

Environmental Management Plan (EMP)

**The Proposed Construction and Operation of the
Ewerakarukua Private Hospital Located in Extension 7,
Okahandja, Otjozondjupa Region**

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1 INTRODUCTION

1.1 Project Background

Cathral Investment Forty-One (Pty) Ltd (The Proponent), plans to construct and operate the Ewerakarukua Private Hospital at Extension 7, Okahandja in the Otjozondjupa Region. The proposed development is situated within portion 437 (Farm 437) (**coordinates: -21.989395, 16.907520**) of the remainder of consolidated farm in the Okahandja Townlands No. 227 (**Figure 1**); and covers a 4.5 ha piece of land. The Ewerakarukua Private hospital will cater for hospital shortages in the Okahandja area, and provide high quality medical services to patients and contribute to the United Nation's Sustainable Development Goal (SDG 3).

Hospitals and health facilities are part of the listed activities that may not be undertaken without an Environmental Clearance Certificate (ECC). Thus, the proposed private hospital development requires an ECC to be issued by the Ministry of Environment, Forestry and Tourism (MEFT).

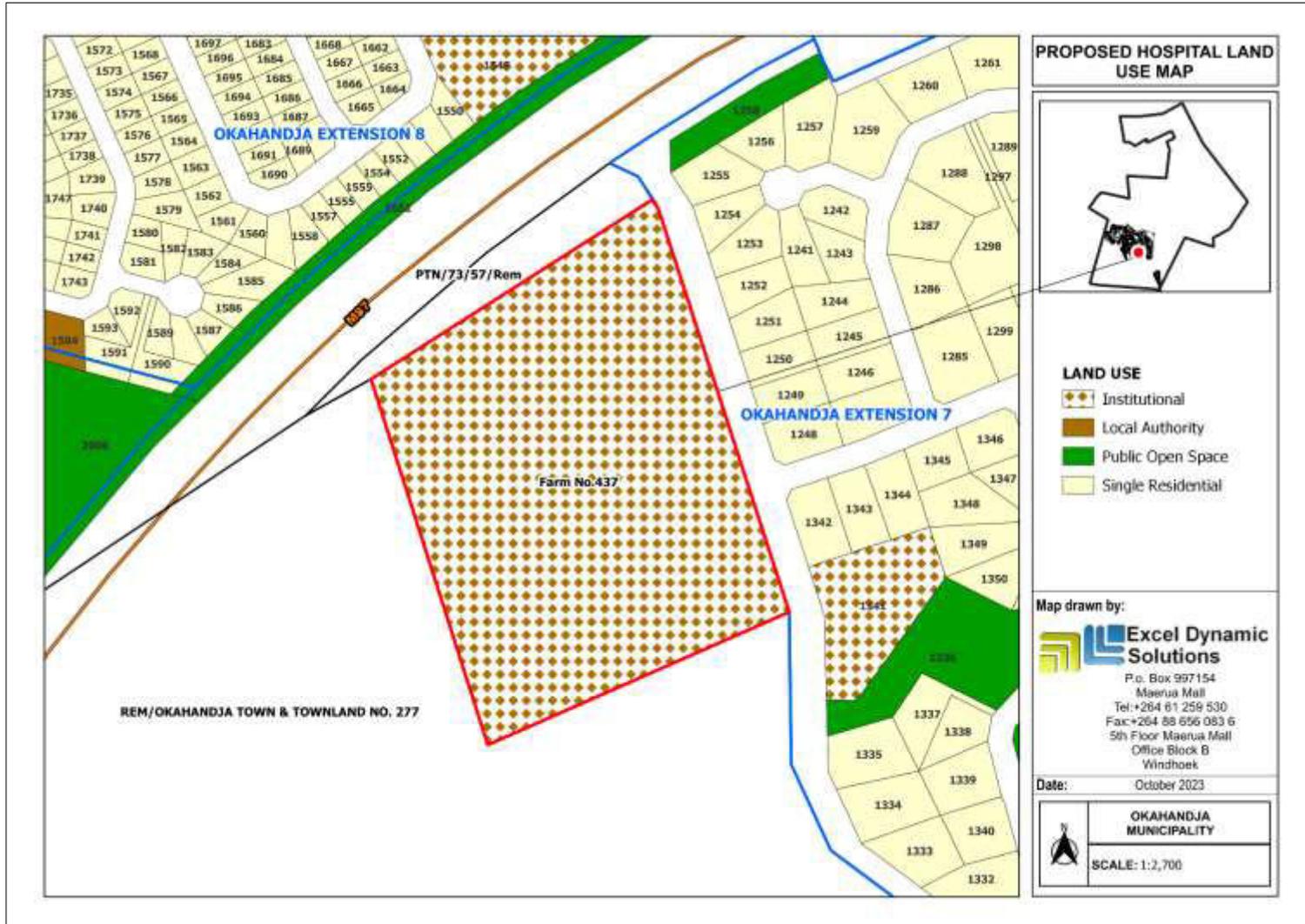


Figure 1: Locality map of the proposed project located within Farm 437

In terms of the Namibian Environmental Management Act (EMA) No. 07 of 2007, Section 27 (2j), Government Notice No. 29, Section 6 and Government Notice No. 30, the proposed project constitutes a number of listed activities that require an ECC from the Department of Environmental Affairs (DEAF) of MEFT. The relevant listed activities as per EIA regulations are:

- *The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorization in term of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.*
- *The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.*
- *The construction of facilities for waste sites, treatment of waste and disposal of waste.*

This statutory document has been prepared as per requirement in accordance with Section 8 of the EMA (No. 7 of 2007). The compilation of this EMP is one of the requirements (scope of work) presented to Excel Dynamic Solutions (Pty) Ltd by The Proponent. It is required of the Environmental Consultant to comply with the EMA and provide for the following:

- Prepare an explicit Environmental Management Plan to be used as a guideline to monitor compliance to the recommendations stipulated in the EIA and to assist in managing and monitoring activities throughout the construction and operation of the proposed development.
- The Environmental Consultant must clearly elucidate in the EMP the roles and responsibilities of the Proponent, the contractors, and any other identified stakeholders.

1.2 Aim of the Draft Environmental Management (EMP)

Regulation 8(j) of the EIA Regulations (2012) requires that a draft Environmental Management Plan (EMP) shall be included as part of the Environmental Assessment (EA). A '**Management Plan**' is defined as:

"...a plan that describes how activities that may have significant environments effects on the environment are to be mitigated, controlled and monitored."

An EMP is one of the most important outputs of the EA process as it synthesizes all the proposed management & mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. It provides a link between the impacts identified in the EA process and the required mitigation measures to be implemented during the construction and operational phase of the proposed development.

It is important to note that an EMP is a statutory document and a person who contravenes the provisions of this EMP may face imprisonment and/or a fine. This EMP is a living document and can be amended to adapt to address project changes and/or environmental conditions and feedback from compliance monitoring.

The purpose of this Draft EMP is to ensure that the proposed project activities are undertaken in an environmentally friendly and sustainably manner. This would be done through the effective implementation of recommended environmental management and mitigation measures contained in the EMP, for which the aim is to avoid and or minimize the adverse identified impacts while maximizing the positive impacts.

1.3 Appointed Environmental Assessment Practitioner

To fulfil the requirements of the EMA and its 2012 EIA Regulations, The Proponent appointed Excel Dynamic Solutions (Pty) Ltd (EDS), an independent consulting company to conduct the required EA process on their (Proponent's) behalf. This draft EMP will be submitted as part of an application for the proposed development to the Environmental Commissioner at the Department of Environmental Affairs and Forestry (DEAF), at the Ministry of Environment, Forestry and Tourism (MEFT).

2 Legal Obligations governing the proposed activities

Upon the issuance of the ECC and obtaining any other necessary and required documentations, the Proponent will then prepare for the construction of the proposed development and then operational phase. The associated project activities will have some potential impacts, particularly the negative ones for which the Draft EMP has been developed.

The construction and operation of the proposed development and its associated activities will be required to adhere to certain local, regional, national and international legal framework (as detailed in the Scoping Report). The legal requirements provided in the Draft EMP are these in terms of permitting/ licensing, i.e., permits or licensing that the Proponent will need to obtain prior to commencing with the construction, operations and or renewal of permits throughout the

operational phase of the proposed development. These legal requirements are provided under **Table 1** below.

Table 1: Applicable legal requirements and permits to the activities of the proposed development

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). Details principles which are to guide all EIAs.	The EMA and its regulations should inform and guide this EA process. Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue. Contact details at the Department of Environmental Affairs and Forestry (DEAF),
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	The EMA and its regulations should inform and guide this EA process. Should the ECC be issued to the Proponent, it should be renewed every 3 years, counting from the date of issue. Contact details at the Department of Environmental Affairs and Forestry (DEAF), Ministry of Environment and Tourism (MET)
Environmental Management Act (EMA) No. 7 of 2007	The Act requires that projects with significant environmental impacts are subject to an environmental assessment process (Section 27). The Act details principles which are to guide all EAs.	Tel: +264 61 284 2701
Forestry Act 12 of 2001, Amended Act 13 of 2005	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.	Should there be protected plant species, which are known to occur within the project site, these are required to be removed and a permit should be obtained from the nearest Forestry office (Ministry of Environment, Forestry and Tourism (MEFT)) prior to removing them.

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
		Tel: +264 61 208 7320
National Heritage Act No. 76 of 1969	The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration, or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment. Should any objects of heritage significance be identified during the site clearing and excavations, the work must cease immediately in the affected site and the necessary steps taken to seek authorisation from the Council.	Should any archaeological material, such as bones, old weapons/equipment, etc., be found on the site, work should stop immediately, and the National Heritage Council of Namibia must be informed as soon as possible. The Heritage Council will then decide to clear the area or decide to conserve the site or material. Contact Details at National Heritage Council of Namibia Tel:(061) 301 903/ Tel: (06) 301 903
The National Monuments Act No. 28 of 1969	The Act enables the proclamation of national monuments and protects archaeological sites	

Legislation/Policy/ Guideline	Relevant Provisions	Implications for this project
Atomic Energy and Radiation Protection Act o. 5 of 2005	The Proponent should ensure that they have applied for and obtained all the required licenses for operating radiation equipments in accordance with the Non-ionising Radiation Regulations (2019)	For the determination of possible exposure, the Proponent should consult with the Ministry of Health and Social Services' National Radiation Protection Authority. Tel.: 061 203 2417/ 061 203 2415
"Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300GHz)" (April 1998 developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)).	To determine the "safe distance" in the hospital. These provisions justify the need for assessing the impact of electromagnetic radiation from the antennae, on the nearby residents.	

3 Draft EMP Limitations

This EMP has been drafted with the acknowledgment of the following limitations:

- This EMP has been drafted based on the Environmental Assessment (EA) conducted for the proposed development.
- The mitigation measures recommended in this EMP document are based on the risks/impacts in the ESA Report which were identified based on the project description as provided by the Proponent, site investigation and public input. Should the scope of the proposed project change, the risks/impacts will have to be reassessed and mitigation measures provided accordingly.

4 EMP ROLES AND RESPONSIBILITIES

The Proponent is ultimately responsible for the implementation of the EMP. However, the Proponent may delegate this responsibility at any time, as they deem necessary during the project phases. The roles and responsibilities of all delegates/parties involved in the effective implementation of this EMP are set out below:

4.1 Competent Monitoring Authority: Department of Environmental Affairs and Forestry (DEAF, MEFT))

The DEAF, MEFT as the environmental custodian is responsible for enforcing compliance with the EMA, it's regulations and full implementation of this EMP. The authority is also responsible for the reviewing of bi-annual reports submitted by the Proponent and grant ECC renewal after 3 years.

4.2 Project Manager

The site manager will be responsible for ensuring that project activities are completed on time, efficiently and sustainably. The manager's duties and responsibilities will include:

- Maintain records of all relevant environmental documentation for the project
- Ensure that relevant commitments contained in the EMP action plan are adhered to.
- Ensure that relevant staff is trained in procedures entailed in their duties
- Through consultations and cooperation with the ECO/SHE officer, issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site.
- Identifying and appointing of appropriately qualified specialists to undertake the project in a timeous manner and to acceptable standards.
- Ensuring compliance with relevant environmental and related authorizations and license conditions.
- Cooperate with all relevant interested and effected parties/stakeholders
- Development and management of schedules for daily activities in compliance with the EMP.

4.3 Safety, Health and Environmental (SHE) or Environmental Control Officer (ECO)

The Proponent may assign the responsibility of ensuring EMP compliance throughout the project cycle to a designated member of staff or external qualified and experienced person, referred to in this EMP as the ECO or SHE officer. The ECO/SHE officer will have the following responsibilities:

- Planning and carrying out site inductions to the workers on-site and visitors to the work area of the site.
- Ensure that relevant commitments contained in the EMP Action Plans are adhered to.

- Maintain records of all relevant environmental documentation for the project.
- Management and facilitation of communication between the Proponent, and stakeholders regarding this EMP.
- Reviewing the EMP annually and amending the document when necessary.
- Conducting site inspections (recommended frequency is monthly during the construction phase and bi-annually for the operation and maintenance) of all areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP).
- Making recommendations to the Proponent with respect to the issuing of fines for contraventions of the EMP.
- Advising the Proponent on the removal of person and/ or equipment not complying with the provisions of this EMP.
- Undertaking an annual review of the EMP and recommending additions and/or changes to this document (EMP).

4.4 Construction Contractor

The Contractor's representative or site supervisors (as appropriate) will be required to:

- Maintain records of all relevant environmental documentation applicable to their work
- Ensuring that the relevant commitments contained in the EMP Action Plans are adhered to.
- Ensure that all relevant staff are trained in procedures.
- Compile relevant procedures and method statement for approval by the applicable phase site manager prior to initiation of project activities on the site.

Archaeology: Chance Finds Procedure (CFP) Implementation Roles

The following personnel have been assigned responsibilities as per the Chance Finds procedure (Appendix 1):

- **Operator:** To exercise due caution if archaeology remains are found.
- **Foreman:** To secure site and advise management timeously.
- **Superintendent:** To determine safe working boundary and request inspection.
- **Archaeologist:** To inspect, identify, advice management, and recover remains.

The Proponent should assess these commitments in detail and should acknowledge their obligation to the specific management actions detailed in the Tables under the following sections.

5 ENVIRONMENTAL MANAGEMENT & MITIGATION MEASURES

The Environmental management and mitigations measures (management plan) provided to the potential adverse impacts associated with the proposed project and its activities are presented under this chapter. The aim of these actions is to avoid these potential impacts where possible, and where impacts cannot be avoided, measures are provided to reduce the impacts significance (as presented under the impacts' assessment chapter of the Assessment Report).

5.1 Management of Key Potential Adverse Environmental Impacts

From the assessment conducted, the following key potential negative impacts have been identified and are summarized below:

- Land degradation and Biodiversity Loss
- Generation of dust
- Water Resources Use
- Soil & Water Resources Pollution
- Waste Generation
- Occupational Health & Safety risks
- Vehicular Traffic Use & Safety
- Noise & Vibrations
- Archaeological or cultural heritage impact
- Impacts to Human Health: Radiation

5.2 The Management and Mitigation of Potential Key Negative Impacts

The management and mitigation measures (action plans) for the potential adverse impacts are presented in **Table 2** for the pre-development, construction, and operational phase. There will be some overlaps with regards to some potential impacts' occurrence during the construction and operational phases, therefore potential impacts have not been separated for these project phases.

The required management and mitigation plan actions have been presented together with key performance indicators, responsible person(s), resources and the timeline of such actions. These aspects form the headings of **Table 2**, and they are as follows:

- Environmental aspect and issues for which management actions are required.
- Proposed impact mitigation measures.
- Key performance indicator (KPI) for monitoring success levels of management actions.
- Responsible person(s) for implementing the proposed management actions.
- Resources required for implementing management actions and monitoring
- Implementation timeframes for the proposed management actions.

Table 2: Management and mitigation action plans for the pre-development and construction phases

Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
PRE-DEVELOPMENT PHASE						
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>-A Comprehensive Health and Safety Plan for the project activities should be compiled. This will include all the necessary health, safety, and environmental considerations applicable to respective works on sites.</p> <p>-An EMP non-compliance penalty system should be implemented on site.</p> <p>-The Proponent should appoint an ECO to be responsible for managing the EMP implementation and monitoring.</p>	<p>-All required Plans and systems are compiled and in place and Environmental Control Officer (ECO) is appointed</p>	Proponent	<p>-EMP implementation Plans and Systems</p> <p>- Identification of all persons involved in the implementation of the EMP.</p>	Pre-development works
Authorizations	Lack of Permits/ Licenses	<p>-All the required agreements and licenses or permits should be applied for and signed, respectively before commencement of work on the site, or as required.</p> <p>-The permits, agreements referred to herein include:</p> <ul style="list-style-type: none"> o Obtaining of an ECC for the proposed project 	<p>-Applicable permits and licenses to be obtained from relevant authorities and kept on site for records keeping and future inspections.</p> <p>-Agreements/permits signed and obtained from on time, min. 2 months prior to</p>	Proponent	<p>Proponent</p> <p>Respective authorities and services provider(s)</p>	Prior to construction works

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<ul style="list-style-type: none"> ○ waste management disposal permits from the relevant facility of City of Windhoek. ○ Water supply agreements. ○ Onsite fuel storage permit from MME for any petroleum stored onsite. 	<p>construction commencement date of works.</p>			
<p>Communication between the Proponent and other neighbouring land users and custodians</p>	<p>Lack of communication (proper liaison) between other land users and Proponent with regards to land use</p>	<p>-The Proponent should appoint a Public Relation Officer (PRO) to liaise with the land users.</p> <p>-A clear communication procedure/plan which should include a grievance mechanism.</p>	<p>A PRO is appointed</p> <p>-Ongoing Stakeholder's Consultation throughout the project cycles, when and as required.</p> <p>PRO contact details to be provided to the affected landowners</p>	<p>Proponent</p>	<p>PRO</p> <p>Complaint's logbook</p>	<p>PRO appointment (Prior to project activities) and their responsibilities throughout the project activities</p>
<p>Employment</p>	<p>Creation of employment opportunities</p>	<p>-Non-skilled labour should be sourced from the locally affected area, in accordance with procedures approved by the relevant authorities.</p> <p>-Preference of local people for employment for jobs should be</p>	<p>-Number of locals employed for pre-development and construction activities</p>	<p>Proponent in collaboration with the Site Manager (if necessary)</p>	<p>Record of employees</p>	<p>Pre-project activities and when necessary, throughout</p>

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>implemented, i.e., permanent residents from the surrounding areas should be employed for the unskilled labour preferentially to out-of-area people (outsiders) where possible. Out-of-area employment should be justified, for example by the unavailability of local skills only.</p> <p>-Equal opportunity should be provided for both men and women, when and where possible.</p>				
Specialised procurement of services	Contractors and services	<p>-All services related to development activities such as construction the Proponent may need; preference should be given to local providers of such services. If not available locally, the services search should be extended to a regional level (Khomas and Otjozondjupa Region), nationally and lastly, internationally.</p>	Number of hired contractors.	<p>Proponent</p> <p>Site Manager</p>	Record of hired or contracted companies or services providers	Pre-project activities and when necessary, throughout
CONSTRUCTION AND OPERATIONAL PHASE						
EMP implementation and training	Lack of EMP awareness and implications thereof	<p>-EMP trainings should be provided to all new workers on site.</p> <p>-All site personnel should be aware of necessary health, safety,</p>	Compliance monitoring conducted bi-annually and should be recorded.	ECO	Bi-annual reports	Throughout the construction and operational phase and as required

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>and environmental considerations applicable to their respective work.</p> <p>-The implementation of this EMP should be monitored.</p> <p>-The site should be inspected, and a compliance audit done throughout <u>the project activities, monthly.</u></p> <p>-An EMP non-compliance penalty system should be implemented throughout the project phases</p>			Records of EMP training conducted.	
Communication between the Proponent and other neighbouring land users and custodians	Lack of communication (proper liaison) between locals and Proponent with regards to land use	-The Proponent should compile a clear communication procedure / plan which should include a grievance and response mechanism.	<p>PRO is part of the project personnel.</p> <p>-Community grievances addressed to their satisfaction</p>	PRO	<p>Complaint's logbook</p> <p>PRO contact details to be provided to the affected locals.</p> <p>Records of stakeholder' consultation</p> <p>Land acquisition agreement conditions</p>	Throughout the construction and operational activities
Water Resources Use	water demand and availability	- The Proponent should come into an agreement with the Municipality of Okahandja to cater water for the construction and also	-Water supply agreements	Proponent	<p>Water supplier</p> <p>Water supplying agreements</p>	Once off supply agreement

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>for the operational phase of the project. However, if the water required during the construction phase is not sufficient. The proponent needs to consult NamWater to cater the construction phase with water.</p> <p>-Water reuse/recycling methods should be implemented as far as practicable such that the water used for the cleaning of project equipment, if possible.</p> <p>-Water storage tanks on site during the operation and construction phase should be inspected daily to ensure that there is no leakage, resulting in wasted water on site.</p> <p>-Water conservation awareness and saving measures training should be provided to all the project workers in both phases so that they understand the importance of conserving water and become accountable.</p>	<p>Proof/ recording/ quantification of water saving efforts.</p> <p>Water supplier</p> <p>-Water permits</p> <p>-inspection of water storage tanks on site</p>	<p>Site Manager</p>	<p>Proponent</p> <p>Water storage tanks on site</p>	<p>Throughout the project phase</p>

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Soils	Physical soil/land disturbance and loss of topsoil	<p>-The topsoil that was stripped from certain site areas to enable construction works should be levelled to reduce erosion.</p> <p>-All possible trenches excavated for construction on site should be backfilled.</p> <p>-Project vehicles and machinery should stick to access roads provided and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction.</p> <p>-The project footprint area should not be cleared entirely, and the vehicles and equipment must be placed in such a way that soil disturbance is minimised, and the site should be rehabilitated after each onsite work.</p>	<p>No proliferation of informal vehicle tracks.</p> <p>No new erosion gullies.</p>	ECO	<p>Proponent</p> <p>All personnel</p> <p>Complaint's logbook</p>	Throughout the project phase
Soils and water resources	Soils and water resources pollution	-Oil and wastewater spill control preventive measures should be in place on site to management soil contamination, thus preventing and minimizing the contamination from reaching water resources bodies. Some of the soil control	No complaints of pollutants on the soils and eventually in the water due to development activities	ECO	<p>Complaint's logbook</p> <p>Non-permeable material to cover the ground surface at areas where hydrocarbons and</p>	Throughout project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>preventive measures that can be implemented include:</p> <ul style="list-style-type: none"> -Spill control preventive measures should be in place on site to management soil contamination, thus preventing and or minimizing the contamination from reaching water resources bodies. -All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures. -The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible. -Ensure employees receive basic Spill Prevention, Control, and Countermeasure (SPCC) Plan training and mentor new workers as they get hired. -Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site. 	<p>No visible oil spills on the ground or pollution spots.</p> <ul style="list-style-type: none"> -Waste containers provided at work sites and campsites 		<p>potential pollutants are utilized.</p>	

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-Polluted soil should be removed immediately and put in a designate waste type container for later disposal.</p> <p>-Drip trays must be readily available on this trailer and monitored to ensure that accidental fuel spills along the tank trailer path/route around the sites are cleaned on time (soon after the spill has happened).</p> <p>-Polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility.</p> <p>-Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources during the construction phase.</p> <p>-Toilet water should be treated using the long drop toilet system and periodically emptied out before reaching capacity and transported to a wastewater</p>				

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		treatment facility during the construction phase.				
Biodiversity	Loss of Fauna and Flora	<p>Fauna</p> <ul style="list-style-type: none"> -Access roads (even existing ones) should be utilized appropriately in a manner that disturbs minimal land areas as possible, thus minimizing faunal habitat destruction. -Breeding sites for faunal species that are found within the site and nearby should not be disturbed. -Environmental awareness on the importance of faunal preservation should be provided to the workers and contractors. <p>Flora:</p> <ul style="list-style-type: none"> -The Proponent should avoid unnecessary removal of vegetation, thus promoting a balance between biodiversity and their construction works. -Vegetation found on the site, but not on site should not be removed but left to preserve biodiversity on the site. -Movement of vehicle and machinery should be restricted to existing roads and tracks to 	<p>No disturbance to unmarked areas.</p> <p>No complaints from locals regarding unauthorised vegetation removal or cutting down of trees.</p> <p>No intentional disturbance and destruction of site vegetation and faunal species</p> <p>Visible preservation of onsite vegetation</p>	ECO	<p>Barricading tape (to indicate working areas)</p> <p>Complaint logbook</p>	Throughout the project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>prevent unnecessary damage to the vegetation.</p> <p>-Even if a certain vegetation is found along the sites, this does not mean that it should be removed. Therefore, care should be taken without destroying the site vegetation.</p> <p>-Design access roads appropriately in a manner that disturbs minimal land areas as possible.</p> <p>-Make use of the existing road network as much as possible and avoid off-road driving, thus minimizing onsite floral destruction.</p> <p>-Vegetation clearing to be kept to a minimum. The vegetation of the site is largely low and open and therefore whole-sale vegetation clearing should only be applied where necessary and within the site footprint.</p> <p>-Environmental awareness on the importance of floral biodiversity preservation should be provided to the workers and contractors.</p>				
Land Use	Conflict between land	-Construction and operational activities should not in any way	Land access and use permits/authorizations.	PRO	Proponent	Throughout the project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
	uses and construction and operational activities	<p>hinder the existing land uses but rather promote co-existence throughout the project operations while respecting other land users.</p> <p>-The Proponent should ensure that their activities comply with the conditions set by the competent, regulatory, and affected authorities such that the proposed construction and operational activities do not severely impact the different existing activities around the site.</p>	<p>Compliance with conditions set within operational permits by relevant and affected authorities.</p> <p>Little to no complaints of significant interference from the neighbouring land users</p>	<p>Proponent</p> <p>ECO</p>	<p>Relevant authorities</p>	
Road use and safety	Increase in vehicular traffic flow	<p>-Vehicles should be driven only on existing access roads and necessary temporary access roads only leading to site; no new roads should be constructed where possible.</p> <p>-The transportation of project materials, equipment and machinery should be limited to once or twice a week only, but not every day.</p> <p>-The heavy truck loads should comply with the maximum allowed limit while transporting materials and equipment/machinery on the public and access roads.</p>	<p>No complaints from members of the public regarding vehicular traffic issues related to the project activities.</p> <p>All personnel operating the project vehicles and machinery are appropriately licensed and possession of valid driving licenses.</p> <p>Demarcated areas for parking, offloading,</p>	<p>Proponent</p> <p>ECO</p>	<p>Number of project vehicles on site</p> <p>Names of drivers</p> <p>Frequency of water carting</p>	<p>Throughout project phase</p> <p>Site access permit (s) to be applied for and obtained prior to commencement of project works</p>

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-The carted water into the area from outside the project area should be done once or twice a week in container that can supply and store water for most of the week, thus reducing the number of trucks on the road.</p> <p>-Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses.</p> <p>Vehicle drivers should adhere to the road safety rules.</p> <p>-Drivers should drive slowly (40km/hour or less), and on the lookout for animals and people.</p> <p>-Project vehicles should be in a road worthy condition and serviced regularly to avoid accidents because of mechanical faults of vehicles.</p>	<p>and loading zones are on site.</p> <p>If required, site access road permits obtained, and requirements fulfilled.</p> <p>No creation of unnecessary tracks on site.</p>			
Local services and infrastructure	Overuse and maintenance	<p>-The heavy trucks transporting materials and services to site should be scheduled to travel at least twice or thrice a week to avoid daily travelling to site, unless on cases of emergencies.</p> <p>The heavy trucks transporting materials and services to site should be scheduled to travel at</p>	-Visible efforts of maintaining access and community roads by the Proponent	Proponent Site Manager	Road clearing machinery (bull dozers)	Throughout the project phase, when necessary

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		<p>least twice or thrice a week to avoid daily travelling to site, unless on cases of emergencies.</p>				
Occupational Health and safety	General health and safety associated with project activities in both phases	<p>-The Proponent should commit to and make provision for bi-annual full medical check-up for all the workers at site to monitor the impact of project related activities on them (workers).</p> <p>-As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs.</p> <p>-employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc.</p> <p>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p>	Comprehensive health and safety plan for all construction and operational activities compiled.	Proponent Site Manager ECO	Occupational Health and Safety Personnel Health and Safety Trainings First aid kits Trained worker to administer first aid	Throughout the project phase and trainings offered as and when required

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>-An emergency preparedness plan should be compiled, and all personnel appropriately trained.</p> <p>-Workers should not be allowed to drink alcohol prior to and during working hours nor allowed on site when under the influence of alcohol as this may lead to mishandling of equipment which results into injuries and other health and safety risks.</p> <p>-The site areas that are considered temporary risks should be equipped with "danger" or "cautionary" signs.</p>				
	<p>Potential increase of prevalence of HIV and AIDS, as well as other sexually transmitted diseases (STDs) prevalence</p>	<p>-The workers should be engaged in health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections during the project phases of the project.</p> <p>-Provision of condoms and sex education through distribution of pamphlets and health trainings must be provided throughout phases.</p>	<p>No new infections recorded linked to workers</p>	<p>Proponent</p> <p>ECO</p>	<p>Occupational health and safety personnel</p> <p>Sex and Health Education/Awareness</p> <p>Provision of condoms at the campsite</p>	<p>Throughout project phase</p>

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
	Accidental fire outbreak	<p>-Portable fire extinguishers should be provided on site during the construction and operational phase.</p> <p>- The hospital must have fire sensors to spray areas with water when a fire breaks out in the hospital.</p> <p>-No open fires to be created by project personnel on onsite during construction phase.</p> <p>-Potential flammable areas and structures such as fuel storage tanks should be marked as such with clearly visible signage.</p>	No wildfires recorded (due to presence of workers)	Proponent ECO	Fire extinguishers (1 per vehicle) and 1 per working site	Throughout project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
Archaeology and heritage	Accidental disturbance and destruction of archaeological or heritage objects and sites	<p>-On-site personnel (s) and contractor crews must be sensitized to exercise and recognize “chance finds heritage” in the course of their work.</p> <p>-During the pre-development and construction works, it is important to take note and recognize any significant material being unearthed and making the correct judgment on which actions should be taken (refer to CFP Appendix attached to the EMP).</p> <p>-A landscape approach of the site management must consider culture and heritage features in the overall planning of construction infrastructures within and beyond the license boundaries.</p> <p>-The Proponent and Contractors should adhere to the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while conducting works.</p> <p>-Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the</p>	<p>Preservation of all artefacts and objects that are discovered on and around project site</p> <p>No-Go Areas avoided</p>	<p>Proponent</p> <p>ECO</p> <p>Operator</p> <p>Foreman</p> <p>Superintended</p> <p>Archaeologist</p>	<p>Salvage equipment</p> <p>Archaeologist</p> <p>Flag tapes</p> <p>GPS (site marking)</p>	As and when required, i.e., prior to site set up, and during pre-development and construction.

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>project Archaeological Management Plan (AMP)/EMP should be complied.</p> <p>-An archaeologist or Heritage specialist should be onsite to monitor all significant earth moving activities that may be implemented as part of the proposed project activities.</p> <p>-Show overall commitment and compliance by adapting “minimalistic or zero damage approach”.</p>				
Waste (Medical waste)	Environmental and Air pollution	<p>-Medical waste generated in hospital must be collected in colour coding bags and/or in containers (i.e. waste entailing a risk of contamination and anatomical waste, infectious waste, chemical and pharmaceutical waste) and must be labelled.</p> <p>- The medical waste storage facility at the hospital must be closed and must only be restricted to authorized persons, must be compartmented, the flooring must be water proof with a good drainage, there must be a wash basin nearby, and the entrance must be marked with a sign e.g.</p>	Medical and hazardous Waste management	ECO	<p>Waste disposal permits to municipalities</p> <p>Environmental, Health and Safety Statements and Policy</p>	Throughout project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>“No unauthorized access, Toxic or Risk of infection”.</p> <ul style="list-style-type: none"> -The Vehicles transporting the waste to the incinerators must be equipped with a safe loading system to prevent any spilling inside or outside the vehicle, and vehicles must be closed in order to avoid any spilling on the road. -Waste must be sterilized or disinfected before the waste are transported to the waste management landfill. - All protocols stipulated by the City of Windhoek on how the waste must be transported and handled must be adhered too. - The waste must be stored for a week in a refrigerated area (3^o-8^o C). Where there is not such refrigerated area, the storage time for infectious medical waste must not exceed the following limits; (a)- in temperature climates: 72 hours in winters and 48 hours in summer, (b)- in hot climates; 24 hours in the not season. - All medical staff must wear appropriate full PPE. 				

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
General waste and sanitation	Environmental Pollution	<p>-Workers should be sensitized to dispose of waste in a responsible manner and not to litter.</p> <p>-After each daily works, the Proponent should ensure that there are no wastes left on the sites.</p> <p>-All domestic and general project waste produced daily should be contained until such that time it will be transported to designated waste sites in nearby town.</p> <p>-No waste may be buried or burned on site or anywhere else.</p> <p>-Sewage waste should be stored as per the available sewage system supplied on site and regularly disposed of at the nearest treatment facility.</p> <p>-Oil spills should be taken care of by removing and treating soils affected by the spill.</p> <p>-A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented.</p> <p>-Careful storage and handling of hydrocarbons on site is essential, therefore should be enforced.</p>	<p>No visible litter around the project area</p> <p>Provision of sufficient waste storage containers</p> <p>Waste management awareness</p>	ECO	<p>Waste storage containers</p> <p>Waste disposal permits to municipalities</p> <p>Environmental, Health and Safety Statements and Policy</p>	Throughout project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		-Potential contaminants such as hydrocarbons and wastewater should be contained on site and disposed of in accordance with municipal wastewater discharge standards so that they do not contaminate surrounding soils and eventually groundwater.				
	Wastewater generated	-Provision of toilet facilities for workers (mobile/portable chemical toilet if possible). -Emptying of chemical toilets according to the manufacturer's specifications.	Adequate toilet and basic ablution facilities on site.	Proponent ECO	Chemical toilets Sewage removal operator waste treatment agents/chemicals	Throughout project phase
Air Quality	Dust generation	-Vehicles should not drive at a speed more than 40 km/h to avoid dust generation around the area. -Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on site, where they are exposed to dust. -Excavating equipment should be regularly maintained to ensure excavation efficiency and so to	No complaints from the public about vehicle emissions and dust generation. Visible efforts to curb dust	ECO	Complaint's logbook Dust suppressant (Water)	Throughout project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		reduce dust generation and harmful gaseous emissions.				
Noise	Nuisance	<p>-Noise from project vehicles and equipment on the working sites should be at acceptable levels.</p> <p>-The construction times should be set such that, no such activities are carried out during the night or very early in the mornings (to be limited between 8am and 5pm on weekdays).</p> <p>-Construction hours should be restricted to between 08h00 and 17h00 to avoid noise and vibrations generated by equipment and the movement of vehicles before or after hours.</p> <p>-When operating machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to noise.</p>	Complaints from neighbouring land users about excessive noise.	ECO	<p>Complaint's logbook</p> <p>Noise protective equipment for workers</p>	Throughout project phase
Social nuisance	Local properties disturbance and values	-Any workers or site employees that will be found guilty of intruding peoples 'privately owned properties should be called in for disciplinary hearing and/or dealt with as per their employer'	No complaints from stakeholders about property theft, disturbance, or intrusion	ECO	<p>Grievance logbook</p> <p>Land access agreement conditions</p>	Throughout the project phase

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		<p>(Proponent)'s code of employment conduct</p> <p>-The project workers should be advised to respect the community and local's private properties, values, and norms.</p> <p>-No worker should be allowed to wander in people's private yards or fences without permission.</p> <p>-Out-of-area workers that may be employed (due to their unique work skills) on site should be sensitized on the importance of respecting the local values and norms.</p>				
Electromagnetic radiation	Human health	<p>-The Proponent should ensure that the equipment in the hospital and its EMR are within the international standards of The Atomic Energy and Radiation Protection Act, Act 5 of 2005 and Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (April 1998 developed by the International Commission on ICNIRP).</p> <p>-The National Radiation Protection Authority should be involved during the operational</p>	Consultation with the NRPA	-Proponent / NRPA	Exposure Guidelines and 2019 Nonionising Radiation Regulations, 2019: Atomic Energy and Radiation Protection Act, 2005	Throughout the operational phase, and when required

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Aspect	Impact	Management and Mitigation Measure(s)	Key Performance Indicator (KPI)	Implementation Responsibility	Resources	Timeline
		phase to assess the possible emissions from the equipment. -Familiarize with the gazetted Non-ionising Radiation Regulations, 2019: Atomic Energy and Radiation Protection Act, 2005				

APPENDIX 1: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

Scope: The “*chance finds*” procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “*a person who discovers any archaeological objectmust as soon as practicable report the discovery to the Council*”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

The Manager/Supervisor must report the finding to the following competent authorities:

- National Heritage Council of Namibia (061 244 375)
- National Museum (061 276800),
- National Forensic Laboratory (061 240461).

Archaeological material must NOT be touched. Tempering with the materials is an offence under the heritage act and punishable upon conviction by the law.

Responsibility:

Operator:	To exercise due caution if archaeological remains are found
Foreman:	To secure site and advise management timeously
Superintendent:	To determine safe working boundary and request inspection
Archaeologist:	To inspect, identify, advice management, and recover remains

Procedure:

Action by person identifying archaeological or heritage material:

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

- a) Report findings, site location and actions taken to superintendent
- b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by Archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area
- c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police

d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.