		
	The induction training will, as a minimum, include the following: <ul style="list-style-type: none"> ➤ The importance of conformance with all environmental policies; ➤ The environmental impacts, actual or potential, of their work activities; ➤ The environmental benefits of improved personal performance; ➤ Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Consultant's environmental management systems, including emergency preparedness and response requirements; and ➤ The mitigation measures required to be implemented when carrying out their work activities. 		

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	All contractors, sub-contractors and casual labourers must acknowledge their understanding of the EMPr and environmental responsibilities by signing an induction attendance record.	ECO & Site Manager	Once-off
	Staff, operating equipment, shall be adequately trained and sensitised to any potential hazards associated with their tasks.	Proponent & Site Manager	During staff induction, followed by on-going monitoring
	Translators are to be used where necessary during staff training.	Site Manager	
	Use of environmental awareness posters on site is advocated.	Site Manager	On-going monitoring
	Staff must be made aware that they are not to make excessive noise e.g. shouting, hooting.		
	All employees must undergo the necessary safety training and wear the necessary protective clothing at all times.		
	No alcohol / drugs to be present on site; no vehicles or machinery are to be operated whilst under the influence of alcohol or drugs.		
	No firearms allowed on site or in vehicles transporting staff to / from the site (unless used by security personnel).		
	No unsocial behaviour will be permitted.		
	Bringing pets onto site is forbidden.		
	Staff must make use of facilities provided for them, as opposed to ad-hoc alternatives (e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden). No fires to be permitted on site.		
	Trespassing on private / commercial properties adjoining the site is forbidden.		
	No worker may be forced to do work that is potentially dangerous or for what he / she is not so trained		
The staff conduct rules are described in a separate table of rules in the EMPr. This is aimed at providing staff with the basic information regarding worker conduct on site.			
The Site Manager is to ensure that conditions of the EMPr are included in the Toolbox Talks.			
Site Management	Access		
	No vehicles may drive onto the adjacent properties and any other no-go areas.	Site Manager	On-going
	All no-go areas will be indicated during Toolbox Talks and/or indicated with warning signs in all		

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	relevant languages.		
	Site Management		
	Adequate drainage and erosion protection must be provided around the site and where necessary.	Site Manager	On-going
	Access points and other cleared surfaces must be dampened whenever necessary and especially in dry and windy conditions to avoid excessive dust. Alternatively, a binding product such as Dustex (supplied by Patch Industrial Supplies) could be used.		
Sewage and Sanitation	Ablutions		
	Toilets must be no closer than 32m from any watercourse. Such facilities, which shall comply with local authority regulations, shall be maintained in a clean and hygienic condition. Their use shall be strictly enforced. They must be positioned in an appropriate place, also taking into consideration, gradient of the land.	Site Manager	Immediately & on-going
	The Site Manager must ensure that toilets are cleaned regularly.		On-going
	Unauthorised spilling of waste from a septic tank into the environment and burying of waste are strictly prohibited.		
Ablution facilities must not cause any pollution to any water resource and it must not be a health hazard to the general public.			
Social Impacts	Communication Between Site Manager, Site Staff and I&APs		
	A complaints register must be kept on site. Details of complaints must be incorporated into the audits as part of the monitoring process. This must be in 3 copy carbon format, with numbered pages.	Site Manager	Immediately and on-going
	Should the staff be approached by members of the public or other stakeholders, they must assist them in locating the Site Manager, or provide a number on which they may contact the Proponent/ Site Manager.		On-going
	The conduct of the staff when dealing with the public or stakeholders shall be in a manner that is polite and courteous at all times.		
	Drivers of heavy-duty vehicles must exercise care when travelling to and from the site – and adhere to all legally enforceable requirements.		
Due to the concentration of a workforce in the area, the Site Manager must implement an	Immediately and as		

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	<p>HIV/AIDS Awareness Programme on site. The Site Manager must appoint an HIV/AIDS Awareness Officer for the duration of the construction period. Activities for HIV/AIDS awareness and prevention will be broad based, targeting both individuals and groups. They may consist of:</p> <ul style="list-style-type: none"> ➤ Peer educators (reference people) drawn from the local labour force and trained in HIV/AIDS issues for discussions with colleagues (estimate 1 per 30 employees); ➤ Small focus group discussions and information covering key issues should be held; ➤ Inclusion of HIV/AIDS activities at site meetings and other discussions; and ➤ Voluntary Counselling and Testing. <p>Education will cover:</p> <ul style="list-style-type: none"> ➤ Stigma and discrimination issues; ➤ Preventative behaviours including on-site safety and awareness; and ➤ Referral to local health centres and services available. 		required
Equipment lay-down and storage	Storage Areas		
	Choice of location for equipment lay-down and storage areas must take into account prevailing winds, distances to water bodies, general on-site topography and water erosion potential of the soil. Impervious surfaces, bunded areas or drip trays must be provided where necessary.	Site Manager	On-going
	Equipment lay-down and storage areas must be designated, demarcated and signed.		
Conservation of the Natural Environment	Erosion and Stormwater Control		
	Soil disturbance must be restricted to the current extent of the project, unless for the removal of alien invasive plants.	Site Manager & ECO	Throughout the duration of the project
	Storm water control must be undertaken to prevent soil loss from the site.		Immediately
	Erosion prevention and control measures must be implemented. These control measures must be advised by the ECO as control measures are unique to site, activity, and dependent on severity and extent.		On-going
	Provision shall be made for storm water management measures that will ensure effective run-off		

Activity	Management / Mitigation	Responsibility	Frequency / Timing	
	control and prevent erosion at run-off points and ponding.			
	Continuous monitoring for evidence of erosion must be undertaken around the site.			
	Earth, stone or rubble is to be properly disposed of so as not to obstruct natural water pathways over the site.			
	Stormwater management must ensure that flow from the development does not result in negative impacts.			
	Fauna and Flora			
	Areas which are identified by the Environmental Control Officer (ECO) as being ecologically sensitive and which are adjacent to the site are to be suitably demarcated to prevent damage during construction practices. These areas are to be recognised as “no-go” areas.	ECO & Site Manager	Immediately	
	No natural vegetation may be cleared without prior permission from the ECO and if applicable from any relevant authority. Indigenous vegetation that is removed is to be replanted either back to the point from which it was taken or must be replaced by new relevant indigenous vegetation.		On-going	
	The ECO must identify and make known to the team all Red Data listed vegetation species. All permits for the removal/ translocation of the identified protected vegetation species must be obtained prior to any ground clearance from the Department of Agriculture, Forestry and Fisheries (DAFF).		On-going	
	All alien invasive plant species must be continuously removed around the site. The best way to do this is to remove the plants from the roots by hand and leave the plants in the sun to dry out and die before disposal. Please refer to the appended Alien Plant Control Programme for specific methods of removal.	ECO & Site Manager	Immediate and On-going	
	When removing alien invasive plants from the riparian area, caution must be taken to ensure that indigenous species are not being removed and all embankments are stable. Indigenous plants must be planted immediately to rehabilitate these areas.			
Disturbance to birds, animals and reptiles and their habitats must be minimized wherever possible.	Site Manager			
Conservation of Water Resources	Water Sources			
	The storage and use of water from the farm dam is not permitted without a Water Use License.	Site Manager	On-going	
	The use of a borehole is not permitted without a Water Use License.			

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	Under no circumstances may any materials or waste generated from the project be disposed of into the farm dam or the Bitou River which runs through the property.	Site Manager	On-going
	The dam must be monitored for sedimentation levels. All bare soil must be vegetated in order to reduce sedimentation.		
	All parked vehicles/ trucks must have drip trays placed underneath the vehicle where potential leaks may occur.		
Waste Management	On-Site Waste Management		
	The excavation and use of rubbish pits is forbidden.	Site Manager	On-going
	Burning of waste is forbidden. <i>A possible exception to this may be that the alien invasive vegetation which is removed from the site should be burned to prevent the spread of the plants; however, permission to burn AIPs must first be obtained from the competent authority and other conservation boards. The transportation of Alien Invasive Plants is strictly forbidden in terms of the Conservation of Agricultural Resources Act (CARA), especially if in seed; unless stored in a completely sealed container.</i>		On-going and monitored weekly
	Littering on the site is forbidden and the site shall be cleared of litter at the end of each working day.		On-going monitoring
	An adequate number of general waste bins must be arranged around the site to collect all domestic refuse, and to minimise littering.		
	Solid waste must be managed and separated into recyclable and non-recyclable materials and disposed of accordingly.		
	All waste generated during operation is to be disposed of at a facility registered in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).		
Handling of Hazardous Materials (if necessary)	Hazardous Materials		
	Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs must additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.	Site Manager	On-going
Cement and other potential environmental pollutants must be stored within an impermeable banded, roofed and sign posted area.			

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	<p>Cement and other potential environmental pollutants must be mixed on an impermeable surface that is bunded to prevent the leakage of pollutants onto the ground (if necessary).</p> <p>All empty contaminated containers must be stored within a hazardous bunded area until collection by a reputable hazardous waste collection company. Waybills must be presented to the ECO for review and filing purposes.</p> <p>No vehicles transporting hazardous materials to the site may be washed on or near site. They must return to the supplier of such material to be cleaned out.</p>		
Cultural Environment	Archaeology and Artefacts		
	No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from Heritage Western Cape.	Site Manager	On-going
Safety and Security	Safety and Security On-Site		
	Material stockpiles or stacks must be stable and well secured to avoid collapse and possible injury to site workers / local residents.	Site Manager	On-going
	Firefighting equipment must be present on site at all times. All equipment on site must be used in accordance with the Occupational Health and Safety Act regulations of South Africa (OHSA), Act No. 85 of 1993; staff must be trained in firefighting procedures.		
	No unauthorised person may be permitted to enter the site without prior permission of the site manager.		
	Vehicle speeds shall not exceed 20km/h when traversing unconsolidated and non-vegetated areas.		

9.2 REHABILITATION AND OPERATIONAL PHASE

Please also refer to the Rehabilitation Plan for detailed mitigation and management of already developed areas.

Activity	Management / Mitigation	Responsibility	Frequency / Timing
Vegetation Rehabilitation – progressive rehabilitation must be carried out	Vegetation		
	All disturbed areas, or areas which have been disturbed for the purpose of the development, are to be re-vegetated. This will aid in preventing erosion within the site. A 100% indigenous planting plan must be adhered to in terms of all planting carried out on the site. Consultation must be made with a Vegetation Specialist for a site-specific vegetation list.	Contractor & ECO	Project completion
	Erosion prevention and control measures must be implemented. Organic mulch or sand bags must be used to contain all sediment and prevent erosion during rehabilitation.	Contractor	Rehabilitation
	All rehabilitated areas must be maintained through weekly inspections until the 100% success rate has been achieved.	Contractor & ECO	Post Construction/ Maintenance Phase
	Encroachment of invasive alien plants in this regard will need to be monitored on a regular basis to prevent re-infestation. This would need to be undertaken by the ECO or a designated specialist.	Developer, Contractor & ECO	Project completion and Maintenance
Land Rehabilitation	Land		
	Rehabilitation must be executed in such a manner that surface runoff will not cause erosion of disturbed areas during and after rehabilitation.	Contractor & ECO	Project completion
	Any rubble is to be removed from site to an appropriate disposal site. Burying of rubble on site is prohibited.	Contractor	Project completion
	The site is to be cleared of all litter.	Developer & Contractor	Project completion and Maintenance
	The surface of all disturbed areas must be left rough to facilitate binding of topsoil and vegetation.	Contractor	Progressive rehabilitation and on Project completion
Removal and Repair of Materials and Infrastructure	Materials and Infrastructure		
	All material used for the construction of the dwellings must be removed from site after construction or maintenance.	Contractor	Project completion

Activity	Management / Mitigation	Responsibility	Frequency / Timing
	The Contractor must repair any damage that the construction works may have caused to adjacent areas.	Contractor	Project completion
	Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the ECO.	Contractor	Project completion
	All areas where temporary services were installed are to be rehabilitated to the satisfaction of the ECO.	Contractor	Project completion
Stormwater Management	Stormwater		
	Any negative stormwater effects, related to the construction phase, must be remediated.	Contractor	Project completion
	On-going monitoring and assessing of stormwater drainage must occur on site during the operational phase of the proposed project.	Developer	During Operational phase
Waste	Removal of Hazardous and Non-Hazardous Waste		
	All hazardous materials and containers must be collected by a reputable hazardous waste collection company and disposed of appropriately.	Contractor	Project completion
	Collection and disposal of non-hazardous waste to a registered landfill site must occur at least once a week.	Developer	During Operational phase
Sewage and Sanitation	Conservancy Tank		
	If a conservancy tank is used it must be watertight to prevent the leakage of foul water or the ingress of groundwater.	Contractor	During Operational phase
	The tank must be emptied regularly utilising the services of the local municipality. Emptying frequency depends on the tank's capacity and amount of people. Normally done once every 1-2 months.	Developer	During Operational phase
	The connection between the inlet pipe and the tank may develop a leak, therefore regular monitoring must be undertaken.	Developer	During Operational phase

9.3 The following are mitigation measures provided by the Western Cape Department of Agriculture with specific reference to the cultivation of Honeybush Tea:

ACTION	ENVIRONMENTAL IMPACT	MITIGATION MEASURES
<ul style="list-style-type: none"> ❖ Construction of contour banks. 	<ul style="list-style-type: none"> ❖ The most significant impact will be changes in the soil structure and degradation of soil quality as a result of erosion and compaction. 	<ul style="list-style-type: none"> ❖ The contour banks on the plan just indicate the direction of flow and not the amount or position of the contour banks. ❖ The gradient in the contour banks must not exceed 1: 150. ❖ The spacing between the contour banks must be calculated by making use of the following formula: $VI=0.3*S + 0.5$ where VI = vertical interval between the contour banks and S is the slope of the land as a percentage. ❖ Mark the Contour banks at intervals not exceeding 25 meters. ❖ It is recommended that you do the construction of the contour banks with a grader. If the soil is very hard and or rocky, you might need to rip the area. ❖ The contour bank may not exceed 600 meters in one direction. ❖ Contour banks are at the most 50% effective against water erosion. You have to incorporate conservation agriculture practices like cover crops or mulch layers within your system.
<p>Install Irrigation:</p> <ul style="list-style-type: none"> ❖ Trench Mother 	<ul style="list-style-type: none"> ❖ Potential wind erosion. 	<ul style="list-style-type: none"> ❖ No trenching should be allowed during windy periods.

		<ul style="list-style-type: none"> ❖ Top soil removed from trenched areas must be replaced over the mother lines.
<ul style="list-style-type: none"> ❖ Surface lay dripper lines to planting rows 1 dripper per plant. 	<ul style="list-style-type: none"> ❖ As the drippers are above the ground no environmental impacts are expected. 	
<p>Land Preparation:</p> <ul style="list-style-type: none"> ❖ Peg out the planting rows with row direction pegs. ❖ Apply Lime and Trace Elements onto planting rows by hand. ❖ Rip planting rows 1 meter wide by 300 mm deep to prepare fine seed bed (tractor to be used) ❖ The planting rows will be 3 meters apart with natural vegetation in-between the planting rows. ❖ Planting holes will be prepared by hand (Soil auger) to 100mm deep. 	<ul style="list-style-type: none"> ❖ Loss of indigenous vegetation. ❖ No negative environmental impacts are foreseen. ❖ Potential wind erosion. ❖ Spills or leaks from construction machinery. ❖ Loss of indigenous 	<ul style="list-style-type: none"> ❖ A plant rescue must be actioned prior to pegging. All rescued plants must be stored at an onsite nursery for re-planting between the rows of Honeybush. ❖ Contact Francois Steyn from the Department of Agriculture to determine required amounts to be used per hectare. ❖ No trenching should be allowed during windy periods. ❖ All machinery must be checked for oil leaks before entering the site. ❖ No refuelling will be allowed on site. This must be done at the entrance to the farm with drip trays placed beneath refuelling areas. ❖ Fire extinguishers must be placed at the re-fuelling area. ❖ Any contaminated soil must be collected immediately, be placed within an impermeable and sealed container, and transported to a licensed

	vegetation.	<p>hazardous waste facility.</p> <ul style="list-style-type: none"> ❖ Any oil or fuels spills are to be reported to the EAP immediately. ❖ A plant rescue must be undertaken and stored at an onsite nursery for re-planting between the rows of Honeybush.
<p>Planting:</p> <ul style="list-style-type: none"> ❖ Plants will be removed from Growing Trays and planted into the soil by hand. ❖ 16 000 plants will be planted per Hectare. ❖ The plants will be planted 300 mm apart in two rows per planting row of 1 meter wide. ❖ Mulch will be applied to the planting rows after planting. ❖ 20 people will be employed to undertake the planting. 	<ul style="list-style-type: none"> ❖ No negative environmental impacts are expected during the planting phase. ❖ Positive social impacts: 20 people employed will not be retrenched. 	

10. ALIEN PLANT CONTROL

Benefits of control

- Elimination of spread of these species into non-affected areas.
- Improvement of water quality and quantity.
- Legal compliance: landowners are required to eradicate or control declared weed and alien invader plants in terms of the Conservation of Agricultural Resources Act 43 of 1983 and the National Environmental Management: Biodiversity Act 10 of 2004.
- Improvement of biodiversity in conservation areas. Fast growing invader plants suppress indigenous flora, with a resultant loss in overall biodiversity.
- Commercial reasons: alien vegetation can spread from conservation areas into production land resulting in greater weed control costs.

Important factors influencing the effectiveness of a control programme

- Timely implementation of control operations is important for alien plants.
- Operations must be directed towards killing alien vegetation. This is best achieved by using an effective herbicide chosen by the ECO and applied by using the “cut-stump; frilling or ring barking methods. Under no circumstances may spraying with a “Rose” or multi- stream nozzle head be done.

Requirements for an effective alien vegetation control programme

- Identify the problem: extent, location and species of problem plant.
- Divide the problem areas into manageable units, taking budget and resource constraints into account.
- Identify any sensitive ecosystems, rare or endangered plants etc. which may be affected by a control programme. Identify the original ecosystem applicable to the area.
- Make provision for a number of follow up operations. The initial clearing operation is only part of the total programme. Failure to follow up will result in a failure of the entire programme.

While the importance of removing or clearing of alien or exotic vegetation is recognised, there should be control over the way in which this takes place. Often what generally appears to be covered by alien vegetation, actually contains pockets of sensitive vegetation or protected species. It is for this reason that clearing of such areas must be undertaken by hand (*Guidelines for the Control and Management of Activities in Sensitive Coastal Areas, first edition, 1998*).

It is important to note that all of the above must be performed with instruction by a suitably qualified Botanical Specialist, as well as in the presence of the specialist.

11. STAFF CONDUCT CONTROL AND INFORMATION SHEET

ALL STAFF MUST OBEY THE FOLLOWING RULES:	
1	DO NOT tamper with or destroy nesting sites, lairs or any other form of animal shelter.
2	DO NOT feed the native animals.
3	DO NOT leave the project site untidy and strewn with rubbish that will attract pests.
4	DO NOT bring any pets onto the project site.
5	DO NOT trespass onto private properties not linked to the project.
6	DO NOT carry a weapon onto the project site or in the vehicles transporting workers to and from the site.
7	DO NOT set fires.
8	DO NOT cause any unnecessary disturbing noise at the project site or at any designated worker collection/drop off points.
9	DO NOT drive a vehicle under the influence of alcohol.
10	DO NOT exceed the national speed limits on public roads or exceed the recommended speed limits in this management plan (where applicable)
11	DO NOT drive a vehicle that is generating excessive noise (noisy vehicles must be reported and repaired as soon as possible).
12	DO NOT litter along the roadsides, including both public and private roads.
13	DO NOT remove or destroy vegetation around the site without the prior consent of the site manager and Environmental Control Officer.
14	DO NOT tamper with, destroy or remove vegetation from any areas that have been fenced off or marked.
15	DO NOT pollute watercourses, whether flowing or not.
16	DO NOT drive through watercourses.
17	DO NOT operate critical items of mechanical equipment without having been trained and certified.
18	ALL employees must undergo the necessary safety training and wear the necessary protective clothing at all times.
19	NO unsocial behaviour will be permitted e.g., excessive shouting, hooting etc.
20	NO ad-hoc activities are to be undertaken e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden
21	NO trespassing on private / commercial properties adjoining the site is forbidden.
22	NO worker may be forced to do work that is potentially dangerous or for what he / she is not trained to do.

12. RESPONSIBILITIES

The "Responsibility" column is merely a guide and does not relieve the Proponent of his responsibilities in terms of overall compliance with the EA and EMPr.

FUNCTION	RESPONSIBILITY
Proponent	<ul style="list-style-type: none"> The Proponent is ultimately responsible for the ensuring compliance with all the requirements associated with the operation, rehabilitation and decommissioning phases of the project.
Site Manager	<ul style="list-style-type: none"> The Site Manager is responsible to ensure that all necessary communication and submission of required documentation concerning this project is submitted to the relevant authorities. The site manager is required to adhere to the EMPr and is responsible to ensure that all staff appointed also adhere the EMPr. Ensures that all staff are made aware of the need to conduct activities in an environmentally responsible manner. (Site Manager) On instruction by the ECO, ensures that storm/surface water controls are established. Ensures prompt remediation of any sewage spills. Stockpiles are protected from aeolian effects, stormwater effects, or being driven over by workers. Ensures that a "clean-site" policy is applicable at all times. Ensures that all complaints by residents are dealt with promptly. Is responsible for any contravention/s by staff or any non-compliance with the EMPr.
Environmental Control Officer (ECO)	<ul style="list-style-type: none"> The ECO is to have access to the site at all times, for the purpose of inspections to ensure that the environmental conditions of the EMPr as well as the conditions stipulated to in the EA and the recommendations made in the EIR are being implemented and adhered to. The ECO must report on the environmental aspects of the project to the responsible person/authority at agreed intervals. The need for any deviations or variations in the environmental conditions must be reported to the DEA&DP for approval prior to these being undertaken. The ECO must be fully cognisant with the contents of the Environmental Authorisation as well as this EMPr and any other applicable legislation
Competent Authority	<ul style="list-style-type: none"> The Compliance Officer appointed by the Competent Authority is responsible for the ensuring that the Proponent, Site Manager and ECO are compliant with the provisions of the EA and EMPr.

ACKNOWLEDGEMENT FORM

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in all other contract documents.

PROJECT NAME:

HONEYBUSH TEA CULTIVATION, FARM WITTEDRIFT 306/7, PLETTENBERG BAY, WESTERN CAPE

DEA&DP REFERENCE: 14/2/1/3/D1/13/0022/16

PROPONENT:

Signed: Date:

SITE MANAGER:

Signed: Date:

ENVIRONMENTAL CONTROL OFFICER

Signed: Date:

APPENDIX A: SITE LAYOUT PLAN

APPENDIX B: REHABILITATION PLAN