ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE MANAGEMENT OF ACTIVIES RELATING TO THE PROTECTION OF THE NATURAL ENVIRONMENT DURING THE CONSTRUCTION AND OPERATIONAL PHASES OF THE

PROPOSED DEVELOPMENT AND EXPANSION OF GRAPE VINEYARDS ON PORTION 13 OF ORANGE FALLS FARM NO. 16, AUGRABIES FALLS WAY, NORTHERN CAPE

This EMPr is a DENC Requirement,
and is to be presented to contractors at the On Site Start-Up Meeting

Compiled by

EnviroAfrica cc

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DETAILS AND EXPERTISE OF THE AUTHOR

This report was prepared by Emile Esquire who has a BA Degree in Geography and Environmental Studies from the University of the Western Cape (UWC), and EIA Short Course from the University of Pretoria (UP).

Emile Esquire has more than three and half years' experience in the administration and evaluation of Section 24G Rectification Applications at the Department of Environmental Affairs and Development Planning ("DEA&DP"). Part of his duties included the drafting of fine notifications; reviewing Environmental Management Programmes (EMPrs); doing site inspections; drafting Environmental Authorisations ("EAs"); and conducting compliance with the conditions of the EAs issued.

Emile Esquire joined EnviroAfrica CC during May 2017; is employed as an Environmental Assessment Practitioner ("EAP") and is working on variety of projects in the Western Cape and Northern Cape.

The whole process and report was supervised by Bernard De Witt who has more than 22 years' experience in environmental management and environmental impact assessments.

Bernard de Witt: B.Sc. Forestry (Stellenbosch); B.A. (Hons) Public Administration (Stellenbosch); National Diploma in Parks and Recreation Management; EIA Short course (UCT); ISO 14001 Auditors course (SABS)

Please refer to Appendix J8 of the BAR for the auther's CV.

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR ACTIVIES RELATING TO THE PROTECTION OF THE NATURAL ENVIRONMENT DURING THE CONSTRUCTION AND OPERATIONAL PHASE OF THE

PROPOSED DEVELOPMENT AND EXPANSION OF GRAPE VINEYARDS ON PORTION 13 OF ORANGE FALLS FARM NO. 16, AUGRABIES FALLS WAY, NORTHERN CAPE

(This EMPr is a condition as set out in the EA)

1. INTRODUCTION

This Environmental Management Programme (EMPr) forms part of the conditions as set out in the The Lair Trust Environmental Authorisation (EA) and recommendations as detailed in the Basic Assessment Report (dated January 2020).

This EMPr binds all contractors, sub-contractors and other persons working on the site to adhere to the terms and conditions of the EMPr throughout the construction of proposed agricultural development.

Any other Site Specific additional activities decided and agreed upon at the "On Site Start-Up Meeting" must be included to form part of the EMPr.

EMPr Circulation List

Full copies of this EMPr will be made for the ECO, Site Engineer and/or Contractor. Appendices will also be made and circulated where relevant.

Scope

This EMPr addresses the construction phase environmental management ("CEMPr") and operational phase environmental management programme ("OEMPr") and all activities associated with the project. This EMPr will demonstrate compliance with Section 24N (2) and (3) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and Appendix 4 of GN No. R. 982 of 4 December 2014. In addition, it will deal with all the requirements of regulation 19 (4) of the EIA regulations (GN R. 326, 07 April 2017) as well as any additional specific information requested by the Department of Environmental Affairs and Development Planning (D:EA&DP) pertaining to some developments. Compliance to this EMPr (which serves as a basis for all the phases of the project) will be monitored by the Environmental Control Officer (ECO). The Construction Engineer/Project Managers, the Contracting Agent(s) and the Client will be responsible for the implementation of this EMPr.

Site location

The proposed development and expansion of grape vineyards on Portion 13 of Orange Falls Farm No. 16, Augrabies Falls Way, Northern Cape. The proposed site is approximately 8.9 km north-west of the town of Augrabies. The property (Portion 13 of the Farm Orange Falls No. 13, Kenhardt) is located, just off the R359 (Augrabies Road) about 8.9 km north-west of the small town Augrabies within the Kai !Garib Local Municipality of the Northern Cape Province. The site co-ordinates is **28°39'42.28"S, 20°20'22.42"E.**

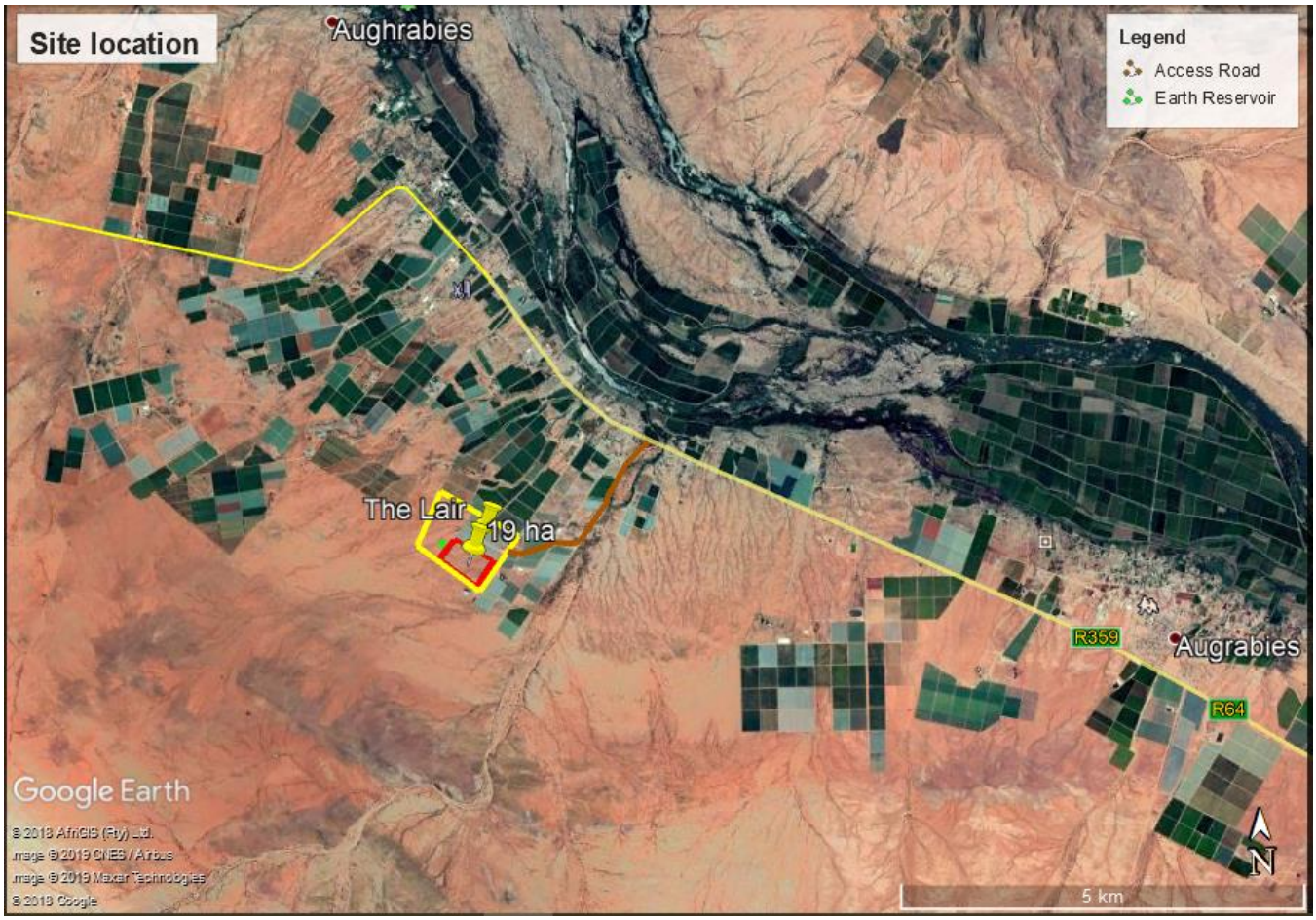

Figure 1: Google Earth aerial view of the proposed site location (yellow polygon). The site is located to the south of R359. There is an existing access road towards the proposed site.

Project Description

The proposed development and expansion of grape vineyards on Portion 13 of Orange Falls Farm No. 16, Augrabies Falls Way, Northern Cape.

It is proposed that an area of 19 ha be cleared of vegetation for the proposed establishment of vineyards and dryland agricultural activities. It is proposed that a small reservoir be developed with a combined storage capacity of 2000m³ and will have a development footprint of approximately 2827m².This dam will be located on the north-western part of the property. No roads will be constructed as existing farm dirt roads will be used to gain access to the proposed site. The total development footprint will not exceed 20 ha. The proposed site is approximately 8.9 km north-west of the town of Augrabies. The property (Portion 13 of the Farm Orange Falls No. 13, Kenhardt) is located, just off the R359 (Augrabies Road) about 8.9 km north-west of the small town Augrabies within the Kai !Garib Local Municipality of the Northern Cape Province. The site co-ordinates are **28°39'42.28"S, 20°20'22.42"E**.

Access

Access to the site will be gained via an existing dirt farm road on the property. The site is located off R365 road. No roads will be constructed. Please see figure 1 above.

The receiving environment

The proposed development footprint is located on private property, zoned for agriculture and is surrounded by agricultural land uses. The proposed vineyards will be located south of the existing vineyards. As is typical of this part of the Northern Cape, ephemeral drainage lines tend to criss-cross the landscape and the proposed site will cross a number of such drainage lines. The site is located within a Critical Biodiversity Area (CBA) and a number of protected plant species in terms of the NCNCA were observed. The land is currently fallow-land, sometimes used for livestock grazing. The vegetation on the property in general can be described as a sparse, slightly disturbed, low shrubland, with the small ephemeral drainage lines the most prominent feature, especially in the area to the west of the proposed site. Bushmanland Arid Grassland is not considered a threatened vegetation type (least threatened), with more than 99% remaining. However only 4% is formally conserved (Augrabies Falls National Park). No special features were observed on the property and the site itself is not considered of any special significance in terms of vegetation other than potential migration route and the fact that it supported a number of protected plant species.

The proposed site is surrounded by agricultural land uses with intensive table grape production within the immediate environment. Brabees River is located approximately 950m east of the proposed site.

Vegetation types expected

According to the SANBI BGIS - National Vegetation Map, site (blue dot) would historically be covered with **Bushmanland Arid Grassland**, and this is a ***least threatened ecosystem***. Please refer to figure 2 below.

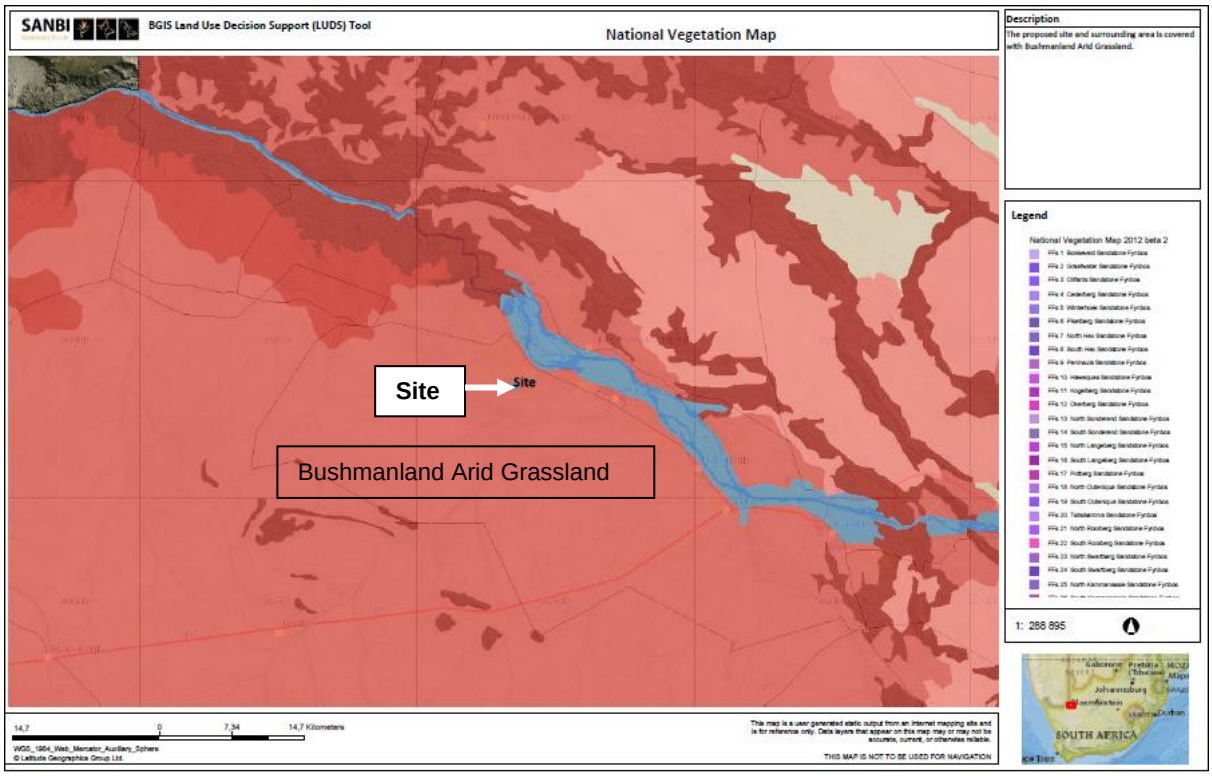

Figure 2: SANBI BGIS National Vegetation Map 2012 beta2 - Showing the vegetation cover of the area.

Surface Water

The proposed development footprint is located on private property, zoned for agriculture and is surrounded by agricultural land uses. The proposed vineyards will be located south of the existing vineyards. As is typical of this part of the Northern Cape, ephemeral drainage lines tend to criss-cross the landscape and the proposed site will cross a number of such drainage lines.

As with almost all areas in the Northern Cape the site is criss-crossed by small drainage lines, which is the result of draining these relative level landscapes during of thunderstorm events. These drainage lines are often associated with slightly larger shrubs and small trees that are only found near such water ways. In this case the vegetation encountered was typical of what was expected on gravelly soils with a shallow sandy layer sometimes present.

The Lower Orange River is lined with vineyards. These vineyards often cut off the flow from the numerous water courses that enter the Orange River. These are small tributaries that only flow during the occasional summer time heavy thunder storm. These tributaries are mostly dry drainage lines. Scouring and erosion are obvious in these drainage lines and closer to the confluence with the Orange River, some of these are deeply incised.

Water velocity down these small water courses can be quite fast and hence the erosion potential is great. If allowed to cross a vineyard, it stands to reason that the damage can be extensive. For this reason, these small water courses and even there bigger reaches lower down have been straightened and canalised since the onset of the table grape industry in the Lower Orange River valley many years ago.

The drainage lines have been cut off with berms and trenches to divert their flow around blocks of vineyards. Some of these trenches are substantial and the network of cut-offs extensive. These storm water diversions have been constructed long before the promulgation of current environmental legislation.

The drainage lines have been cut off with berms and trenches to divert their flow around blocks of vineyards. Some of these trenches are substantial and the network of cut-offs extensive. These storm water diversions have been constructed long before the promulgation of current environmental legislation.

Lower down closer to the Orange River these once natural tributaries have lost all their riverine characteristics and ecological function. This, however, is the trade-off that must be made for having a table grape industry. The drainage lines are dense over the landscape, despite of the semi-desert conditions and it cannot be avoided not to divert them when blocks of vines are planted, along with the access roads, irrigation and other infrastructure. The drainage lines at the Lair Trust vineyards are not any different. The top end of these vineyards is marked by cut -off trenches. Brabees River is located approximately 950m east of the proposed site. Please refer to **Appendix D1** and **Appendix D3** for more detail. Please refer to figure 3 below.

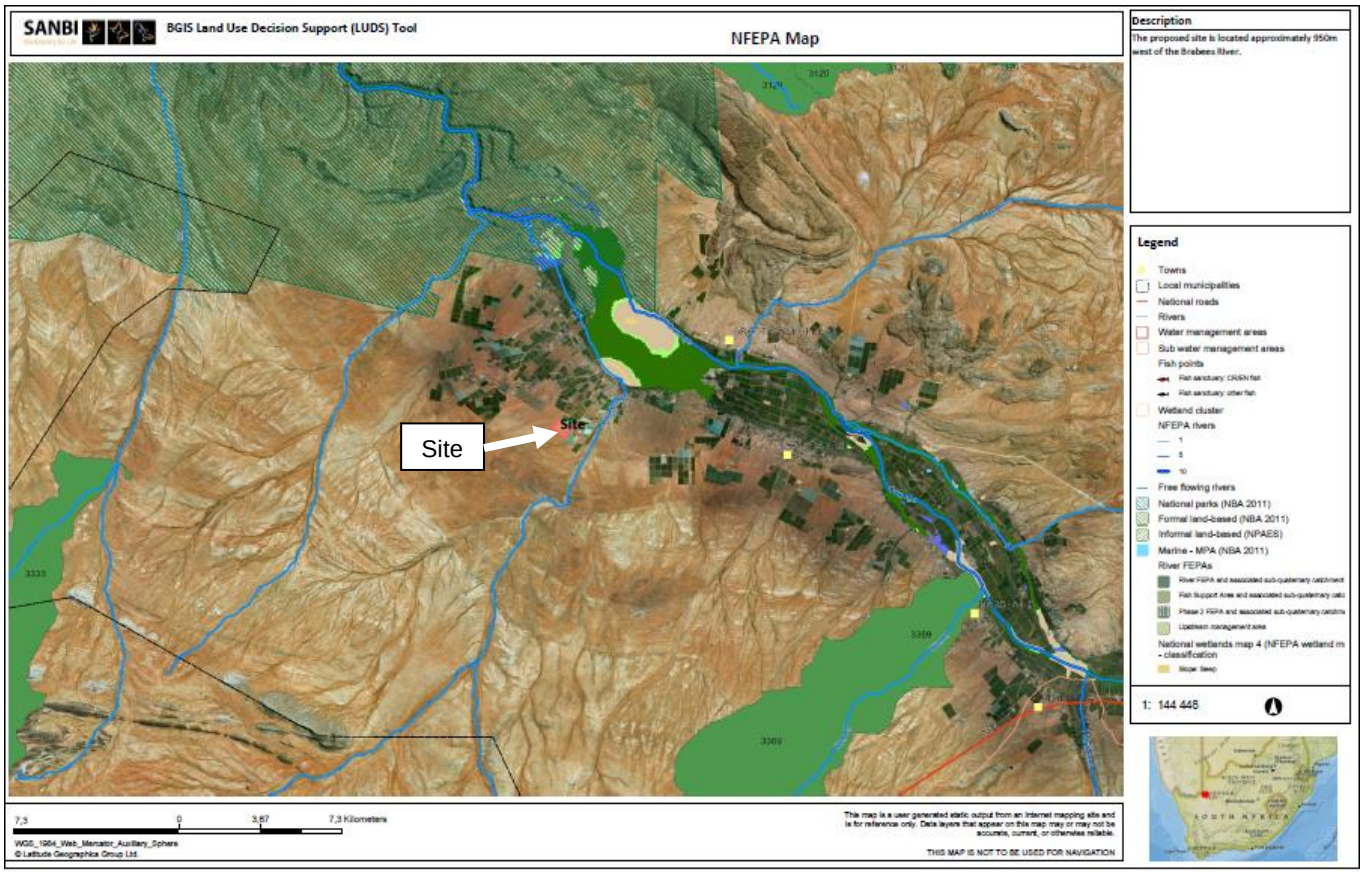

Figure 3: National Freshwater Ecosystem Priority Areas (NFEPA) Map of the proposed site and surroundings.

Recommendations on Impact MITIGATION/minimisation

It is recommended that the development footprint not be expanded; and during the construction phase the moving area around this construction to be minimized and kept in close proximity to the site.

Vegetation:

It is recommended that the alien vegetation be cleared during the construction phase of the activity which will be beneficial to the ecosystem of that area. The following mitigation measures are proposed:

- Before any work is done the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint). The demarcation must include the total footprint necessary to execute the work but must aim at minimising disturbance.
- All construction must be done in accordance with an approved construction and operational phase Environmental Management Programme (EMPr), which must be developed by a suitably experienced Environmental Assessment Practitioner (EAP).
- A suitably qualified Environmental Control Officer (ECO) must be appointed to monitor the construction phase in terms of the EMPr and the recommendations made in the Biodiversity Assessment, as well as any other conditions which might be DENC.
- An application must be made to DENC for a flora permit in terms of the Northern Cape Nature Conservation Act, Act 9 of 2009) (NCNCA) with regards to impacts on species protected in terms of the act.
- All Aloe species within the construction footprint must be searched & rescued and transplanted in nearby remaining natural veld. A watering programme for searched and rescued plants must be implemented and maintained until these plants have re-established themselves.

- Apply for an NCNCA permit for the search and rescue of Aloe Species.
- Topsoil must be removed to a depth of 15 – 20 cm and protected and stored separately for re-use during rehabilitation.
- All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. Topsoil and vegetation must be replaced over the disturbed soil to provide a source of seed and seed bed to encourage re-growth of the species removed during construction.
- An application must be made to DENC for a flora permit in terms of the NC NCA with regards to impacts on species protected in terms of the Act.
- Access must be limited to routes approved by the Environmental Control Officer (ECO).
- Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO.
- Indiscriminate clearing of any area outside of the construction footprint must be avoided.
- Erosion control measures must be implemented in accordance with the EMPr.
- All areas impacted as a result of construction must be rehabilitated on completion of the project.
- An Integrated waste management approach must be implemented during construction. All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.
- All alien vegetation must be cleared from all associated footprints within the various construction sites.

Freshwater:

The establishment of vineyards on an area that has small drainage lines. The drainage lines on the land where vineyards will be established are to be altered, if not destroyed. Digging of cut-off trench through drainage lines at upstream boundary of new blocks. Re-alignment of drainage lines into irrigation return flow channels. Alteration of drainage lines. Agri-chemicals down the drainage lines. Sediments down drainage lines. Tilling of new land. Removal of vegetation. Construction of irrigation infrastructure. Planting of vines. Movement of sediments down the drainage line, through the Brabees River.

According to the Freshwater Impact Report (Appendix D3), the significance of the impact on the small drainage lines is regarded as low because only short sections of the drainage lines are impacted. It is not foreseen that the vineyard will ever be rehabilitated and allowed to some state closer to the original state prior to development, but that it would rather be re-planted after many years, once the vines become too old to render the expected yield.

There is not much that can be done in the line of mitigation of the environmental impact when the soil is prepared and the vines planted. The only significant mitigation that can be implemented is to make sure that vineyards are not over-irrigated and that as little as possible agricultural return flow is created.

The impact of a couple of new blocks of vineyards is low-negative. The mitigation measures that are available indeed lower the significance from “medium” to “low”. The following mitigation is proposed:

- Do not disturb any land outside of designated agricultural areas.
- Construction must not commence during the rainy season.
- Create a 9m buffer around the main drainage line on site.
- Prevent the over-use of agri-chemicals and fertilizers.

- Prevent plant remnants to wash down drainage lines following the pruning season.
- Do not work outside of the footprint of the proposed small reservoir and should be clearly demarcated; and
- Landscape the surroundings of the completed small reservoir.

Environmental Authorization

The Conditions of approval of the Environmental Authorization (EA) and other relevant approvals/licences from other authorities will be included as Appendix 1 in the final EMPr. The conditions of approval must be adhered to as part of the EMPr. EA (Environmental Authorization) Conditions of Approval – Appendix 1.

2. COMMENCEMENT OF WORKS

The site project contractors must timeously receive a copy of the site EMPr and any other further additional information that pertains to site conditions/amendments or deviations from original site plan. This EMPr must form part of the Contractors Contract.

A copy of the EMPr must be on site at all times and available for presentation to any authority requesting to see such document.

Before the commencement of works, the contractor must consult the owner of the property, regarding timing of works, possible disturbance of farming activities, access to the site and any other possible "no-go areas".

No work on site may take place until:

- The Environmental Contract is signed between the relevant parties
- One week's written notice given to the Department before commencement of any construction activity (As per the EA)
- EMPr has been approved by the relevant authorities
- On-Site Start-Up Meeting has been held
- Site and No-Go areas has been demarcated
- Contractors are in possession of the EMPr and other relevant documentation
- Contractors signed the Declaration Of Understanding
- All mandatory site equipment is in place
- On Site Environmental Education & Awareness training session has taken place with all relevant construction personnel present.

NB: Work refers to: Camp Establishment, Earthmoving activities and any preliminary construction activities.

3. ENVIRONMENTAL CONDITIONS OF APPROVAL

- Environmental Authorisation Conditions Of Approval – see Appendix 9 for the full EA
- Original Basic Assessment Report Recommendations – see Appendix 11
- Local Authority Conditions of Approval – if applicable
  (see attached as appendices)

4. ISSUES OF CONCERN

Issues of concern that were identified in the Environmental Impact Assessment process and/or included in the EA include but are not restricted to the following:

- Disturbance to Portion 13 of Orange Falls Farm No. 16, Augrabies Falls Way, Northern Cape.

The pre-determined environmental issues and respective activities must be addressed during the "On Site Start-Up Meeting" (OSSM) and reflected in the On-Site Start-Up Report.

The Site Specific recommendations as per the original letters to The Lair Trust and conditions as per the The Lair Trust Environmental Authorisation are to be included and to be reflected in the On-Site Start-Up Report (refer point 6 under start-up report)

Such activities include but shall not be limited or restricted to;

- Access route
- Demarcation of working footprint and removal and storage of topsoil material
- Waste management
- Mandatory site equipment
- Establishment of construction site compound and fuel stores
- Ablution & Toilet Facilities
- Refuse Management
- Concrete works & batching proposals
- Soil Erosion Control
- Fire fighting equipment & Emergency fire reaction plan
- Overhead power line and/or AC cable supply route (method statement if required)

5. ON-SITE START-UP MEETING

The mandatory **on-site start-up** meeting that is conducted preferably **14 days but not less than 5 working days** prior to commencement of any site/camp establishment, earthworks and/or construction activities and will relate to additional discussed information that must be complied with during the entire construction phase.

ON-SITE START-UP MEETING REPORT to be attached as Appendix 1 to the The Lair Trust. The Start-Up Meeting Report to include all site-specific issues and arrangements as discussed and agreed on at the site start-up meeting.

The On-Site Start-Up Meeting additional information pertains to specific site construction agreements that was discussed on site by all the relevant parties and agreed on and must be included in the On Site Start-Up Meeting Report. **(The arrangements and agreements must fall within the conditions as set out in the EA)**

At the on-site start-up meeting (OSSM), the following issues must be addressed:

- The EMPr & other relevant site documents
- Project to be discussed and all uncertainties are cleared
- Method statement/s to be discussed
- Power line installation access routes (if required)
- Road (if required) and construction area to be demarcated
- Materials stockpile and lay down areas to be demarcated
- Method of stockpiling to be discussed
- Fire fighting procedures
- Mandatory fire fighting equipment & fire preventative measures
- Solid waste removal intentions
- Placement, type and service of toilets to be agreed on
- Placement and type of rubbish bins and removal of rubbish to be agreed on
- Labour overnight camp to be demarcated and services agreed on (if required)
- Environmental Education and awareness training session to all contractors and onsite staff/labour

The following people must attend the on-site Start-Up Meeting:

- A representative from The Lair Trust
- Main contractor's representative
- Site supervisor/foreman
- Environmental consultant (EC/ECO)
- Environmental site officer (ECO/ESO)

Minutes of the on-site Start-Up Meeting will be condensed to a report format and circulated to all attendees of the above named meeting for their perusal and comments if needed. A Non-response is deemed an acceptance of the contents and agreements of the report. (**Appendix 1)**

The main contractor must provide (i) a list of all sub-contractors and their scope of work for the contract and (ii) a time schedule of works.

The On-site Start-up Meeting report will also form part of this Environmental Management Programme ("EMPr"). If any discrepancies between the start-up report and the EMPr arise then the EMPr will take precedence until clarification on the discrepancy is clarified. If any discrepancies between the EMPr and the EA then the EA will take precedence until clarification on the discrepancy is clarified.

IT IS THE RESPONSIBILITY OF THE MAIN CONTRACTORS TO ENSURE THAT ALL SUB-CONTRACTORS, THAT WORK ON THE SITE DURING AND AFTER THE CIVILS CONTRACT, ARE INFORMED OF THE ENVIRONMENTAL CONDITIONS PERTAINING TO THE SITE.

NB! NO WORK WILL START UNTIL THE ABOVE IS IN PLACE AND AGREED ON.

6. METHOD STATEMENT

Method statements from the contractor will be required for specific sensitive actions on request of the authorities, The Lair Trust or the ECO. A method statement forms the base line information on which sensitive area work takes place and is a "live document" in that modifications are negotiated between the Contractor and ECO/ The Lair Trust, as circumstances unfold. All method statements will form part of the EMPr documentation and are subject to all terms and conditions contained within the EMPr main document.

These documents must be available to the authorities for inspection or on request.

A method statement describes the scope of the intended work in a step-by-step description in order for the ECO and The Lair Trust to understand the contractor's intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks.

The Contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the ECO and The Lair Trust have approved the method statement.

Method statements need to be compiled by the contractor for approval by The Lair Trust and the ECO. The contractor must submit written method statements to The Lair Trust for the purposes of the environmental specification, a "Method Statement" is defined as a written submission by the contractor to The Lair Trust setting out the plant, materials, labour and method the contractor proposes using to carry out an activity, in such detail that The Lair Trust and the ECO is able to assess whether the contractor's proposal is in accordance with the specifications and/or will produce results in accordance with specifications.

The contents of the Method statement cannot be changed or altered.

The method statement must cover applicable details with regard to:

- Construction procedures

- Materials and equipment to be used
- Getting the equipment to and from site
- How the equipment/material will be moved while on site
- How and where material will be stored
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material (of any potential hazardous material) that may occur
- Timing and location of activities
- Compliance/non-compliance with the Specifications, and
- Any other information deemed necessary by The Lair Trust and the ECO.

The Contractor must abide by these approved method statements, and any activity covered by a method statement must not commence until The Lair Trust and the ECO has approved of such Method Statement.

NB: No work may commence or take place until all relevant parties have approved the Method Statement.

Explanation of method statements and a pro forma method statement sheet that must be completed by the Contractor for each activity requiring a method is attached as **Appendix 4 & Appendix 5.**

7. ENVIRONMENTAL DECLARATION of UNDERSTANDING

(for the Environmental Management Programme (EMPr)

The purpose of the Environmental Declaration of Understanding agreement between the applicant/client, the engineer, the contractor and the Environmental Consultant is;

1. To enforce compliance by all parties with the EA and this Environmental Management Programme.
2. To maintain proof of compliance with the site EA.
3. Applicant to inform all relevant parties of the EA and EMPr (as per condition of the EA).
4. To protect the environment of the site against environmental damage;
5. To mitigate and rehabilitate any damage to the environment.
6. Ensure that all contractors and sub-contractors are familiar with the EMPr and EA and sign the mandatory Declaration of Understanding indicating their undertaking to work within the framework of the environmental requirements.

This agreement outlines the obligations on the ECO to ensure compliance by all parties with the EMPr

8. PENALTIES

The Lair Trust (on recommendation by the ECO) reserves the right at all times for the duration of this agreement to impose restrictions and associate penalties on the contractor with respect to the specific nature, timing and extent of construction activities on environmentally sensitive sites.

In instances of non-compliance with the EMPr by the contractor (or any of their employees) or sub-contractor/s (or any of their employees) that move on or off the site, the on-site ECO must issue a written warning indicating the non-conformance to the contractor.

The Lair Trust in consultation with the Environmental Consultant/ECO, must determine the amount of the penalty applicable in accordance with the Penalties for Non-Compliance Schedule of Tariffs (**Appendix 2**).

Such penalty amount must be produced in writing and presented to the contractor within seven (7) days of the written warning. The Lair Trust may recover penalties by deducting the fine from the offending contractor.

The contractor will be responsible for all costs incurred where emergency procedures are implemented to deal with accidents impacting on the environment as well as the rehabilitation of such damage in conjunction with the ECO and site engineer.

In serious cases, at the discretion of The Lair Trust and the Environmental Consultant/ECO, any multiple offences can be added together.

The ECO (after consultation with Environmental Consultant/ The Lair Trust may also *stop the works or part thereof until the situation is resolved; no extension of time is claimable by the contractor.*

These penalties do not preclude any prosecution under any law or regulation.

This set of procedures must be understood by all relevant onsite project managers / project managers and site workers.

See **Appendix 2** for the Penalties for Non- Compliance.

9. RESPONSIBILITY OF THE LAIR Trust (as the Applicant)

The Lair Trust must be responsible for ensuring compliance with the conditions contained in the EA by any person acting on his behalf, including but not limited to an agent, servant, employee or any person rendering a service to The Lair Trust in respect of the activity, including but not limited to contractors and consultants.

The Lair Trust is responsible for appointing the ECO, Site Engineer and Contractor for the duration of the construction contract and for ensuring that the Site Engineer and Contractor fulfil their obligations in terms of this EMPr.

The Lair Trust and or its representative must notify DENC and any other relevant authority, in writing, within 24 hours thereof if any condition of this authorisation is not adhered to.

10. THE SITE ENGINEER / SITE MAIN CONTRACTOR

The Site Engineer/Site main contractor is responsible for ensuring that the construction contract and daily construction activities as per the original site specifications are implemented in terms of the Environmental Management Programme which includes additional on-site Start-Up Meeting agreements

The Site Engineer and the ECO are expected to develop a close working relationship and to stay in contact with each other.

The Site Engineer issues site instructions to the Contractor and all requests and communications between the ECO and Contractor are via the Site Engineer.

The only exception to this is where the ECO needs to issue a “stop works” order on the Contractor or the Site Engineer if serious environmental harm is about to happen or is happening as a result of construction activity. This “stop-order” must be confirmed by the ECO as soon as practically possible to all affected construction personnel.

When the ECO is not on site, the resident engineer will be responsible for implementation of the EMPr. Any construction and construction related activities that might lead to damage to the environment should be immediately brought to the attention of the site ECO.

The site engineer or the appointed engineer’s representative must complete the daily “**ENVIRONMENTAL DAILY CHECKLIST” (see Appendix 6)**

11. THE CONTRACTOR

The Contractor must ensure that all of its sub-contractors, employees, suppliers, agents, etc., are fully aware of the environmental issues detailed in the site EMPr. The Contractor must liase closely with the Site Engineer and the ECO and must ensure that the works on site are conducted in an environmentally sensitive manner and fully in accordance with the requirements of the EMPr, at all times.

Any main bulk service providers must be advised of the construction activities as well as the requirements of this EMPr and the Contractor must be responsible for their activities conducted within their work areas.

All contractors working on site must have proper and competent contractor supervision during their time of contract.

If more than one contractor work on the site simultaneously then the responsibility lies on each contractor to adhere to the conditions of the EMPr and related documents.

This is for the duration of the contract.

The supervisors must work closely with the appointed environmental officer and discuss the daily programme with the appointed environmental officer. Any problems that might lead to damage to the environment must be discussed prior to commencement of the activity.

THE ECO MUST ENSURE THAT ALL CONTRACTORS / SUB-CONTRACTORS HAVE SIGNED THE "DECLARATION OF UNDERSTANDING" (Appendix 3) IN THIS CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROGRAMME BEFORE CONSTRUCTION COMMENCES.

12. SITE PERSONNEL: ENVIRONMENTAL AWARENESS TRAINING

All daily site construction personnel must attend an on-site Induction Environmental Education and Awareness training (E&AT) session together with any site-specific environmental training they may require to carry out their duties.

All contractor and sub-contractor teams involved in work on site must be briefed on their obligations towards environmental controls and methodologies in terms of this EMPr prior to commencement of any construction and construction related activities

The on-site Environmental Education and Awareness Training session must take the form of an on-site environmental talk and where necessary relevant demonstrations conducted by the ECO.

The on-site Environmental Education and Awareness Training session must be aimed at all levels of site contractors, sub-contractors and related site workers & site management.

In the case of new workers coming on site throughout the construction programme, the site contractor is responsible to ensure all new labour arriving on site is made aware of the contents of the EMPr and is briefed on the E&AT.

13. ENVIRONMENTAL CONTROL OFFICER

13.1 Frequency of site visits

An ECO must be appointed for the duration of the construction phase (as required by EA). The ECO must:

- Conduct a start-up meeting before construction commences.
- ECO to visit the site on a weekly basis while construction is in progress.
- ECO to monitor the development on a monthly basis & attend the site meeting until development is completed.
- Conduct a closing down visit ASAP after completion of the Development.
- Conduct an Environmental Compliance Audit Report as required in terms of Appendix 7 and Regulation 34 of the EIA Regulations, 2014 (as amended).
- The Environmental Compliance Audit Report requirements are detailed in **Section 13.3** of this EMPr.

13.2 Requirements for the Posts

Environmental Control Officer: [ECO]

- A recognised environmental practitioner with a degree in environmental management and a sound knowledge of the environment and environmental management principles.
- An independent person with 5 or more years of environmental site management and able to ensure EMPr compliance monitoring experience on construction projects.

13.3 Auditing Programme

- This audit programme was included into the EMPr to comply with requirements of Appendix 7 of the EIA Regulations, 2014.
- The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the approved EMPr, and where applicable the closure plan, in order to determine whether such EMPr and closure plan continuously meet mitigation requirements and addresses environmental impacts, taking into account processes for such auditing prescribed in terms of the EIA Regulations, 2014.
- The holder of this environmental authorisation must, for the period during which the environmental authorisation and EMPr, and where applicable the closure plan, remain valid—

  (a) ensure that the compliance with the conditions of the environmental authorisation and the EMPr, and where applicable the closure plan, is audited; and

  (b) submit an environmental audit report to the relevant competent authority (DENC.
- The environmental audit report contemplated in subregulation (1) must—

  (a) be prepared by an independent person (ECO) with the relevant environmental auditing expertise;

  (b) provide verifiable findings, in a structured and systematic manner, on

  (i) the level of performance against and compliance of an organisation or project with the provisions of the requisite environmental authorisation or EMPr and,where applicable, the closure plan; and

  (ii) the ability of the measures contained in the EMPr, and where applicable the closure plan, to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity;

  (c) contain the information set out in Appendix 7 of the EIA Regulations, 2014; and

  (d) be conducted and submitted to the competent authority at intervals as indicated in the environmental authorisation.
- Within 7 days of the date of submission of an environmental audit report to the competent authority (DENC), the holder of an environmental authorisation must notify all potential and registered interested and affected parties of the submission of that report, and make such report immediately available—

  (a) to anyone on request; and

  (b) on a publicly accessible website, where the holder has such a website (if applicable).

13.4 Monitoring responsibilities of the ECO

- The ECO will undertake regular site inspections and to monitor and assist in environmental tasks he/she must compile daily/weekly reports/checklist and submit to EnviroAfrica/ The Lair Trust.
- Is to ensure that the mitigation/rehabilitation measures and recommendations referred to in the Environmental Authorisation are implemented and to ensure compliance with the provisions of the EMPr.
- Must notify DENC and any other relevant authority, in writing, within 24 hours thereof if any condition of the EA is not adhered to.
- Is responsible for the environmental issues involved with the construction phase of the project;
- Co-ordinating any aspect of site activity that may have an effect on the environment;
- Must work in close conjunction with The Lair Trust/Site representative, contractors and sub-contractors
- Must identify and demarcate the impact area i.e. construction footprint area before any construction activities commence
- Must demarcate the necessary areas for storage of materials, ablutions, eating areas of contract workers, etc.
- Must identify 'No go' areas and areas sensitive to erosion and have these areas demarcated. Environmental awareness of the workers is essential. This must be in the form of an on-site talk and must be conducted at an appropriate technical level
- The ECO will keep a site inspection diary. The purpose of the site diary is to record construction progress and environmental compliance. This information is then recorded in the form of an ECO checklist and/or diary entries and photographic records for visual reference. (Appendix 8).
- These documents must be available to the authorities for inspection or on request. The diary must include meetings/discussions with the contractor and must reflect environmental queries, agreed actions and dates of eventual compliance. These must form part of the official environmental record

13.5 Authority of the ECO

The ECO has the authority to stop works if in his/her opinion there is a serious threat to or impact on the environment caused directly from the construction operations.

This authority is to be limited to non-compliance to the EMPr and emergency situations where consultation with the Environmental Consultant is not immediately available.

The ECO is to inform the Environmental Consultant of the reasons for the stoppage as soon as possible. A relevant reason should be supplied to The Lair Trust /Site representative as soon as possible after stoppage of such works.

Upon failure by the contractor or his employee to show adequate consideration to the environmental aspects of this contract i.e. wilful destruction of the environment, the ECO may recommend to The Lair Trust /site representative to have the contractor's representative or any employee(s) removed from the site or work suspended until the matter is remedied.

No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor

13.6 Appointment of an ESO. (Environmental Site Officer)

When necessary the ECO may appoint an ESO to carry out the site inspections and the following will apply:

- The ESO is appointed prior to commencement of construction activities, site inspections are decided upon between The Lair Trust and the ECO depending on the environmental sensitivity of the construction areas and site location.
- The frequency of site inspections is also determined prior to commencement of works but can change if the need arises.

13.7 Qualifications of an ESO.

The appointed Environmental Site Officer must fulfil the following criteria:

- Have at least 5 years' experience as an Environmental Site Officer.
- Have a sound understanding of the contents of the EMPr.
- Must be able to enforce compliance to all relevant site documents.
- Have a basic knowledge of the NEMA and other relevant information.
- A construction background would be an advantage.
- Must be able to work with site personnel and resident engineers.

14. CHANGES TO ENVIRONMENTAL MANAGEMENT PROGRAMME

Although care has been taken to address all known relevant environmental issues for the construction phase, it may become necessary to add or amend certain procedures or instructions to improve the efficiency of the Environmental Management Programme (EMPr).

Only those additions or amendments of this EMPr that will either improve environmental protection or can be proven not to have any negative effect to the immediate and surrounding environment will be considered.

Changes or deviations have to be motivated in writing by means of a Method Statement and the same procedures for a standard Method Statement have to be followed.

Any additions or amendments must be submitted by the ECO to DENC after the ECO has consulted with the Environmental Consultant and The Lair Trust. Please note that any additions or amendments to this EMPr must be approved by DENC before they are implemented.

No deviation from the contents of the EMPr is allowed without the above-named prescribed procedures.

15. RECORD KEEPING

All records relating to the implementation of this management plan (e.g. Declaration of Understanding, ECO Checklist and/or diary, Method Statements, etc.) must be kept together and can be retrieved easily. These records must be available for scrutiny by any relevant authorities.

Photographs are to be taken of the site prior to, during and immediately after construction, as a visual reference. These photographs must be stored with other records related to this EMPr.

Any environmental non-compliances reported must have the support of sufficient photographic proof to mitigate the non-compliance report.

16. ENVIRONMENTAL COMPLETION STATEMENT

An Environmental Completion Statement is a report by the ECO/EC to the relevant authorities stating completion of the project and compliance with the EMPr and conditions.

The following environmental statements must be completed on completion of all site construction activities and submitted in line of sequence to the relevant office for perusal and reference.

16.1 ESO: ENVIRONMENTAL CLOSING STATEMENT

The ESO must submit an **environmental closing statement** on completion of the construction phase of the development. The environmental closing statement must cover all aspects of daily/weekly construction activities that took place during the ESO site inspections.

16.2 ECO: ENVIRONMENTAL COMPLETION STATEMENT

The ECO must submit an **environmental closing statement** relating to all environmental and technical issues that occurred on site as well as any conclusions regarding incidents such as written warnings, stoppages of works and penalty fines.

16.3 ENVIRONMENTAL AUDIT REPORT

An Environmental Audit Report by the ECO must be submitted by The Lair Trust to the satisfaction of the Department of Environment and Nature Conservation (DENC), and the environmental audit report will be conducted and submitted to the Department at intervals as indicated in the Environmental Authorisation (EA).

17. MANAGEMENT SPECIFICATIONS (CONSTRUCTION PHASE)

(This EMPr is additional to conditions as set out in the EA)

17.1 Fauna and Flora

The Contractor must not deface, paint, damage or mark any natural features (e.g. trees, rock formations, buildings, etc.), if these should be situated in or around the Site, for survey or other purposes unless agreed beforehand with the Engineer and the ECO. Any features affected by the Contractor in contravention of this clause must be restored/rehabilitated to the satisfaction of the Engineer and the ECO

Except to the extent necessary for the carrying out of the works, flora must not be removed, damaged or disturbed nor must any vegetation be planted. Any removal of vegetation that is necessary should be kept strictly to the demarcated area. The planted trees on site that are within the development footprint should be carefully removed and replanted elsewhere on the property.

Staff and plant movement to be restricted to the disturbed areas. Construction material must be stored in areas designated by the site agent and must not damage natural vegetation. Only the existing roads/tracks are to be used.

Trapping, poisoning and/or shooting of animals is strictly forbidden. No domestic pets or livestock are permitted on Site. Where the use of herbicides, pesticides and other poisonous substances are to be used, the Contractor must submit a Method Statement.

All incidents of harm to any animal or natural vegetation (apart from the agreed upon areas) must be reported to the ECO.

Before any work is done the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint).

The demarcation must include the total footprint necessary to execute the work but must aim at minimising disturbance.

All construction must be done in accordance with an approved construction and operational phase Environmental Management Programme (EMPr), which must be developed by a suitably experienced Environmental Assessment Practitioner (EAP).

A suitably qualified Environmental Control Officer (ECO) must be appointed to monitor the construction phase in terms of the EMPr and the recommendations made in the Biodiversity Assessment, as well as any other conditions which might be DENC.

An application must be made to DENC for a flora permit in terms of the Northern Cape Nature Conservation Act, Act 9 of 2009) (NCNCA) with regards to impacts on species protected in terms of the act.

All Aloe species within the construction footprint must be searched & rescued and transplanted in nearby remaining natural veld. A watering programme for searched and rescued plants must be implemented and maintained until these plants have re-established themselves.

Apply for an NCNCA permit for the search and rescue of Aloe Species.

Topsoil must be removed to a depth of 15 – 20 cm and protected and stored separately for re-use during rehabilitation.

All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. Topsoil and vegetation must be replaced over the disturbed soil to provide a source of seed and seed bed to encourage re-growth of the species removed during construction.

An application must be made to DENC for a flora permit in terms of the NC NCA with regards to impacts on species protected in terms of the Act.

Access must be limited to routes approved by the Environmental Control Officer (ECO).

Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO.

Indiscriminate clearing of any area outside of the construction footprint must be avoided.

Erosion control measures must be implemented in accordance with the EMPr.

All areas impacted as a result of construction must be rehabilitated on completion of the project.

An Integrated waste management approach must be implemented during construction. All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.

All alien vegetation must be cleared from all associated footprints within the various construction sites.

17.2 Protection and Rescue of Fauna and Flora (if required)

The removal of fauna from the site must be done in accordance with the requirements of the Nature Conservation Ordinance regulating these activities and should be conducted by a suitably qualified and experienced person. The necessary permits that may be required from Cape Nature must first be obtained.

If required, any flora identified during construction to be rescued must be removed and placed in an area specifically allocated for these plants to ensure that the necessary care thereof will take place until being relocated and planted in designated areas.

The areas of vegetation that are to be protected during construction must be demarcated and indicated on a site plan. A Method Statement is to be submitted to the ECO by the Contractor, detailing the method of fencing for protection of the conservation areas.

Before any work is done the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint).

The demarcation must include the total footprint necessary to execute the work but must aim at minimising disturbance.

All construction must be done in accordance with an approved construction and operational phase Environmental Management Programme (EMPr), which must be developed by a suitably experienced Environmental Assessment Practitioner (EAP).

A suitably qualified Environmental Control Officer (ECO) must be appointed to monitor the construction phase in terms of the EMPr and the recommendations made in the Biodiversity Assessment, as well as any other conditions which might be DENC.

An application must be made to DENC for a flora permit in terms of the Northern Cape Nature Conservation Act, Act 9 of 2009) (NCNCA) with regards to impacts on species protected in terms of the act.

All Aloe species within the construction footprint must be searched & rescued and transplanted in nearby remaining natural veld. A watering programme for searched and rescued plants must be implemented and maintained until these plants have re-established themselves.

Apply for an NCNCA permit for the search and rescue of Aloe Species.

Topsoil must be removed to a depth of 15 – 20 cm and protected and stored separately for re-use during rehabilitation.

All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. Topsoil and vegetation must be replaced over the disturbed soil to provide a source of seed and seed bed to encourage re-growth of the species removed during construction.

An application must be made to DENC for a flora permit in terms of the NC NCA with regards to impacts on species protected in terms of the Act.

Access must be limited to routes approved by the Environmental Control Officer (ECO).

Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO.

Indiscriminate clearing of any area outside of the construction footprint must be avoided.

Erosion control measures must be implemented in accordance with the EMPr.

All areas impacted as a result of construction must be rehabilitated on completion of the project.

An Integrated waste management approach must be implemented during construction. All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.

All alien vegetation must be cleared from all associated footprints within the various construction sites.

17.3 Clearing of Vegetation, Stripping & Conservation of Topsoil (if required)

A Method Statement must be submitted detailing the methods to be used for vegetation clearing if required. All cleared areas must be stabilised as soon as possible. Burning of cleared vegetation on site is prohibited. The burying of cleared vegetation or use as part of backfill or landscape shaping is prohibited unless written approval is obtained from the ECO.

Cleared vegetation may be used for mulch or slope stabilisation of the Site. Should bulk vegetation be removed from the designated working areas (foot print area) then tall vegetation shall first be removed through brush cutting and chipping of larger shrub material; this may be added to the topsoil material stockpiles as mulch. Unless otherwise agreed upon, only indigenous plant material shall be used for this purpose.

Prior to any activities within the demarcated work areas, topsoil material shall be removed to a depth of 15 to 20cm or deeper if specified by the engineer in consultation with the ECO, and stockpiled in a designated area for use in rehabilitation of the site post construction. Any area where the topsoil will be impacted by construction activities, including the construction offices and storage areas, must have

the topsoil stripped and removed and covered with herbaceous vegetation (other than alien species), overlying grass and other fine organic matter and stockpiled for subsequent use in rehabilitation.

Topsoil storage areas must be convex and should not exceed 2 m in height. The Contractor must ensure that the material does not blow or wash away. Topsoil must be treated with care, must not be buried or in any other way be rendered unsuitable for further use (e.g. by mixing with spoil) and precautions must be taken to prevent unnecessary handling and compaction. In particular, topsoil must not be subject to compaction greater than 1 500 kg/m² and must not be pushed by a bulldozer for more than 50 m. Trucks may not be driven over the stockpiles.

Topsoil from different soil types must be stockpiled separately and replaced in the same areas from which they were taken if this proves to be the case. Specific attention should be given to the areas that may house rare and threatened species. Topsoil areas must be demarcated in order to ensure the safekeeping of topsoil and to separate different stockpile types.

Before any work is done the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint).

The demarcation must include the total footprint necessary to execute the work but must aim at minimising disturbance.

All construction must be done in accordance with an approved construction and operational phase Environmental Management Programme (EMPr), which must be developed by a suitably experienced Environmental Assessment Practitioner (EAP).

A suitably qualified Environmental Control Officer (ECO) must be appointed to monitor the construction phase in terms of the EMPr and the recommendations made in the Biodiversity Assessment, as well as any other conditions which might be DENC.
An application must be made to DENC for a flora permit in terms of the Northern Cape Nature Conservation Act, Act 9 of 2009) (NCNCA) with regards to impacts on species protected in terms of the act.

All Aloe species within the construction footprint must be searched & rescued and transplanted in nearby remaining natural veld. A watering programme for searched and rescued plants must be implemented and maintained until these plants have re-established themselves.

Apply for an NCNCA permit for the search and rescue of Aloe Species.

Topsoil must be removed to a depth of 15 – 20 cm and protected and stored separately for re-use during rehabilitation.

All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. Topsoil and vegetation must be replaced over the disturbed soil to provide a source of seed and seed bed to encourage re-growth of the species removed during construction.

An application must be made to DENC for a flora permit in terms of the NC NCA with regards to impacts on species protected in terms of the Act.

Access must be limited to routes approved by the Environmental Control Officer (ECO).

Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO.

Indiscriminate clearing of any area outside of the construction footprint must be avoided.

Erosion control measures must be implemented in accordance with the EMPr.

All areas impacted as a result of construction must be rehabilitated on completion of the project.

An Integrated waste management approach must be implemented during construction. All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.

All alien vegetation must be cleared from all associated footprints within the various construction sites.

17.4 Protection of Archaeological & Paleontological remains (if required)

Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during construction activities, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (SAHRA) (Att Ms Natasha Higgitt 021 462 4502). Burials, etc. must not be removed or disturbed until inspected by the archaeologist.

During construction, any possible discovery of finds such as stone tools scatters, artefacts, human remains, or fossils are made, the operations must be stopped, and the ECO in charge of these developments ought to be alerted immediately.

These discoveries ought to be protected (preferably in situ), and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carried out by a professional archaeologist or palaeontologist. SAHRA Contact details: South African Heritage Resources Agency, 111 Harrington Street, PO Box 4637, Cape Town 8000, South Africa. Email: Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509 Web: www.sahra.org.za). The ECO and Engineer are also to be informed.

If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/ Mimi Seetelo – 021 320 8490), must be alerted immediately as per section 36(6) of the NHRA and item 5 of the Schedule.

If any heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resources. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA.

Note that the Contractor may not, without a permit issued by the responsible heritage resource authority; destroy, damage, excavate, alter, deface or otherwise disturb any archaeological resources.

The Environmental Management Programme (EMPr) must be implemented and an Environmental Control Officer (ECO) must be appointed.

17.5 Appropriate use of Machinery

Contractor must, at all times, carefully consider what machinery is appropriate to the task while minimizing the extent of environmental damage and disturbance to the surrounding area.

The contractor may not operate any machinery including a fuel driven compressor outside the demarcated area.

Where practical, all maintenance of plant and machinery on Site must be performed in workshops. If it is necessary to do maintenance outside of a workshop area, the Contractor must obtain the approval of the Engineer and the ECO prior to commencing activities

All vehicles and equipment must be routinely inspected for fuel and oil leaks, kept in good working order and serviced regularly. Leaking equipment must be repaired immediately or removed from the Site. When servicing equipment, drip trays must be used to collect the waste oil and other lubricants. Drip trays must also be provided in construction areas for stationary plant (such as compressors) and for "parked" plant (such as scrapers, loaders, vehicles). Drip trays will be kept free of water that will float the oil to overspill. All drip trays / bungs to attain a 120% capacity of the plant fuel / oil capacity.

Appropriate 2.5 kg (minimum requirement) dry powder SABS approved and service certified fire-fighting extinguisher must be a mandatory item on all vehicles working and moving on or off the construction site.

17.6 Demarcating and fencing

Final site demarcation must be carried out with all relevant parties (who will be responsible) present for the day-to-day activities on the site, they include;

The Lair Trust	Representative
Environmental Consultant	Environmental Consultant (EC)
Main Contractor	Project Site Manager
Sub-contractor	Project contractor
ECO/ESO	Environmental Control Officer or Site Officer

The proposed site will be demarcated prior to the commencement of any construction activities whatsoever, this includes site establishment, the moving of construction material or any other items onto the site, etc.

The site will be demarcated with appropriate strong steel dropper poles. A single strand of orange baler twine is to be attached to the dropper poles to indicate boundaries and no-go areas for site personnel and vehicular movement. (Alternative fencing may be decided upon dependent on site requirements)

The construction area i.e. road, stockpile areas and development footprint etc. must be demarcated and fenced off with steel dropper poles and orange baler twine approximately 1 m high is considered adequate. The demarcation will be agreed on during the start-up meeting.

All fencing and fence placement/positioning must be approved by the ECO on site.

Work areas and access routes must be clearly demarcated to minimise environmental impact.

NB. Steel dropper poles and orange baler twine has proven to be the most environmentally friendly means of on-site demarcation.

In the event that sensitive features are threatened by construction activities, temporary fencing off of these areas (for individual areas such as trees or rocks) or the construction area (when working in a mainly natural environment) is recommended.

The Contractor must maintain in good order all demarcation, fencing and barriers for the duration of construction activities, or as otherwise instructed. Any temporary fencing removed for the execution of any portion of the works is to be reinstated by the Contractor as soon as practicable. The Contractor at the end of the contract must remove all demarcation, fencing or barriers not forming part of the final works on Site.

Once in place the demarcation barriers may not be moved or altered without consultation with the site ESO and the main contractor.

17.7 "NO-GO" Areas

"NO-GO" areas, if so designated by the EMPr, EA or on site start-up meeting, are certain pre-determined areas where construction activities are prohibited. The contractor must ensure that no person, machinery and/or equipment enter the "NO-GO" areas at any time during the contract period.

If so required by specifications in the EMPr, certain areas must be "NO-GO" areas. The Contractor must ensure that, insofar as he has the authority, no person, machinery, equipment or material enters the designated "NO-GO" areas at any time.

Areas of special importance will be decided upon between the Engineer, Contractor, the ECO, and the land owner and demarcated as "No go" areas on a site plan and fenced off. Such areas are out of bounds to the Contractor and his staff, sub-contractors and their staff or suppliers and their staff and to any other person involved in the construction, without the written permission specified by the ECO.

All private property outside of the construction areas as set out in the site layout plan shall be considered no-go areas.

17.8 Water, Storm water, Erosion & Sedimentation Control

The Contractor must take appropriate and active measures to prevent erosion resulting from his own construction activities and operations as well as storm water control measures to the satisfaction of the ECO.

Occupants on site must have access to safe drinking water. Water to be supplied by the contractor shall be from a legal source and comply with recognised standards for potable and other uses.

During construction, the Contractor must protect areas susceptible to erosion by installing all the necessary temporary and permanent drainage works as soon as possible.

It is illegal to discharge water into a public stream if the quality does not conform to the required health or water standards. Other measures as may be necessary must be taken to prevent the surface water from being concentrated in streams. All potential hazardous fluids / materials must be

protected from the rain to prevent them being washed into storm water channels. All such measures must be discussed with and approved by the ECO.

17.9 Fuel, Tar Compounds and Oil

No more than 25l of fuel is to be stored on the site.

Basic guidelines to follow if any fuels are to be stored are as follows:

- These areas must comply with general fire safety requirements.
- All vehicles, equipment, fuel and petroleum services and containers must be maintained in a good condition that prevents leakage and possible contamination of soil or water supplies. Drip trays are to be used in these storage areas to prevent contamination of the ground in the event of spillages or leaks.
- No refuelling of vehicles to be allowed on site.
- If required, only small volumes (<25l) of fuel is permitted on site for the fuelling of small plant and equipment.
- Quantities of fuels must not exceed 25 litres at any time.
- All plants / fuel tanks must have a drip tray present to use in the event off accidental spillage of oils and fuels and must contain a capacity level of 120% of the capacity of the plant fuel and oil tanks.
- Drip trays must be used when refuelling small plant or equipment.
- A suitable leak proof container for the storage of oiled equipment (filters, drip tray contents and oil changes etc.) must be established.
- Fuels and oils must be safely located out of harm's way from the elements and safety and fire prevention must be strictly adhered to.
- All spills are to be recorded in the ESO diary.
- A bioremediation/hydrocarbon spill remediation product approved by the ECO must be stored on site and near the fuel stores for any emergencies such as spills. Once a purpose manufactured hydrocarbon spill remediation product has been used or has been used to treat contaminated materials (soil, rubble etc.), it can be disposed of as per general waste provided this is not in excessive quantities.

Fuel Storage proposals must be cleared by the ECO before any storage or stockpiling takes place.

17.10 Hazardous Substances

If potentially hazardous substances are to be stored on site, the Contractor must provide a Method Statement detailing the substances/materials to be used, together with the storage, handling and disposal procedures of the materials to the Engineer and the ECO.

Paints: - No paint products may be disposed of on Site and brush/roller wash facilities must be established to the satisfaction of the Engineer and the ECO. Oil based paints and chemical additives

and cleaners such as thinners and turpentine must be strictly controlled. A Method Statement detailing the paint management procedures is required.

Hazardous building materials: - Hazardous building materials (e.g. asbestos, fibre claddings, refrigerants, coolants, sub-station cooling oils, etc.) must be identified and dealt with in accordance with the relevant safety and health legislation. All such material must be separated on Site and disposed of at appropriate licensed disposal sites. The Contractor must supply the ECO with a certificate of disposal.

Hazardous materials should be stored under lock and key in designated areas with properly displayed and visible warning signs.

17.11 Concrete Works

The Engineer (in collaboration with the ECO) must indicate the permitted location of batching plants (including the location of cement stores and sand and aggregate stockpiles), if these are to be present on Site, on a site plan. A Method Statement indicating the layout and preparation of such facilities must be submitted.

Cleaning of equipment and flushing of mixers must not result in pollution of the surrounding environment. All wastewater resulting from batching of concrete must be disposed of via the contaminated water management procedure. Used cement bags must be stored in weatherproof containers to prevent wind dispersion and water contamination. Used cement bags must be disposed of on a regular basis via the solid waste management system, and must not be used for any other purpose.

Disposal of cement bags on site must be arranged with the site ECO.

All visible remains of excess concrete must be physically removed and disposed of on completion of cement work. Washing the remains into the ground is not acceptable. All excess aggregate must also be removed.

The following recommendations must be implemented to minimise impact.

- The concrete mixing must take place on top of boarding and/or impermeable sheeting to protect the ground. This board and or sheeting must be removed from the site once the mixing is complete
- Concrete batching to take place at identified areas only in consultation with the ECO.
- Cement contaminated water may not enter a natural or man-made (e.g. trench/sloot or dam) water system. Preventative measures include establishing sumps from where contaminated water can be either treated in situ or removed to an appropriate waste site.
- Dry mixing batching areas to be carefully placed in consultation with the ECO
- If possible/appropriate ready mix concrete must be used.
- Cement bags are to be stored securely out of harm's way from the elements (wind and rain). Bags has to be covered and placed on plastic sheeting
- Sand and stone to be stored on plastic if it is stored outside the future fenced off site.

- Excess or spilled concrete must be confined within the works area and then removed to a waste site.
- Wash-down areas must be confined to within the concrete batching area only.

NB: In the event of Ready Mix concrete deliveries taking place on site the site foreman, must ensure that no wash-down of ready mix trucks takes place on or around the site, except at the concrete batching area where concrete wastewater may be contained in the existing bunding pit. Any alternative method of disposal must have to approval of the site ECO.

17.12 Fires and smoking

No fires are allowed.
If Smoking is allowed on site then arrangements to be made for disposal of cigarette buds. No smoking will be allowed outside the agreed upon areas.

Adequate fire fighting equipment according to the fire hazard during the construction period must be available on site and in good working order (at least one type ABC (all-purpose) 2.5 kg extinguisher and 3 fire beaters per working area). The persons on site must be trained in the use of such equipment.

The main contractor must provide a list of all authorities involved in fire fighting in the region. This list must include emergency contact numbers and must be visible at the site office.

Welding, gas cutting or cutting of metal will only be permitted inside the working areas.

The Contractor must pay the costs incurred to organizations called to put out any fires started by him. The Contractor must also pay any costs incurred to reinstate burnt areas as deemed necessary by The Lair Trust.

It is required that contractors have available the emergency telephone numbers of the nearest local Fire Fighting Station and that an emergency fire fighting re-action plan has been drawn up with on-site workers and the land-owner.

17.13 Emergency Procedures

It is the responsibility of the contractor to assess the potential risks to the environment as a result of the project. As such, the contractor must have the necessary standard emergency operating procedures in place to deal with any potential emergency such as oil spills or fire.

All staff should be made aware of the necessary basic emergency procedures in the event of an emergency including injuries to staff. The appropriate equipment and identified personnel to deal with such basic emergencies should be available on site.

Fire: The Contractor must advise the relevant authority of a fire as soon as one starts and must not wait until he can no longer control it. The Contractor must ensure that his employees are aware of the procedure to be followed in the event of a fire.

Spills: The Contractor must ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which must include notifying the Engineer, the ECO and the relevant

authorities. Treatment and remediation of the spill areas must be undertaken to the reasonable satisfaction of the ECO and Local Authority.

17.14 Dust Control (if required)

The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities to the satisfaction of the ECO and Local Authority.

Excessive dust during construction, can be reduced by spraying water regularly to control dust generation. Other suitable dust control mitigation measures can also be considered.

The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area).

The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause damage to people and property.

The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

The Environmental Management Programme (EMPr) must be implemented.

17.15 Solid Waste Management

No on-site burying or dumping of any waste materials, vegetation, litter or refuse must occur.

The Contractor must provide problem-animal and weatherproof bins with lids of sufficient number and capacity to store the solid waste produced on a daily basis. The lids must be kept firmly on the bins at all times. Bins must not be allowed to become overfull and must be emptied at least once a day. Waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof, and which the Engineer and the ECO has approved.

All solid waste must be disposed of off-site at an approved landfill site in terms of section 20 of the Environment Conservation Act (Act No. 73 of 1989).The Contractor must supply the ECO with a certificate of disposal. All hazardous waste must be disposed of at a licensed hazardous waste site.

The Contractor must make provision for workers to clean up the Contractor's camp and working areas on a daily basis so that no litter is left lying around and so that the site is in a neat and tidy state. The Contractor must remove from site the refuse collected at least once a week.

The Contractor must be responsible for the establishment of a refuse control system that is acceptable to the ECO.

Disposal arrangements must be made in advance and cleared with the ECO before construction starts.

17.16 Toilets and Ablution Facilities

The Contractor must provide suitable sanitary arrangements near the construction site for all site employees, in agreement with the land owner. A minimum of one toilet must be provided per 15 persons at each working area (station) or as stipulated in the Environmental Management Programme.

If portable/chemical toilets are to be used (in agreement with the land owner);

- The toilet must be within easy reach of the working area and be in good working condition and cleaned on a daily basis. Toilet paper must be provided. The toilets must be emptied on a weekly basis or when full or when instructed by the ECO on site.
- Disposal arrangements must be made in advance and cleared with the ECO before construction starts. Sanitation provision and servicing must be to the satisfaction of the ECO. The Contractor must ensure that toilets are emptied prior to any builders' holidays, and/or weekends.
- Toilets must be of a neat construction and must be provided with doors and locks and must be secured to prevent them blowing over.
- Cognisance of the surrounding residential area must be taken and chemical toilets are to be properly screened from these.

NB. NO BURYING OR BURNING OF ANY WASTE MATERIAL ON OR NEAR THE CONSTRUCTION SITE NOR ANYWHERE ON THE SURROUNDING PROPERTY IS PERMITTED.

17.17 Stockpiling

Any stockpiling of gravel, cut, fill or any other material including spoil must only be allowed in degraded areas or areas below the future cover of buildings and tar or paved parking surface. The Contractor must indicate the proposed areas for such operations and method of undertaking such operations in a Method Statement to be submitted to the ECO for approval before any such activity begins. Any area used for stockpiling and not covered by building development must be returned to at least the state they were in before stockpiling and it must be ensured that the erosion potential of these areas is not increased.

The Contractor must ensure that the material does not blow or wash away or mix with each other. If the stockpiled material is in danger of being washed or blown away, the Contractor must cover it with a suitable material, such as hessian, netting or plastic.

17.18 Preparation of Building Material

The Contractor must ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) required to comply with the Specifications. The Contractor must ensure that these delivery drivers are supervised during off-loading, by someone with an adequate understanding of the requirements of the Specifications. Cognisance of vehicle and pedestrian traffic while delivering material must be taken.

All manufactured and/or imported material must be stored within the demarcated area, and, if so required, out of the rain. All lay down areas outside of the construction camp must be subject to the Engineer and the ECO's approval in such a way as not to cause a nuisance or environmental damage.

All building materials are to be prepared at the batching plant, to enable the effects of cement and other substances, and the resulting effluent to be more easily managed.

It is essential that any imported material i.e. base material for road works, building sand, bedding base sand for pipe / cable lines etc. must be screened and of which the origins must be identified prior to arriving at the receiving environment, and this must be approved by the Engineer / ECO.

17.19 Discharge of construction water

Potential pollutants of any kind and in any form must be kept, stored, and used in such a manner that any escape can be contained and the water table not endangered. This particularly applies to water emanating from runoff from fuel depots/workshops/truck washing areas. Wash down areas must be placed and constructed in such a manner to ensure that the surrounding areas are not polluted.

Contaminated water includes water that is carrying excess sediment due to construction activities. The contractor, being responsible for the construction and effective containment and maintenance of settlement ponds must ensure that the surrounding environment is not adversely affected as a result of construction activities. Contaminated water storage facilities must not be allowed to overflow and appropriate protection from rain and flooding must be implemented. Contaminated water that is removed from site must be disposed of at a facility approved by the ECO and Local Authority. No contaminated water that does not meet the water quality standards and criteria under the National Water Act may be released into a natural system, whether it is to surface or groundwater.

All cement effluent from mixer washings, and run-off from batching areas and other work areas must be contained in suitable sedimentation ponds. Sedimentation ponds must be allowed to dry out on a regular basis to allow for solid material to be removed. This material must be disposed of in a suitable manner, depending on the nature of the material, and to the discretion of the ECO.

17.20 Contractors Temporary Camping site and Eating Areas

The Contractor must designate eating areas for the approval of the ECO, which must be clearly demarcated. No eating of meals must take place outside these designated areas without the approval of the Contractor/ECO. The feeding or leaving of food for animals is strictly prohibited. Sufficient waste bins must be present in this area and emptied regularly.

The contractor must supply cooking facilities that are suitable for the environment and are not liable to cause the outbreak of fires.

No overnight camping/stay on site allowed. If overnighting is necessary for security purposes then it must be cleared with the ECO on site.

17.21 Traffic, Access Routes and Haul Roads

The Contractor must control the movement of all vehicles and plant including that of his suppliers so that they remain on designated routes. In addition, such vehicles and plant must be so routed and operated as to minimise disruption to regular users of the routes not on the Site. On public roads adjacent to the Site, vehicles will adhere to municipal and provincial traffic regulations.

All temporary access routes must be rehabilitated at the end of the contract to the satisfaction of the ECO, if required.

Method Statements for any new access/ haul roads must be submitted if required.

17.22 Site Clean Up and Rehabilitation

The Contractor must ensure that all structures, equipment, materials and facilities used or created on site for or during construction activities are removed once the project has been completed. The construction site must be cleared, and cleaned to the satisfaction of the ECO.

Immediately after the demolition of the campsite, the contractor shall restore the site to its original state, paying particular attention to its appearance relative to the general landscape. The contractor's procedure for rehabilitation shall be approved by the ECO and Engineer.

This shall include but not be limited to:

- Earthworks to reinstate the physical characteristics of the site. Here attention to the natural vertical and lateral heterogeneity in landform shall guide the reinstatement of natural areas
- Replacement of topsoil material – care shall be taken to ensure that the same material that was removed from each area is replaced there, since this will carry the seed complement appropriate for re-establishment of each plant community type
- Final landscaping by machine, but landscaping by hand may be required in many areas under rehabilitation
- Re-seeding and/or replanting of rehabilitated areas

The Contractor shall not be permitted to use fertilisers or pesticides

It is imperative that any potential erosion problems are addressed. This may require subsequent site visits to monitor the efficacy of erosion control measures.

17.23 Land Management

Vehicles accessing the construction site must be made aware of driving in hazardous road conditions, sharp bends, narrow roads, bad weather, or near children or domestic animals along the road.

No fences or gates on the relevant construction property must be damaged. All access gates to the property (construction site) to be kept closed at all times. Access by unauthorised personnel should be controlled. The access gates to the construction areas must always be closed.

17.24 Socio-Cultural Issues

Adjacent and nearby Property owners or property occupiers, must be treated with respect and courtesy at all times.

The cultural lifestyles of the communities living in close proximity to the construction areas must be respected.

Cognisance of the visual and noise impacts of construction activities must be taken, and all possible efforts to minimise these impacts must be taken.

18 MANAGEMENT SPECIFICATIONS (OPERATIONAL PHASE)

The most important part of the operational phase will be to ensure that the site is meticulously maintained and that the operations are carefully monitored. The applicant will remain overall responsible for the environmental performance of the site and must be aware of the legal requirements and obligations. The applicant must also be aware of the legal action that can be taken against him as a person with regards to negligence leading to environmental pollution.

This section of the Environmental Management Programme (EMPr) is required to address the protection and ongoing management of the natural resources both on and off the site during the operational stages of the development. The overarching goal is to ensure that undue or reasonably avoidable impacts of the proposed development are avoided and that positive impacts of the development are enhanced.

The following points of action must be considered during the operational phase (maintenenace activities) to avoid any environmental impacts:

- All maintenance activities will consider the environment and surrounding businesses, residences and residents.
- The Applicant will ensure that any maintenance activities that are undertaken are carried out in line with the specifications and recommendations set out in section 17 of this document.
- Any incidents that have resulted in a large negative impact on the environment are to be reported to DENC.
- The site must be securely fenced off, with no public access to the installation.

18.1 Noise Aspects – Mitigation

Localised noise can be expected during the operation phase, mainly from tractors and other farming equipment. Spraying of vines to keep it fugus-free. The site is located within an area that is known for intensive agricultural practices. The following mitigation measures must be implemented:

The SANS noise standards must be adhered to.

Existing speed limits should be adhered to.

The potential impacts associated with construction related activities and heavy vehicles can be effectively mitigated.

Spraying of vineyards only to take place during normal working hours.

No work must be permitted on Sundays or Public Holidays.

Drivers should be made aware of the potential dust and noise impacts.

The Contractor shall endeavour to keep noise generating activities to a minimum.

The Environmental Management Programme (EMPr) must be implemented.

18.2 Freshwater Resources Aspect – Mitigation

According to the Freshwater Impact Assessment Report (Appendix D3), the establishment of vineyards on an area that has small drainage lines. The drainage lines on the land where vineyards will be established are to be altered, if not destroyed. Digging of cut-off trench through drainage lines at upstream boundary of new blocks. Re-alignment of drainage lines into irrigation return flow channels. Alteration of drainage lines. Agri-chemicals down the drainage lines. Sediments down drainage lines. Tilling of new land. Removal of vegetation. Construction of irrigation infrastructure. Planting of vines. Movement of sediments down the drainage line, through the Brabees River.

According to the Freshwater Impact Report (Appendix D3), the significance of the impact on the small drainage lines is regarded as low because only short sections of the drainage lines are impacted. It is not foreseen that the vineyard will ever be rehabilitated and allowed to some state closer to the original state prior to development, but that it would rather be re-planted after many years, once the vines become too old to render the expected yield.

There is not much that can be done in the line of mitigation of the environmental impact when the soil is prepared and the vines planted. The only significant mitigation that can be implemented is to make sure that vineyards are not over-irrigated and that as little as possible agricultural return flow is created. The impact of a couple of new blocks of vineyards is low-negative.

The mitigation measures that are available indeed lower the significance from “medium” to “low”.

Do not disturb any land outside of designated agricultural areas.

Do not over-irrigate the vines.

Monitor soil the moisture.

Adhere to scientifically defined irrigation program.

Prevent over-use of agri-chemicals and fertilizers.

Prevent plant remnants to wash down drainage line following pruning season.

The Environmental management Programme (EMPr) must be implemented.

18.3 Botanical/ Ecological Aspect - Mitigation

The direct loss of vegetation type and associated habitat due to construction and operational activities. The following mitigation measures are proposed and must be implemented:

Before any work is done the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint).

The demarcation must include the total footprint necessary to execute the work but must aim at minimising disturbance.

All construction must be done in accordance with an approved construction and operational phase Environmental Management Programme (EMPr), which must be developed by a suitably experienced Environmental Assessment Practitioner (EAP).

A suitably qualified Environmental Control Officer (ECO) must be appointed to monitor the construction phase in terms of the EMPr and the recommendations made in the Biodiversity Assessment, as well as any other conditions which might be imposed by DENC.

An application must be made to DENC for a flora permit in terms of the Northern Cape Nature Conservation Act, Act 9 of 2009) (NCNCA) with regards to impacts on species protected in terms of the act.

All Aloe species within the construction footprint must be searched & rescued and transplanted in nearby remaining natural veld. A watering programme for searched and rescued plants must be implemented and maintained until these plants have re-established themselves.

Apply for an NCNCA permit for the search and rescue of Aloe Species.

Topsoil must be removed to a depth of 15 – 20 cm and protected and stored separately for re-use during rehabilitation.

All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. Topsoil and vegetation must be replaced over the disturbed soil to provide a source of seed and seed bed to encourage re-growth of the species removed during construction.

An application must be made to DENC for a flora permit in terms of the NC NCA with regards to impacts on species protected in terms of the Act.

Access must be limited to routes approved by the Environmental Control Officer (ECO).

Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO.

Indiscriminate clearing of any area outside of the construction footprint must be avoided.

Erosion control measures must be implemented in accordance with the EMPr.

All areas impacted as a result of construction must be rehabilitated on completion of the project.

An Integrated waste management approach must be implemented during construction. All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.

18.4 Dust Aspect – Mitigation

The activity is not expected to have dust impacts during the operational phase. However, the following mitigation measures will be implemented:

Excessive dust during construction, can be reduced by spraying water regularly to control dust generation. Other suitable dust control mitigation measures can also be considered.

The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area).

The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause damage to people and property.

The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

The implementation of the EMPr.

18.5 Visuas Aspect – Mitigation

The activity is not expected to have a visual impact during the operational phase as development is located within an area of Augrabies that are being used for intensive farming practices.

18.6 Socio-cultural Aspects

The project will provide job opportunities during the construction and the operational phase.

This development has the potential to positively contribute to the local economic development of the area.

This development has the potential to provide an economic injection in the local community, by means of creating employment opportunities.

The proposed development will contribute towards the agricultural production within Augrabies.

The cultural lifestyles of the communities living in close proximity to the construction areas must be respected.

18.7 Heritage / Cultural or Historic Aspects - Mitigation

No cultural or historic impacts are expected during the operational phase of this activity. However, the following mitigation measures must be implemented:

Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during construction activities, these must immediately be reported to the archaeologist

(Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (SAHRA) (Att Ms Natasha Higgitt 021 462 4502). Burials, etc. must not be removed or disturbed until inspected by the archaeologist.

During construction, any possible discovery of finds such as stone tools scatters, artefacts, human remains, or fossils are made, the operations must be stopped, and the ECO in charge of these developments ought to be alerted immediately.

These discoveries ought to be protected (preferably in situ), and the ECO must report to SAHRA so that appropriate mitigation (e.g. recording, collection) can be carried out by a professional archaeologist or palaeontologist. SAHRA Contact details: South African Heritage Resources Agency, 111 Harrington Street, PO Box 4637, Cape Town 8000, South Africa. Email: Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509 Web: www.sahra.org.za). The ECO and Engineer are also to be informed.

If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/ Mimi Seetelo – 021 320 8490), must be alerted immediately as per section 36(6) of the NHRA and item 5 of the Schedule.

If any heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resources. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA.

Note that the Contractor may not, without a permit issued by the responsible heritage resource authority; destroy, damage, excavate, alter, deface or otherwise disturb any archaeological resources.

The Environmental Management Programme (EMPr) must be implemented and an Environmental Control Officer (ECO) must be appointed.

19 TERMS AND ABBREVIATIONS:

The following definitions and abbreviations are applied:

DEA	Department of Environmental Affairs
DENC	Department: Environment and Nature Conservation
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EMS	Environmental Management System
IEM	Integrated Environmental Management
***ECO**	Environmental Control Officer
***ESO**	Environmental Site Officer
ER	Engineer's Representative
HWC	Heritage Western Cape
I&AP	Interested & Affected Party
OSSM	On Site Start-Up Meeting
SAHRA	South African Heritage Resources Agency

Environment means the surroundings within which humans exist and that are made up of:

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part of the combination of the above two bullets and the interrelationships between them;
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Potentially hazardous substance is a substance, which, in the reasonable opinion of the Engineer, can have a deleterious (detrimental) effect on the environment.

Method Statement is a written submission by the Contractor to the Engineer or relevant responsible person such as the Project Leader, in response to the Specification, or a request by the Engineer/Project Leader, setting out the plant, materials, labour, method, responsible persons and timeframe that the Contractor proposes using to carry out an activity, identified by the relevant specification or the Engineer/Project Leader when requesting the Method Statement, in such detail that the Engineer/Project Leader is enabled to assess whether the Contractor's proposal is in accordance with the Specifications and/or will produce results in accordance with the Specifications.

The Method Statement shall cover applicable details with regard to:

- construction procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/non-compliance with the Specifications;
- any other information deemed necessary by the Engineer/Project Leader.

reasonable means, unless the context indicates otherwise, reasonable in the opinion of the Engineer/Project Leader after he has consulted with a person, not an employee of the client, suitably experienced in "environmental implementation plans" and "environmental management programmes", both as defined in the Environmental Management Act (Act No 107,1998).

solid waste means all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).

contaminated water means water contaminated by the Contractor's activities, *e.g.* concrete water and runoff from plant/ personnel wash areas.

construction site means the area influenced and affected by the construction activities or under the control of the Contractor, often referred to as "the Site".

contractor's camp means the designated and suitably demarcated areas on the Site within which all site offices and staff facilities are situated and within which equipment will be stored, for instance, borrow areas, batching plant, crusher plant, sand washing plant, workshop, offices, rest areas, ablution areas, etc., whichever is applicable.

construction means the period of the project during which the actual works are carried out, deemed to include site establishment, site preparation, the works, maintenance period and decommissioning.

precautionary principle means the basic principle, that when in doubt or having insufficient or unreliable information on which to base a decision, to undertake actions that will have minimum risk.

Applicant	The person/organisation (usually the holder of the Environmental Authorisation) with rights to undertake the development of the site.
Audit/Monitoring	Regular inspection and verification of construction activities for degree of compliance to the Environmental Management Programme.
Bund	Enclosure under/around a storage facility to contain any spillage – the storage capacity of the bung must be 120% of the total capacity of the possible spillage amount
Batch plant	Machinery used on site for the large-scale mixing and production of concrete or plaster and associated equipment and materials.
Construction phase	The construction phase period of a cellular communications Construction site is defined as from the commencement of site establishment up to and including the practical site handover.
Contract	An accepted offer to execute specified work within a stated time for a monetary reward. It takes the form of all the documents and drawings issued when tenders are invited (in which the nature and quantity of the work to be executed are set out), the schedules of which documents have been priced by the contractor for completion within a stated time, and the acceptance, in writing, of the Contractor's price) (source: SABS 0120; 1986). OR The General Conditions of Contract and Special Conditions, Specifications, Drawings, Tender, written records of matters agreed after the submission of the Contractor's tender, Letter of Acceptance and Agreement, together with other documents which the parties have agreed in writing shall form part of the Contract and such amendments or additions to the Contract as may be agreed in writing between the parties (source: GCC, 1990).
Contractor	The natural or juristic person or partnership whose tender has been accepted by, or on behalf of the Employer and where applicable, includes the Contractor's heirs, executors, administrators, trustees, judicial managers or liquidators, as the case may be.
Declaration of Understanding	Form that is signed by all contractors involved in the construction works of their understanding and acceptance of the EMPr and site-specific additions to the EMPr.
Development site	The boundary and extent of development works and infrastructure.
Developer	The developer is the person/body responsible for the development of the project and could be the same as, or different to the Applicant.
Emergency	A situation requiring immediate action and where failure to implement appropriate actions timeously may result in environmental damage.
Engineer	A person who represents the Applicant and is responsible for the technical, environmental and contractual implementation of the works to be undertaken.
Engineer's Representative	The person appointed from time to time by the Engineer in terms of the General Conditions of Contract. The Engineer's Representative shall: • Observe the execution of the Works, examine and test materials and workmanship and receive from the Contractor such information as he shall reasonably require. • Have the authority: o Given to him by any provisions of the Contract.

- Given to him by the Engineer.
- To deliver to the Contractor oral or written communications from the Engineer.
- To receive on behalf of the Engineer oral or written communications from the Contractor.

The powers and authority of the Engineer's Representative would be subject to certain conditions.

Environmental Awareness Course	An environmental education course for the Contractors management staff and labour force which informs them of the requirements of the EMPr.
Environmental Completion Statement	A report document submitted to the relevant authority showing that the EMPr environmental controls were appropriately implemented on a project.
Environmental Completion Audit	Similar to an Environmental Completion Statement but it is more detailed and will contain detailed information regarding controls and their effectiveness. This document would be required for large projects normally where a professional environmental scientist was appointed as the ECO.
Environmental Management Programme:	A programme for managing potential impacts identified during the approval process. It could consist of one or more of the following components, depending on necessity dictated by the nature of the development: • Standard Environmental Specification • Detailed Environmental Specification • Guideline documents and tools for implementation by the different role players • The Environmental Education Course • Standard Revegetation Specification • Detailed Revegetation Specification As mentioned earlier, the term Environmental Management Programme is often used interchangeable with Environmental Management *Programme*, and for the purposes of this document will be assumed to have the same definition.
Environmental Authorisation	Environmental Authorisation issued by DENC for the authorisation to commence construction under certain environmental compliances.
***ESO (Environmental Site Officer**	Designation is reserved for suitably qualified environmental site managers, who are to be appointed by the Engineer, and are mainly associated with large and complex developments.
***ECO (Environmental Control Officer)**	Designation is reserved for suitably qualified authority or officer acting on their behalf. The ECO is usually a professionally registered Environmental Scientist.
Environmental Specification	For the purposes of this study, this designation is reserved for the combination of the Standard Environmental Specifications and the Detailed Environmental Specifications.
ECO vs. ESO	ECO might also mean the ESO but the ESO does not mean the ECO. The ESO is responsible to the ECO
General Conditions of Contract	A document that sets out the general rights and obligations of the parties to a contract, on such matters as sureties, quality of work, program, supervision, insurance, co-operation with others, provision of plant, material and labour, the regulation of wages, samples, tests, examination, commencement and completion of work, penalties for delay, requirements for maintenance, methods of dealing with defects, variations, measurements and payments, and the settlement of disputes. In South Africa, the most widely accepted general conditions of contract for general civil engineering works is the SAICE General Conditions of Contract for Works of Civil Engineering Construction (sixth edition, 1990).
NO-GO Areas	Areas identified as being environmentally sensitive in some manner and delineated on plan, and on the site with pegs or fencing and which are out of bounds to unauthorised persons. Authorisation must be obtained from the Engineer/Project Leader prior to entry.
Particular Specification	A specification that covers construction work involving a specialist type of operation that is not adequately covered in a Standardized Specification.
Project Specification	A specification that describes the Works in general terms (including the locality, the conditions on Site, the extent of the Contract, the construction programme, and the service facilities available and to be taken into consideration) and that may include clauses that amend or amplify or add to any requirement(s) of a standardized specification (or standard or particular specification) in the sequence in which the requirements and specifications occur in the contract documents.
Reference Group:	The funding body and major role-players (including the environmental authorities)

	who may resolve environmental disputes, which could arise between the different role-players on site.
Revegetation Specification	This designation is reserved for the combination of the Standard Revegetation Specifications and the Detailed Revegetation Specifications.
Site	The boundary and extent of development works and infrastructure, including any areas off the main site on which works are to be carried out in order to allow the development to proceed successfully.
Specification	A technical description of the standards of materials and workmanship that the Contractor is to use in the Works to be executed, the performance of the Works when completed and may include the manner in which payment is to be made. It is essential for the specifications to be clear, concise and to the point, and use should not be made of ambiguous terms or phraseology.
Standard Specification	An established or accepted model specification. In South Africa the most widely accepted standard specification for general civil engineering works is the set of SABS 1200 Standardized Specifications (refer to definition below), however, other Standard Specifications such as BS, AAWA and Standard Water Specifications are also used.
Standardized Specification	A specification that is published by the South African Bureau of Standards (SABS) and that so covers a particular class of civil engineering construction that the specification is generally applicable throughout the Republic of South Africa.
Top material	This refers to any surface material in the construction area, whether it is soil, fine material or stones including vegetation.
Works	The works to be executed in accordance with a contract.

20 APPENDICES:

Appendix 1: SITE START-UP REPORT

Appendix 2: PENALTIES FOR NON-COMPLIANCE

Appendix 3: DECLARATION OF AGREEMENT

Appendix 4: INFORMATION ON METHOD STATEMENTS

Appendix 5: EXAMPLE OF METHOD STATEMENT

Appendix 6: CONTRACTOR/S REPRESENTATIVE: ENVIRONMENTAL DAILY CHECKLIST

Appendix 7: BASIC RULES OF CONDUCT

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Appendix 9: ENVIRONMENTAL AUTHORISATION.

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Appendix 11: DRAWINGS (SEE BASIC ASSESSMENT REPORT).

Appendix 12: Other documents.

APPENDIX 1: START-UP REPORT

TO BE INCLUDED AFTER START-UP MEETING

APPENDIX 2: PENALTIES FOR NON-COMPLIANCE

PENALTIES FOR NON-COMPLIANCE

The contractors / sub-contractors must contact the ECO at any stage if unsure about any matter, or if a pollution incident occurs, or vegetation or animals are damaged.
ECO = Environmental Control Officer ESO= Environmental Site Officer

PHASE		
PRE-CONSTRUCTION PHASE	**Penalty for Non-compliance**	
	Bottom range	Top Range*
Construction area to be marked off before construction starts.		5000
The demarcated area must be maintained throughout the construction phase	500	1000
Site area for stock piling of building material must be demarcated	500	5000
Site area for storing of waste material must be demarcated	500	5000
Fencing off the construction site with mesh fencing of 1.8m, where necessary or other suitable material as agreed on by ECO	500	1000
Sitting of access road/s to be approved by ECO & demarcated with stakes before any construction starts (if applicable)		5000
Temporary route used for construction must be determined on site with ECO (if applicable)	1000	5000
Telecommunications & AC power routes must be determined with the ECO (if applicable)	1000	5000
Sensitive features that may be harmed must be clearly marked or demarcated.	500	2000
Vegetation that may not be removed must be clearly marked or demarcated.	500	5000
Contractor must make the Construction team and all sub-contractors aware of all environmental aspects that could lead to imposition of penalties	100	5000
Contractor to sign Declaration of understanding (DOU) before construction starts		5000
Contractor to assure that all subcontractors be informed and signed DOU	1000	5000
Method statements must be provided on request by the ECO. No work may commence until the Method Statement is accepted by the ECO and Engineer	1000	5000
CONSTRUCTION PHASE		
Information		
A copy of the EMPr & Environmental Authorisation with all the conditions of approval and the relevant Method Statements must be at site at all times.	200	5000
Construction crew behaviour		
Construction crews may not overnight on site.	200	5000
No amplified music allowed on site	100	200
Construction crew must stay within the demarcated construction area. (Applicable in sensitive sites)	50	500
Eating of meals only allowed in demarcated area	50	500
No pets permitted on site		100
Driving, Parking & Storing of machinery and vehicles are only allowed inside demarcated areas and existing roads	1000	5000
Machinery may only be used on the road and may not disturb the vegetation on the sides of the road except if cleared by ECO. Machinery used must be carefully considered to limit environmental damage	500	5000
No vegetation other than that agreed on may be damaged - i.e. no access to areas outside construction area.	500	2000
No individual may cause unnecessary damage to flora and fauna on, around or near the site	20	2000
No littering allowed (incl. cigarette butts)	50	500
Excavations		
No topsoil may be removed or altered outside the demarcated area		2000

and/or which was not specified.		
Commercial sources of sand, rock and gravel to be cleared with ECO	200	5000
All surplus material to be taken off-site and be disposed of at approved site	500	5000
Toilets		
Sufficient ablution facilities must be provided		3000
Toilets to be secured to prevent them from falling or blowing over.	100	1000
They must be serviced regularly, (according to the manufacturer's instructions) and kept clean.	100	1000
Everybody on site must make use of ablution facilities	50	1000
Fire Prevention		
All mandatory fire fighting equipment (as specified at start-up) must be on site at all times	500	4000
Fire fighting equipment to be in good working order and serviced.	500	2000
No fires, including cooking fires, allowed on site	1000	5000
Concrete & Cement Activities		
Wash-down site of Ready Mix delivery trucks must be pre-determined prior to commencement of the activity.	500	5000
Concrete may only be mixed within the boundaries of the bunding area or demarcated area and/or where was agreed on by the ECO.	500	5000
All excess cement & concrete mixes to be contained on construction site and removed from site when necessary or requested by the ECO	200	5000
Any cement / concrete spillage to be cleaned up immediately.	500	5000
Mixing and storage areas must be appropriately located in demarcated area or as agreed upon at the on-site Start-Up Meeting	500	1000
Dust pollution control		
Ensure that loose building material is covered to prevent dust pollution	100	1000
Water run-off		
Contamination of water bodies, rivers, dams or wetlands must be prevented at all cost	500	5000
Rainwater from construction & building site/s must be channelled, contained & allowed to dry out, so as not to transport any pollutants into the surrounding area. Temporary trenches, straw stabilising, brush cutting can be used	500	5000
Waste control		
Sufficient refuse bins must be placed on site	500	2000
Refuse bins must be cleaned on a regular basis	100	1000
General litter / building refuse must be cleaned up on a regular basis from the site	500	3000
Cement-contaminated water; paint; oil; cement slurries etc. must be stored in watertight containers or as agreed with ECO	500	5000
Store all refuse & waste material in wind & animal proof containers	100	1000
Waste must be disposed of at an official waste deposit site on a regular basis.	500	5000
The absence of or inadequate drip trays or bunding facilities	500	5000
Failure to address oil/fuel leaks from on-site machinery	200	5000
Herbicides		
No herbicides or pesticides whatsoever may be used.	200	2000
Construction road		
Road must be upgraded to prevent degradation and erosion of the road and surrounds.	500	5000
Power and Telecommunications supply		
Demarcate power supply route	500	5000
No vehicles to drive through vegetation unless authorised by ECO	500	5000
Storage of equipment may only take place at an area demarcated by the ECO.	500	5000
Working must be done in phases to prevent trampling of vegetation	N/A	
Use of generators and fuel powered equipment		
A watertight cover must be place under the power generator	500	5000

equipment to prevent accidental spillage of fuel & oil seeping into the soil.		
Drip tray must be able to take 120% of fuel on site	500	5000
All waste material generated from the use of this equipment must be contained and removed from the site	500	5000
Mobile fuel powered equipment must be well maintained and must not have any fuel or oil leaks.	200	5000
Soil Stabilisation		
Ensure that soil material for filling and stabilisation comes from a source that does not contain seeds alien to the area. The source must be cleared with the ECO.	100	2000
Rehabilitation		
Remove rocks and stones and stock pile in area recommended by ECO	500	5000
Remove all plants that can be used for rehabilitation and store on- or off-site in appropriate manner as agreed with ECO	200	5000
Removal of all old concrete and alien materials from site	500	5000
Site must be cleared of all waste and building material	500	5000

*(Large scale / repeated offence)

APPENDIX 3: DECLARATION OF UNDERSTANDING

DECLARATION OF UNDERSTANDING

I, _____

Representing _____

Declare that the conditions of the authorisation were brought under my attention and that I have read and understood the contents of the Environmental Management Programme (which includes all documents as per Record of Decision).

SITE: _____

Environmental Authorisation ref: _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications as set out in the various documents for the aforementioned site.

I also undertake to inform all persons under my supervision of such specifications and contents of the documents.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness 2: _____

APPENDIX 4: INFORMATION ON METHOD STATEMENTS

INFORMATION ON METHOD STATEMENTS

Method Statements are to be completed by the person undertaking the work (i.e. the Contractor). The Method Statement will enable the potential negative environmental impacts associated with the proposed activity to be assessed.

The Method Statement can only be implemented once approved by the ECO.

The Contractor (and, where relevant, any sub-contractors) must also sign the Method Statement, thereby indicating that the works will be carried out according to the methodology contained in the approved Method Statement.

The ECO will use the Method Statement to audit compliance by the Contractor with the requirements of the approved Method Statement.

Changes to the way the works are to be carried out must be reflected by amendments to the original approved Method Statement; amendments require the signature of the ECO denoting that the changed methodology or works are necessary for the successful completion of the works, and are environmentally acceptable. The Contractor will also be required to sign the amended Method Statement thereby committing him/herself to the amended Method Statement.

This Method Statement MUST contain sufficient information and detail to enable the ECO to apply their minds to the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him/her in order to undertake the works.

THE TIME TAKEN TO PROVIDE A THOROUGH, DETAILED METHOD STATEMENT IS TIME WELL SPENT. INSUFFICIENT DETAIL WILL RESULT IN DELAYS TO THE WORKS WHILE THE METHOD STATEMENT IS REWRITTEN TO THE ER'S AND ESO'S SATISFACTION. The page overleaf provides a *pro forma* method statement sheet, which needs to be completed for each activity requiring a method statement in terms of the EMPr.

APPENDIX 5: EXAMPLE OF METHOD STATEMENT

METHOD STATEMENT

CONTRACT:……..…….... **DATE:**……..

PROPOSED ACTIVITY (give title of method statement and reference number):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:	End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible):
Note: please attach extra pages if more space is required

DECLARATIONS

1) ENVIRONMENTAL CONSULTANT AND/OR ENVIRONMENTAL CONTROL OFFICER
The work described in this Method Statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

_____ _____
(Signed) (Print name)

_____ _____
(Signed) (Print name)

Dated: _____

2) PERSON UNDERTAKING THE WORKS
I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the ECO will audit my compliance with the contents of this Method Statement

_____ _____
(Signed) (Print name)

Dated: _____

3) THE LAIR TRUST
The works described in this Method Statement are approved.

_____ _____ _____
(Signed) (Print name) (Designation)

Dated: _____

4) APPROVING AUTHORITY
The works described in this Method Statement are approved.

_____ _____ _____
(Signed) (Print name) (Designation)

Dated: _____

APPENDIX 6: CONTACTOR: ENVIRONMENTAL DAILY CHECKLIST

CONTACTOR/S REPRESENTATIVE: ENVIRONMENTAL DAILY CHECKLIST

SITE: _____

PHASE OF WORK AND % OF COMPLETION:_____

ENVIRONMENTAL ASPECT	YES/ NO (✓ or X)	COMMENTS
• How many workers are on site		
• All new personnel on site are aware of the contents of the EMPr and have been through the environmental awareness course.		
• Contractor's camp is neat and tidy and the labourers' facilities are of an acceptable standard.		
• Sufficient and appropriate fire fighting equipment is visible and readily available.		
• Waste control and removal system is being maintained.		
• Refuse bins in place and maintained		
• Toilets are in place and clean		
• Demarcation and other fences are being maintained.		
• What machinery are on site		
• Drip trays are being utilised were there is a risk of incidental spillage		
• Bunds/ drip trays are being emptied on a regular basis (especially after rain).		
• No leakages (oil & fuel) are visible from construction vehicles		
• No go areas, remaining natural features and trees have not been damaged.		
• Dust control measures (if necessary) are in place and are effectively controlling dust.		
• Noise Control measures (if necessary) is in place and is working effectively.		
• Erosion control measures (if necessary) are in place and are effective in controlling erosion. (Access road, site areas etc.)		
• Stockpiles are located within the boundary of the site, do not exceed 2 m in height and are protected from erosion.		

Completed by:…… Sign:……..……. Date:……

To be submitted at the end of each week to the Environmental Site Officer (ESO)

Received by:

Environmental Site Officer: :…… Sign:……..……. Date:……

APPENDIX 7: BASIC RULES OF CONDUCT

BASIC RULES OF CONDUCT

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.
NOTE: **ALL new site personnel must** attend an environmental awareness presentation. Please inform your foreman or manager if you have not attended such a presentation or contact the ESO.

DO:

- USE THE TOILET FACILITIES PROVIDED – REPORT DIRTY OR FULL FACILITIES
- CLEAR YOUR WORK AREAS OF LITTER AND BUILDING RUBBISH AT THE END OF EACH DAY – use the waste bins provided and ensure that litter will not blow away.
- REPORT ALL FUEL OR OIL SPILLS IMMEDIATELY & STOP THE SPILL CONTINUING.
- DISPOSE OF CIGARETTES AND MATCHES CAREFULLY. (Littering is an offence.)
- CONFINE WORK AND STORAGE OF EQUIPMENT TO WITHIN THE IMMEDIATE WORK AREA.
- USE ALL SAFETY EQUIPMENT AND COMPLY WITH ALL SAFETY PROCEDURES.
- PREVENT CONTAMINATION OR POLLUTION OF STREAMS AND WATER CHANNELS.
- ENSURE A WORKING FIRE EXTINGUISHER IS IMMEDIATELY AT HAND IF ANY "HOT WORK" IS UNDERTAKEN e.g. welding, grinding, gas cutting etc.
- REPORT ANY INJURY OF AN ANIMAL.
- DRIVE ON DESIGNATED ROUTES ONLY.
- PREVENT EXCESSIVE DUST AND NOISE.

DO NOT:

- REMOVE OR DAMAGE VEGETATION WITHOUT DIRECT INSTRUCTION.
- MAKE ANY FIRES.
- INJURE, TRAP, FEED OR HARM ANY ANIMALS – this includes birds, frogs, snakes, lizards etc.
- ENTER ANY FENCED OFF OR MARKED AREA.
- ALLOW CEMENT OR CEMENT BAGS TO BLOW AROUND.
- SPEED OR DRIVE RECKLESSLY
- ALLOW WASTE, LITTER, OILS OR FOREIGN MATERIALS INTO THE STREAM
- SWIM IN THE DAM.
- LITTER OR LEAVE FOOD LAYING AROUND

Notes:
1. Must any animals such as tortoises, chameleons or snakes be encountered then do not harm them. The ESO or ER must be contacted to remove these safely. The harming of any animal will result in disciplinary action.
2. Construction and heavy machine operators must be particularly sensitive to staying within access routes and prevention of unnecessary damage. Dust and noise is also of particular concern. Ensure that vehicles and machinery do not leak fuel or oils. Refuelling or maintenance must be done within the maintenance camp area only.
3. Alien plant clearing and control work teams must be closely supervised.

BASIESE GEDRAGSKODES

Die volgende lys vertenwoordige die Moets en Moenies vir omgewingsbewustheid wat alle deelnemers aan hierdie projek in ag moet neem tydens die uitvoer van hul take. Hierdie lys is nie volledig nie en dien slegs as ‘n vinnige verwysing.
NOTA: **ALLE nuwe terreinpersoneel moet** ‘n aanbieding ten opsigte van omgewingsbewustheid bywoon. Indien u nog nie so ‘n aanbieding bygewoon het nie, lig asseblief u voorman of bestuurder in of kontak die Omgewings Terreinbeampte.

MOETS:

- GEBRUIK DIE BESKIKBARE TOILET-GERIEWE – RAPPORTEER VUIL OF VOL GERIEWE.
- MAAK U WERKPLEK SKOON VAN ROMMEL OF BOUROMMEL AAN DIE EINDE VAN ELKE DAG – gebruik beskikbare vullisdromme en verseker dat rommel nie rondwaai nie.
- RAPPORTEER ALLE BRANDSTOF- EN OLIE STORTINGS ONMIDDELLIK – STOP VERDERE STORTING.
- WEES VERSIGTIG MET DIE WEGDOEN VAN SIGARETTE EN VUURHOUTJIES. (rommelstrooi is ‘n oortreding.)
- BEPERK WERKAKTIWITEITE EN DIE STOOR VAN TOERUSTING TOT DIE ONMIDDELLIKE WERKAREA.
- GEBRUIK VEILIGHEIDSTOERUSTING EN VOLDOEN AAN ALLE VEILIGHEIDS-MAATREËLS.
- VOORKOM BESOEDELING VAN STROME EN WATERBANE
- VERSEKER DAT ‘N BRANDBLUSSER IN WERKENDE TOESTAND BYDERHAND IS WANNEER “WARM” WERK VERRIG WORD bv. Sweis, wegslyp, gasny, ens.
- RAPPORTEER BESEERDE DIERE.
- RY SLEGS OP AANGEWESE ROETES.
- VOORKOM OORMATIGE STOF EN GERAAS.

MOENIE:

- PLANTEGROEI VERWYDER OF BESKADIG SONDER DIREKTE INSTRUKSIE NIE.
- ENIGE VURE MAAK NIE.
- ENIGE DIERE DOOD, BESEER, VANG OF VOER NIE, insluitende voëls, paddas, slange, akkedisse, ens.
- ENIGE OMHEINDE OF AFGESPERDE AREAS BINNETREE NIE.
- SEMENT OF SEMENTSAKKE LAAT RONDWAAI NIE.
- VINNIG OF ROEKELOOS BESTUUR NIE.
- ENIGE ROMMEL, AFVAL, OLIE OR ENIGE VREEMDE MATERIAAL IN STROME LAAT BELAND NIE.
- IN DIE DAM SWEM NIE.
- ROMMELSTROOI OF KOS LAAT RONDLÊ NIE.

Notas:
1. Indien enige diere soos skilpaaie, verkleurmannetjies of slange teëgekom word, moet hulle nie beseer of dood nie. Kontak die OTB of RI om hulle veilig te verwyder. Die besering van diere sal lei tot dissiplinêre optrede.
2. Operateurs van konstruksie- en swaar masjiene moet veral versigtig wees om binne toegangsroetes te bly en om enige onnodige skade te voorkom. Verseker dat voertuie en masjiene nie olie of brandstof lek nie. Brandstofaanvulling en voertuigonderhoud mag slegs binne die onderhoudsarea gedoen word.
3. Streng toesig moet gehou word oor indringerplantbeheerspanne.

EZIPPHAMBILI EKUNYANZELEKILEYO UKUBA ZENZIWE

Zonke ezi zinto zilandelayo zizinto ekufuneka zenziwe nekufuneka zingenziwanga. Wonke umntu ofikayo kufuncka afundiswe ngemigaqo kupala. Needa yazisa iforman yakho ikuba awukhange uye kufundiswa.

IZINTO EMAZENZIWE

- SEBENZISA IZINDLU ZANGASESE, YAZISA XA KUKHO UMONAKALO.
- ZAMA UKUCOCA APHO UBUSEBENZA KHONA.
- SEBENZISA IMIGQOMO YENKUKUMA UNGAYEKI IPHAPHTIEKE.
- YAZISA XA UBONA IOIL ECHITHSKALAYO OKANYE IPETROL.
- CIMA LOZOLI CIGARETTE XA UGQIBIBILE UKUTSHAYA
- ZONKE IZIXHOBO USEBENZA ZIBUYISELE APHO ZIHLAKA KHONA XA UCGIBILE APHO ZIHLALA KHONA XA UGQIBILE UKUZISEBENZISA.
- ZISEBENZISE IZIKHUSELIXA UZINKIWE.
- SUKUGALELA IZINTO EMLANJENI.
- MASIBEKHO ISICIMA MLILO XAUSEBENZA NGOMLILO.
- YAZISA MSINYANE XA UBONE ISILWANYANA EZONZAKELEYO.
- XAUQHUBA ISITHUTHI HAMBA ENDLELENI QHA UNGAFATHULINJE.
- NAPHINA ZAMAUNGENZI THULI OKANYE INGXOLO XA USEBENZA.

EMAZINGENZIWA

- SUKUSUSA NESIPHINA ISITYALO UNGAKHANGE UXELELWE
- SUKWENZA MLILO NOKUBA SEKUBANDA
- AMAGQARA UKUBULALA IZILWANYANA NOKUZIFIDA AKUVUMELEKANGA
- SUKUNGENA XA KUVALIWE NGAPHANDLE KWE MVUME
- INGXOWA ZESAMENTE MAZINCEDWE ZINGALAHLWA NJE
- SUKUQHUBA NGESANTYA ESIPHAKAMILEYO
- SUKUGALELE NAYIPHI INTO PHAYA EMLANJENI
- SUKUQUBHA EDAMENI Q OQOSHA YONK INKUKUMA

APPENDIX 8: ECO/ESO DAILY REPORT/CHECKLIST

ECO / ESO SITE VISIT CHECKLIST / REPORT:

PROJECT NAME: DATE
PROJECT & PHASE: LOCATION

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable		
DEMARCATION **METHOD STATEMENT** **Boundaries of "no go" areas, construction sites, offices, temporary storage areas as well as labourer's facilities must be demarcated (EMPr and ECO requirements) and maintained for the length of the construction period.**		
NO-GO AREAS/PROTECTION OF FAUNA & FLORA **Identified "No-Go Areas", remaining natural veld and indigenous- or significant trees are protected features and must be demarcated for protection from construction damage (including secondary impact).** **All areas outside of the demarcated construction sites and access roads to be regarded as NO-GO areas unless otherwise agreed upon with the client and ECO.** **All flora identified to be rescued must be removed and placed in an area specifically allocated and taken care off until re-used in pre-approved way.** **Identified areas with significant vegetation must be protected as NO-GO areas.**		
CLEARING OF VEGETATION & TOPSOIL REMOVAL **METHOD STATEMENT** **Before any construction or earthworks, topsoil must be stripped (15cm – 20cm) and stockpiled for rehabilitation/ landscaping. Stockpiles:** **must be protected (may not blow or wash away or gets compacted) and stored separately.** **may not be moved further than 50 m or mixed with any other soil.** **must be convex and should not exceed 2 m in height.** **In addition:** **Cleared areas must be stabilized.** **Burning or burying of cleared vegetation is prohibited, but may be used for mulch or slope stabilisation on site.**		
STOCKPILING **METHOD STATEMENT** **Top- and subsoil's from trenches must be located within site boundaries, stabilised and may not exceed 2 m in height.**		
TEMPORARY STORAGE FACILITIES **METHOD STATEMENT** **Must be demarcated, organised, neat and tidy and of acceptable standards.**		
CONSTRUCTION CAMP & SITE OFFICES **METHOD STATEMENT** **Must be demarcated, organised and free of day-to-day litter**		

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable		
(maintaining good housekeeping standards).		

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable		
FUEL STORAGE **METHOD STATEMENT** **Fuel storage areas must be situated within the demarcated construction camp site (or an area approved by the ECO).** **Bunds must be built (EMPr and ECO requirements) around larger fuel storage areas (accidental spillages).** **Drip trays must be used (in accordance with EMPr) at all fuel and oil storage and refilling sites and must be cleaned regularly, especially after rain.**		
LABOURER'S FACILITIES **METHOD STATEMENT** **Facilities must be of acceptable standards suitably demarcated, well maintained, neat and tidy and with adequate ablution facilities.**		
ENTRANCE AND HAUL ROADS **METHOD STATEMENT** **Only approved entrance and haul roads may be used (existing roads and infrastructure). No new roads or parking areas may be developed without written approval from the ECO.**		
MANDATORY SITE EQUIPMENT **METHOD STATEMENT** **Mandatory site equipment must be in place, well maintained and in accordance with EMPr and ECO requirements.** **Sufficient refuse bins must be on site (well placed and conspicuous) and must be cleaned regularly.** **Fire extinguishers must be readily available, maintained and functional.** **Drip trays must be used (in accordance with EMPr) at all fuel and oil storage and refilling sites and must be cleaned regularly, especially after rain.** **Toilets and sanitation facilities must be kept clean neat and hygienic (toilet paper must be available).**		
WASTE CONTROL **METHOD STATEMENT** **The contractor is expected to control all construction related waste material and general litter on actual construction sites and its immediate surroundings.** **Waste management must be in accordance with the EMPr, of acceptable standards, with regular removal of general waste, hazardous waste as well as construction waste (e.g. concrete waste and spoil).**		
CEMENT MIXING & BATCHING AREAS **METHOD STATEMENT** **Mixing areas must be approved by the ECO, suitably demarcated and may not result in pollution.** **Polluted cement water may only be released into sedimentation ponds.** **Sedimentation ponds must be maintained and cleaned regularly (and**		

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable		
reinstated after use).		

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable		
CONSTRUCTION VEHICLE MAINTENANCE **METHOD STATEMENT** **Construction vehicles must be in good working order and well maintained to prevent oil and fuel leakages and to reduce noise levels.** **Maintenance areas must be approved by ECO.** **Refuelling must be done in accordance with the EMPr, using drip trays.**		
HEAVY EARTHMOVING EQUIPMENT **Construction vehicles and equipment may only operate within the demarcated site boundaries (and approved access roads), especially heavy earthmoving vehicles.**		
DUST CONTROL **METHOD STATEMENT** **Adequate control measures must be in place to prevent dust pollution as a result of construction activities (especially with regard to entrance-, haul roads and exposed surfaces).** **Areas of concern must be watered regularly during construction AND periods of strong winds, BUT must take water saving into account.**		
EROSION CONTROL **METHOD STATEMENT** **Erosion resulting from works must be controlled.** **Temporary and permanent drainage works must be maintained.** **Erosion damage and damage in drainage courses must be reinstated.**		
NOISE CONTROL **METHOD STATEMENT** **Effective noise control measures must be in place and acceptable working hours must be kept (deviations must be approval by the ECO).**		
ENVIRONMENTAL CONDUCT **Environmental conduct of construction personnel must be acceptable (e.g. no burning or burying of refuse; no littering and no cement bags or other construction waste material lying around).**		
ARCHAEOLOGICAL & HERITAGE FINDS **METHOD STATEMENT** **Should any archaeological or heritage remains be exposed during excavations or any activity on site, these must immediately reported to The site agent/engineer, the ECO HWC or SAHRA.**		
REHABILITATION **METHOD STATEMENT** **On completion of the project or phase, all areas impacted by the construction activities must be reinstated and/or rehabilitated to the satisfaction of the ECO with emphasis on the following:** **Site offices must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.**		

ENVIRONMENTAL ASPECT	1-3 NA	COMMENTS
Note: 1 = Poor, 2 = Average, 3 = Good NA = Not Applicable		
Labourer's facilities must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO. **All construction site areas must be rehabilitated or reinstated to the satisfaction of the ECO.** **All temporary fencing and demarcation must be removed and the areas reinstated to the satisfaction of the ECO.** **Temporary storage areas must be rehabilitated or reinstated to the satisfaction of the ECO.** **All remaining construction material must be removed and the areas rehabilitated or reinstated to the satisfaction of the ECO.** **Any additional disturbed areas must be rehabilitated or reinstated to the satisfaction of the ECO.**		
ADDITIONAL METHOD STATEMENTS **Method statements must be submitted and approved before commencement of the works and must be available at the site offices.**		
ENVIRONMENTAL CHECKLIST **The contractor must ensure that the weekly environmental checklist is completed at the end of each week and it must be available at the site offices.**		
SPOT FINES & PENALTIES **Spot fines and penalties must be recorded and documented by the ECO (in accordance with the EMPr).**		
FIXED POINT PHOTOS **Photographs must be taken by the ECO, Site Engineer and or Site Manager, prior to, during and immediately after construction as visual reference. These photographs must be stored with other records relating to the EMPr.**		

ECO:

ECO OBSERVATION SHEET

APPENDIX 9: ENVIRONMENTAL AUTHORISATION.

APPENDIX 10: RECOMMENDATIONS AS PER BASIC ASSESSMENT REPORT

APPENDIX 11: DRAWINGS

APPENDIX 12: ANY OTHER RELEVANT DOCUMENTS