

Environmental Clearance Certificate (ECC) Renewal/ Updated Environmental Management Plan (EMP) Report for the:

The Proposed Industrial Township on Farm Nubuamis No. 37, Windhoek, Namibia



ECC Renewal Application No.: APP- 001691

Old ECC No.: ECC00729

Proponent: Trustco Group Holdings (Pty) Ltd
2 Keller Street, Trustco House
PO Box 11363 Windhoek, Namibia

July 2023

EXECUTIVE SUMMARY

Trustco Property Holdings (Pty) Ltd acquired ownership of the Remainder of Farm Nubuamis No.37. Farm Nubuamis No.37 is located on the northern outskirts of the Windhoek Townlands, approximately 7km from the central business district. The initial acquired area measured around 302 hectares, of which 145 hectares have been developed into Lafrenz Extension 1 Extension 2 (Ptn 130) and Lafrenz Extension 3 (Ptn 131). The remaining undeveloped 157 hectares, being Portion 81, 133 and The Remainder of Portion A are still to be developed. These portions make up the proposed project activities for the ECC renewal application. The current and expiring project ECC was issued on 01st July 2020 upon approval of the EMP at the time and expired on the 01st July 2023 (Appendix A).

The project associated work are listed activities in the Environmental Impact Assessment (EIA) Regulations (2012) of the Environmental Management Act (EMA) No. 7 of 2007 that may not be undertaken without an Environmental Clearance Certificate (ECC) and that the ECC needs to be renewed every three years.

This document has been compiled to inform the Ministry of Environment, Forestry and Tourism (MEFT) of what has happened on the project site since the issuance of the expired ECC to date to enable the renewal of the ECC issued in July 2020. Subsequently, to report on the progress of actual activity at the site, implementation of the environmental management and mitigation measures of potential impacts identified.

For the project to remain compliant with the environmental legislation and ensure sustainability, a new ECC should be applied by launching an application with MEFT for evaluation and consideration of renewing the ECC.

Trustco Property Holdings recommends that the expired ECC be renewed so that the Proponent can continue with the project for an industrial township development for continued economic opportunities.

The proponent is currently not using the site for the intended project but will do so in the near future. However, the implementation of the project remains within the proponent's development timeline. Therefore, awarding the ECC renewal sets the proponent back on track and can proceed with the intended activities for national economic development while adhering to the legislations to ensure sustainable environmental growth as listed in the EMP.

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1 INTRODUCTION

1.1 Background and Project Location

Trustco Property Holdings (Pty) Ltd acquired ownership of the Remainder of Farm Nubuamis No.37. Farm Nubuamis No.37 is located on the northern outskirts of the Windhoek Townlands, approximately 7km from the central business district. The initial acquired area measured around 302 hectares, of which 145 hectares have been developed into Lafrenz Extension 1 Extension 2 (Ptn 130) and Lafrenz Extension 3 (Ptn 131). The remaining undeveloped 157 hectares, being Portion 81, 133 and The Remainder of Portion A are still to be developed.

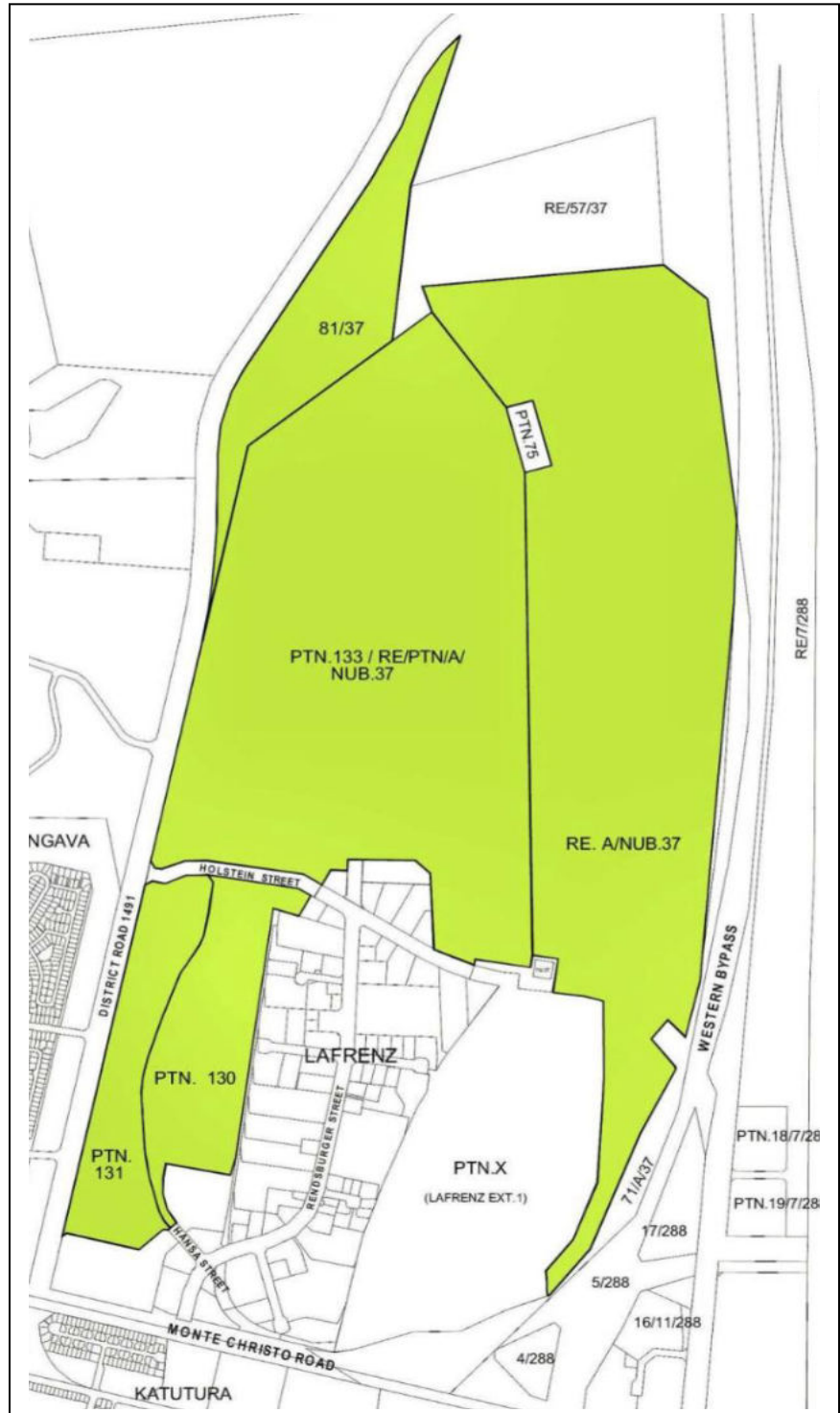


Figure 1-1: Locality plan of portions 130, 131, 133, 81 and the Remainder of Portion A of Farm Nubuamis No.37

The project associated work are listed activities in the Environmental Impact Assessment (EIA) Regulations (2012) of the Environmental Management Act (EMA) No. 7 of 2007 that may not be undertaken without an Environmental Clearance Certificate (ECC) and that the ECC needs to be renewed every three years:

The associated listed activities include:

Land Use and Development Activities:

- Listed activity 5.1 (d): The rezoning of land from use for nature conservation or zoned open space

Infrastructure:

- Listed activity 10.1 (b): The construction of public roads
- Listed activity 10.2: The route determination of roads and design of associated physical infrastructure where-
 - (a) it is a public road
 - (c) the road caters for more than one lane of traffic in both directions

The current and expiring project ECC was issued on 01st July 2020 upon approval of the EMP at the time and expired on the 01st July 2023. The copy of the expired ECC is attached as Appendix A.

Therefore, for the project to remain compliant to the environmental legislation and ensure sustainability, an ECC renewal should be applied for (accompanied by an updated Environmental Management Plan (EMP) and submitted to the Environmental Commissioner at the Ministry of Environment, Forestry and Tourism (MEFT)). To ensure a continued compliance with the EMA and its 2012 EIA, Trustco Property Holdings Limited (Ltd) Pty is applying for the ECC renewal.

The updated EMP would include information of what may have changed between the date of ECC issuance and the confirmation of actual implementation of the environmental management and mitigation measures recommended upon approval of the first EMP.

1.2 The Aim of the EMP

This document has been compiled to inform the Ministry of Environment, Forestry and Tourism (MEFT) of what has happened on the project site since the issuance of the expired ECC to date to enable the renewal of the ECC issued in July 2020. Subsequently, to report on the progress of actual activity at the site, implementation of the environmental management and mitigation measures of potential impacts identified.

For the project to remain compliant with the environmental legislation and ensure sustainability, a new ECC should be applied for by launching an application with MEFT for evaluation and consideration of renewing the ECC.

The purpose of renewing an ECC is to ensure that the project activities are environmentally friendly and sustainable. This EMP therefore describes the methodology for managing, rehabilitating and monitoring the potential environmental impacts of the proposed development.

This is done by the effective implementations of environmental management and mitigation measures recommended in the previously approved EMP to minimize the negative impacts while maximizing the positive impacts. Not only by the mere implementation of these measures, but also bi-annual monitoring of this implementation through audit and project activities' compliance exercises on site throughout the project life cycle and validity of the ECC over time.

Subsequently, to comply with the EMA and its 2012 EIA Regulations, the Proponent has submitted timely bi-annual monitoring reports, assessed the site for implementation and mitigation measures recommended in the old EMP, compiled an updated EMP, and submitted the ECC renewal application.

2 DESCRIPTION OF CURRENT ACTIVITIES ONSITE: SITE AUDIT

This section describes the current status and activities of the proposed project site. There have been no development activities since the last ECC issuance in 2020.

At present, during the reporting of this application no development activities have taken place or are taking place at Portions 81, 133 and Remainder of Portion A of Farm Nubuamis No.37. Trustco Properties Holdings (PTY) Ltd have maintained site monitoring to minimize and mitigate potential impacts by having monthly site drive throughs (on existing tracks) of the undeveloped proposed area and have adhered to the recommendations by Kolberg (2012) mentioned in the Scoping Report (pp 23, sec 3.2 Biophysical Environment) by LM Environmental Consultants (2012).

Upon site visit on 11 July 2023, observations presented a scenic beauty of mostly intact natural vegetation (Figures 2-1) on the hills and valleys of the proposed area. North-west of the site, adjacent to the Havana informal settlement it was noticeable that parts of portion 133 was being used as a soccer field (large open area with goalpost lookalikes), that serves as an open relaxation area too, as few vehicles were noticed parked there and people standing in the area. The same adjacent area is spotted as a dumping site and used as a “public toilet” this was concluded due to the many toilet paper sheets on the ground and hanging from the grass (Figure 2-1). On the North-east side (on the B1 road reserve), the general public uses the proposed site to house make-shift shelters, including stalls for sales of acacia pods, grass and firewood (Figures 2-3 and 2-4).



Figure 2-1: Intact grass growth south of the proposed site (about 1km from developed LaFrenz Industrial Park)



Figure 2-2: Toilet paper remains from area being used as a toilet



Figure 2-3: Presence of Acacia trees on the north east side (along the B1)



Figure 2-4: Makeshift shelters and Business stalls along the B1 on the north west side of the site

3 LEGAL FRAMEWORK: PERMITTING AND LICENSES

The project's activities are undertaken in a biophysical and social environment. The legislations below aim to inform Trustco Property Holdings (PTY) Ltd on the requirements pertaining to the development during the planning, construction, operational and decommissioning phases.

A summary of the relevant legislation and regulatory authorities for permits and/ or approvals is provided:

Table 3-1: List of applicable legislations required for permits or licenses for the project activities

Legislation/Policy/ Guideline	Regulating Authority & Contact Details	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007)	Ministry of Environment, Forestry and Tourism Mr. Timoteus Mufeti: Environmental Commissioner Tel.: 061 284 2701	Requires that projects with significant environmental impacts are subject to an environmental assessment process.	The EMA and its regulations should inform and guide this EA process. ECC Renewal: An ECC should be renewed every 3 years.
Environmental Impact Assessment (EIA) Regulations		Details the requirements for what should be included in an Environmental Scoping Report and an EIA report. Including requirements for public consultation throughout the project life-cycle.	The proposed project has not commenced. However, constant consultations and engagements with the interested and affected parties (stakeholders) should be continued if necessary and required.
Soil Conservation Act (No 76 of 1969)	Ministry of Agriculture, Water and Land Reform	The Act provides the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.	Duty of care must be applied to soil conservation and management measures is included in the project initiation EMP.
Forestry Act 12 of 2001	Ministry of Environment, Forestry and Tourism Directorate of Forestry 061 2087320	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22(1)). The Act prohibits the removal of and transport of various protected plant species.	The Scoping Report of 2012 identified some protected species such as the Shepard's tree and camelthorn, and, which should not be removed without a permit.

Legislation/Policy/ Guideline	Regulating Authority & Contact Details	Relevant Provisions	Implications for this project
Public Health Act (No. 36 of 1919)	Ministry of Health and Social Services	Section 119 states that “no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”	The Proponent and all its employees/ contractors should ensure compliance with the provisions of this legal provisions.
Health and Safety Regulations GN 156/1997 (GG 1617)		Details various requirements regarding health and safety of labourers.	
Public and Environmental Health Act No. 1 of 2015		To provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.	
Road Traffic and Transport Act, No. 22 of 1999	Roads Authority: Mr. Eben !Gawaxab gawaxabe@ra.org.na 061 284 7088 or Mr. Roger Ochs ochsr@ra.org.na 061 284 7031	The Act provides for establishing the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental to it.	The relevant access road permits must therefore be applied for. Applicable and appropriate signage to be correctly set up.

Legislation/Policy/ Guideline	Regulating Authority & Contact Details	Relevant Provisions	Implications for this project
Labour Act (No. 6 of 1992)	Ministry of Labour, Industrial Relations and Employment Creation Ms Kyliki Sihlala Acting Labour Commissioner 061 2066111	Ministry of Labour, Industrial Relations and Employment Creation aims to ensure harmonious labour relations through promoting social justice, occupational health and safety and enhanced labour market services for the benefit of all Namibians.	According to the Scoping Report and EMP of 2012, permission will be required if 12- hour shifts are needed.

4 ENVIRONMENTAL MANAGEMENT ACTION PLANS CHECKLIST

This chapter presents the potential impacts identified when the environmental clearance was issued and the environmental management actions (measures) recommended. It is under this chapter that Trustco Properties Holdings (Pty) Ltd will demonstrate that it has been maintaining the implementation of management and mitigation actions plans on site to manage and mitigate the significance of the adverse potential impacts stemming from the current project phase with no activities.

4.1 Key Potential Impacts

The main potential impacts identified are as follows:

Positive

- Socio-economic impact such as job creation and procurement services from external suppliers
- Contribution to scientific knowledge
- Social uplifting and betterment through Corporate Social Responsibility (CSR) activities

Negative (Adverse)

- Contamination of soil
- Contamination of surface/ groundwater
- Erosion
- Dust and Air Quality
- Depletion of natural resources
- Waste generation (general, sewage and wastewater).

4.2 EMP Implementation Roles and Responsibilities

This section is a presentation of the roles of different parties involved in the project cycle (planning, operations and rehabilitation) and their respective responsibilities towards implementing the EMP.

The proponent, their contractors and sub-contractors should note that obligations imposed by the EMP are legally binding in terms of the Environmental Clearance granted by MEFT to:

- Ensure compliance with regulatory authority stipulations and guidelines which may be local, provincial, national, and/or international.
- Verify environmental performance through information on impacts as they occur.
- Provide feedback for continual improvement in environmental performance.
- Identify a range of mitigation measures which could reduce and mitigate the potential impacts to minimal or insignificant levels.

The roles and responsibilities of all parties involved in effectively implementing the EMP are set in Table 4-1.

Table 4-1: The persons and institutions responsible for the Implementation of the EMP

Responsible person or institution	Responsibility
Trustco Properties Group (Pty) Ltd (Proponent)	<ul style="list-style-type: none"> -Managing the implementation of the EMP and updating and maintaining it when necessary. -Management and monitoring of individuals and/or equipment on-site in terms of compliance with the EMP. -The implementation of and compliance with the environmental management measures proposed in this document. -Ensuring compliance with relevant environmental and related permits and license conditions.
Site Manager	<ul style="list-style-type: none"> -Ensure that relevant commitments in the EMP Action Plans are adhered to. -Ensure relevant staff is trained in procedures entailed in their duties. -Maintain records of all relevant environmental documentation for the project. -Reviewing the EMP annually and amending the document when necessary. -Issuing fines to contractors/ individuals who may breach the EMP provision and if necessary, removing such individuals from the site. -Cooperate with all relevant interested and affected parties/stakeholders. -Where required, management and facilitation of communication between the Proponent and Interested and Affected Parties (I&APs). -Development and management of schedules for daily activities

Responsible person or institution	Responsibility
<p>Environmental and Social Officer (ESO) or Safety, Health & Environmental (SHE) Officer</p>	<p>-Make sure that the EMP's provisions and the environmental authorization are complied with onsite. The ESO/SHE Officer must be fully conversant with the Environmental Impact Assessment, Environmental Management Plan/Program and environmental legislations, specifically the Environmental Management Act No. 7 of 2007 and its 2012 EIA Regulations.</p> <p>-Issue instructions to the Proponent where environmental considerations call for action must be taken.</p> <p>-Submit regular written reports, ensuring that activities on site comply with all relevant environmental legislation, monitoring and verifying that adverse environmental impacts are minimal.</p> <p>-Advising the Proponent on removing person(s) and/or equipment not complying with the provisions of the EMP.</p> <p>-Making recommendations to the Proponent concerning the issuing of fines for contraventions of the EMP.</p> <p>-Maintain records of all relevant environmental documentation.</p>
<p>Project employees, contractors and sub-contractors</p>	<p>They have a personal responsibility to aid in implementing the EMP while present and working on site. Therefore, they must adhere to the relevant management and mitigation measures to collectively protect the environment and promote environmental sustainability.</p>

4.3 EMP Auditing Based on Observations and Required Actions

The evaluated and compliance status in Table 4-2 has been done to check EMP compliance (the implementation of the management and mitigation measures (action plans)) with regards to the EMP produced in 2012 and the activities of the proposed site between when the ECC was issued (July 2020) and current (July 2023).

4.4 EMP Requirements Compliance Status (Current Activities)

The environmental management measures (actions) have been checked for compliance regarding what has been happening onsite since the last ECC approval. The management actions are categorized follows:

- **FULLY COMPLIANT** – the Proponent undertook or has been undertaking the project activity(s) according to the environmental management action recommended, therefore complies with the EMP requirements.
- **COMPLIANT** - the Proponent undertook or has been undertaking project activity(s) according to the recommended environmental management actions, but not fully.
- **NON-COMPLIANT** – the Proponent did not undertake or has not been undertaking the project activity(s) as per the recommended environmental management actions in the EMP.

Table 4-2: Environmental Management Plan (EMP) Compliance between July 2020 and July 2023

Aspect	Activity	EMP Implementation and Observations	Compliance Status	Required Action Measures
PLANNING PHASE AND ASSOCIATED ACTIVITIES				
EMP and training Implementation	EMP required permits such as Road Access Permit	The site does not have a formal access road permit yet as no project activities are taking place	FULLY COMPLIANT	none
ECC	The validity of the ECC	The ECC has recently expired but the renewal application has been submitted to MEFT before expiry date (Appendix B).	COMPLIANT	The next ECC renewal application should be applied for at least 3 months before expiry date.
Reporting system on monitoring aspects of operations and maintenance as outlined in the EMP	Reporting	Establish a reporting system to report on aspects of operation and maintenance as outlined in the EMP. Keep monitoring reports (bi-annual reporting) on file for submission with Environmental Clearance Certificate renewal applications where needed.	FULLY COMPLAINT	none
Soils	Soil contamination and compaction	There are signs of soil contamination in some site areas, due to waste dumping from the informal settlement.	COMPLIANT	Create awareness on the importance of the environment. In conjunction with the City of Windhoek provide bins at site for waste dumping instead.
Littering and waste management	The waste management at the site.	There is a lot of littering and waste at site. Adjacent informal settlement uses site as a "toilet space"	NON-COMPLAINT	Create awareness on the dangers and risks of defecating on private land.

Aspect	Activity	EMP Implementation and Observations	Compliance Status	Required Action Measures
<p>Impact on biodiversity (fauna and flora) and ecosystem</p>	<p>Impacts on the ecosystem from footpaths and vehicle movements may lead to land degradation, and killing/harming local fauna and flora.</p>	<p>-Vegetation noted is disturbed by the movement and dumping of waste from the adjacent Havana informal settlement on the north western side.</p> <p>-Grass and Acacia trees look cut down by the community for sale along the B1 on the north eastern side.</p>	<p>COMPLAINT</p>	<p>-Create awareness on the importance of flora and fauna to the environment to prevent community members' further damage to the site.</p> <p>-Strict conditions and reprimanding prohibiting harvesting of flora and snaring/stealing of local livestock occurring in the area.</p> <p>-Killing, injuring, capturing, disturbing, or feeding any animal or removing any part of any wild animal, whether alive or dead, is prohibited.</p> <p>-No removal, destroying, damage or disturb of any egg, nest, or burrow on and around the site is allowed.</p> <p>-Maintain the species registry of all plant and animal species encountered within the site premises and boundary from the project scoping assessment report for species preservation upon commencement of activities.</p>

5 ENVIRONMENTAL MONITORING, COMPLIANCE AND AUDITING

To ensure compliance with the legal requirements, minimize potential adverse impacts and improve environmental sustainability monitoring should be implemented as per the 2012 EMP reporting. These recommended monitoring exercises are to be implemented as follows:

Type	Parameter	Frequency	Responsible Person
Sewerage pipelines	Maintenance and monitor for damage to or leakages	Regular maintenance and weekly monitoring	Trustco Property Holdings
Storm water and soil erosion	Soil erosion rates	<i>Ad hoc</i> (especially the rainy season)	Trustco Property Holdings
Alien invasive plant species	Identification and removal of any alien invasive species	Manual removal of weed (invasive) plants, continuously	Trustco Property Holdings

6 RECOMMENDATIONS AND CONCLUSIONS

6.1 Conclusions

Trustco Property Holdings recommends that the expired ECC be renewed so that the Proponent can continue with the project for an industrial township development for continued economic opportunities.

Renewing and awarding the ECC renewal sets the proponent back on track within its development time line to proceed with intended activities for national economic development while adhering to the legislations to ensure sustainable environmental growth as listed in the EMP.

APPENDIX A: COPY OF THE CURRENT AND EXPIRING ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) - ECC00729

ECC - 00729 Serial: v9Vso0729



REPUBLIC OF NAMIBIA
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE
ISSUED

In accordance with Section 37(2) of the Environmental Management Act (Act No. 7 of 2007)

TO

Trustee Property Holdings (PTY) Ltd.
P. O. Box 11383, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Industrial Townships Establishment on Farm Nubuamis No.37 on Portion 81 (a Portion of Portion 13), Portion 133 (a portion of portion A) and the Remainder of Portion A, Windhoek, Khomas Region

Issued on the date: **2020-07-01**
Expires on this date: **2023-07-01**




ENVIRONMENTAL COMMISSIONER
REPUBLIC OF NAMIBIA

(See conditions printed over leaf)

This certificate is printed without measures or alterations.



APPENDIX B: COPY OF THE ECC RENEWAL APPLICATION (Cover Page)

No. 4878

Government Gazette 6 February 2012

**ANNEXURE 1
FORMS**

Form 1

**REPUBLIC OF NAMIBIA
ENVIRONMENTAL MANAGEMENT ACT, 2007**

(Section 32)

APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE



PART A: DETAILS OF APPLICANT

1. Name: (person or business):	Truico Property Holdings (PTY) Ltd.
2. Business Registration / Identity No:	2001/621
3. Correspondence Address:	P.O. Box 11363, Windhoek, Namibia
4. Name of Contact Person:	Mr. Riaan Bruyns / Ms. Linda Uulenga
5. Position of Contact Person:	Head: Compliance Legal and Risk
6. Telephone No.:	+264 61 275 4811
7. Fax No.:	N/A
8. E-mail Address:	riaan.bruyns@tph.co / linda2@tph.co

APPENDIX C: LIVING ENVIRONMENTAL MANAGEMENT PLAN (EMP) DRAFT

**ENVIRONMENTAL MANAGEMENT PLAN
FOR THE PROPOSED INDUSTRIAL TOWNSHIP ON FARM
NUBUAMIS NO. 37, WINDHOEK, NAMIBIA**



Photo: Herta Kolberg

2 April 2012

Prepared by:



Prepared for:



On behalf of:



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1 Environmental Management Plan

1.1 Aim and Structure of the Environmental Management Plan

An Environmental Management Plan (EMP) is one of the most important outputs of the Environmental Assessment (EA) process as it is the synthesis of all the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities.

The aim of the EMP is to assist Trustco Group International and their Contractor(s) to ensure that the day-to-day operations are carried out in an environmentally responsible manner, thereby preventing or minimizing the negative effects and maximizing the positive effects of the Project-related activities.

Once approved by the Directorate of Environmental Affairs (DEA), Ministry of Environment and Tourism (MET), in the form of an Environmental Clearance Certificate, the EMP(s) will become legally binding document(s) and Trustco Group International, its Contractor(s) and their Sub-Contractors are required to abide to the conditions stipulated in the EMP(s).

Separate EMPs have been prepared for the proposed Project. An EMP for the planning phase, and an EMP for the construction/operational phase of the proposed Project/Activities.

The EMPs are presented as comprehensive matrices: for each Activity/Process and related Aspects and Impacts, Management Actions required to address the impacts arising directly and indirectly from the various aspects of the proposed project, with Responsible Persons and timing for each, are listed.

Copies of the EMPs should be made available at Trustco Group International's Offices during the construction/operational phases of the proposed Project.

External auditing (and monitoring) should be carried out to ensure compliance with the EMPs. Parties responsible for transgression of the EMPs should be held responsible for any rehabilitation that needs to be undertaken. Note that the EMPs are not static documents and that the documents should be updated as the Project progresses/more information of the proposed activities becomes available.

1.2 Permits and Approvals

An overview of the most pertinent legislation with the aim of informing Trustco Group International and their Contractor(s) of the legal requirements pertaining to the Project during the planning, construction, operational, and decommissioning phases can be found under Section 4 of this Report.

A summary of the relevant legislation and regulatory authorities (including contact details) as far as permits and/or approvals are concerned, is provided:

1.3 Glossary of Terms

Aspect	Element of an organization's activities or products or services that can interact with the environment (International Organization for Standardization (ISO), 2004).
Disposal	The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid or hazardous waste on or in the land or water ((US) EPA).
Environment	Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation (ISO, 2004).
Environmental Assessment (EA)	The process of identifying, predicting and evaluating the effects of proposed activities on the environment. It should include information about the risks and consequences of activities, possible alternatives, and steps which can be taken to mitigate (minimize or off-set) any negative impacts. It should also discuss steps to increase positive impacts and to promote compliance with the principles of environmental management. Both Government bodies and private persons or groups (such as private companies) can be required to carry out environmental assessments (MET, 2008).
Environmental Clearance Certificate	A certificate which allows a listed activity to go ahead. The certificate means that the Ministry of Environment and Tourism is satisfied that the activity in question will not have an unduly negative impact on the environment. It may set conditions for the activity to prevent or to minimize harmful impacts on the environment (MET, 2008).
Environmental Management Plan (EMP)	A key document that should consist of the set of measures to be taken during implementation and operation to eliminate, offset, or reduce adverse environmental impacts to acceptable levels. Also included in the plan are the actions needed to implement them (DEA, 2008).
Hazardous Waste	<p>Waste that poses substantial or potential threats to public health or the environment. There are four factors that determine whether or not a substance is hazardous: i) ignitability (i.e. flammable); ii) reactivity; iii) corrosivity; and iv) toxicity (Wikipedia).</p> <p>(a) any waste containing, or contaminated by, poison; (b) any corrosive agent; (c) any flammable substance having an open flash-point of less than 90 degrees Celsius; (d) an explosive or radioactive material and substance; (e) any chemical or any other waste that has the potential even in low concentrations to have a significant adverse effect on public health or the environment because of its inherent toxicological, chemical, ignitable, corrosive, carcinogenic, injurious and physical characteristics; (f) any waste consisting of a liquid, sludge or solid substance, resulting from any manufacturing process, industrial treatment or the pre-treatment for disposal purposes of any industrial or mining liquid waste, which in terms of any law, order or directive relating to drainage and plumbing may not be discharged into any drain or sewer; (g) the carcass of a dead animal; and (h) any other waste which may be declared as such by Council or in terms of any other applicable law but excludes household hazardous waste (City of Windhoek, Solid Waste Management Policy).</p>

Heavy/Noxious Industrial	Processes which use primary raw natural resources for production, such as textiles, brewery, abattoirs and tanneries (Africon, 2004). Land used for the purpose of carrying on any noxious or offensive trade or occupation and, without prejudice to the generality of the foregoing, includes the following: chemical works, paint works, breweries and distilleries, sugar mills and sugar refineries, manure , superphosphate or fertilizer works; or premises used for the storing or mixing of manure, superphosphates or fertilizers or premises for the storing, drying, preserving or other treatment of bones, horns or hoofs, premises used for the storing, sorting or treatment of hides and skins, other than in a dry and inoffensive condition, abattoirs, glue or size factories, entrails scraping and tripe boiling works; soap or candle works, fat and dripping works and any other similar works where meat, bones, blood, offal or other animal organic matter is handled, wool scouring or wool washing works, rock-lobster or fish processing works, fish pickling or rock-lobster and fish canning trades, whaling stations, premises or trades used for the storing or handling and
	processing of material originating from fish, whales and seals, paper mills or paper factories, wattle bark grinding or extract factories, destructors, depositing sites or other sites for the disposal or processing of domestic refuse, trade refuse, street refuse, sewage or night soil, lead melting works, oil refineries and other trades in connection with the processing of by products or petroleum refining, paint and varnish works, quarries, asbestos cement , bricks and lime works, metallurgical works, reduction and reprocessing works (Windhoek Town Planning Scheme, 2006; see GCS and Stubenrauch Planning Consultants, 2011).
Industrial Waste	Any waste generated as a result of business, commerce, trade, wholesale, retail, professional, manufacturing, maintenance, repair, fabricating, processing or dismantling activities, but does not include general waste, garden or bulky waste, builder's waste, business waste, hazardous waste or health care risk waste (City of Windhoek, Solid Waste Management Policy).
Impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects (ISO, 2004).
Integrated Waste Management (IWM)	Concept of employing several waste control and disposal methods such as source reduction, recycling, reuse, incineration, and land filling, to minimize the environmental impact of commercial and industrial waste streams (Business Dictionary).
Leachate	Any liquid, including any suspended components in the liquid, which has percolated through or drained from waste ((US) EPA).

Light Industrial Activities	<p>Including depots and warehousing facilities, clean secondary and tertiary processing facilities with low waste load and support facilities for primary and secondary industries, such as packaging, servicing and cleaning.</p> <p>Land use where work is performed in connection with any business, undertaking or institution, whether as an employer or employee, pupil or inmate of an institution, or otherwise, in any one or more of the following activities: (a) the making of any article or part of any article; (b) the altering, repairing, renovating, testing, ornamenting, painting, spraying, polishing, finishing, cleaning, dyeing, washing, or breaking up of any article; (c) the adaption for sale or use of any article; (d) the sorting, assembling or packing (including washing or filling bottles or other containers) of any articles (e) the construction, reconstruction, assembling, repairing or breaking up of vehicles or parts thereof (but excluding premises used for the purpose of housing vehicles where only minor adjustments are carried out); (f) printing by letterpress, lithography, photogravure or other similar process, including any activity associated with the printing industry; (g) the production and storage of gas in a holder of more than five hundred cubic metre (500 m³) storage capacity; (h) photographic work; (i) any other activity added in terms of the Labour Act (Act 23 of 1992); (j) any activity that is necessarily or ordinarily incidental to any activity referred to in subparagraphs (i) to (x), inclusive, if the premises on which it is carried on form part of or are adjacent to the premises on which the activity to which it is so incidental is carried on (GCS and Stubenrauch Planning Consultants, 2011).</p>
Mitigation	Any action intended to either reduce or avert exposure or the likelihood of exposure to sources that are not part of a controlled practice, or which are out of control as a consequence of an accident (DEA, 2008).
Monitoring	The repetitive and continued observation, measurement and evaluation of environmental data to follow changes over a period of time to assess the efficiency of control measures (DEA, 2008).
Pollution	The direct or indirect introduction of something which is harmful to people, property, or the environment into the air, land, or water. Pollution can be caused by substances, vibrations, heat, radiation or noise. One of the key ideas behind the law is that the polluter must pay the costs of pollution (MET, 2008).
Polluter Pays Principle	Principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment (DEA, 2008).
Sewerage	The subset of wastewater that is contaminated with faeces and/or urine; it includes domestic, municipal, or industrial liquid waste products disposed of, usually via a pipe or sewer or similar structure (Wikipedia).
Significant Effect	Having, or likely to have, a consequential qualitative or quantitative impact on the environment, including changes in ecological, aesthetic, cultural, historic, economic and social factors, whether directly or indirectly, individually or collectively (Environmental Management Act (EMA) 7 of 2007).
Stormwater	Water that originates during precipitation (rainfall) events. Stormwater that does not soak into the ground becomes surface runoff. Stormwater is of concern for the following two reasons: one is related to the volume and timing of runoff water (for flood control and the supply of water) and the other is related to the potential contaminants that the water may be carrying and subsequent water pollution (Wikipedia).
Sustainable Use	Using natural resources in a way and at a rate that does not lead to a long- term decline, so that the environment will be able to meet the needs of future generations, i.e. the natural resources of the earth must be shared fairly between

	present and future generations (MET, 2008).
Waste	An unwanted or undesired material or substance. It is also referred to as rubbish, trash, refuse, garbage, or junk, depending on the type of material. Litter is waste that has been carelessly disposed of in plain sight. Waste is “dumped” in order to avoid paying waste disposal fees (Wikipedia).
Waste Management	The collection, transport, processing, recycling or disposal, and monitoring of waste materials (Wikipedia).
Wastewater	Any water that has been adversely affected in quality by anthropogenic (human) influences, i.e. liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations (Wikipedia).

1.4 Roles and Responsibilities

Trustco Group International is responsible for fulfilling the requirements in the EMPs for the planning and construction/operational phases of the proposed Project.

The following actions are proposed:

1. The provision by Trustco Group International of, on an ongoing basis, sufficient management sponsorship and human and financial resources for the implementation of the various EMPs;
2. The development of a monitoring programme(s) for the construction/operational phases of the proposed Project (see Section 6.6); and
3. External auditing (by an independent, external auditor) of the management actions as contained in the EMPs for the construction/operational phases of the proposed Project.

1.5 Environmental Management Plans

This Section contains the Environmental Management Plans (EMPs) for the planning (Table 4), and construction/operational (Table 5) phases of the proposed Project (also see IFC, 2007).

Table 4: Environmental Management Plan: Planning Phase.

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Layout and Design of an Industrial Township on Portions 130, 131, 133 and 81 of the Remainder of Portion A and the Remainder of Portion A, Farm Nubuamis 37				
Layout and Design of an Industrial Township	Potential loss of archaeological material	<ul style="list-style-type: none"> Carry out an archaeological survey of the kopjes immediately west of the B1 Highway (there is an old (1930s) record of some rock art sites). 	Trustco Group International / Independent Archaeologist	Pre-construction
	Negative impact on floral species	<ul style="list-style-type: none"> The scenic beauty of and the mostly intact natural vegetation found in the hills and valleys to the north-east of Nubuamis should be preserved. It is advised that the rocky Eastern Area, with the steep slopes and deep valleys, be kept as a Public Open Space and that the trees are protected. Nubuamis houses some beautiful large indigenous trees and as many as possible of these should be saved (when the area is ultimately developed). Survey and mark (red and white tape) the protected/unique species i.e. shepherd's tree <i>Boscia albitrunca</i>, camelthorn <i>Acacia erioloba</i>, or worm-cure albizia <i>Albizia anthelmintica</i>. Permit(s) to be obtained from the Directorate of Forestry, Ministry of Agriculture, Water and Forestry before the removal of any of the following trees: shepherd's tree <i>Boscia albitrunca</i>, camelthorn <i>Acacia erioloba</i>, or worm-cure albizia <i>Albizia anthelmintica</i>. Be on the lookout for and mark (red and white tape) any stone plants/beesklootjies <i>Lithops pseudotruncatella</i> subsp. <i>pseudotruncatella</i> and/or duiwepoot <i>Avoniaalbissima</i> and/or <i>Aloe littoralis</i> and/or <i>Aloe hereroensis</i>. Permit(s) to be obtained from the Directorate Scientific Services, Ministry of Environment and Tourism before any of these plants are removed (for relocation). 	Trustco Group International / Surveyor / Town Planner / Architect / Engineer / Environmental Control Officer (ECO)	Pre-construction

	Pollution of biophysical environment	<ul style="list-style-type: none"> • Ensure that Public Open Spaces are not developed and that flatter, low-lying areas are not impinged upon (this will prevent excessive runoff, maximise 	Trustco Group International / Surveyor / Town	Pre-construction
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ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
	(surface/runoff water)	<p>infiltration of precipitation, and ensure groundwater recharge).</p> <ul style="list-style-type: none"> Any waste that could potentially pollute the water sources should be collected and disposed of in licensed landfills. Ensure that liquid and solid waste are disposed of properly, especially in Portions 130, 131 and 133, as to not exacerbate eutrophication of the surface water stored in the Goreangab Dam. Runoff of pollutants should be prevented from reaching the Klein Windhoek River; the River provides recharge to groundwater sources and this could pose a risk to groundwater-related receptors further downstream. Runoff from areas where surface water might have become contaminated should be captured and treated to sewerage effluent standards; uncontaminated runoff should be diverted around areas where such water might become contaminated. 	Planner / Architect / Engineer	
	Soil erosion	<ul style="list-style-type: none"> Limit or prevent the making/establishment of new tracks/roads in the currently undeveloped areas. 	Trustco Group International / Surveyor / Town Planner / Architect / Engineer	Pre-construction
Social and Environmental Performance				
Management and Monitoring	Social and Environmental Performance	<ul style="list-style-type: none"> Ensure that all aspects related to the EMP are implemented during the planning phase. 	Trustco Group International	Ongoing
Consultation and Disclosure	Social and Environmental Performance	<ul style="list-style-type: none"> Maintain open and direct lines of communication between the Proponent (Trustco Group International), the City of Windhoek (CoW), and I&APs with regards to environmental matters. Consult with I&APs throughout the project process and adequately incorporate I&APs' concerns. 	Trustco Group International / CoW	Ongoing
			Trustco Group International	Ongoing
Grievance Mechanism	Social and Environmental	<ul style="list-style-type: none"> Implement a grievance mechanism for receiving and resolving any concerns and grievances related 	Trustco Group International	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
	Performance	<p>to the project's social and environmental performance throughout the project life cycle.</p> <ul style="list-style-type: none"> • Inform all I&APs about the mechanism. • Address concerns promptly and transparently and in a culturally appropriate manner. • Keep a register of all concerns/issues received from I&APs, as well as the measures taken to address these. 		
Training, including awareness and inductions	Social and Environmental Performance	<ul style="list-style-type: none"> • Train employees and contractors in matters related to the project's social and environmental performance and Namibia's regulatory requirements. • Ensure adequate environmental awareness training for all senior site personnel. • Give environmental induction presentations to all site personnel prior to work commencement. 	Trustco Group International	Ongoing
Employment and Procurement Opportunities				
Employment and procurement opportunities	Social and Environmental Performance	<ul style="list-style-type: none"> • Include the EMPs in the tender documents so that tenderers can make provision for the implementation of the EMPs. • Penalties for non-compliance with the stipulations of the EMPs should be agreed upon (and can be included in the tender documents). • Source contracting companies and experts based on merit and expertise giving preference to local contractors on condition that the local contractors have the required experience and expertise. • Tender policy to give preference to medium and small construction companies from Namibia in order to ensure maximum local beneficiation. • Consider utilising local labour for unskilled work and to then provide training to workers in order to perform semi-skilled work; this should be done under the supervision of managers/specialists to ensure maximum local beneficiation. • Consider the use of labour intensive development and construction methods in order to maximize 	Trustco Group International	Pre-construction

		<p>employment opportunities, but without reducing productivity and cost efficiency.</p> <ul style="list-style-type: none"> • Ensure that tender proposals received are scrutinised to ensure that minimum wages have been adhered to in the costing. • Ensure that contractors adhere to the Namibian Labour, Social Security, Health and Safety, and Affirmative Action laws (by means of a contractual requirement for the submission of monthly proofre. the payment of minimum wages to workers, listing of the workers' Namibian Identification Numbers (IDs), and payment of Social Security). • Tender documents to stipulate that all contractors have an HIV/AIDS Policy and Programme in place (aspects to be addressed in/by the Policy/Programme include: promotion of a positive attitude regarding protected sex and other safe sex practices; enforcement of national legislation and regulations regarding the sex worker industry; raising HIV awareness by educating workers regarding HIV transmission and safe sex practices; ensuring the availability of condoms and contraceptives; providing medical care facilities for the sick; and improving attitudes towards HIV positive co-workers). • Source maximally from local resources to ensure maximum economic beneficiation of local businesses in terms of new business sales. 		
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ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Health, Safety and Security				
Occupational Health and Safety	Social and Environmental Performance	<ul style="list-style-type: none"> • Prepare and submit a Health and Safety Plan. • Adhere to all Namibia's Health and Safety Regulations. • Occupational Health and Safety Training to be provided to all employees. • Ensure that qualified first aid can be provided at all times. • Provide and ensure the active use of Personal Protective Equipment (PPE). 	Contractor(s)	Pre-construction
Community Health and Safety	Social and Environmental Performance	<ul style="list-style-type: none"> • Notice or information boards relating to public health and safety hazards and emergency contact details should be put up at the gate(s). 	Trustco Group International	Pre-construction
Existing Damage to the Environment				
Dumped Refuse	Negative impact on fauna / pollution of the environment / visual impact	<ul style="list-style-type: none"> • All refuse to be removed and disposed of at the Windhoek Municipal Waste Site; control measures to be put in place to prevent the additional or further dumping of refuse. 	Trustco Group International	Pre-construction / Ongoing
Alien species	Negative impact on flora / flooding (as water cannot drain freely in the river(s))	<ul style="list-style-type: none"> • Alien vegetation in the water courses to be controlled and/or removed manually (using a sickle or "weed-eater and preferably during February/March) on a continuous basis (until the natural vegetation has reestablished itself). 	Trustco Group International	Pre-construction / Ongoing
Tree felling, and the collection of wood and camelthorn seed pods	Negative impact on flora	<ul style="list-style-type: none"> • Tree felling and the collection of wood and camelthorn seed pods to be controlled/prohibited, possibly with the assistance of the Directorate of Forestry, Ministry of Agriculture, Water and Forestry. 	Trustco Group International	Pre-construction / Ongoing
Human excrement	Occupational and Community Health	<ul style="list-style-type: none"> • The use of the area as a "public toilet" to be addressed. 	Trustco Group International	Pre-construction / Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Social and Environmental Performance				
Management and Monitoring	Social and Environmental Performance	<ul style="list-style-type: none"> Ensure that all aspects related to the EMP are implemented during the construction/operational phases. Hold regular site meetings/inspections. Make provision in the minutes of the meetings for reporting on all aspects of the EMP related to the construction/operational phases. 	Trustco Group International / Resident Engineer (RE)/ECO	Ongoing
Consultation and Disclosure	Social and Environmental Performance	<ul style="list-style-type: none"> Maintain open and direct lines of communication between the Proponent (Trustco Group International), the City of Windhoek (CoW), and I&APs with regards to environmental matters. Consult with I&APs throughout the project process and adequately incorporate I&APs' concerns. 	Trustco Group International / CoW / RE/ECO Trustco Group International	Ongoing Ongoing
Grievance Mechanism	Social and Environmental Performance	<ul style="list-style-type: none"> Inform all I&APs about the grievance mechanism for receiving and resolving any concerns and grievances related to the project's social and environmental performance throughout the project life cycle. Address concerns promptly and transparently and in a culturally appropriate manner. Keep a register of all concerns/issues received from I&APs, as well as the measures taken to address these. 	Trustco Group International / RE/ECO	Ongoing
Training, including awareness and inductions	Social and Environmental Performance	<ul style="list-style-type: none"> Train employees and contractors in matters related to the project's social and environmental performance and Namibia's regulatory requirements. Ensure adequate environmental awareness training for all senior site personnel. Give environmental induction presentations to all site personnel prior to work commencement; attendance list to be signed by all who attended the presentation. 	Trustco Group International Contractor(s) / RE/ECO	Ongoing Pre- and during construction
Labour and Working Conditions	Social and Environmental Performance	<ul style="list-style-type: none"> Establish, maintain and improve the worker-management relationship. Base the employment relationship on equal opportunity and fair treatment 	Trustco Group International / Contractor(s)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
		<p>and no discrimination to be allowed.</p> <ul style="list-style-type: none"> • Comply with Namibia’s labour and employment laws and prevent unacceptable forms of labour, i.e. harmful child and forced labour. • Promote safe and healthy working conditions and the protection and promotion of worker health. • Document and communicate the Working Conditions and Terms of Employment. • Respect Collective Agreements and the right of workers to organize and bargain collectively. • Implement a Grievance Mechanism. 		
Occupational Health and Safety	Social and Environmental Performance	<ul style="list-style-type: none"> • Adhere to all Namibia’s Health and Safety Regulations. • Occupational Health and Safety Training to be provided to all employees. • Ensure that qualified first aid can be provided at all times. • Provide and ensure the active use of Personal Protective Equipment (PPE). 	Trustco Group International / Contractor(s)	Ongoing
Community Health and Safety	Social and Environmental Performance	<ul style="list-style-type: none"> • Prevent communicable disease (e.g. Sexually Transmitted Infections (STIs) such as HIV transmission): provide surveillance and active screening and treatment of employees; prevent illness among employees (through health awareness and education initiatives); ensure ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers; and promote immunization. 	Trustco Group International / Contractor(s)	Ongoing

Table 5: Environmental Management Plan: Construction/Operational Phase.

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Construction of an Industrial Township				
Construction Activities	Loss of or damage to archaeological material	<ul style="list-style-type: none"> Should any archaeological material, e.g. graves, be found during trenching or other excavation work, work should immediately cease and the National Heritage Council of Namibia in Windhoek informed 	RE/ ECO / Contractor(s)	
	Negative impact on faunal species	<ul style="list-style-type: none"> Do not allow the setting of snares (poaching), illegal collecting of veld foods, indiscriminate killing of perceived dangerous species (e.g. snakes) and the collection of wood. This would diminish and negatively affect the local fauna. Prevent and discourage the making of fires. Runaway veld fires will affect the local fauna and may negatively impact neighbouring farms and home and business owners. Implement a refuse removal policy. Littering could result in certain animals becoming accustomed to humans/associated activities and lead to typical problem animal scenarios, e.g. with baboon and jackal. Implement and maintain track discipline with maximum speed limits (e.g. 40 km/h). Avoid off-road driving and driving at night. 	RE/ECO/ Contractor(s)	Ongoing
	Negative impact on floral species	<ul style="list-style-type: none"> Attempt to avoid the removal of bigger trees, especially the protected species shepherd's tree <i>Boscia albitrunca</i>, camelthorn <i>Acacia erioloba</i>, or worm-cure <i>albizia Albizia anthelmintica</i>. 	RE/ECO / Contractor(s)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
		<ul style="list-style-type: none"> • These serve as habitat for a myriad of fauna. Permit(s) to be obtained from the Directorate of Forestry, Ministry of Agriculture, Water and Forestry before the removal of any of the following trees: shepherd's tree <i>Boscia albitrunca</i>, camelthorn <i>Acacia erioloba</i>, or worm-cure albizia <i>Albizia anthelmintica</i>. • Be on the lookout for and mark (red and white tape) any stone plants/beeskloutjies <i>Lithops pseudotruncatella</i> subsp. <i>pseudotruncatella</i> and/or duiwepoot <i>Avoniaalbissima</i> and/or <i>Aloe littoralis</i> and/or <i>Aloe hereroensis</i>. Permit(s) to be obtained from the Directorate Scientific Services, Ministry of Environment and Tourism before any of these plants are removed (for relocation). • Implement a policy of reintroducing two specimens for every one individual removed. • Prohibit the collection of firewood (by means of a policy). Dead wood has an important ecological role. • Prevent and discourage the making of fires. Runaway veld fires will affect the local flora and may negatively impact neighbouring farms and home and business owners. • Alien vegetation in the water courses to be controlled and/or removed manually (using a sickle or "weed-eater and preferably during February/March) on a continuous basis (until the natural vegetation is again established). 		

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Construction Camp (if applicable)				
Construction camp	Disturbance of fauna and flora and habitat alteration	<ul style="list-style-type: none"> No trees or natural vegetation may be removed for the making of fires. No animal may be injured, fed, trapped, hunted or harmed in any way. No off-road driving will be allowed. No trespassing on adjoining properties is allowed and no livestock/game/vegetation is to be interfered with. 	Contractor(s) / RE/ECO (to inspect)	Ongoing
	Pollution of biophysical environment (air, soil and water)	<ul style="list-style-type: none"> No fires will be allowed, unless a specific area has been identified and set aside by the RE/ECO for the cooking of food. Vehicle maintenance/servicing/washing not to be allowed anywhere on site. Portable toilets to be provided and used at the camp. Sanitary wastewater to be released into a French drain system. Use bio-degradable detergents on site. Enforce proper waste (hazardous and non- hazardous) management practices (as per Waste Management Plan to be submitted by the Contractor) – waste and litter to be disposed of in scavenger and weatherproof bins and the refuse to be collected by the contractor and disposed of at least once a week. 	Contractor(s) / RE/ECO (to inspect)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
	Occupational Health and Safety	<ul style="list-style-type: none"> No fires will be allowed, unless a specific area has been identified and set aside by the RE/ECO for the cooking of food. Ensure that employees are trained in the use of appropriate firefighting equipment and ensure that such equipment is on hand at all times. Comply with all safety regulations re. electricity supply. Supply potable water for human consumption and other domestic uses; conduct chemical testing of water samples on a monthly basis (if applicable). Make suitable arrangements, as far as practicable, for the maintenance of health, the prevention and overcoming of outbreaks of disease and of adequate first aid services. Ensure that security arrangements are in place. 	Contractor(s) / RE/ECO (to inspect)	Ongoing
Change in Land Use				
Construction of an Industrial Township	Change in land use	<ul style="list-style-type: none"> Restrict construction activities to demarcated areas; all other areas will be regarded as "no go" zones in order to minimize the impact on the surrounding land. 	RE/ECO / Contractor(s)	Ongoing
Site Preparation				
Site preparation - clearing of areas for construction activities	Disturbance of fauna and flora and habitat alteration	<ul style="list-style-type: none"> Restrict construction activities to previously demarcated areas (e.g. construction camp, access road, borrow pits, etc.); all other areas will be regarded as "no go" zones in order to minimize the impact on the surrounding land. Minimize the removal of native plant species; no vegetation may be removed/damaged without direct instruction. No off-road driving will be allowed. No animal may be injured, fed, trapped, hunted or harmed in any way. 	Contractor(s) / RE/ECO (to inspect)	Pre- and during construction

	Soil erosion	<ul style="list-style-type: none"> • <u>Sediment mobilization and transport</u>: reduce or prevent soil erosion (schedule activities to avoid heavy rainfall periods; contour and minimize length and steepness of slopes; mulching to stabilize 	Engineer / Contractor(s) / RE/ECO (to inspect)	Pre- and during construction
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ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
		<p>exposed areas; re-vegetate areas promptly; and design channels and ditches for post-construction flow). Note that the area(s) towards and adjacent to the drainage line(s) are easily eroded and further development may exacerbate this problem.</p> <ul style="list-style-type: none"> • <u>Road design</u>: limit access road gradients to reduce run-off induced erosion; provide adequate road drainage based on road width, surface material, compaction and maintenance. • <u>Structural (slope) stability</u>: provide effective short-term measures for slope stabilization, sediment and subsidence control until long-term measures (during operations) can be implemented; provide adequate drainage systems to minimize and control infiltration. 		
	Possible loss of the seed bank in the topsoil	<ul style="list-style-type: none"> • The upper layer of soil (10-20 cm), where alluvial, to be stripped and stockpiled separately (1-2 m high piles to allow for proper aeration). Install drainage to protect the topsoil pile from (water) erosion and cover it to protect it from (wind) erosion. 	Contractor(s) / RE/ECO (to inspect)	Pre- and during construction
Road Construction				
Borrow pit siting	Visual, pollution (traffic, noise and air), and land use	<ul style="list-style-type: none"> • Consider, in addition to material quality and quantity, the visual impact, potential traffic, noise and air pollution, and the potential loss of arable land when borrow pits are sited. 	RE/ECO / Contractor(s)	Pre- and during construction
Borrow pit management	Disturbance of fauna and flora and habitat alteration	<ul style="list-style-type: none"> • Limit the number of borrow pits as far as possible. • The progression of stripping and excavation to allow for rehabilitation once the areas have been fully utilized. 	RE/ECO / Contractor(s)	Pre- and during construction
	Safety	<ul style="list-style-type: none"> • Undertake excavations in a safe manner and in compliance with the relevant safety regulations. 	Contractor(s) / RE/ECO (to inspect)	Construction and Rehabilitation
	Rehabilitation	<ul style="list-style-type: none"> • Cut slopes not to be steeper than 30 degrees • Use excess rock spoil to fill borrow pits; material to be neatly shaped and no loose material to be left inside the borrow pits. • No waste is allowed to be dumped in borrow pits. 	Contractor(s) / RE/ECO (to inspect)	Construction and Rehabilitation

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
		<ul style="list-style-type: none"> Evenly spread top soil over the entire area to allow for the re-growth of vegetation. Replant previously removed native plant species in disturbed areas. 		Construction and Rehabilitation
Use of a Troxler (soil density gauge containing a radioactive source)	Occupational Health and Safety	<ul style="list-style-type: none"> Register the Troxler and apply for a permit from the Ministry of Health and Social Services. Implement controls and monitoring requirements as per those prescribed by the Ministry of Health and Social Services for the safe handling, transportation and storage of the device. 	Contractor(s) / RE/ECO (to inspect)	Pre- and during road construction
Construction Activities				
Presence of construction teams, increased traffic, presence and movement of machinery	Noise pollution	<ul style="list-style-type: none"> Construction activities to cease at 18h00. Enforce a speed limit of 40km/h. Large construction vehicles to be fitted with silencers. 	Contractor(s) / RE/ECO (to inspect)	Ongoing
Increased traffic, presence and movement of machinery, and the establishment of soil stockpiles	Air quality (Dust or Particulate Matter (PM) pollution)	<ul style="list-style-type: none"> Minimize the area in which the movement of construction machines will take place to reduce the effects of dust pollution. Minimize dust from material handling sources (e.g. conveyors and bins) by using covers and/or control equipment (e.g. water suppression). Minimize dust from open area sources, including storage piles, by using control measures (install enclosures and covers, and increase the moisture content). Avoid the excavation, handling and transport of erodible materials under high wind conditions or when a visible dust plume is present. Maintain the road surface to preserve surface characteristics (e.g. texture and roughness). Use dust control/suppression methods, such as applying water or non-toxic chemicals to minimize dust (oil and oil by-products are not a recommended measure to control road dust). 	Contractor(s) / RE/ECO (to inspect)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Increased traffic, presence and movement of machinery (exhaust from diesel engines)	Air quality & Occupational and Community Health and Safety	<ul style="list-style-type: none"> Fleet owners/operators to implement manufacturer recommended engine maintenance programs (to control vehicle emissions: Carbon Monoxide (CO), Nitrogen Oxide (NO_x), Sulphur Dioxide (SO₂), Particulate Matter (PM) and Volatile Organic Compounds (VOCs)). 	Contractor(s)	Ongoing
Increased traffic, movement of machinery	Occupational and Community Safety	<ul style="list-style-type: none"> Adopt best transport safety practices by implementing the following measures: emphasize safety aspects among drivers; improve driving skills and require licensing of drivers; adopt limits for trip duration; avoid dangerous routes and times of day; and use speed control devices. Regularly maintain vehicles and use manufacturer approved parts. Use locally sourced materials (where possible) to minimize transport distances. Employ safe traffic control measures, including the use of traffic and safety warning signs and flag persons to warn of dangerous conditions. 	Contractor(s) / RE/ECO (to inspect)	Ongoing
Safety and Security				
Presence of construction teams and equipment	Occupational and Community Safety and Security	<ul style="list-style-type: none"> Access controlled entrance(s) with 24-hour security. Notice or information boards relating to public safety hazards to be put up at the entrance(s) and construction camp/site(s). Enforce a strict ban on the recruitment of construction workers at the entrance(s) and on visitors gaining entry to the construction workers on site. 	Trustco Group International / RE/ECO (to inspect)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Resource Use				
Water Management	Resource use / depletion of natural resources	<ul style="list-style-type: none"> Implement a water conservation program, promoting the continuous reduction in water consumption; treatment and disposal costs commensurate with the magnitude and cost of water use. 	RE/ECO / Contractor(s)	Ongoing
Energy Management	Resource use (e.g. coal) / depletion of natural resources	<ul style="list-style-type: none"> Promote the sustainable use of energy (that will result in the reduction of use and cost reductions) (e.g. energy efficient light sources). Raise awareness amongst the staff and contractors. 	RE/ECO / Contractor(s)	Ongoing
ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Hazardous Materials Management				
Hazardous materials management	Social and Environmental Performance	<ul style="list-style-type: none"> Establish hazardous materials management priorities (based on hazard analysis of risky operations). Avoid, or minimize the use of hazardous materials. Prevent uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that may result in fire or explosion. Make use of engineering controls (containment, automatic alarms and shut-off systems); implement management controls (procedures, inspections and training, communication and drills) to address residual risks not prevented or controlled through engineering controls. 	RE/ECO / Contractor(s)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
	Pollution of biophysical environment (soil and water)	<p>Implement prevention and control measures for the use, handling and storage of hazardous materials:</p> <ul style="list-style-type: none"> • <u>Materials transfer</u>: regularly inspect, maintain and repair fittings/pipes/hoses; make use of drip trays/other drip containment measures at connection/possible overflow points; • <u>Overfill protection</u>: use trained filling operators; install gauges on tanks to measure the volume inside; make use of dripless hose connections (vehicle tanks) and fixed connections (storage tanks); use a catch basin/drip tray around the fill pipe to collect spills; • <u>Reaction, fire, and explosion prevention</u>: hazardous materials to be stored in marked containers and separate (from non-hazardous materials); incompatible hazardous materials (acids, bases, flammables, oxidizers, reactive chemicals) to be stored in separate areas and with containment facilities separating material storage; smoking or working with open flames not to be permitted in the presence of these substances; limit access to hazardous waste storage areas and clearly label and demarcate the area; conduct regular inspections of the areas and document the findings; prepare and implement spill response and emergency plans; train employees in the use of appropriate firefighting equipment and ensure that such equipment is on hand at all times. • <u>Secondary containment</u>: use bunding (made of impervious, chemically resistant material) that can contain the larger of 110% of the largest tank or 25% of the combined tank volumes for above-ground tanks with a total storage volume equal or greater than 1,000 litres. 	Contractor(s) / RE/ECO (to inspect)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
		<ul style="list-style-type: none"> • Train workers on the correct transfer and handling of fuels and chemicals and the response to spills. • Immediately report and clean up any accidental hydrocarbon spill: Spill-Sorb, Drizzat Pads, Enretech Powder or Peat Moss can be used to clean up small spills; in case of larger spills, the spill together with the polluted soil should be removed and disposed of at e.g. a biological remediation site. 		
	Occupational Health and Safety	<ul style="list-style-type: none"> • Implement hazard communication and training programs (including information on Material Safety Data Sheets (MSDS)) to make employees aware of workplace chemical hazards and how to respond to these. • Provide and ensure the active use of PPE. 	Contractor(s) / RE/ECO (to inspect)	Ongoing
Waste Management				
Waste management: non-hazardous and hazardous	Pollution of biophysical environment	<ul style="list-style-type: none"> • Prepare and submit a Waste Management Plan before construction/operation commences. The generation of waste should be avoided or minimized as far as practicable; where it cannot be avoided, but has been minimized, waste should be recovered and reused; where waste cannot be recovered/reused, it should be treated, destroyed and disposed of in an environmentally sound manner. • Institute and maintain good housekeeping and operating practices; littering is not allowed. • Non-hazardous and hazardous waste to be collected and stored separately. • Ensure that waste is not disposed of and/or stored near any surface water source. • Ensure that liquid and solid waste are disposed of properly, especially in Portions 130, 131 and 133, as to not exacerbate eutrophication of the surface water stored in the Goreangab Dam. • Runoff of pollutants should be prevented from reaching the Klein Windhoek River; the River provides recharge to groundwater sources and this could pose a 	Contractor(s) / RE/ECO (to inspect)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
		<ul style="list-style-type: none"> • risk to groundwater-related receptors further downstream. • Runoff from areas where surface water might have become contaminated should be captured and treated to sewerage effluent standards; uncontaminated runoff should be diverted around areas where such water might become contaminated. • Non-hazardous waste to be transported by an approved contractor to and disposed of at the City of Windhoek Waste Site. • Hazardous waste: recycle petroleum (fuels and lubricants) waste products and collect and recycle batteries and print cartridges (if relevant). The remainder to be transported by an approved contractor to a recognized hazardous waste disposal site (e.g. Kupferberg), with prior permission from the Windhoek Municipality. 		
Waste management: sanitary	Pollution of biophysical environment	<ul style="list-style-type: none"> • Portable chemical toilets (1 toilet per 30 employees; preferred 1:15) to be provided; spillages/leakages to be cleaned up immediately; contents to be collected by an approved contractor and disposed of at an approved sewage site (with prior permission from the Windhoek Municipality). 	Contractor(s) / RE/ECO (to inspect)	Ongoing
Wastewater management - wastewater treatment	Pollution of biophysical environment	<ul style="list-style-type: none"> • Ensure that the discharge of process wastewater and/or sanitary wastewater and/or wastewater from utility operations and/or stormwater to land conform to the regulatory requirements. • Runoff from areas where surface water might have become contaminated should be captured and treated to sewerage effluent standards; uncontaminated runoff should be diverted around areas where such water might become contaminated. 	Contractor(s) / RE/ECO (to inspect)	Ongoing

ASPECT	IMPACT	MANAGEMENT ACTIONS/OBJECTIVES	RESPONSIBLE PERSON(S)	TARGET DATE
Wastewater management - stormwater management	Soil erosion	<ul style="list-style-type: none"> Regular inspection and maintenance of permanent erosion and runoff control features. 	Contractor(s) / RE/ECO (to inspect)	Ongoing
Rehabilitation				
Rehabilitation	Social and Environmental Performance	<ul style="list-style-type: none"> Remove all equipment, waste, temporary structures, etc. from the camp and work sites. Reshape all disturbed areas (including stockpiles, borrow pits, and temporary detours and turnouts) to their original contours. Cover disturbed areas with previously collected topsoil and spread evenly. Manually rip disturbed areas, where compaction has taken place, and cover the areas with previously collected topsoil. Replant any previously removed native plant species in disturbed areas. Reintroduce two specimens for every one individual that had to be removed. 	Contractor(s) / RE/ECO (to inspect)	Ongoing and post-construction

1.6 Monitoring and Reporting

The following monitoring and reporting, at least but not limited to, needs to be carried out during the planning, construction/operational and rehabilitation phases:

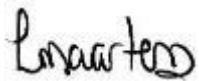
Type	Parameter	Frequency	Responsible Person
Sewerage pipelines	Maintenance, and monitor for damage to or leakages	Regular maintenance and weekly monitoring	Trustco Group International
Storm water and soil erosion	Soil erosion rates	<i>Ad hoc</i> (after the rainy season)	Trustco Group International
Alien invasive plant species	Identification and removal of any alien invasive species	Manual removal (using a sickle or "weed-eater and preferably during February/March) on a continuous basis (until the natural vegetation has reestablished)	Trustco Group International
Environmental Management Plan	Environmental performance / corrective measures to be taken as or when required	Internal audits (monthly) External audits (bi-annual)	Trustco Group International

2 Conclusions and Recommendations

It is the opinion of LM Environmental Consulting that the Nubuamis portions of land are suitable for the development of an Industrial Township.

Note that, as per Environmental Management Act 7 of 2007, certain activities may not be undertaken without an environmental clearance certificate and site-specific Environmental Impact Assessments (EIAs) may be required.

It is advised that the establishment of industries with a high-water demand not be permitted. Also, that the EMPs for the planning, and construction/operational phases are implemented, that regular monitoring takes place, and that corrective measures are taken as or when required.



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