

Environmental Management Programme

for

HENLIE BOERDERY

Prepared by:

Bucandi Environmental Solutions



Project Manager: H len Prinsloo (*Pr.Sci.Nat.*) Reg. No. 400108/11 (SACNASP)

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## Table of contents

1.	Details of the EAP .....	1
a)	Contact details of EAP .....	1
b)	Expertise of the EAP .....	1
2.	Detailed description of aspects .....	1
3.	Ecological sensitivity map of preferred site .....	2
4.	Impacts and mitigation measures .....	1
a)	Impacts identified for preferred alternative .....	1
b)	Timeframes and management of mitigation .....	9
c)	Monitoring and reporting .....	12
d)	Environmental Awareness Plan .....	13

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## 1. DETAILS OF THE EAP

### a) Contact details of EAP

Name of The Practitioner: H len Prinsloo

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### b) Expertise of the EAP

*The qualifications of the EAP*

M. Tech (Nature Conservation)

*Summary of the EAP's past experience.*

10 years' experience with environmental impact assessments, 3 years in the USA, 12 years in South Africa.

Please see CV attached as Appendix G-4 of the Basic Assessment Report.

## 2. DETAILED DESCRIPTION OF ASPECTS

### Poultry Houses:

Henlie Boerdery is proposing the construction of 19 environmentally controlled chicken houses with the capacity to hold up to 47 000 birds per house on Portion 4 of the farm Mooilaagte 483 JP, situated in the Lichtenburg District within Ditsobotla Local Municipality area. The proposed project triggers a Basic Assessment for certain listed activities under Listing 1 of NEMA (National Environmental Management Act, 1998). Bucandi Environmental Solutions (Bucandi) was requested by Henlie Boerdery to conduct a Basic Assessment as part of the application for environmental authorisation.

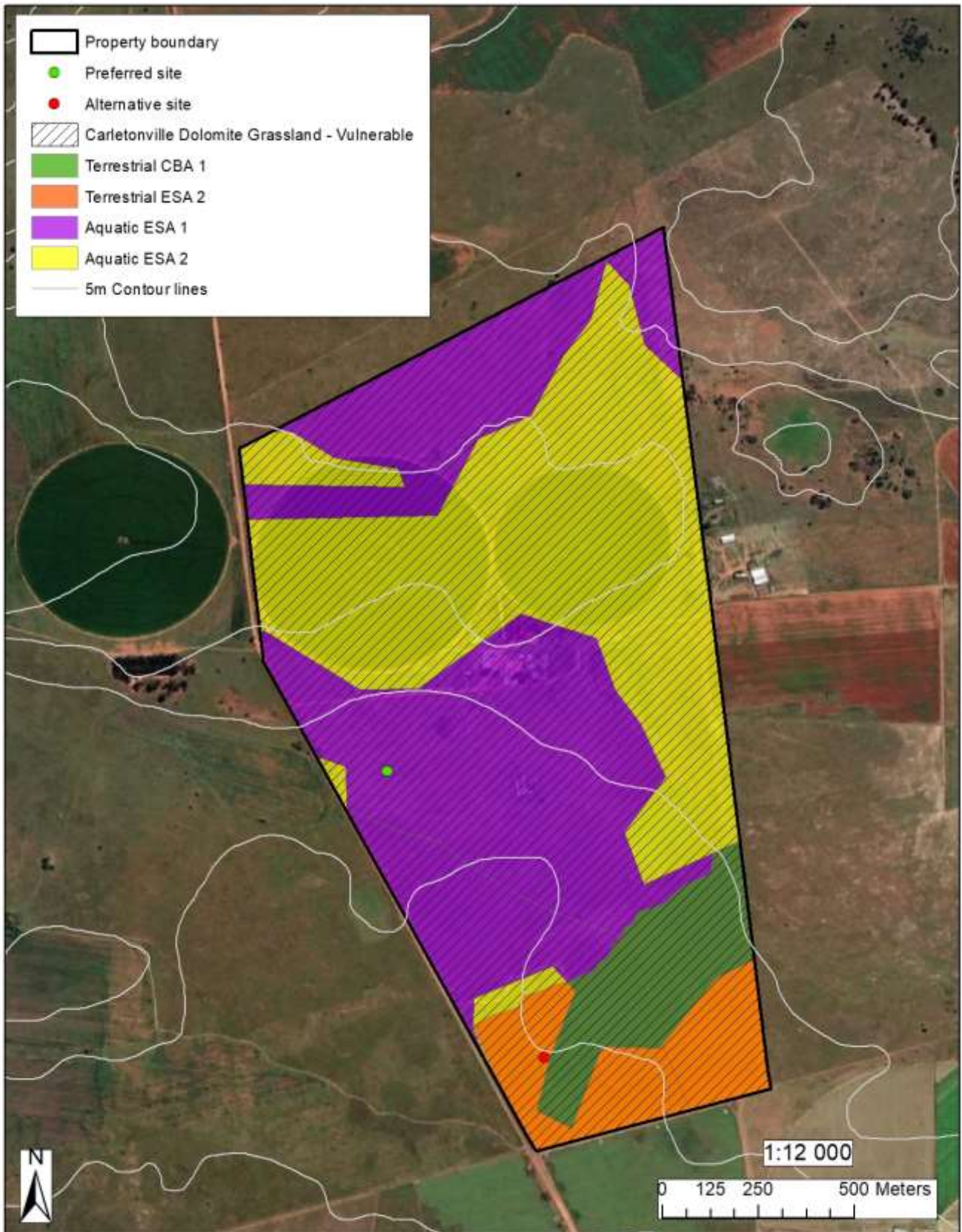
The activity will entail the construction of 19 environmentally controlled chicken broiler houses (144m x 15m each). Each house will have the capacity for 47 000 birds. The entire site expansion will be able to house up to 893 000 birds.

The project will entail the following:

- Earthworks and clearing of vegetation (cultivated land) on the site for 19 poultry houses.
- Construction of 19 environmentally controlled chicken houses (144m x 15m) with capacity for 47 000 birds per house, totalling approximately 893 000 birds.
- A silo and water tank will be erected next to each house.
- Powerlines will be connected to each house from the new Eskom point.
- Pipelines will be connected to each house from a new borehole.

The site will be fenced off with a 2.4m high electric fence.

### 3. ECOLOGICAL SENSITIVITY MAP OF PREFERRED SITE



Ecological map for the proposed development on Portion 4 of the farm Mooilaagte 483 JP

July 2020  
Created by:



**4. IMPACTS AND MITIGATION MEASURES**

**a) Impacts identified for preferred alternative**

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative A 1 (preferred alternative)</b>			
	<i>Direct impacts:</i>		
	Positive impacts	High	None
	Air quality and disturbance	Low	Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
	Surface and groundwater pollution	Low	Machinery should be properly maintained at all times. Servicing of machinery should take place only in specific demarcated and protected areas. Measures should be taken for the proper disposal of oils, grease, oil filters, rags, etc.
	Sewage and domestic waste	Low	Proper ablution facilities should be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers should be made aware of the risk of soil water contamination. Domestic waste should be disposed of in appropriate containers, and removed to the nearest municipal waste-disposal site as part of existing waste management system.
	Soil compaction, loss of fertility and increased erosion	Low	Appropriate measures should be taken to reduce the risk of erosion from unprotected slopes i.e. Diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes should be Rehabilitated concurrent with

Activity	Impact summary	Significance	Proposed mitigation
			construction.
	Fires	Low	Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment should be available, as prescribed by the relevant safety standards and legislation.
	Disturbance of fauna	Low	Only small animals occur in this area e.g. small rodents and reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed
	Safety	Low	Access to the construction site to be controlled at all times.
	Aesthetics	Low	If needed, an additional line of trees will be planted to minimise visual impact.
	<b>Indirect impacts:</b> None		
	<b>Cumulative impacts:</b> None		
<b>Operational Phase</b>			
	Manure	Low	After completion of each cycle manure is removed and used on the same farm as fertilizer.
	Carcasses	Low	The carcasses are removed on a daily basis and is collected by a contractor.
	<b>Indirect impacts:</b> None		
	<b>Cumulative impacts:</b> None		
<b>Alternative: A 2</b>			
	<b>Direct impacts:</b>		
	Positive impacts	High	None

<b>Activity</b>	<b>Impact summary</b>	<b>Significance</b>	<b>Proposed mitigation</b>
	Air quality and disturbance	Low	Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
	Surface and groundwater pollution	Low	Machinery should be properly maintained at all times. Servicing of machinery should take place only in specific demarcated and of oils, grease, oil filters, rags, etc.
	Sewage and domestic waste	Low	Proper ablution facilities should be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers should be made aware of the risk of soil water contamination. Domestic waste should be disposed of in appropriate containers, and removed to the nearest municipal waste-disposal site as part of existing waste management system.
	Soil compaction, loss of fertility and increased erosion	Low	Appropriate measures should be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes should be rehabilitated concurrent with construction.
	Fires	Low	Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment should be available, as prescribed by the relevant safety standards and legislation.
	Disturbance of fauna	Low	Only small animals occur in this area e.g. small rodents and

Activity	Impact summary	Significance	Proposed mitigation
			reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed
	Safety	Low	Access to the construction site to be controlled at all times.
	Aesthetics	Low	If needed, an additional line of trees will be planted to minimise visual impact.
	Manure	Low	After completion of each cycle manure is removed and used on the same farm as fertilizer.
	Carcasses	Low	The carcasses are removed on a daily basis and is collected by a contractor.
	<b>Indirect impacts:</b> None		
	<b>Cumulative impacts:</b> None		

Alternative: S 1			
	<b>Direct impacts:</b>		
	Positive impacts	High	None
	Air quality and disturbance	Low	Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
	Surface and groundwater pollution	Low	Machinery should be properly maintained at all times. Servicing of machinery should take place only in specific demarcated and of oils, grease, oil filters, rags, etc.
	Sewage and domestic waste	Low	Proper ablution facilities should be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers should be made



			<p>aware of the risk of soil water contamination.</p> <p>Domestic waste should be disposed of in appropriate containers, and removed to the nearest municipal waste-disposal site as part of existing waste management system.</p>
	Soil compaction, loss of fertility and increased erosion	Low	<p>Appropriate measures should be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes should be rehabilitated concurrent with construction.</p>
	Fires	Low	<p>Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment should be available, as prescribed by the relevant safety standards and legislation.</p>
	Disturbance of fauna	Low	<p>Only small animals occur in this area e.g. small rodents and reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed</p>
	Safety	Low	<p>Access to the construction site to be controlled at all times.</p>
	Aesthetics	Low	<p>If needed, an additional line of trees will be planted to minimise visual impact.</p>
	Manure	Low	<p>All of the manure is removed after each cycle and used as fertilizer on the same farm.</p>
	Carcasses	Low	<p>The carcasses are removed on a daily basis and is and</p>

			collected by a contractor.
	<b>Indirect impacts:</b> None		
	<b>Cumulative impacts:</b> None		

<b>Alternative: S 2</b>			
	<b>Direct impacts:</b>		
	Positive impacts	High	None
	Air quality and disturbance	Low	Dust control by means of watering if necessary. Vehicles to be regularly serviced and well-tuned. Operations to be undertaken during working hours only.
	Surface and groundwater pollution	Low	Machinery should be properly maintained at all times. Servicing of machinery should take place only in specific demarcated and of oils, grease, oil filters, rags, etc.
	Sewage and domestic waste	Low	Proper ablution facilities should be provided i.e. chemical toilets at appropriate locations on site if necessary or existing facilities must be used. Workers should be made aware of the risk of soil water contamination. Domestic waste should be disposed of in appropriate containers, and removed to the nearest municipal waste-disposal site as part of existing waste management system.
	Soil compaction, loss of fertility and increased erosion	Low	Appropriate measures should be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material. All unprotected slopes should be rehabilitated concurrent with

			construction.
	Fires	Low	Cooking and heating fires permitted only in designated areas with appropriate safety measures. Adequate firefighting equipment should be available, as prescribed by the relevant safety standards and legislation.
	Disturbance of fauna	Low	Only small animals occur in this area e.g. small rodents and reptiles. The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas. No fauna found on the site will be killed
	Safety	Low	Access to the construction site to be controlled at all times.
	Aesthetics	Low	If needed, an additional line of trees will be planted to minimise visual impact.
	Manure	Low	All of the manure is removed after each cycle and used as fertilizer on the same farm.
	Carcasses	Low	The carcasses are removed on a daily basis and is and collected by a contractor.
	<b>Indirect impacts:</b> None		
	<b>Cumulative impacts:</b> None		

<b>No-go option</b>			
	<b>Direct impacts:</b>		
	Positive impacts	Low	None
	Air quality and disturbance	Low	None
	Surface and groundwater pollution	Low	None
	Sewage and domestic waste	Low	None
	Soil compaction, loss of fertility and increased erosion	Low	None
	Fires	Low	None

	Disturbance of fauna	Low	None
	Safety	Low	None
	Aesthetics	Low	None
	Manure	Low	None
	Carcasses	Low	None
	<b>Indirect impacts:</b> None		
	<b>Cumulative impacts:</b> None		

**b) Timeframes and management of mitigation**

The table below lists the activities identified, mitigation measures proposed, the person responsible for the management actions, timing of actions and objectives to be reached.

Activities	Environmental Objectives	Auditable Management and Mitigation Measures	√	Person Responsible	Timing	Requirement for “sign-off” report
<b>Planning and Design Phase</b>						
No environmental activity will take place during this phase.						
<b>Construction Phase</b>						
1. Removal of vegetation and preparing site for construction.	Maintaining air quality and minimising disturbance caused by noise, dust and emissions.	Dust control by means of watering if necessary.		Hennie Pretorius	Ongoing	Confirm compliance and justify emissions
		Vehicles to be regularly serviced and well tuned.			Ongoing	
		Operations to be undertaken during working hours only.			Ongoing	
2. Construction of infrastructure.	Protecting the quality of surface and ground water.	Machinery should be properly maintained at all times.		Hennie Pretorius	Ongoing	Initialise water monitoring to take place at least quarterly.
		Servicing of machinery should take place only in specific demarcated and protected areas.			Ongoing	
		Measures should be taken for the proper disposal of oils, grease, oil filters, rags, etc.			Ongoing	
Controlling sewage and domestic waste disposal by workers.		Proper ablution facilities should be provided i.e. chemical toilets at appropriate locations on site if necessary; else existing facilities must be used.		Hennie Pretorius	Before onset of construction	Confirm compliance and monitor site to ensure that domestic waste and construction rubble has been

Activities	Environmental Objectives	Auditable Management and Mitigation Measures	√	Person Responsible	Timing	Requirement for “sign-off” report
		Workers should be made aware of the risk of soil water contamination.			Before onset of construction	removed.
		Domestic waste should be disposed of in appropriate containers, and removed to the nearest municipal waste-disposal site.			Weekly	
	Preventing fires.	Cooking and heating fires permitted only in designated areas with appropriate safety measures.		Hennie Pretorius	Ongoing	Initialise and monitor a fire prevention and response plan.
		Adequate fire fighting equipment should be available, as prescribed by the relevant safety standards and legislation.			Ongoing	
	Minimising soil compaction, loss of fertility and erosion.	Appropriate measures should be taken to reduce the risk of erosion from unprotected slopes i.e. diversion berms, ponding pools, and not exceeding angles of repose of stockpiled material.		Hennie Pretorius	Ongoing	Confirm compliance.
		All unprotected slopes should be rehabilitated concurrent with construction.			Ongoing	
	Controlling the temporary disturbance of fauna.	The area is surrounded by similar habitat and fauna is expected to move voluntarily to surrounding areas.		Hennie Pretorius	Ongoing	Confirm compliance.
		No fauna found on the site will be killed.			Ongoing	
	Ensuring the safety of workers and the public.	Access to the construction site to be controlled at all times.		Hennie Pretorius	Ongoing	Erection of safety fence and controlled entry points to the site.
	Minimising visual and audible impacts that may occur as a result of vehicle exhausts, dust and noise from machinery.	If needed, an additional line of trees will be planted to minimise visual impact.		Hennie Pretorius	Before onset of construction	Establishment of a tree line.

Activities	Environmental Objectives	Auditable Management and Mitigation Measures	√	Person Responsible	Timing	Requirement for "sign-off" report
<b>Operational Phase</b>						
1. Utilisation of infrastructure.	Managing the disposal of sewage, waste and litter.	Sewage from flush-toilets flows to a french drain.		Hennie Pretorius	Ongoing	Confirm compliance with good practice.
		Household waste is removed to the nearest authorised municipal landfill site.			Weekly	
		Litter is controlled by good practice.			Ongoing	
	Disposal of chicken manure	All of the manure is removed after each cycle and used as fertilizer on the same farm.		Hennie Pretorius	After each cycle	Confirm compliance after each cycle.
	Preventing wash water from contaminating surface and ground water.	Houses are washed after each cycle only after the removal of manure and carcasses.		Hennie Pretorius	After each cycle	Water quality to be tested quarterly.
		The houses are washed using a high pressure (16bar) sprayer, minimising the amount of water used.			After each cycle	
Equipment is not washed with water, but rather using a foam sanitizer (F29) which is applied as dry foam and allowed to evaporate.			After each cycle			
Disposal of carcasses.	The carcasses are removed on a daily basis and is and collected by a contractor.		Hennie Pretorius	Daily	Confirm compliance.	
Minimising air pollution.	Manure in houses and in manure pile should be treated regularly to prevent excessive odours and flies. Fly control should include measures for control of adults as well as larvae.		Hennie Pretorius	Ongoing	Confirm compliance.	
<b>Decommissioning and Closure Phase</b>						
This phase is not foreseen for this project.						

### **c) Monitoring and reporting**

All activities identified and proposed mitigation measures should be monitored according to the following programme:

- Regular monitoring of all the environmental management measures and components must be carried out by the holder of the ROD in order to ensure that the provisions of this programme are adhered to.
- On-going and regular reporting of the progress of implementation of this programme will be done by the ECO.
- An ECO should be appointed to conduct external environmental audits every two month as long as construction is taking place and every six months once construction has been completed.

#### *Roles and responsibilities for the execution of monitoring programmes*

It is the responsibility of the holder of the ROD to appoint an ECO before any construction takes place. The ECO will then be responsible for environmental training of the contractors and employees, as well as the external environmental auditing according to the timeframe stipulated above.

#### *Environmental Monitoring*

Environmental Monitoring is the continuous evaluation of the status and condition of environmental elements. Its purpose is to detect change that takes place in the environment over time and involves the measuring and recording of physical, social and economic variables associated with development impacts. The purpose of the monitoring programme is not only to ensure conformance with the EMP through the contract/work instruction specifications but also to monitor environmental issues and impacts that have not been accounted for in the EMP that are, or could result in significant environmental impacts for which corrective action is required. Monitoring shall form part of the contract or work instruction.

#### *Internal performance audits*

It is recommended that the site manager undertake regular performance audits in accordance with the approved EMPr in which each environmental management specification will be rated in terms of the following criteria:

- Full Compliance (no action required)
- Satisfactory Performance (Some remedial/preventative actions required)
- Unsatisfactory performance (Remedial actions required)

The performance monitoring report must incorporate all compliance issues as well as corrective actions taken, permits, licenses and all contract documentation's conditions. These reports must be made available to the appointed Environmental Control Officer (ECO).

#### *External Compliance Audits*

An independent qualified ECO must be appointed to monitor the site and operations for compliance in accordance with the approved EMPr. The external compliance audits must be conducted on a two monthly basis during construction and a six monthly basis during operation.

The ultimate aim is that each environmental management specification be checked by means of a system in which a score may be allocated for:

- Full compliance
- Satisfactory performance
- Unsatisfactory performance
- No action



## **d) Environmental Awareness Plan**

### *Environmental awareness training*

Environmental awareness should be done as part of the induction training completed by all personnel working on the site. To ensure the training is always updated, placards containing information about environmental aspects will regularly be updated and distributed. If the ECO in his own discretion or the discretion of the site manager decide to update any environmental awareness training, he/ she will be able to do so at their own discretion.

It is recommended that the environmental awareness training be presented at least every 6 months to ensure the update of environmental goals in relation to current activities is communicated to the personnel.

The ability of the team to contain any environmental incidents is dependent on the management efficiency of the manager on site, and his ability to train and ensure his employees are knowledgeable about environmental impacts.

The contractors and applicant must ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- Explanation of the importance of complying with the EMP;
- The construction must take place in ecological sound manner, taking due cognisance of the sensitive ecological areas in close vicinity of the site (i.e. drainage channel/streams).
- The need to protect and preserve the historical and archaeological heritage of the site.
- The importance of conformance with all environmental policies and procedures;
- The significant environmental impacts, actual or potential, as a result of their activities;
- The environmental benefits of improved personal performance;

### *Dealing with risks and accidents*

The solution to the risks involved with prospecting operations is to have all the appropriate information and planning in place before the incident occurs. This is important to ensure the correct procedures and reporting structures are followed, and the appropriate remediation steps are followed. The approved EMP shall be available on site. This EMP contains all the management plans necessary to prevent or mitigate pollution or degradation of the environment. An Incident Register and a Complaints Register should be kept on site and completed in the case of any environmentally detrimental incident happening or complaints are received. These registers should be kept and included in the internal and external reports.