

UPDATED ENVIRONMENTAL MANAGEMENT PLAN (EMP)

EXISTING BRICK MAKING PROJECT ON PORTION 9 OF FARM BLOCK V NO.656

KOMBAT AREA

OTJOZONDJUPA REGION

NAMIBIA

PREPARED FOR

ZHEN HUA CONSTRUCTION MATERIAL CC

BY:

TOGREEN CONSULTING CC – ENVIRONMENTAL MANAGEMENT SPECIALISTS

CONTACT NO: +264 81 854 4510

EMAIL: togreen.consulting@gmail.com

MAY 2024

DOCUMENT INFORMATION

Document Title	Updated Environmental Management Plan (EMP)_Existing Brick Making Project on Portion 9 of Farm Block V No.656_Kombat Area_ Otjozondjupa Region
Reference No.	2024/001/ZhenHua
Project Name	Existing Brick Making on Portion 9 of Farm Block V No.656
Project Site Location	Portion 9 of Farm Block V No.656, B8 Road, Kombat, Otjozondjupa Region
Client/Proponent	Zhen Hua Construction Material CC P. O. Box 96 Kombat Contact Person: Ms. Dongshu Zhang Contact No. +264 81 6703019 Email: dongshu56789@gmail.com
Document Status	Final
Issue Date	24 May 2024

Author:

Mr. Abraham Kanime (BSc, MSc/MEng).
Environmental Assessment Practitioner (EAP)



P. O. Box 4068
Ongwediva
Namibia
Contact No. +264 81 854 4510
Email: togreen.consulting@gmail.com

Disclaimer:

This report has been compiled by Togreen Consulting CC with reasonable care and that all interpretations of as presented and or the mitigation measures being recommended are done in good faith and with high level of professionalism, based on the information available at the time of this review.

Togreen Consulting therefore disclaims any responsibility to the client and its stakeholders in respect to any potential matter arising post the issuance of this report which is outside the agreed scope of this assignment

Table of Contents

Non-Technical Summary	4
1. Introduction	6
1.1 Togreen Consulting CC – Environmental Management Specialists	6
1.2 Project Description and Location.....	7
1.3 Project motivation	9
1.4 Requirements of Environmental Management Plan (EMP).....	10
1.5 Objectives of Environmental Management Plan (EMP)	11
1.6 EMP Implementation Responsibility and Accountability.....	12
1.7 Terms of Reference.....	13
3. Approach to existing environmental impacts review and EMP update	19
4. Environmental Performance based on original impacts and mitigations.....	21
5. Key Environmental Impacts (as reviewed and updated)	24
5.1 Environmental Impacts review approach.....	25
5.2 Environmental and social impact significance review	25
6. Environmental Management Plan (Tabulated).....	29
7. Monitoring and Evaluation	42
8. Conclusion and Recommendation	42
9. Reference.....	44
Annex 1: Environmental Clearance dated 24 April 2009	45
Annex 2: Consumer Installation Certificate for Diesel.....	46
Annex 3: Background Information Document	47
Annex 4: Interested and Affected Party (I&AP) Complaint Register	48
Annex 5: EAP Curriculum Vitae	49

Non-Technical Summary

Purpose: This updated Environmental Management Plan is prepared for Zhen Hua Construction Material CC on their existing brick making operation situated on a private land along B8 road, outside Kombat in Otjozondjupa Region. EMP is prepared for **the purpose of renewal application the new Environmental Clearance Certificate**. To this effect, Togreen Consulting was appointed by Zhen Hua Construction Material CC to manage this authorization process on their behalf.

Project motivation: Zhen Hua Construction Material CC has over the past 15 years, invested in the infrastructure and equipment development of the brick making project in Kombat to ensure project sustainability and profitability; while contributing to national development agenda of Namibia targeting infrastructure development, job creation and vocational skill transfer. Further, the farm was purchased specifically for this activity and on the basis of huge clay reserve on the farm; Zhen Hua Construction Material CC is committed to continue with the project for many years to come within the cleared land space. Currently the project employs about 90 employees of which 95% are Namibians. National development projects has benefited from this brick making operation as the main supplier for bricks.

Environmental performance status: This existing brick making operation on a private land and the original impacts which were identified are said to be localized. There were a total of 12 mitigation actions recommended, the proponent have fully implemented 9 actions whereas 3 of the mitigation actions have been partially implemented. This translates into 75% compliance with the implementation of recommended action. For more specific information, table 4 presents the performance of various actions from the original assessment.

Key environmental impacts: A total of 10 environmental and socio-economic impacts have been reviewed to be applicable to the existing brick making operation in Kombat. Only two of the impacts were found to be low significant which were related to relations with neighboring farm as well as site or object of heritage significance. Four of the impacts which were found to be moderate significant include biodiversity, groundwater abstraction sustainability, air pollution and HIV/AIDS related impact. Of the highly significant impact are waste management, worker's safety, topsoil loss and only one which is positive impact and this is relating to employment creation as well as support to local economy through procurement and corporate social responsibility.

Approach to mitigation: Togreen as a specialty environmental consultant is always committed to provide and recommend SMART mitigations to environmental impacts. For the EMP to find its validity against the test of time, it is only when the recommended actions contained in it are

Specific, Measurable, Achievable, Relevant and Time-bound. This has always been the approach which is used in this assignment.

Conclusion and recommendation

This is a comprehensive EMP which includes a re-evaluation of existing environmental and socio-economic impacts of the brick making operation in Kombat. A total of 10 key impacts have been identified as existing impact and accordingly mitigation measures are recommended for each of the impacts which resulted in a total of 32 mitigation actions.

The EMP has considered and covered sufficient environmental and socio-economic aspects which according to expert opinion are adequate for the management of potential impacts associated with the existing brick making operation in Kombat.

Therefore, it is recommended that this EMP and the relevant renewal application for environmental clearance certificate be considered as adequate for the ultimate issuance of the Environmental Clearance Certificate for Existing Brick Making Operation of Zhen Hua Construction Material CC, Kombat, Otjozondjupa Region, Namibia.

1. Introduction

The Environmental Management Plan is prepared for the proponent on the existing operation of a Brick Making Project being carried on a farm outside Kombat in Otjozondjupa Region and **further for the purpose of renewal application of the Environmental Clearance Certificate.**

The existing Brick Making Project has been operating under the Environmental Clearance letter which was issued in April 2009 following the completion of an Environmental Impact Assessment process which was conducted by Versatile Environmental Consulting (VERSACON) CC. Although in 2009, the Environmental Management Act No.7 of 2007 (EMA) was not yet in operation, the EIA was triggered by the process of purchasing the Portion 9 of Farm Block V No.656 as was recommended jointly as best practice by the two Ministries i.e. the then Ministry of Land, Resettlement and Rehabilitation, and that of Environment and Tourism. Since 2009, the Proponent had believed and wrongly interpreted that the validity of the environmental clearance given in 2009 was an open validity as this no expiry date was indicated on the environmental clearance letter, although section 40(2) of EMA dictates the clearance certificate should have maximum validity of three years. Further, EMA No.7 of 2007 had also come in full force in February 2012. However fact is that no renewal application of Environmental Clearance Certificate was submitted to the Office of Environmental Commissioner since the initial issuance of 2009.

It is against this background that the Zhen Hua Construction Material CC (hereafter Proponent) became aware that a new clearance certificate needs to be obtained as the original environmental clearance letter would have already expired in April 2012. Therefore the Proponent approached Togreen Consulting CC (hereafter Consultant) to assist with the update of their Environmental Management Plan including review of existing impacts and on their behalf, apply for the renewal of Environmental Clearance Certificate with the Office of Environmental Commissioner in line with the provision of EMA and its Regulations of February 2012.

1.1 Togreen Consulting CC – Environmental Management Specialists

Togreen Consulting CC (hereafter Consultant) is an independent Namibian environmental consulting entity duly registered (Reg.No.CC/2015/14230) and operates under the motto “Togreen creates a green path for sustainable development in Namibia and beyond”. The general consultancy services which Togreen offers to public include environmental impact assessments, compilation of environmental management plans, integrated waste management plans, siting and design criteria setting for waste management facilities, closure plans, site rehabilitation plan and strategies,

environmental auditing as well as development of environmental manuals for training and awareness.

For the current assignment, Mr. Abraham Kanime is assigned to the project as Environmental Assessment Practitioner (EAP) and co-ordinate the necessary review of existing environmental impacts onsite, update of the environmental management plan and ultimately submit the application for renewal of environmental clearance certificate. Mr. Kanime is a seasoned environmentalist with varsity knowledge and experience in the Namibian environmental law on the basis of both enforcement and operation. Mr. Kanime is an Environmental Engineer by profession having being in possession of Master's Degree in Environmental Engineering and also a Bachelor of Science in Natural Resources specializing in Fisheries and Aquatic Sciences (*see EAP CV in Annex 5*).

1.2 Project Description and Location

The brick making project is located on Portion 9 of the Farm Block V No.656 which is a registered Erven (ERF) with Title Deed T 6077/2010 and was purchased and duly registered specifically for the project of Brick Making and the relevant buildings associated with the project such as accommodation for the owner or workers. Further therefore it is the condition of this registration that the farm should not be used for other purposes such as (own interpretation) animal husbandry, crop or game farm.

The brick making project covers approximately 16,2 ha of the total farmland of 40,0012 ha, however the current mining area (pit) only cover about 2 ha with the varying depths ranging between 3 to 5 meters and the rest is covered by project associated building structures including accommodation.

The brick making process can be described by the first step of clay mining and crushing, followed by processing of mixing the material to produce mud before transfer such mud into the mold machine and the last step is drying the bricks and further hardening them in the oven using heat. Figure 1 presents the simplified brick making process:

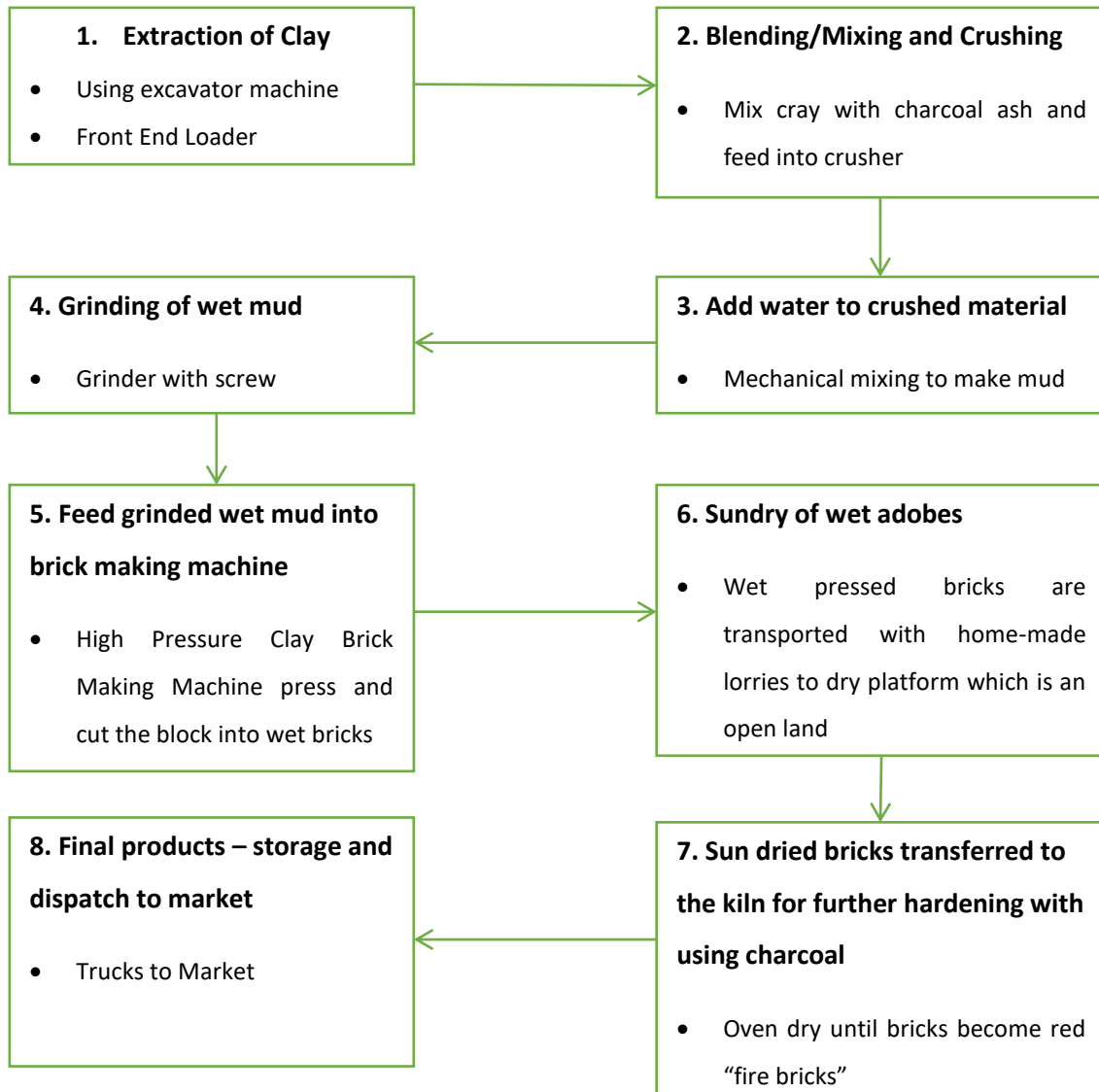


Figure 1: Simplified process for brick making project

Major inputs and sources:

- **Clay soil** – extracted from the pit within the farm
- **Charcoal ash** – sourced from local fine charcoal producers and obtained for free as this is waste
- **Water** – abstracted from the two boreholes on existing on the farm
- **Power** – the process is powered with diesel generator
- **Diesel** – from fuel suppliers or distributors
- **Charcoal** – sourced from local charcoal producers gridded

The operation currently employ 80 employees with different portfolio comprises of general workers, Equipment operators, Operation Managers and Truck Drivers. The brick making operation in Kombat has potential production capacity between 50,000 to 60,000 bricks per day. The production is

seasonal based as it is only to be conducted during dry season between May and October when rain ceases and each month runs for at least 20 days.

Figure 2 present the outline of project site depicting B8 Road, the farm boundary and visual aerial google earth view of the size of the disturbed land and undisturbed land by Zhen Hua Brick Making Operation.



Ref. Points	Latitude (S)			Y Decimal degree	Longitude (E)			X Decimal degree
	Degree	Minutes	Seconds		Degree	Minutes	Seconds	
A	19	41	55.37	19.69871389	17	41	7	17.68527778
B	19	41	59.49	19.69985833	17	41	3.36	17.68426667
C	19	41	44.85	19.69579167	17	40	24.29	17.67341389
D	19	41	32.39	19.69233056	17	40	27.05	17.67418056
E	19	41	41.92	19.69497778	17	40	47.86	17.67996111

Figure 2: Project Location – Portion 9 of Farm Block V No.B8 road outside Kombat

1.3 Project motivation

Zhen Hua Construction Material CC over the past 15 years has invested in the infrastructure and equipment development of the project site to ensure project business sustainability and profitability while contributing to national development agenda of Namibia targeting infrastructure development, job creation and vocational skill transfer. Further, the farm was purchased specifically for this activity and on the basis of huge clay reserve in the farm; Zhen Hua Construction Material CC is committed to continue with the project for many years to come within the cleared land space.

1.4 Requirements of Environmental Management Plan (EMP)

The listed activities are listed due to their nature and scale which has potential to cause significant environmental effects. It is based on these significant environmental effects that trigger the need to determine the controls to be put in place which aims either, to prevent, reduce, or control the significant environmental effects and such controls known as mitigation measures form part of the environmental management plan (EMP).

Table 1: Listed activities which are applicable and related to the existing Brick Making Operation of Zhen Hua Construction Material in Kombat

Listed Activity Category	Specific Listed Activity	Specific Project Activity directly linked to specific listed activity
2. Waste Management, Treatment, Handling and Disposal Activities	<i>2.1) Construction of facilities for waste sites, treatment of waste and disposal of waste</i>	Handling of domestic wastewater and solid waste onsite – general waste management
3. Mining and Quarrying Activities	<i>(3.2) Other forms of mining or extraction of any natural resources whether regulated by law or not;</i>	Extraction of clay soil from the farm ground which is not regulated by Mineral (Prospecting and Mining) Act 33 of 1992
	<i>(3.3) Resource extraction, manipulation, conservation, and related activities;</i>	Extraction of clay soil from the farm ground and mix with other materials including water (manipulation) to make bricks
4. Water Resource Development	<i>(8.1) Abstraction of ground or surface water for industrial or commercial purposes;</i>	Abstraction of groundwater using the onsite two boreholes for industrial/commercial purposes (i.e. water used in brick making operation)
	<i>(8.2) The abstraction of groundwater at a volume exceeding the threshold authorized in terms of the law</i>	Abstraction of groundwater for which the rate should be in compliance with the water resource management Act 11

Listed Activity Category	Specific Listed Activity	Specific Project Activity directly linked to specific listed activity
	<i>relating to water resources;</i>	of 2013 and Regulations of August 2023
9. Hazardous Substance Treatment, Handling and Storage	<i>(9.4) The storage and handling of dangerous goods including petrol, diesel, liquid petroleum gas or paraffin, in a containers with a combined capacity of more than 30 cubic meters at any one location;</i>	Storage and handling/use of diesel onsite in an above ground with respect to holding capacity at any given time and location
	<i>(9.5) Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, petroleum, gas or paraffin</i>	Installation or installed diesel storage tank above ground as well as associated dispensing system onsite for mobile equipment and diesel power generator

1.5 Objectives of Environmental Management Plan (EMP)

EMP is a living document which ought to be updated from time to time as new impacts are continuously identified and aims to outlines mitigation measures identified for each project activity or process and to ensure smooth implementation of up-to-date mitigation actions during the operational phase of the project up to and including closure.

Said differently, EMP aim to serve as a tool with which the environmental impacts associated with the project are monitored and managed through a proactive approach and commitment.

Specific objectives are:

- Formulate and customise mitigation actions to prevent, minimize or control the negative impacts, whereas on the other hand maintaining or maximising the positive impacts;

- Guide the implementation of mitigation actions to address the identified impacts in terms of clear responsibility and timelines as in relation to various phases of the project;
- Raise awareness of identified impacts and mitigations with all relevant internal role players to aid implementation with relevant internal stakeholders and other role players;
- Establish programme for environmental monitoring (including health and safety aspects) to track effectiveness of mitigation measures; and
- Set the basis of managing cumulative impacts and develop strategy for progressive rehabilitation and final closure

1.6 EMP Implementation Responsibility and Accountability

It is established regulatory condition and expectation that the overall responsibility with regards to correct and adequate implementation of environmental management plan lies with the proponents and their environmental assessment practitioners (EAPs). For the Brick Making Operation, it is recommended that this responsibility shall lie with the proponent and that Consultant should be reasonably available to provide clarification to the proponent on any mitigation measures recommended in the EMP during the compilation as well as after the approval and issuance of the environmental clearance certificate to the proponent. Table 2 below outlines the recommended general framework of implementation responsibility and accountability:

Table 2: Institutional framework for EMP implementation

Responsible/Accountable party	Entity / Institution	Role
1. Consultant/EAP	Togreen Consulting CC – Environmental Management Specialists	Compile an implementable EMP which is SMART – Specific, Measurable, Achievable, Relevant and Time-bound
2. Proponent	Zhen Hua Construction Material CC	Allocate the necessarily resources both human resource, equipment and financial to aid smooth implementation of the EMP

Responsible/Accountable party	Entity / Institution	Role
		throughout the life of project up to and including closure
3. Workers Representative	Zhen Hua Construction Material CC	Report to management for action on non-compliance with health, safety and environment by the brick making project
4. Interested and affected parties (I&APs)	Public	Enquire with management of Zhen Hua Construction Material on any issue related to health, safety and environment in and around the project site which affect public and report to authority if no action from management
5. Environmental Regulator	Office of Environmental Commissioner - Ministry of Environment, Tourism and Forestry	Conduct regulatory inspections at project site and issue relevant guidance to the proponent
6. Other regulators	<ul style="list-style-type: none"> - Department of Water Affairs - Ministry of Health and Social Services - Ministry of Labour, Industrial Relation and Employment Creation 	Conduct respective regulatory inspections at project site and issue relevant guidance to the proponent

1.7 Terms of Reference

The scope of work for this assignment is the review of existing impacts and mitigation measures; regulatory review and update of the environmental management plan for the purpose of renewal application of Environmental Clearance Certificate.

The drafting of EMP management plan follows the general rules as set out in the EMA Regulation 8(j) and that the plan should include the following:

- A description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.
- Information on proposed management, mitigation, protection or remedial actions to be undertaken to address the impacts on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure – in this case as far as progressive rehabilitation is concerned; and
- As far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development – In this case focus will be on progressive rehabilitation
- In addition, it is the focus of this assignment to review the applicable legal framework in order to update the requirements

2. National legislation framework

Namibian Constitution is the supreme law of the land according to article 1(6) and by interpretation all legislations ought to comply with its provisions for them to maintain their own validity. Further, Article 95(l) of the Namibia specifically provide under the Principles of State Policy that the State shall promote the welfare of people by adopting policies which aims at protection and maintaining of ecological biodiversity. To this effect, the Environmental Management Act No.7 of 2007 and its Regulations of February 2012 were enacted which provide for listed activities which may not be undertaken without environmental clearance certificate and in the same vein also outline the process of environmental impact assessment and compilation of environmental management plan. Table 3 below review and present the relevant provisions of other statutes:

Table 3: Other enabling legislations related to the brick making operation

Aspect	Policy/Statute	Provision and current relevance to the project	Responsible Authority
Mineral	Mineral (Prospecting and	Regulate the mining of certain	Ministry of

Aspect	Policy/Statute	Provision and current relevance to the project	Responsible Authority
Exploration, Prospecting and Mining	Mining) Act 33 of 1992	<p>class of minerals.</p> <p><u>Current relevance status:</u> <i>clay soil is being mined at Kombat is classified as common clay and does not fall in the class of clay minerals listed in Part 3 of Schedule 1 (e.g. Ball Clay, and Refractory Clay, hence prospecting license is not a requirement. This was also confirmed with the regulator by the proponent</i></p>	Mines and Energy
Farm land /rezoning to industrial purpose/acquisition of agricultural land by foreigners	Agricultural (Commercial) Land Reform Act 6 of 1995	<p>Provide for acquisition agricultural land, give government first priority for purchase and regulate acquisition of agricultural land by foreigners</p> <p><u>Current relevance status:</u> title deed indicates the land (erven) to be used solely for industrial purpose of brick making manufacturing. The owner of farm has permanent residence permit in Namibia. Hence this no longer relevant to this review and update of EMP except the compliance to this condition</p>	Directorate of Land Reform
Top soil conservation	Soil Conservation Act 76 of 1969	<p>Combating and prevention of soil erosion and conservation...</p> <p><u>Relevance status:</u> confirmed. Clay</p>	Agriculture, Water and Land reform /

Aspect	Policy/Statute	Provision and current relevance to the project	Responsible Authority
		mining does not only disturb topsoil but also create pit making edge of the pit to be unstable and prone to erosion	Environment Forestry and Tourism
Groundwater abstraction and use	Water Resource Management Act 11 2013 and its August 2023 Regulations	Provide for the control of water resources – hence regulating abstraction and discharge of wastewater <u>Relevance status:</u> confirmed	Department of Water Affairs
Air quality	Atmospheric Pollution Prevention Ordinance 11 of 1976	Protection of ambient air quality from dust and smoke <u>Relevance status:</u> while this piece of legislation is not repealed, currently is not being enforced us no relevant responsible authority. However it has been referenced into Environmental Management Act and Public and Environmental Health Act	Currently there is no authority. However it can be safely be interpreted that Ministry of health and social services as well as Office of Environmental Commissioner are the responsible authorities
Health and Safety at workplace	Labour Act 11 of 2007	Provide for minimum employment conditions to ensure employees health and safety are protected <u>Relevance status:</u> confirmed	Ministry of Labour, Industrial Relations and Employment Creation
Interaction with	HIV/AIDS and Gender	Provides guidance to EIA	Jointly by

Aspect	Policy/Statute	Provision and current relevance to the project	Responsible Authority
community - HIV/AIDS	Mainstreaming into EIA: Specific guidelines for Namibia – 2016 (not a law but a policy)	practitioners to consider HIV/AIDS and gender issues into EIA process for capital projects <u>Relevance status:</u> confirmed	Ministry of Environment Forestry and Tourism and Ministry of Health Social Services
Wild-life conservation and human-wild life conflict	Nature Conservation Ordinance 4 of 1975 and subsequent amendments	Provide for protection of wild life (flora and fauna) and regulate hunting and harvesting of wild trees products <u>Relevance status:</u> confirmed to extent relating to birds and small wild mammals hunting only	Ministry of Environment Forestry and Tourism
Vegetation clearing	Forestry Act No.12 of 2001	Regulate clearing of vegetation and list protected trees <u>Relevance status:</u> the operation site is established on cleared land of about 16.2 ha and no plan to expand the footprint in near future. Hence not relevant	Ministry of Environment Forestry and Tourism
Waste Management	Environmental Management Act No.7 of 2007, incorporated the provisions of Hazardous Substances Ordinance 14 of 1974 National Solid Waste Management Strategy	Regulate pollution control and provide for the principle of Polluter-Pay. In addition a policy on solid waste management approach step by step to ensure by 2028 Namibia is free of littering and be leading nation in waste management	Ministry of Environment Forestry and Tourism

Aspect	Policy/Statute	Provision and current relevance to the project	Responsible Authority
	2018	<u>Relevance status:</u> confirmed, domestic waste is generated onsite and potentially hazardous waste (contaminated soil at diesel tank in case of spill)	
Community exposure	Public and Environmental Health Management Act No.1 of 2015	Protect individuals and community from public health risks <u>Relevance status:</u> confirmed and also with reference to drinking water quality and fitness	Ministry of Health and Social Services / local authority environmental health department
Heritage Resources / Archeological objects	National Heritage Act 27 of 2004	Provide for protection and conservation of sites and objects of heritage significance and cultural value <u>Relevance status:</u> confirmed.	National Heritage Council of Namibia
Employment / Development	Vision 2030/NDP 6 and Harambee Prosperity Plan	Provide for a dream for Namibia to become industrialized through infrastructure development and knowledge/skill transfer to empowering its citizen <u>Relevance status:</u> confirmed.	National Planning Commission
Storage of diesel	Petroleum Act 13 of 1990	Provide for consumer installation for petroleum products <u>Relevance status:</u> confirmed	Ministry of Mines and Energy

3. Approach to existing environmental impacts review and EMP update

In Namibia, the EIA process follows the general guideline as outline in the EMA Regulations of February 2012 and as briefly outlined and summarised below:



It is anticipated that there are no new impacts as the brick making process is still the same as in 2009 when original EIA process was conducted. Therefore it is the technical opinion of the EAP/consultant that there is no need to redo an EIA process following the above outline process. In this sense, no open public consultation and advertisement is required. However the above process is used as guide specifically for compilation of environmental management plan which includes review or confirmation of existing impacts which allow an informed update of environmental management plan. The three basis for choosing this approach, are:

- No change in operation design
- No plan for expansion (i.e. clearing new area of vegetation) in near future
- No complaints or negative comments from the public (I&APs) have been received since 2009, except positive public comments on some of the good work the company did for the community (see newspaper article in figure 3 below)

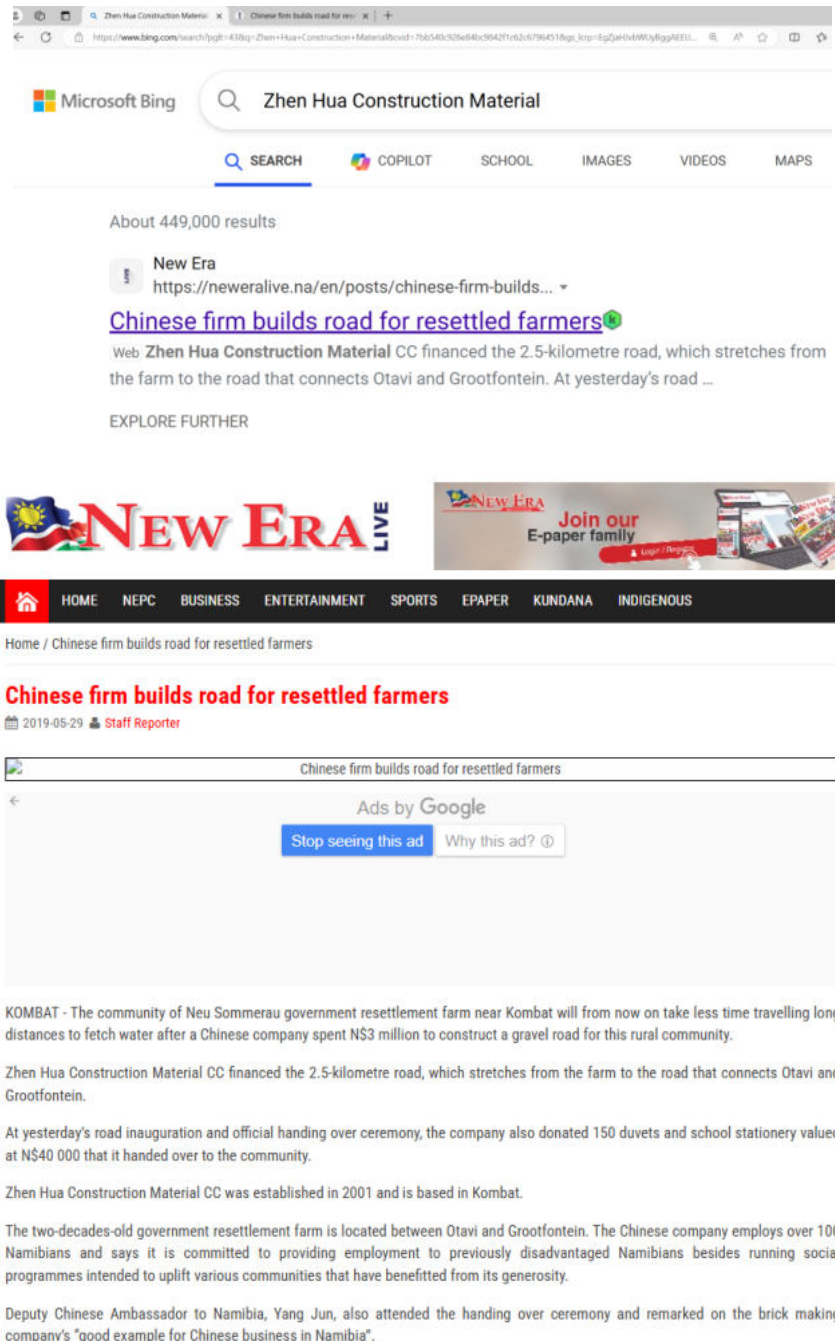


Figure 3: Positive public image of Zhen Hua Construction Material CC

4. Environmental Performance based on original impacts and mitigations

Based on the originally identified impacts and mitigation (Willemse, 2009), this section summarises the impacts and mitigations, and presents a snap short of the environmental performance based on the current site conditions as picked up during the inspection and interview with proponent which the Consultant conducted on 08 May 2024:

Table 4: Existing Impacts, Mitigations and Current status of implementation

Impacts and Activities	Rating	Mitigation measure	Current status
<u>Soils and Sediments:</u> Land clearance and excavation lead to topsoil being lost and habitat destruction	2	Develop management and development plan for entire operation to mitigate and prevent actions which cause this impact	Partly implemented <ul style="list-style-type: none"> 16.2 ha of land cleared and about 2 ha is covered by the mining area for clay
Disturbed area not rehabilitated immediately	1	Investigate feasible option for rehabilitation	Partly implemented <ul style="list-style-type: none"> Some area in a pit show progressive growth of grass Some plan in place but not written
Charcoal disposal	4	Find an area for temporal storage of charcoal storage area to prevent seepage	Implemented <ul style="list-style-type: none"> Charcoal is stored in open especially during dry season in bags at a designated area
<u>Air Pollution:</u> Baking of adobe in the kiln and earth moving equipment releases air emissions	4	No further action	Implemented as noted <ul style="list-style-type: none"> Mobile equipment such as front end loader, excavator as well as transportation trucks have schedules for routine maintenance service
<u>Underground water:</u> Abstraction of water from	4	<ul style="list-style-type: none"> No mitigation required, however should expansion 	Implemented Daily water consumption is measured in terms of how many 10 cubic meters

Impacts and Activities	Rating	Mitigation measure	Current status
onsite well and charcoal disposal		<p>plan become envisaged, water resource be assessed</p> <ul style="list-style-type: none"> • Precautionary principle to limit water • Clean up area and have dedicated storage for charcoal 	tanks. Estimated 2 tanks are used per day i.e. 20 cubic meters
<u>Vegetation:</u> land clearance of vegetation before excavation for clay	2	<ul style="list-style-type: none"> • Identify areas for future clearing in consultation with Forestry Department 	Implemented as noted No future plan to expand, however the original purpose of concerned land is for excavation or mining for clay and by intention forestry maybe not to interfere with the proponent
	1	<ul style="list-style-type: none"> • Develop management plan that lay out targeted areas for various activities 	Implemented Site establishment outlines area for mining, brick making process, accommodation facilities as well as other infrastructure all on already cleared land
<u>Habitats:</u> land vegetation clearance and excavation	2	<ul style="list-style-type: none"> • Investigate feasibility including implementation for rehabilitation of affected areas by excavation to control associated impacts • Plan for future expansion must incorporate effort to minimize impacts 	Partially implemented Current pit has maximum depth is about 5 meters, other areas are shallower. Some old excavated areas of the pit natural grasses have grown but these areas that naturally restored despite lowered original elevation are still potential for future clay extraction. Hence current focus was to make the pit safe for people or small animals such as ground squirrel not to be trapped

Impacts and Activities	Rating	Mitigation measure	Current status
<u>Human health and safety</u> : Charcoal disposal onsite	4	<ul style="list-style-type: none"> Clean up spilled charcoal and allocate a dedicated area for charcoal storage/disposal 	<p>Implemented</p> <p>Spent charcoal is stored or disposed onsite at a dedicated area</p> <ul style="list-style-type: none"> Note: this is not hazardous or harmful to humans but to improve aesthetic quality of the site
Baking adobes in kiln expose workers to smoke emissions	4	Consider PPE policy and enforce	<p>Implemented</p> <ul style="list-style-type: none"> All workers working near or in the kiln wear masks Administrative control in place to reduce workers exposure to smoke
Exposure to excessive smoke may lead to long term respiratory diseases	1	Consider PPE policy and enforce	Implemented
<u>Socio-economics</u> : Employment creation and contribution to livelihood, food security, access to basic services such as health, education and welfare	1	<ul style="list-style-type: none"> No mitigation required 	<p>Implemented</p> <p>This is a positive significant impact which need to be maintained and only change preferred is when there is improvement</p> <p>Currently the project employs 80 people and 95% of the workforce is Namibian</p>
<p>Rating:</p> <p>1 – Red: Major Impact 2 – Orange: Moderate Impact</p> <p>3 – Yellow: Minor Impact 4 – Green: Negligible Impact</p>			

5. Key Environmental Impacts (as reviewed and updated)

This section intends to list the updated existing key environmental and social impacts and review their significance. Below list the key environmental and social issues which are potentially present at the brick making operation site in Kombat:

- Relations with neighboring farms: Tracks of livestock seen on the project site of cattle jumping boundary fence from neighboring farm(s) into the project site attracted by un-grazed potential pasture since no livestock or game are kept onsite (**Impact 1**)
- Interaction with community – issue of HIV/AIDS: Workers at project site not only from the surrounding areas but also from anywhere in Namibia (**Impact 2**)
- Employment creation: (**Impact 3**)
- Air quality: Excavation and crushing are potentially source of dust emission and kiln may be source of smoke (**Impact 4**)
- Loss of fertile topsoil and sediments: Excavation to access clay material (**Impact 5**)
- Groundwater abstraction sustainability: two boreholes exist onsite and supply water to brick making processes as well as for human consumption (**Impact 6**)
- Biodiversity conservation – illegal hunting of birds and small mammals: The proponent constructed onsite accommodation for workers with one located in an undisturbed area within the project site/farm (**Impact 7**)
- Waste management: Domestic solid waste, domestic wastewater and potentially hydrocarbon contaminated soil and used oil are likely to be generated and handled onsite (**Impact 8**)
- Occupational exposure (health and safety at workplace): manual handling, smoke in the kiln and dust are some of the activities that have potential to expose workers (**Impact 9**)
- Heritage site and object: excavation has potential to unearth objects or sites e.g. graves or other objects of cultural and heritage significance which may not be known beforehand (**Impact 10**)

5.1 Environmental Impacts review approach

The review approach follows the general standard criteria for impact evaluation as presented below:

Table 5: Standard criteria for Impact evaluation

Criteria	Category
Impact	Description
Status	Positive, Neutral or Negative
Extent	Small (within operation project site), Medium (beyond operation project site) or Large (beyond project site boundary)
Duration	Planning, Execution/Operation or Closure/Post closure phase
Magnitude	Low, Medium or High
Likelihood	Unlikely, likely, Definitely
Confidence Level	Unsure/Low, Medium, or High
Significance	Low, Moderate, or High

5.2 Environmental and social impact significance review

Although some of existing impacts can easily be mitigated to low and or no significant, it is the approach of this environmental management plan that conditions may change over time and that all identified impacts are well document in order to keep track of the mitigations. Hence they are all presented as key impacts during operation phase of the project and also to keep records of them in order to serve as baseline for continuously improvements in environmental performance. It must be stated that the project nature did not change since it started in 2009, therefore the impacts would remain the same and perhaps only improvement would be change in better mitigation measures. Table 6 present a snapshot of review outcomes of the existing environmental socio-economic impacts in terms of significance against whether positive or negative. The impacts are represented by symbols as I1, I2, I3, etc. followed by a reference word relates to the impacts highlighted above. Table 6 present the review of the existing impacts:

Table 6: Review of existing environmental, socio-economic impact

Criteria	Category	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
Impact	Description	Relations	HIV/AIDS	Jobs	Air	topsoil	Groundwater	Biodiversity	Waste	Safety	Heritage
Status	Positive, Neutral or Negative	N	-Ve	+Ve	-Ve	-Ve	-Ve	-Ve	-Ve	-Ve	-Ve
Extent	Small, Medium (beyond operation project site) or Large (beyond project site boundary)	Large	Large	Large	Small	Small	Large	Medium	Medium	Small	Large
Duration	Planning, Execution,	E. Phase	E.Phase	E.Phase	E.Phase	C.Phase	E.Phase	E.Phase	C.Phase	E.Phase	E.Phase

	or closure										
Magnitude	Low, Medium or High	Low	High	High	Medium	High	High	Medium	Medium	High	High
Likelihood	Unlikely, likely, Definitely	Unlikely	Likely	Definitely	Likely	Definitely	Likely	Likely	Likely	Likely	Unlikely
Confidence Level	Low, Medium, or High	High	Medium	High	High	High	Medium	Medium	High	High	Medium
Significance	Low, Moderate, or High	Low	Moderate	High (+Ve)	Moderate	High	Moderate	Moderate	High	High	Low

From Table 6, it can be said that two of the existing impacts are low significant impacts (relations with neighbor and heritage object and sites), four impacts are moderate significant impacts (HIV/AIDS, air pollution, groundwater, biodiversity) and remaining 4 are highly significant impact which include one positive impacts which is associated with employment creation and three negative impacts relates to topsoil loss, waste pollution and safety of employees. Please note that the last row of the impact rating matrix presents the resultant impact rating and it is on this basis the above conclusion is made.

Page intentionally left blank!!

6. Environmental Management Plan (Tabulated)

For easy of reference during implementation, the specific mitigation actions are presented in a tabular form.

The tabulated EMP presents the impact theme or impact category as identified above and with their respective recommended mitigation actions. EMP in this format also extends to include or clarify the potential phase of the project in which the identified impact theme and actions are to take place. Further, EMP also present the estimated cost or rather provide for estimated cost of actions, the responsibility of the action, the indicator of action as well as the status of the action.

Please note and as common cause that EMP is a living document and information as cost and responsibility may change from time to time, hence this must not be taken as cast-in stone, hence information relates to cost would be left to the proponent to decide. Hence the EMP is outlined in this manner to help the proponent to work with easy when tracking the implementation of mitigation actions.

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
<u>Impact 1: Relations with neighbouring farms</u>						
<ul style="list-style-type: none"> Tracks of livestock seen on the project site of cattle jumping boundary fence from neighboring farm(s) into the project site possibly attracted by ungrazed potential pasture since no livestock or game are kept onsite Low significant impact 						
1.	Develop proactive engagement with farmers with livestock that jump into project site to make them aware of potential damage they can cause to property or potential loss they may incur should livestock fall in the pit	Execution/Operation	-	Operation Manager	<ul style="list-style-type: none"> - Complaint Register - Formal meeting conducted 	Ad hoc engagement
<u>Impact 2: Interaction with local community – issue of HIV/AIDS spreading</u>						
<ul style="list-style-type: none"> Workers at project site not only from the surrounding areas but also from anywhere in Namibia Interaction with the local community is critical with regards to the potential spread of HIV/AIDS as a recognized potential impact with any development project particularly involving migration of people from other regions or countries. Boost to the local economy also means increase in buying power as well as selling power which may also include phenomenon of increase in prostitution and sex trade. 						

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
<ul style="list-style-type: none"> • Moderate significant negative impact 						
2.	Develop awareness program for employees on the danger of HIV/AIDS, alcohol abuse and domestic violence related matter when interacting with local community or fellow employees	Execution / Operation	-	Human Resource	<ul style="list-style-type: none"> - Wellness induction and training conducted - Procedure to handle cases of sexual assaults 	Induction done but not specifically include HIV issues
<p><u>Impact 3: Employment, Skills Transfer and Other economic opportunities</u></p> <ul style="list-style-type: none"> • Development projects attract job seekers not only from local community but beyond • Also potential to support and boost local economy • High significant positive impact 						
3.	Develop a Recruitment Policy which favour Namibian and also have a certain % job opportunity reserved for locals	Planning	-	Human Resource	<ul style="list-style-type: none"> - Number of Locals employed - Ratio of employed locals from previously disadvantaged group (Affirmative Action) 	Implemented

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
4.	Procurement Policy – % commitment toward local market support (e.g. purchasing of food stuffs)	Execution/Operation	-	Sale Manager	<ul style="list-style-type: none"> - List of qualifying products which can be sourced locally - Monthly list of local products purchased 	Implemented
<p><u>Impact Theme 4: Air Quality</u></p> <ul style="list-style-type: none"> • Excavation and crusher has potential to emit dust • Truck driving on gravel access road have to potential to emit dust • Kiln has potential to emit smoke but very minimal • Moderate significant impact 						
5.	Explore and implement dust suppression system for excavation site	Planning/Operation	-	Operation Manager/Engineer		Partially implemented
6.	Implement Speed Limit of 20 km/h on access roads within drilling sites and or comply to speed limits on public farm roads	Operation	-	Operation Manager	<ul style="list-style-type: none"> - Speed tracking monitoring system installed - Penalties for non-compliance 	Implemented

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
7.	Dust suppression on the access roads	Execution/Operation	-	Operation Manager/Engineer	<ul style="list-style-type: none"> - Dust suppression method identified and approved - Dust suppression schedule developed - Schedule implemented 	Implemented
8.	Consider installation of dust bucket and monitor dust fallout	Execution/Operation	-	Operation/Engineer with help of consultant	<ul style="list-style-type: none"> - Siting of buckets completed - Buckets procured and installed - Samples collection schedule established - Samples send to the accredited laboratory and results used for communication updates with stakeholders 	-
<p><u>Impact 5: loss of fertile topsoil and sediments</u></p> <ul style="list-style-type: none"> • To access the clay material, excavation of topsoil and other sediments is done • Topsoil is highly fertile and when excavated without due care for storage, that is lost for ever 						

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
<ul style="list-style-type: none"> • Highly significant negative impact 						
9.	Where practical possible, top soil should be excavated and stockpiled to be used in progressive rehabilitation	Excavation during operation phase	-		<ul style="list-style-type: none"> - Register for stockpiles of topsoil developed - Induction with earth moving machine operator conducted 	Partially implemented
10.	Develop program to manage and protect stockpile of topsoil from wind and rainfall storm	Operation		Operation Manager	<ul style="list-style-type: none"> - Specific storage site identified which is not prone to erosion 	-
<p><u>Impact 6: Groundwater resource abstraction and conservation</u></p> <ul style="list-style-type: none"> • Two boreholes available onsite and serve as water source for brick making process as well human consumption • No flow meters in place to measure the actual rate of water abstraction and use, however quantity of water is currently estimated using capacity of the holding tanks. It is estimated that 20 cubic meters of water is abstracted per day for both operation and human use • Boreholes have depth up to 150 meters according to available oral information • The project site fall within the zone of what is known as maize triangle, notion associated with abundance of groundwater resources • Moderate significant negative impact 						

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
11.	Install a flow meter on all borehole pumps to accurately start measuring abstraction rates	Operation	-	Operation Manager /Engineer	<ul style="list-style-type: none"> - Name of borehole/well/line - Permit or agreement in place 	Partly implemented (estimation)
12.	Once abstraction rate are determined through a flow meter, confirm if quantity exceed the national threshold which require abstraction permit as per new water resource management regulations August 2023	Planning/Operation		Operation Manager and advised by consultant	<ul style="list-style-type: none"> - Actual abstraction rates are known - Compared to regulatory threshold - Action accordingly 	-
13.	Water monitoring program to test water for E.coli and hydrocarbon contaminants (reference to fact that domestic wastewater is handled onsite via french drains and soak pit)	Operation	-	Operation Manager and advised by consultant	<ul style="list-style-type: none"> - Water sampling program developed - Agreement with external lab in place - Water quality report part of agenda for important operational and management meetings 	Implemented Ministry of Health (Grootfontein Office) conduct water sampling for public health

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
						surveillance
<p><u>Impact 7: Biodiversity conservation – illegal hunting of birds and small mammals</u></p> <ul style="list-style-type: none"> The proponent constructed onsite accommodation for workers with one located in an undisturbed area within the project site/farm Hunting of wild birds and small mammals is part of cultural practice and many people may forget that now there is a law protecting this wildlife Moderate significant negative impact <i>Note: Disturbance to natural habitat in the project site is inevitable as the project site was duly registered for brick making operation, hence this impact was already caused during the planning phase of the project (purchasing and registering the land for such purpose), hence was not part of the risk rating</i> 						
14.	Develop and implement biodiversity policy by incorporating this into work related offences just same as stealing from employer	Operation	-	Human Resource	- Induction incorporate biodiversity aspect and offences explained to workers - Record of disciplinary case involving biodiversity offenses	-
15.	Disturbance to protected plants and trees should be considered and consider relocating plants to	Operation	-	Operation Manager	- Damage to protected plant/tree is reportable and recognised incident	-

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
	the nearby nursery or obtain guidance from Forestry (optional)				Guidance obtained for removal of protected species	
Impact 8: Waste Management						
<ul style="list-style-type: none"> Domestic solid waste, domestic wastewater and potentially hydrocarbon contaminated soil and used oil are likely to be generated and handled onsite Diesel tank available onsite which was permitted by Mines and Energy Ministry – Consumer installation certificate available Workshop for machines Highly significant negative impact 						
16.	Install waste segregation bins for solid waste and encourage reduce, reuse, collect waste for recycling	Planning/Operation	-	Operation manager	- Number of bins installed - Incorporate waste segregation in induction and safety talks	Partially implemented
17.	Develop waste removal schedule based on the quantity and type	Operation	-	Operation Manager	- Waste removal schedule - Compliance checklist	Implemented
18.	Identify waste recyclers and reach agreement for the receipt of recyclables (when applicable)	Operation	-	Operation Manager	- Name of facility - Agreement /Consent	-

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
19.	Identify approved disposal site and reach agreement for offsite disposal	Planning/Operation	-	Operation Manager	- Name of facility - Agreement/Consent	Implemented
20.	Establish waste accounting method and maintain records of waste generated onsite	Operation	-	Operation Manager	- Waste database - Disposal Certificates file	-
21.	Develop hydrocarbon spill procedure to guide the clean up during a spill incident at the consumer diesel tank and workshops	Operation	-	Operation Manager (this can be delegated to HSE Worker's representative or a safety representative)	- Hydrocarbon storage container inspection checklist - Hydrocarbon spill response procedure in place - Workers trained on it	-
22.	Install sanitary ablution facility with adequate removal schedule to prevent bacterial contamination of soil and water: Consider septic tanks and separate	Planning/Operation	-	Operation Manager/Engineer and assistance from consultant	- Improvement implemented - Contract with waste removal or insourced service	Partially implemented

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
	shower water from toilet pot water and manage separately through emptying and disposal at approved oxidation pond or via insitu treatment methods					
<u>Impact 9: Occupational Exposure – health and safety at workplace</u>						
<ul style="list-style-type: none"> • Manual handling, smoke in the kiln and dust emission are some of the activities that have potential to expose workers to hazards • While the likelihood may be low to medium, any injury to work or occupational health related is a serious matter with regard to labour law • Highly significant negative impact 						
23.	Appoint Safety Representative	Operation	-	Human Resource	- Certificate/letter of appointment accepted	-
24.	Develop Safety Induction Program	Operation	-		- Attendance register maintained	Implemented
25.	Develop Standard Operating Procedures (SOPs) for each work package or activity	Operation	-		- List of SOPs	-

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
26.	Conduct HIRA – Hazard Incident and Risk Assessment on all critical work	Operation	-	Operation Manager	- HIRA	-
27.	Develop a culture of toolbox talks and share with the team before work commence	Operation	-	Operation Manager	- Number of toolbox talks on: safety; environment; Health/Hygiene	Partially implemented
28.	Establish and maintain minimum PPEs requirement for each work package /area	Operation	-	Operation Manager	- PPEs purchased and issued to employees and visitors	Implemented
29.	Establish Employee wellness program to help boost employee concentration at work: - Mental Health information - Financial education - Health lifestyle etc.	Operation	-	Human Resource	- Number of sessions held ove	-
30.	Develop safety policy for	Plannning/opera	-	Operation Manager	- Scanning Checklist for	-

No.	Action	Project Phase/Activity	Cost Estimate (N\$)	Responsibility	Indicator/Result	Implementation Status
	excavation and digging which include requirement for scanning the area	tion			underground live cables, mines etc.	
<u>Impact 10: Cultural, Traditions, Customs and Heritage Resources</u>						
<ul style="list-style-type: none"> Excavation has potential to unearth objects or sites e.g. graves or other objects of cultural and heritage significance which may not be known before hand Low significant negative impact 						
31.	Report any object or place of heritage importance to any nearby head of traditional community or national heritage council	Operation	-	Operation Manager	- No records of violation of traditions and customs	Implemented
32.	Avoid damage to site or object of cultural or heritage significance	Operation	-	Operation	- No record of illegal possession cultural or heritage objects	Implemented

7. Monitoring and Evaluation

The implementation of mitigation actions and achievements of respective indicators as highlighted in the EMP (Tabulated) should be monitored from time to time, to ensure effective and timely implementation. The status of implementation will be used to indicate the baseline of an action and to be the basis of decision on how and when to fill the gap in the implementation of EMP Actions. Records of deviations also need to be established and Targets for improvements should be set in order to ensure key environmental and social issues whether negative or positive are addressed on a continuous basis.

It is important to note that EMP is a living document in the sense that it will require to be reviewed, updated and or amended as new environmental, social and or project information are becoming available as well as due to other factors such as change in policies, new regulatory guidelines and new technology. Hence this section is very critical and responsibility lies with the management of Zhen Hua Construction Material CC, to ensure that the EMP is up to date.

8. Conclusion and Recommendation

This is a comprehensive EMP which includes a re-evaluation of existing environmental and socio-economic impacts of the brick making operation in Kombat. A total of 10 key impacts have been identified as existing impact and accordingly mitigation measures are recommended for each of the impacts which resulted in a total of 32 mitigation actions. Only two of the impacts were found to be significantly low and these were relates to relations with neighboring farms and cultural heritage of objects and sites. Four of impacts were found to be significantly moderate and these were related to biodiversity, HIV/AIDS, groundwater abstraction sustainability and air pollution. The remainder four of the impacts were found to be highly significant, these relates to topsoil loss, employee safety, waste management as well as employment creation including support to local economy which was the only positive impact of the project however with high magnitude as the company has employed about 90 employees of which 95% are Namibians.

The EMP has considered and covered sufficient environmental and socio-economic aspects which according to expert opinion are adequate for the management of potential impacts associated with this existing brick making operation in Kombat.

Therefore, it is recommended that this EMP and the relevant renewal application for environmental clearance certificate be considered as adequate for the ultimate issuance of the Environmental Clearance Certificate for Existing Brick Making Operation of Zhen Hua Construction Material CC, Kombat, Otjozondjupa Region, Namibia.

9. Reference

Act and Regulations

- a) Namibia Constitutional Act 1 of 1990
- b) Environmental Management Act 7 of 2007
- c) Environmental Management Regulations of 6 February 2012
- d) Water Resource Management Act 11 of 2013
- e) Water Resource Management Regulation August 2023
- f) Petroleum Act 13 of 1990
- g) National Heritage Act 27 of 2004
- h) Mineral (Prospecting and Mining) Act 33 of 1992
- i) Agricultural (Commercial) Land Reform Act 6 of 1995
- j) Soil Conservation Act 76 of 1969
- k) Atmospheric Pollution Prevention Ordinance 11 of 1976
- l) HIV/AIDS and Gender Mainstreaming into EIA: Specific guidelines for Namibia – 2016
(not a law but a policy)
- m) Labour Act 11 of 2007
- n) National Solid Waste Management Strategy 2018
- o) Forestry Act No.12 of 2001
- p) Public and Environmental Health Management Act No.1 of 2015

Original EIA/EMP Report

- q) Environmental Impact Assessment (EIA) and Environmental Management Plan for The Brick Making Operation of Zhen Hua Construction Material CC, Kombat, Otjozondjupa, prepared by Versatile Environmental Consulting (Versacon) CC, 25 March 2009

Annex 1: Environmental Clearance dated 24 April 2009

Annex 2: Consumer Installation Certificate for Diesel

Annex 3: Background Information Document

Annex 4: Interested and Affected Party (I&AP) Complaint Register

Annex 5: EAP Curriculum Vitae



Republic of Namibia

MINISTRY OF ENVIRONMENT AND TOURISM

Enquiries: Dr. F.M. Sikabongo
Tel.: 00264 61 249015
Fax: 00264 61 240339
freddy@dea.met.gov.na

FGI Building, 1st Floor
Post Street Mall
P/Bag 13346
Windhoek

OFFICE OF THE PERMANENT SECRETARY

The Managing Director
Zhen Hua Construction Materials CC
c/o Versacon Consulting
P.O. Box 17
Windhoek, Namibia

Tel.: 00264 61 306 329

Dear Sir,

Re: Environmental Clearance for the Brick Making Operation of Zhen Hua Construction Materials CC, Kombat, Otjozondjupa Region

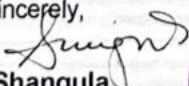
Thank you for your submission of the Environmental Assessment and Management Plan for the above-mentioned project. The assessment done is considered sufficient as it takes into account the key environmental issues concerning the proposed activities. It is recommended that once the project is implemented, regular environmental monitoring and possible improvements, should be conducted.

In view of the fact that the abovementioned project is located within an environmentally sensitive area, the Ministry of Environment and Tourism reserves the right to attach further legislative and regulatory conditions during the operational phase of the project. We further advise that all key stakeholders must be properly consulted prior to any construction activities.

On the basis of the above, this letter serves as an Environmental Clearance for the project to proceed. However, it is important to note that this Environmental Clearance only becomes valid when the applicant is in possession of a valid prospecting license issued by the Ministry of Mines and Energy, in consultation with the Ministry of Environment and Tourism.

Thank you once again for your kind co-operation.

Yours sincerely,


Dr. K. Shangula
Permanent Secretary



All official correspondence must be addressed to the Permanent Secretary

DUPLICATE



MINISTRY OF MINES AND ENERGY

PETROLEUM PRODUCTS AND ENERGY ACT, 1990
PETROLEUM PRODUCTS REGULATIONS (2000)


CONSUMER INSTALLATION CERTIFICATE

[Regulation 18 (5)]

CON/OT/10/0074

CONSUMER INSTALLATION CERTIFICATE		PERMANENT* <input checked="" type="checkbox"/>	PETROL* <input type="checkbox"/>	Certificate No.
		TEMPORARY* <input type="checkbox"/>	DIESEL* <input checked="" type="checkbox"/>	CI/2346/2009
Name of certificate-holder		Zhen Hua Construction Material CC		
Address of certificate-holder		Physical address	Postal address	
		Ongopolo Mines Kombat	Box 96 Kombat	
Nature of activity to which certificate relates*	Commercial/ Industrial Undertaking <input checked="" type="checkbox"/>	Farming Operation <input type="checkbox"/>	Mining Operation <input type="checkbox"/>	
If storage tank is to be permanently installed, location of site		Ongopolo Mines Kombat		
Conditions applicable to Certificate <i>See next page for general and special conditions applicable to licence.</i>				
Date of issue of certificate		25 February 2009		
In the case of a temporary licence, period of validity		N/A		
Issued by the Minister of Mines and Energy in terms of regulation 18(5), on		at		
Windhoek		25 February 2009		
 Minister: Mines and Energy				

* Mark the appropriate item

PERSONAL INFORMATION	Kanime, Abraham Iitembu
	<p>  Togreen Consulting CC, Erf 7427, Ongwediva, Oshana Region, Namibia  N/A  +264 81 854 4510  Togreen.consulting@gmail.com </p> <p>Date of birth 24.10.1980.</p>
PART-TIME POSITION	Environmental Assessment Practitioner (EAP) and Waste/Pollution Technical Advisor
FULL-TIME POSITION	Superintendent Assurance and Compliance at Dundee Precious Metal Tsumeb (Pty) Ltd
WORK EXPERIENCE	<ul style="list-style-type: none"> • Currently employed within the Department of Environmental Social and Governance responsible for waste management, environmental licensing and permitting as well as assurance and compliance over the past 7 years • Previous worked as Senior Conservation Scientist for Waste Management and Pollution Control as well as Environmental Engineer within the Ministry of Environment, Tourism and Forestry – policy advise related positions on the waste management, pollution control, environmental quality management and quiet involved with EIAs/EMP reviews as well as inspections • Also worked for National Marine Information and Research Centre as Assistant Biologist responsible for demersal fishery research • Also worked as a teacher, survey enumerator as well as assistant quality controller onboard fishing vessels in Namibian water • Therefore, have combined work experience of more than 14 years in the field of natural resource management including environmental policy advisory, planning, implementation, monitoring and enforcement: <ul style="list-style-type: none"> ✓ Marine and freshwater aquatic research ✓ Environmental Impact Assessment review and advise covering listed activities including infrastructures development projects as per Environmental Management Act 2007 and its Regulations 2012 ✓ Waste Management Planning, Concept Design and Implementation ✓ Environmental Inspection and Auditing ✓ Environmental Monitoring, Data Interpretation/Reporting ✓ Sustainability Data Reporting ✓ Stakeholder Engagement and awareness ✓ Participation in climate change mitigations and adaptation discussions
EDUCATION AND TRAINING	<ul style="list-style-type: none"> • Master Degree in Environmental Engineering – China University of Geosciences - School of Environmental Studies, Wuhan, Hubei Province, PR China, (2012) <ul style="list-style-type: none"> - Thesis: Water Environmental Quality Assessment for tracing non-point pollution sources including treatment of fluoride in contaminated groundwater samples using anion clay • Bachelor of Science in Natural Resources specializing in Fisheries and Aquatic

	<p>Sciences, University of Namibia, Windhoek (2008), and research project was on sustainable fishery management of Olushandja Lake through Management approach to Natural Resource Management</p> <ul style="list-style-type: none"> • Some of training and short courses attended: <ul style="list-style-type: none"> - ISO 14001:2015 – Environmental Management System Requirement and Implementation (BSI Training Academy, 2021) - Hazard and Operability Study – Techniques (ISHEcon Chemical Process Safety Engineers, 2017) - Namibian Environmental Management in Mining with a focus on EMA 2007 (Polytechnic of Namibia now NUST, 2013) - Safety and Environmental Induction - Environmental quality monitoring technique as well as urban and industrial wastewater treatment technology, which was completed with Centre of Environment, New Delhi, India, November 2014
<p>PROFESSIONAL PROFILE AND EXPERTISE</p>	<p><u>Activities:</u></p> <ul style="list-style-type: none"> • Develop criteria for waste facility design and development • Siting of landfill and other waste management facilities • Environmental impact assessment execution, review and related stakeholder engagement • Mentor environmental graduates and interns on environmental best practices • Member of the Advisory Committee for Environmental Health Programme for Namibia University of Science and Technology committee (note: membership lapsed in 2021) • Professional speaker at Sustainable Waste Management Summits and Conference (Latest was in August 2022 organised by Pelgea Group at Safari Hotel) • Experience with participation at environmental regulatory forums and workshops <p><u>Current functions:</u></p> <ul style="list-style-type: none"> • Coordinate waste management planning onsite the smelter • Develop waste management plans and procedures • Environmental technical inputs to design, construction and operation of waste facilities including closure • Advisory on regulatory compliance and keep update with new regulatory change and development • Maintaining Permitting and Regulatory reporting • Liaison with environmental related government ministries and departments • Serve as technical advisor for waste management and pollution control as well as environmental impact assessment including stakeholder engagement, which is function on part-time basis with Togreen Consulting CC <p><u>Professional interests:</u></p> <ul style="list-style-type: none"> • Circular Economy and Integrated Waste Management Planning and Implementation • Non-point pollution source and mitigations • Sustainability Reporting • Environmental data analysis and correlation • Human behavior shift toward concept of circular economy, waste management

	<p>hierarchy and realization of true meaning of climate change mitigation and adaptation</p> <ul style="list-style-type: none"> • Environmental law and other legal matters
RELEVANT PUBLICATIONS AND EIA/EMP CONDUCTED/INVOLVED	<ul style="list-style-type: none"> • Co-authored a research paper on comparison of ontogenetic trophic shift in two hake species <i>Merluccius capensis</i> and <i>Merluccius paradoxus</i> from Benguela Current Ecosystem (Namibia) using stable isotopes analysis (published in <i>Fisheries Oceanography</i> 21:2-3, 215-225, 2012) – Note: this paper contributes to ecological approaches knowledge to fisheries management
	<ul style="list-style-type: none"> • Environmental and Social Management Plan for Victoria Car Rental & Tours, Windhoek, Khomas Region. Client: Mr. Erastus Ndjalo. Date Completed: February 2018 – This was purpose of Development Bank funding application
	<ul style="list-style-type: none"> • Environmental Management Plan for Oshana Park – existing hospitality facility, Omaalala, Oshana Region. Client: Mr. John Helao. Date Completed: February 2017 • Training Manual (English and Oshikwanyama versions) for a Community Recycling Project, Omusati Region. Client: Liyufa Komalombwelo Support Group; Date Completed: July 2016. • EIA/EMP for Water infrastructure update including construction of pollution control dam for smelter, 2019 (Coordinated and report quality review from proponent side) • ESIA and Consolidated EMP for Smelter Expansion Project (report quality review from proponent side)
	<ul style="list-style-type: none"> • Have technically reviewed more than 150 EIA/EMP for application of environmental clearance the time was working for Office of Environmental Commissioner
	<ul style="list-style-type: none"> • Also conducted regulatory inspection at environmental incident site and project sites and compiled various environmental inspection reports, time was with Office of Environmental Commissioner
ROLE IN THIS ASSIGNMENT	<ul style="list-style-type: none"> • Environmental Assessment Practitioner (EAP)

End.