



If you can't measure it
You can't control it



CK 96/44367/23 (SA)
CC/2005/3576 (NAM)

APP: 003249

DESERT STORAGE CC
EIA Scoping Report
for a
BULK STORAGE FACILITY
at Walvis Bay

PROJECT NO: 2021/139/J

Building towards better **Safety**
Health
Environment
Quality

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STATEMENT PAGE

National Environmental Health Consultants CC is an Approved Inspection Authority in terms of the Occupational Health and Safety Act (85 of 1993). (Certificate No.: CI 057 OH) SA and A.I.A 22/15 Namibia, **Labour Act, 1992 (Act 6 of 1992)** as amended under the **Labour Act 2007, (Act 11 of 2007)**.

J. Cornelissen, conducted this EIA on behalf of **National Environmental Health Consultants CC** and hereby declares that the results/findings given in the report are a true reflection of conditions encountered during the survey/observations on site.

Where relevant published and validated methods exist, they are always used in preference to novel methods. If a novel method is applied, a summary of validation and reference to the internal Standard Operating Procedure(s) is provided.

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16 February 2022
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Ministry of Labour,
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Employment Creation
NAMIBIA

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ACRONYMS AND ABBREVIATIONS

Below is a list of acronyms and abbreviations used in this report.

Acronyms / Abbreviations	Definition
AIDS	Acquired Immune Deficiency Syndrome
AIEMA	Associate Member with the Institute of Environmental Management & Assessment
AN	Ammonium Nitrate
ANFO or AN/FO	or ammonium nitrate/fuel oil)
°C	Degrees Celsius
CEs	Consulting Engineers
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CoM	Chamber of Mines of Namibia
COSDEC	Community Skills Development Centre
CTAN	Coastal Tourism Association of Namibia
DEA	Directorate of Environmental Affairs
DLEU	Line Ministry: Drug Law Enforcement Unit
DOB	Damara Orogenic Belt
DRFN	Desert Research Foundation of Namibia
EAP	Environmental Assessment Practitioner
EAPAN	Environmental Assessment Professionals' Association of Namibia
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
ELO	Environmental Liaison Officer
EMP	Environmental Management Plan
EMPr	Environmental Management Plan Report
ENAEX	BRITANITE MINING SERVICES (PTY) LTD
EPC	Engineer, Procure, Construct
EPZ	Export Processing Zone
ERC	Erongo Regional Council
EU	European Union
GDP	Gross Domestic Product
GWh	Gigawatt Hours
HAN	Hospitality Association of Namibia
HC	Hydrocarbon
HDI	Human Development Index
HFO	Heavy Fuel Oil
HHV	Higher Heating Value
HIV	Human Immunodeficiency Virus
HPI	Human Poverty Index
IC	Internal Combustion
IFC	International Finance Corporation
kW	Kilowatt
Kwh	Kilowatt-hour
Km/km	kilometres
IAPs	Interested and Affected Party
LED	Local Economic Development
LFO	Light Fuel Oil
m ³ /h.	Cubic Meters per Hour
m ²	Meters Square
MARPOL	Maritime Pollution - International Convention for the Prevention of Pollution from Ships
MAWF	Ministry of Agriculture, Water and Forestry
MDO	Marine diesel oil
MET	Ministry of Environment and Tourism
MGO	Marine Gas Oil
MHSS	Ministry of Health and Social Services

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21st day of January 2022

Company:
DESERT STORAGE CC – BULK STORAGE FACILITY – EIA
- Walvis Bay

Occupational Hygienist
Johan Cornelissen



Project No:
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Acronyms / Abbreviations	Definition
MJ/kg	Mega joule per Kilogram
MLSW	Ministry of Labour and Social Welfare
MME	Ministry of Mines and Energy
MRLGHRD	Line Ministry: Regional Local Government Housing and Rural Development
MW	Megawatt
MWT	Ministry of Works and Transport
NACOMA	Namibian Coast Conservation and Management Project
NAMPOL	Namibian Police
NANGOF	Namibia Non-Governmental Organizations' Forum
NDP	National Development Plan
NEEEF	New Equitable Economic Empowerment Framework
NEHC	National Environmental Health Consultants CC
NEWS	Namibia Environment and Wildlife Society
NHE	National Housing Enterprise
NNF	Namibian Nature Foundation
NNNP	Namib-Naukluft National Park
NOx	Oxides of nitrogen
NP	National Park
PM	Project Manager / Developer Representative
PM10	Particulate Matter small than 10 Micrometers
PPA	Power Purchase Agreement
ppm	Parts Per Million
PPP	Public Participation Process
RA	Roads Authority
RA	Resident Architect
RE	Resident Engineer
SACNSP	South African Council for Natural Scientific Professions
SAIEA	Southern Africa Institute for Environmental Assessment
SEIA	Strategic Environmental Impact Assessment
SMEs	Small and Medium Enterprises
SO ₂	Sulphur Dioxide
TB	Pulmonary Tuberculosis
TESEF	Transformational Economic and Social Empowerment Framework
TOC	Terms of Reference
µg/m ³	Micro Meters
UST's	Underground Storage Tanks
V	Volt
W	Watt
WWF	World Wildlife Fund in Namibia

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1. INTRODUCTION

National Environmental Health Consultants CC (NEHC CC) has been appointed by **DESERT STORAGE CC** to conduct the Environmental Impact Assessment (EIA) process in terms of the:

- Environmental Impact Assessments are regulated by the Ministry of Environment and Tourism (MET) in terms of the Environmental Management Act, 7 of 2007.
- This Act was gazetted on 27 December 2007 (Government Gazette No. 3966).
- The List of Activities that may not be undertaken without an Environmental Clearance Certificate and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) were promulgated on 6 February 2012.

DESERT STORAGE CC intends to establish a bulk storage facility that includes hazardous substances (*Ammonium Nitrate*). Raw materials will be brought in mainly by bulk vessel through Namport or from neighbouring countries and then transported by road to the proposed site and stored on site. From there it will be distributed to the indicated delivery address locally or to neighbouring countries.

A 5HA Portion of Farm 38 Walvis Bay was approved by the local authority for the proposed project. The need is for a proposed Dangerous/Hazardous Materials (Ammonium Nitrate) Storage Facility for approximately 11 500 tonnes.

Desert Storage CC is a proudly Namibia company that will be a key stakeholder in the development and growth of this corridor. The demand for AN (Ammonium Nitrate) in Southern Africa is growing exponentially resulting in higher demand and bigger consignments. Currently Walvis Bay only has available storage for 5 000 tonnes of AN that is very small compared to the current need and not viable for the bigger companies to invest in as their minimum shipping quantities are starting at 8 000 tonnes.

With the new proposed storage facility, we can push up the numbers that will benefit not only Namport but also the Transport groups, clearing and forwarding companies, fuel outlets, employment and eventually more revenue for Namibia as a whole.

A new but integral part of **Desert Storage CC** will be the import of AN through the port of Walvis Bay, storage at the proposed storage facility on farm 38 and delivery to the client with custom designed vehicles for Hazardous materials for local and Central African Mining industry. This new Service will be undertaken by **Desert Storage CC** on behalf of Sasol Limited, a South African integrated Energy and Chemical supply company and any other similar companies.

Currently the existing AN Clients lease storage space from Native Storage Facility on Farm 38 in Walvis Bay. The on-site access and storage arrangements of Native Storage Facility are not fully compliant with Sasol Limited (Enaex) requirements. **Desert Storage CC** will ensure compliance to all legislative and Sasol Limited (Enaex) requirements. In the medium to long term the Native Storage Facility Storage area is unlikely to be large enough to accommodate the long-term storage requirements of **Desert Storage CC** and Sasol Limited (Enaex) or similar company's demands.

Finally, the main supplier and business partner of the Native Storage Facility is Orica, an Australian-based multinational corporation that provides commercial explosives and blasting systems to the mining, quarrying, oil and gas and construction markets, and business competitor of Sasol Limited (Enaex)

As a result of the above, a new and alternative dangerous/hazardous material storage facility is urgently required in Walvis Bay for **Desert Storage CC** and Sasol Limited (Enaex). Farm 38, which has been identified by the Local Council for the establishment of extensive industrial activities,

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currently where the Native Storage Facility is situated, has been identified by **Desert Storage CC** as the preferred location for the new Dangerous/ Hazardous material storage facility.

The land requirement of **Desert Storage CC** for its dangerous/hazardous material storage facility is 5ha. **Desert storage CC** has undertaken a site assessment feasibility study to identify the most suitable site for its dangerous/ Hazardous material storage facility and Farm 38 is considered ideal, hence the already existing storage facility. Due to Safety separation distance requirements, the preferred site need to be a sufficient distance form any other existing development.

Material storage facility:

As part of this area application, **Desert Storage CC** will also commit to attend to the following

1. Site identification, site survey, approval of lease area Survey diagram and registration of lease area.
2. Undertake an Environmental Impact Assessment for the Dangerous/ Hazardous Material storage Facility as required by the Environmental Management Act.
3. Comply with the statutory requirements for the location and safety buffer distance requirements of the Dangerous/Hazardous material storage facility
4. Obtain access to essential services such as water, sewer, electricity and road access.
5. Investment of capital in the dangerous/hazardous material storage facility, including site fencing/walling
6. The creation of at least 50 jobs

An Environmental Scoping (EIA) and EMP report on the proposed activity, which is the subject of this report, was carried out to ensure that it will comply to relevant requirements for approval by the Ministry of Environment and Tourism.

The Environmental Scoping and EMP report were done quantitatively, consisting of descriptions of the installations, the operation and processes. This was followed by identification of the material hazards, reviewing incident experience and noting tests done. Hazardous events were also analysed, their consequence severity and likelihood quantified. A combination of severity and likelihood allowed estimation of the risks, which were then compared with acceptability targets, from which the need for further risk treatment must be focused on.

The Project will involve the following stages as illustrated below:

- Access roads to and from new proposed site;
- Ground works;
- Development of associated infrastructure:
- Water;
- Electricity;
- Sewage;
- Ablution;
- Administration;
- Fencing;

2. PROJECT MOTIVATION

At its core, this project will entail the importation, handling, transport and storage of Ammonium Nitrate.

In recent years, Southern Africa, has seen a steadily increase in mining and quarrying activities, which stretches from South Africa, all the way to the Democratic Republic of the Congo. All these mining and quarrying industries, spread out across the entire Southern Africa, has one key and crucial element in common, which is, that these mining and quarrying industries needs to utilize the use of explosives.

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Most companies involved in the mining and quarrying industry, manufactures their own explosives to save on costs, and the compound or ingredient most used, has been shown to be Ammonium Nitrate. The Ammonium Nitrate which is commonly used during the manufacturing of the explosives, however, still has to be imported and transported, before it reaches its end destination at the relevant mining and quarrying industry. **Desert Storage CC** aims to cater to and serve the growing market who intends to import and transport Ammonium Nitrate in order to manufacture the explosives.

Considering that **Desert Storage CC** intends to utilize the Port of Walvis Bay for loading of Ammonium Nitrate, the proposed and preferred storage facility, has to be in the vicinity of Walvis Bay, where the Ammonium Nitrate will be stored and transported from, once sold. Thus, the proposed project will provide quality and sustainable employment to local residents.

The project has the potential to benefit the country, society and the surrounding communities, in particular the town of Walvis Bay. Direct economic benefits will be derived from wages, taxes, profit and support towards achieving the local economic development strategy of the town Walvis Bay. Indirect economic benefits will be derived from the procurement of goods and services and the increased spending power of employees through the creation of new jobs at the proposed operations. The challenge facing **Desert Storage CC** is its contribution towards achieving these benefits while at the same time preventing and/or mitigating potential negative social and environmental impacts.

The project is viable and would certainly be beneficial to the overall economy of Namibia. The project aims to increase the storage capabilities of the Port of Walvis Bay to a satisfactory size, as the current storage capabilities, are not *per se* sufficient or adequate, for the requisite storage capacity sought after by bigger companies. By increasing the storage capabilities of the Port of Walvis Bay, numerous other role players will benefit, such as Namport, transport companies, fuel outlets and distributors, which in turn will create new employment opportunities for local residents.

3. PROJECT DESCRIPTION

3.1 Introduction

As indicated hereinabove, the proposed project will consist of the handling, transportation and storage of Ammonium Nitrate, to cater to and to serve the increasingly growing mining and quarrying industries in Southern Africa.

Product hauling from the site will mainly utilize the C14, D1984 linking the C14 with the B2 to transport their product to our clients. Hauling trucks travelling from NamPort to and from the site along the C14 road to an established gravel access road (± 8 km South of Walvis Bay) that links **Desert Storage CC** storage site with the C14 will be utilized during bulk product receiving and off-loading periods.

The information presented in the section below was derived from the following sources:

- Visual observations during site visits by NEHC CC;
- Discussions with local residents and authorities;
- Atlas of Namibia, 3rd edition (Mendelsohn *et al*, 2009);
- Google Earth and spatial data from Environmental Information Services (EIS) Namibia; and
- Other EIA's and specialist studies conducted in the area:
 - Husab Linear EIA (Metago, 2011); and
 - Proposed Britanite Mining Services (Pty)Ltd Activity – Farm 26 (NEHC CC, 2018)

The regional and local settings of the proposed storage facility area, is illustrated in Figure 6.4.1.

Environmental Clearance Certificates are regulated by the Ministry of Environment and Tourism (MET), whom will decide in terms of the Environmental Management Act, 7 of 2007.

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The related Environmental Impact Assessment process will include: a screening phase and a scoping phase including an Environmental Impact Assessment with an Environmental Management Plan (EMP).

3.2 Details of the project developer

Business Registration:	Desert Storage CC, Registration No: CC/2016/16463
Location of Activity:	Farm No. 38, In the Municipality of Walvis Bay
Scale and Scope of Activity:	Measuring 5 hectares.
Nature of Activity:	Storage and transportation of Ammonium Nitrate
Contact person:	Mr. Phillip Beard
Designation:	Project Manager
Phone:	+264 81 146 5177
E-mail:	pbaard52@gmail.com

3.3 Proposed Site

The total lease area for Desert Storage CC's activities is approximately 5 hectares (50 000 m²) on Farm No. 38, within the Walvis Bay Municipal District.

The town of Walvis Bay is the second largest urban settlement in Namibia and the regional capital of the Erongo Region. The Walvis Bay area is approximately 1,124 km² in size (including ~60 km of coastline) and it is situated along the Atlantic Ocean between the Swakop (north) and Kuiseb Rivers (south). The area also includes the Langstrand Resort and the Dolphin Park Recreation Resort.

On the eastern side, the Walvis Bay area extends to the Namib Naukluft Park, Namibia's largest conservation area. The area includes the Walvis Bay Wetland and the Kuiseb River and Delta. The Walvis Bay Wetland was proclaimed a Ramsar Site, or Wetland of International Importance, in 1995. The Wetland comprises the more than 3,000-year-old Walvis Bay Lagoon, and includes the inter-tidal mudflats and the eastern half of Pelican Point. The area is regarded as a biodiversity hotspot, due to the following: the rich estuarine fauna; it supports about 129,000 birds and hosts Palearctic and intra-African migrant birds, as well as six rare bird species; it is the most important wetland bird habitat on the Namib Coast and one of the ten most important wetlands in Africa.

The Kuiseb River and Delta is found in the National Namib Naukluft Park. The desert and dune areas around the Kuiseb River support unique and well-adapted communities of fauna and flora with low species density, but with high endemism (LAB, 2008; EcoAfrica Environmental Consultants, 2009).

The 30 km stretch of coastline between Walvis Bay and Swakopmund, including the dune belt area, is also regarded as a biodiversity hotspot: the dune belt area hosts specially adapted desert organisms; the coastal section is designated as an Important Bird Area (IBA); and it has the most important breeding area for the endemic Damara Tern (EcoAfrica Environmental Consultants, 2009).

As large dune areas are conserved in the Namib Naukluft Park, the area is not considered an important habitat for conservation purposes and it is currently categorised as a recreational area. It has been recommended that the dune belt be included in the Walvis Bay Nature Reserve, and that the areas east of Long Beach and at Dune 7 be maintained as free zones for off-road driving (NACOMA, 2008a).

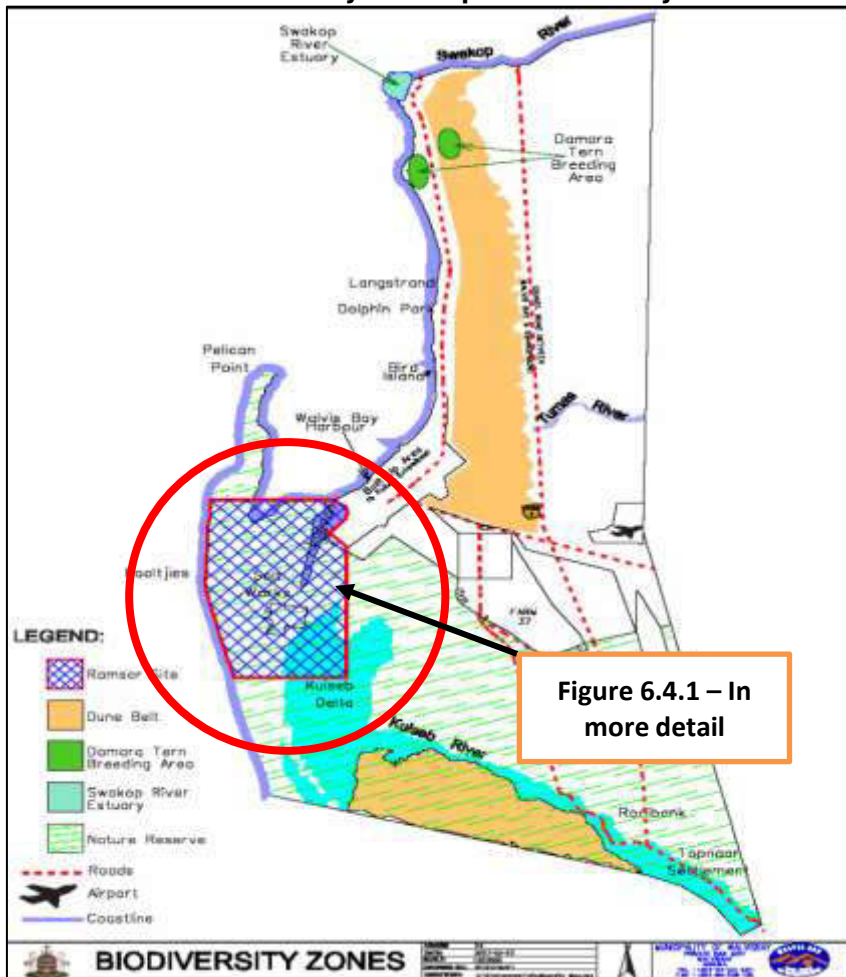
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FIGURE 3.3.1: REGIONAL AND LOCAL SETTINGS:

(<https://www.nationsonline.org/oneworld/map/namibia-administrative-map.htm>)



FIGURE 3.3.2: Walvis Bay Municipal biodiversity area and zones:



The Map shows the different biodiversity area and zones covering the entire Walvis Bay - Biodiversity Report for the Municipality of Walvis Bay

FIGURE 3.3.3: LOCAL SETTING OF THE LEASE AREA FOR THE PROPOSED DESERT STORAGE CC STORAGE FACILITY

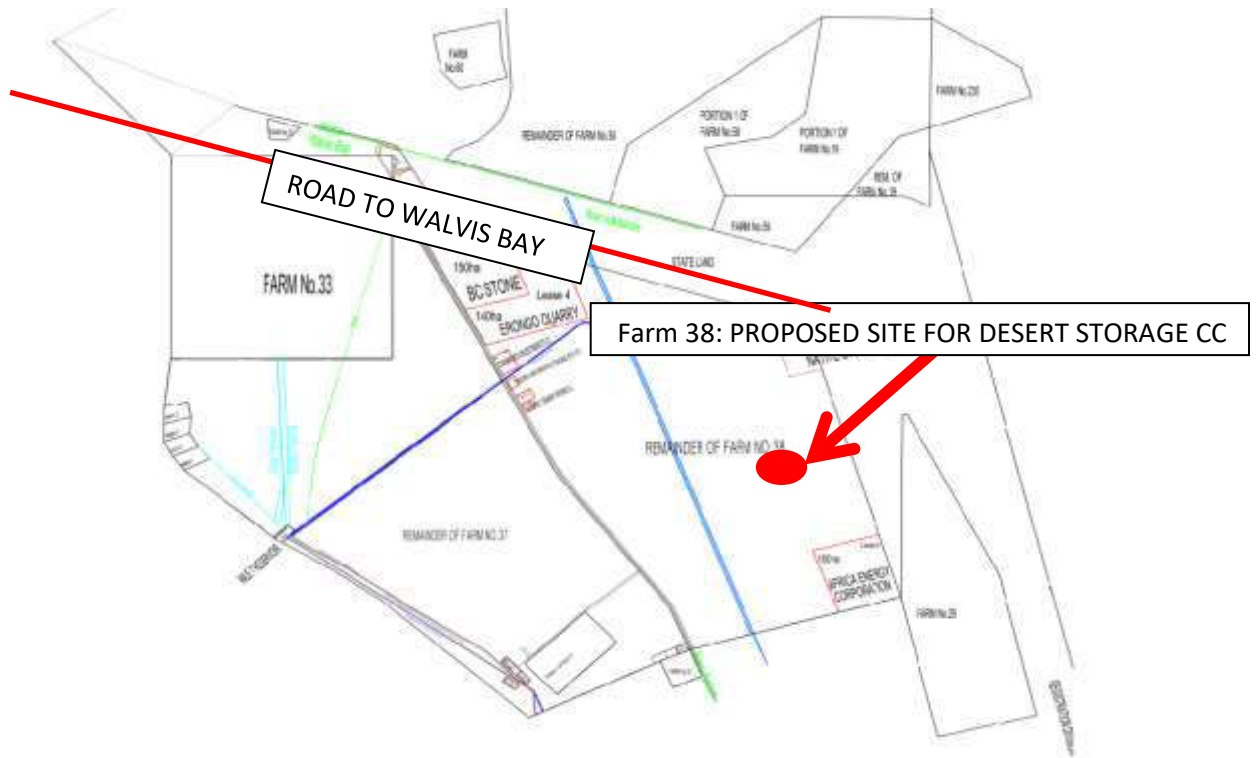


FIGURE 3.3.4: LOCAL SETTING OF THE LEASE AREA FOR FARM 38 - DESERT STORAGE CC STORAGE FACILITY - SITE LOCATION



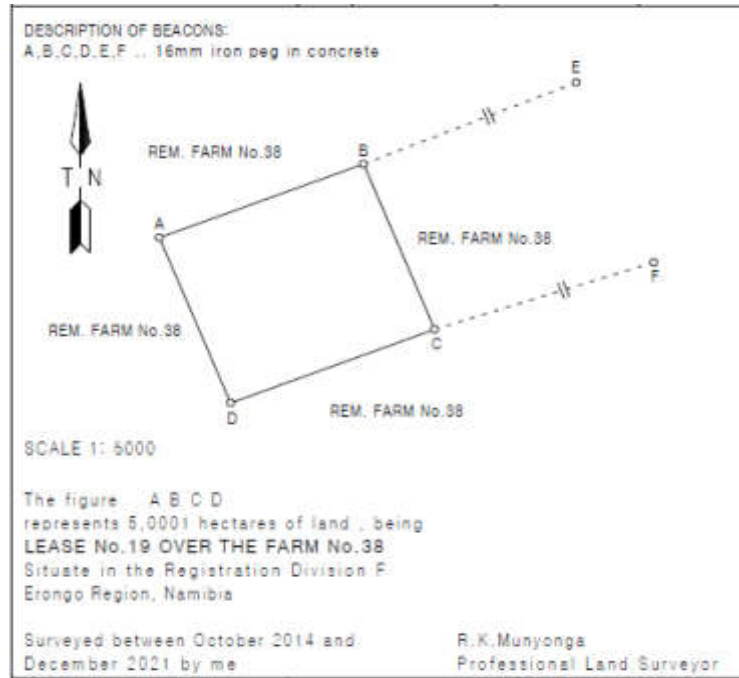
Waiting final Surveyor General maps and GPS Points for proposed site.

Temporary GPS Point is :
 GEOGRAPHICAL COORDINATES (WGS84)
 LEASE 19 OVER FARM 38 REV1

Name Latitude Longitude:
 L19A -23 00 39.84472 14 37 40.28159
 L19B -23 00 37.02836 14 37 48.05116
 L19C -23 00 43.39887 14 37 50.74583
 L19D -23 00 46.21494 14 37 42.97653

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Figure 3.4.5: Approved Surveyor General No.A /2021



3.4 Brief Process Description

3.4.1 Background:

As discussed hereinabove, **Desert Storage CC** intends to handle, transport and store Ammonium Nitrate. The process which is to be conducted at the proposed project site, will be the loading and off-loading of Ammonium Nitrate, with the main activity being, the storage of Ammonium Nitrate.

3.4.2 Raw Materials:

The raw materials to be stored at the proposed site consists of Ammonium Nitrate. The Ammonium Nitrate will be received by road on 34 tonne truck up to 11 500 tonnes at a time. On site the Ammonium Nitrate will be off loaded with forklifts and stored until loading to the client.

3.4.3 Storage:

The entire purpose of the proposed project is to erect and establish a storage facility, wherein Ammonium Nitrate can be stored, in order to increase the storage capacity and capabilities. The Ammonium Nitrate is imported in approximately 1,25t bulk bags which are sealed on top to prevent water ingress onto the product, as well as to minimise the risk that Ammonium Nitrate dust will escape and contaminate the environment.

The storage facility will consist of a warehouses or storehouses, measuring 50m in length, 22m in width and 8m in height. Furthermore, it will comprise of a concrete slab floor, walls of brick and a light steel structure roof. Access doors will be 4.2 m high and 5m wide to allow for trucks to enter.

3.5 Transport Routes and Mechanisms

Please take note that there is an existing network of roads in the proposed project area that could be used for transportation of workers, goods and products associated with the proposed project. Access to the site will be obtained from the C14 national road with an existing access road leading to the proposed site.

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The proposed project will include the following surface infrastructure:

- Temporary construction facilities and infrastructure for the security at night;
- Storage and handling of hazardous substances: Ammonium Nitrate;
- Fire control system;
- Surface water management: water supply tanks, clean and dirty storm water controls;
- Services: pipelines, access road, solar power only for charging cell phones and illumination at night for the security, back-up generator only for emergencies;
- Water: 4 x 5000litre water tanks for fire emergencies;
- Temporary ablution facilities;
- Security and access control; and
- The Storage Facility for Ammonium Nitrate.

3.6 Water Supply and Management

Water will be supplied by Desert Storage. The usage of water is limited in the day to day operations of the site.

Water management facilities for the control of storm water and for pollution prevention such as water supply tanks and clean/dirty storm water controls will be designed to keep clean and dirty water systems separate. Preventing the discharge of dirty water and recycling of dirty water is a priority.

3.7 Waste Management

3.7.1 Sewage

Due to the fact that no existing Town Council sewage connection point is available to service the new proposed site, it is proposed that there will be temporary/movable ablution facility for the proposed project. This movable ablution facility will be cleaned and placed by a registered sewerage solution company as necessary.

Sewage will be treated by means of a containerised sewage system. The final effluent from this Storage Facility will meet all legal specifications for effluents currently applicable in Namibia in terms of the Water Resources Management Act, 2004.

The sewage produced at the site stems mainly from ablution and toilet flushing. The total quantity of domestic effluent production is estimated to be between 1 and 2m³/day. The grey water is disposed of into the environment via a soak away. The toilet facilities used are of the flushable type, but will be supported and connected to a septic tank, that will be maintained by the local authority of Walvis Bay. A containerised trickling filter plant system is to be installed.

The total fresh water consumption for domestic purposes on site is approximately 5l of water per person per day. Consumption of water, with a maximum of 40-50 people on site equates to 250 to 300 l/day.

The sewage system of the site will cater for 50 people working an eight-hour shift. The sewage effluent will be pumped to the process water tank or discarded in accordance with permit requirements.

3.7.2 Sources of Waste

Most of the waste if any, will be generated from:

Solid waste generated from the site, will primarily be domestic and industrial non-hazardous waste. A comprehensive waste management plan, dealing with the

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classification and method of disposal for every material item brought onto site, will be developed for the project as product details and consumption rates become available.

Solid waste will include:

- Spills of Ammonium Nitrate during the handling thereof, in the stores and during loading and off-loading;
- Washing of the floors, wash water could potentially contain Ammonium Nitrate; (**No washing of floors will be allowed.**)
- Refuse from construction, such as scrap wood, metal and concrete;
- General domestic garbage from the storage facility, such as paper, refuse food, etc.;
- Construction debris, inert waste will be placed into bulk bins;
- General domestic garbage will be collected into bulk bins; and
- Refuse bulk bins are to be emptied once weekly at the nearby Walvis Bay landfill site.

3.7.3 Other waste

The types of waste that may be generated by the project include; general industrial waste, such as scrap metal and building rubble and domestic waste. These wastes will be temporarily handled and stored on site before being removed for recycling by suppliers, reuse by scrap dealers or final disposal at permitted waste disposal facilities. No on-site landfill (waste disposal) facilities are planned. A waste management procedure will be developed for these wastes.

3.7.4 Spillages

The site will be designed to have a zero discharge of any spillages.

3.8 Employment and Housing

It is estimated that approximately 50 permanent jobs will be created by the proposed project. Additional jobs may be created during the construction phase of the proposed project as well.

During the construction phase of the project security personnel will be housed on the site.

Housing will not be provided for employees on-site, it is expected that the employees will be transported from the nearby towns.

The anticipated labour compliment for the full production is detailed in Table 3.9.1.

TABLE 3.9.1 Labour compliments:

Post	Number
Magazine Master Manager	1
Deputy MM	1
Yard maintenance	2
Forklift Driver	4
Security	4
Strapping Teams	20
Total	32

**Positions for health and safety staff are not included.*

3.9 Socio-Economic

To manage migration of job seekers in a similar manner that minimizes pollution of the environment and avoids disruption of socio-economic life of the local people, no migration

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measures are planned, as the number to be employed is small, nobody will be displaced as a result of the implementation of this project.

During the project construction phase of a period of three (3) to six (6) months, activities will potentially utilize up to/approximately 30-50 people for the period. Even though the number is small, the project will nevertheless contribute to the improvement of the living standards of the nearby community.

Secondary spin off jobs may also lead to additional employment opportunities once the project has been established. It is envisaged to source labour requirements from the town of Walvis Bay.

3.9.1 Potential Socio-Economic Impacts

Within the accepted broad definition of the term “environment” that applies to Environmental Impact Assessments, it is required to assess potential socio-economic impacts as part of this study. Herein, the potential socio-economic factors associated with this proposed project, are listed below, with comments as to their relevance and significance to this particular project.

3.9.2 Changes in employment opportunities

The current estimations indicate that approximately 40-50 employees will be required for the construction phase of the project, whilst approximately 32 permanent jobs will arise as a result of this project.

It is anticipated that these employees will be sourced from local employment seekers and therefore, this impact is not regarded as a significant impact.

It is recommended that:

- The employee recruitment process for this project must be fair and transparent, to ensure that there are no conflicts between new-comers to the area and local job-seekers; and
- Due to the high unemployment rate, preferential treatment should be given to the local community, should they meet the minimum requirements for the job.

3.9.3 Secondary business opportunities

Given that this project will be a relatively small employer, it is recommended that the local communities be considered, if any secondary business opportunities become available as a result of the project.

Possible secondary business opportunities that could serve to support the project include the following:

- Transport jobs to deliver goods to and from the site;
- Cleaning services; and
- Maintenance Services, Vehicle Maintenance/Serviceing.

To ensure any secondary business opportunities benefit the local community as a whole, as opposed to only a few individuals, it is recommended that this issue be further discussed amongst community leaders in order to initiate and implement any such plans.

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3.9.4 **Increased pressure on local services and infrastructure**

This project will be completed in a period, i.e. 3 – 6 months; there will be limited pressure on the local services and this is not regarded as a significant impact.

It is therefore, recommended that services required during the construction phase be planned in conjunction with the Walvis Bay Town Council to ensure the town benefits in a positive manner from this development.

3.9.5 **Conclusions**

The socio-economic impacts associated with the scale of this project will not negatively affect the Town of Walvis Bay. **Desert Storage CC** Storage Facility, will contribute positively towards the development of Walvis Bay, even though it is a relatively small employer.

3.10 **Electricity**

Solar power will be installed for security illumination at night and should any night or early morning work be necessary. No NamPower electricity will be on site. There will be a mobile generator for emergencies and any night work, should this be necessary

3.11 **Health and Safety**

The site will have a health and safety programme in place which complies with local legislation as well as with international best practices.

To achieve this, **Desert Storage CC** will:

- Assess and respond to risks by identifying hazards to health and safety;
- Provide and maintain a working environment that is safe and in which risks to the health and safety of employees is managed;
- Ensure an adequate supply of health and safety equipment and that the site is staffed with due regard to health and safety;
- Establish a health and safety policy;
- Prepare and implement Codes of Practice; and
- Provide health and safety training.

3.11.1 **Occupational Health**

The project will have an occupational health and medical surveillance programme in place, where pre-employment, periodical and exit medical examinations including x-rays and audiometric testing are undertaken and a full employee health record system is established and maintained.

Occupational health is a specialised field and it is recommended that this be outsourced to a qualified Occupational Health Practitioner who should conduct the pre-employment, periodic and exit examinations. Medical records must and will be kept both for current and former employees.

3.11.2 **Occupational Hygiene**

Occupational Hygiene is an applied science concerned with the identification, evaluation and control of environmental factors and stresses arising in or from the work-place and which may cause sickness, impaired health and well-being or significant discomfort to and inefficiency of the employees. Through sound process design and engineering principles, coupled with maintenance of standards and equipment, occupational hygiene issues can be controlled.

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In order to conform to internationally accepted Occupational Exposure Limits (OEL), a baseline risk assessment must first be performed, thereafter a survey should be carried out, to determine the exposure of the workforce, to pollutants which have been identified during the risk assessment.

As the monitoring and analysis of pollutants involves a number of expensive instruments, a properly equipped laboratory and especially qualified staff, it is suggested that this function be outsourced as well.

3.11.3 Codes of Practice / Standards

The site will have in place Codes of Practice (COP) or site standards which, with respect to the working environment, health and safety, will cover topics such as:

- Mobile machinery operation, maintenance and repair;
- Storage and handling of chemicals;
- Roadways, construction, maintenance and use;
- Access to site;
- Waste disposal;
- Fire risk and firefighting;
- Airborne pollutants, including dust;
- Noise and hearing conservation;
- Occupational health;
- Occupational hygiene monitoring;
- Environmental management; and
- Emergency procedures.

3.11.4 Health and Safety Training

All persons who are employed on the site will be trained, prior to the commencement of their employment, on all aspects of health and safety as well as the requirements of the COP's that are relevant to their occupation. There will be regular refresher training for both workers and supervisors on health and safety. Responsibility for safety on site will be designated to appropriate supervisors and personnel.

3.11.5 Site Safety Program

Desert Storage CC will only appoint suitably qualified and competent persons in to assume responsibility for health and safety. The Safety Officer position is a part time appointment. Participation by labour in health and safety matters will comply with labour regulations.

3.11.6 Risk Assessment

The employer must identify the hazards and assess the risks to health and safety, to which employees may be exposed to. The employer must then determine how to eliminate or control or minimise the said risks. This is a formal, documented process which must involve all relevant persons, including the health and safety committee at the site.

There are a variety of risk assessment techniques available. The one used should be straightforward, relatively simple and easily understood by all the participants. The risk analysis matrix should be limited to Low, Medium and High categories for both probability and severity. One should avoid risk assessment systems that use complicated matrices and jargon.

The group who actually do the risk assessment should be chosen for expertise in the topic being assessed, this would include operators as well as any technical experts.

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Included therein, should be management (employer representation), employee representation, safety professionals, and where necessary the supplier or manufacturer, and a facilitator who should have appropriate technical knowledge.

Once the assessment team has been chosen, one must ensure that there is an understanding of the systems by all the participants. This is done by fully describing and discussing the systems. The systems are divided up into logical components for analysis. Any possible deviation or alternatives in design, installation or use is subject to a process of hazard identification. Each hazard is then assigned a probability of occurrence and a severity rating. The product of these is the "risk rating".

Methods of reducing the probability and/or severity are discussed and evaluated. Those considered appropriate are noted, and the rating process is then repeated. The process is documented and remedial action is taken on the design, installation or operation. Risk assessments must be reviewed periodically and, on any occasion, where there is a change of operation or equipment.

4. THE ENVIRONMENTAL IMPACT ASSESSMENT FOR DESERT STORAGE CC

Environmental Impact Assessments are governed by the Environmental Management Act, 7 of 2007, and is regulated by the Ministry of Environment and Tourism (MET). This Act was promulgated in the Government Gazette No. 3966 on 27 December 2007. The List of Activities that may not be undertaken without an Environmental Clearance Certificate and the Environmental Impact Assessment Regulations: Environmental Management Act, 7 of 2007 were promulgated on 6 February 2012 in Government Gazette No. 4878.

The following listed activities are relevant to the activities of **Desert Storage CC**:

4.1 Activities of Desert Storage CC

Table 4.1-1 List of activities that requires Environmental Clearance Certificate.

No. 29 List of activities that may not be undertaken without Environmental Clearance Certificate Act, 7 of 2007	
No	ACTIVITY
	HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE
9.1	The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 14 of 1974.

4.2 Desert Storage CC – Environmental Impact Assessment Process

An application will be submitted to the Ministry of Environment and Tourism (MET) for the activities relating to **Desert Storage CC**.

An EIA Scoping process is being conducted in terms of the Environmental Management Act, 7 of 2007. This process includes: a screening phase and a scoping phase, which includes an impact assessment and the production of an Environmental Management Plan (EMP).

The main purpose of this report is to provide information relating to the activities, which **Desert Storage CC** intends to conduct and perform at the proposed site and to indicate, which environmental aspects and potential impacts have been identified during both the Screening and Scoping Phases. This Scoping Report was developed through site observations, input from relevant environmental specialists and consultation with relevant stakeholders.

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This report will provide sufficient information for the MET to make an informed decision regarding the activities of **Desert Storage CC**, and whether an Environmental Clearance Certificate can be issued or not. An Environmental Management Plan (EMP) is also compiled as part of this report, as required by Section 15 of the Environmental Management Act, 7 of 2007.

The overall objectives of the Environmental Impact Assessment (EIA) process is to:

- Provide an independent assessment of the potential environmental, social and economic impacts associated with the proposed project;
- Undertake public consultation,
- Identify and integrate sustainable development criteria; and
- Develop mitigation measures for identified potential impacts, where necessary.

An EIA is influenced by national legislation as well as by a range of guidelines. In this regard, the legislation applicable to this proposed project, will be discussed more fully hereunder.

This report is the scoping report followed by an Environmental Management Plan (EMP). The main purpose of this scoping report is to generate terms of reference for the EIA that will enable the meaningful assessment of all the relevant environmental and social issues.

4.3 EIA Scoping Process

The process that was followed to develop this Scoping Report and EMP process and corresponding activities are outlined in **Table 4.3-1** below.

Table 4.3-1: Scoping process

Objectives	Corresponding activities
Project initiation/screening phase (August 2018)	
<ul style="list-style-type: none"> • Identify environmental aspects and potential impacts internally. • Finalize TOR for specialists' studies. • Initiate the Scoping (including assessment) process. 	<ul style="list-style-type: none"> • Project initiation discussions with Desert Storage CC. Identify environmental and social issues and determine legal requirements. • APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE hand delivered at MET's Office in Windhoek.
Scoping phase (including assessment of impacts) (November 2021 – February 2022)	
<ul style="list-style-type: none"> • Further identify potential environmental issues associated with the proposed project. • Considering alternatives. • Provide a description of the potentially affected environment. • Assessment of potential environmental impacts associated with the proposed project. • Develop management and mitigation measures. 	<ul style="list-style-type: none"> • Site visits and focus meetings with owner and Project owners. • Compilation of Scoping Report and EMP. • Distribution of Scoping Report to Interested and Affected Parties (I and AP) for comment. • Forward finalized Scoping Report with EMP and I and AP's comments to MET for decision-making.

4.4 Environmental Team

National Environmental Health Consultants CC (NEHC CC) is the independent company that has been appointed by **Desert Storage CC** to undertake the Environmental Impact Assessment and related processes. Johan Cornelissen, the Project Manager has approximately thirty-six (36) years of relevant experience in environmental management, conducting/managing EIA's, compiling EMP's and implementing EMP's and Environmental Management Systems. The relevant curriculum vitae documentation is attached in **Appendix F**. The environmental project team is outlined in **Table 4.4-1** below.

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Table 4.4-1: The environmental project team

Team	Name	Designation	Tasks and roles	Company
Client Interaction	Mr. Phillip Baard	Manager	Responsible for the interface between Desert Storage CC and the environmental team, and for the ensuring implementation of the EMP.	Desert Storage CC
Client Interaction	Mr. Charl Baard	Operational Manager	Responsible for the interface between Desert Storage CC and the environmental team, and for the ensuring implementation of the EMP.	Desert Storage CC
Project Management	Johan Cornelissen	Project Manager	Management of the process. Report Compilation.	NEHC CC
	Leonie Cornelissen	Project Assistant	Project administration, meetings, report compilation, etc.	NEHC CC
Specialist Input	Johan Cornelissen	Air quality specialist	Desktop air quality assessment	NEHC CC
	Johan Cornelissen	Environmental Noise	Desktop Environmental Noise assessment	NEHC CC

5. SCOPING METHODOLOGY

5.1 Information Collection

NEHC CC used various sources to identify the environmental issues associated with the activities with **Desert Storage CC's** proposed storage facility. The main sources of information for the preparation of this Scoping Report include:

- Information relating to the storage activities of **Desert Storage CC** which includes:
 - Description of the activities of **Desert Storage CC**;
 - Maps indicating the location of the proposed **Desert Storage CC** Storage Facility in the Walvis Bay Municipal boundaries; and
 - Description of the associated activities
- Site visits and inspections by NEHC CC;
- Literature research, consisting of:
 - Other EIA's and specialist studies done in the area; and
 - Atlas of Namibia.
- Input from Specialists in respect of:
 - Air quality; and
 - Environmental Noise.
- Consultation with other key stakeholders and Interested and Affected Parties.

5.2 Scoping Report

The main purpose of this Scoping Report is to indicate which environmental aspects relating to **Desert Storage CC** activities might have an impact on the environment. Due to reasons mentioned in **Sections 4, 5 and 12**, these potential impacts could also be assessed and the findings presented in this report. Furthermore, management and mitigation measures are provided to avoid or reduce these impacts.

Table 5.2-1 outlines the Scoping Report requirements contained in **Section 5** of the Environmental Impact Assessment Regulations promulgated in February 2012, in terms of the

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Environmental Management Act, 7 of 2007. The table includes reference to the relevant sections in the report.

Table 5.2-1: Scoping report requirements stipulated in the EIA regulation

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report
a) the curriculum vitae of the EAP who prepared the report;	Appendix F
b) a description of the proposed activity;	Sections 3
c) a description of the site on which the activity is to be undertaken and the location of the activity on the site	Section 4
d) a description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Sections 4 & 5
e) an identification of laws and guidelines that have been considered in the preparation of the Scoping Report;	Section 6
f) details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including - <ul style="list-style-type: none"> i. the steps that were taken to notify potentially interested and affected parties of the proposed application; ii. proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given; iii. a list of all persons, organizations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application; and iv. a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues; 	Section 5.3, Appendix B, Appendix C, Appendix D, Appendix E.
g) a description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Sections 2, 7 & 10
h) a description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Section 11
i) Description of the storage activities	Sections 3, 7.1
j) a draft management plan, which includes - <ul style="list-style-type: none"> i. information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure; ii. 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; and iii. 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. 	Section 11 & 12 & EMP

5.3 Public Participation Process

The Public Participation Process for the proposed activities to be conducted by **Desert Storage CC**, is aimed to ensure that all persons, such as resident and authorities, as well as organizations that may be affected by, or interested in, the proposed activities were informed of the project and could register their views and concerns. By consulting with the I and AP's the range of environmental issues to be considered in the Scoping Report (including the assessment of impacts) has been given specific context and focus.

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Included below is a summary of the people consulted, the process that was followed, and the issues that were identified.

5.3.1 Stakeholders

The following **Table 5.3(a)** provides a broad list of stakeholders that are relevant to the proposed project. They were informed about the activities of **Desert Storage CC** and the public consultation process.

Table 5.3(a): Stakeholders

Stakeholder Grouping	Organization
Government Ministries	<ul style="list-style-type: none"> Ministry of Environment and Tourism (MET) Ministry of Mines and Energy Ministry of Safety and Security, Office of the Inspector General, Namibian Police Force and Namibian Defense Force
Municipalities	<ul style="list-style-type: none"> Municipality of Walvis Bay
Other interested and affected parties	<ul style="list-style-type: none"> Any other people with an interest in, or who may be affected by, the proposed project.

The full stakeholder database for this project is included in **Appendix D** of the report.

5.3.2 Steps in the Consultation Process

Table 5.3-1 sets out the steps in the consultation process that were conducted during the EIA Scoping process.

Table 5.3-1: Consultation process with Interested and Affected Parties

TASK	DESCRIPTION	DATE
Notification - regulatory authorities and IAPs		
MET. APPLICATION REGISTRATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE	Done on MET's Website Registered as: APP-003249	11 November 2021
I and AP identification	The stakeholder database was created and has been updated throughout the EIA Scoping process, where required. A copy of the I and AP database is attached in Appendix D .	November/ December 2021
Distribution of background information document (BID) and telephone calls	If applicable, BID's were distributed via email to the relevant authorities and I and AP's on the stakeholder database and hard copies were made available on request. Hard copies of the BID were also made available during the focus group meetings. The purpose of the BID was to inform I and AP's about the activities of Desert Storage CC , the EIA (Scoping) process being followed, possible environmental impacts and means of providing input to the EIA (Scoping) process. Attached to the BID was a registration and response form, which provided I and AP's with an opportunity to submit their names, contact details and comments on the project.	October/ November 2021
Site notices	A site notice was erected on the site. A photo of the site notice is attached in Appendix C .	2 nd of November 2021
Newspaper Advertisements	Block advertisements were placed as follows: <ul style="list-style-type: none"> The Republikein (3rd and 8th of November 2021) Copies of the advertisements are attached in Appendix B .	November 2021
Focus Group Meeting and submission of comments		

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TASK	DESCRIPTION	DATE
Focus group meetings Submission of Comments	Due to the fact that only two I and AP's registered, no Focus group meetings were held. Register is included in Appendix D . In addition, emails (with comments) were submitted to NEHC CC from the two I and AP's.	November 2021
Comments and Responses	All comments received by email, fax, telephone conversations are attached in Appendix D . A Summary Issues and Response Report is attached Appendix E .	
Review of draft Scoping Report		
I and AP's and authorities (excluding MET) review of Scoping Report and EMP	The Scoping Report (excluding Appendices) will be distributed to all I and AP's that are registered on the I and AP database via e-mail (where available) and on MET electronic porthole.	02 / 2022
	Authorities and I and AP's have 21 working days to review the Scoping Report and submit comments in writing to NEHC CC. The closing date for comments will be 07/03/2022	07/03/2022
Comments on the Scoping Report	All comments will be considered and included into the final documentation submitted to MET.	14/03/2022

5.3.3 Summary of issues raised

All issues that have been raised to date by I and AP's are provided in **Appendix E** of the Scoping Report. The issues raised pertain to:

- Commercial concern.

6. LEGAL FRAMEWORK

The environmental legal requirements are summarized below.

The Republic of Namibia has five tiers of law and a number of policies relevant to environmental assessment and protection, which includes:

- The Constitution;
- Statutory law;
- Common law;
- Customary law; and
- International law.

Key policies currently in force include:

- The EIA Policy (1995); and
- Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1994).

As the main source of legislation, the Constitution of the Republic of Namibia, 1990, makes provision for the creation and enforcement of applicable legislation. In this context and in accordance with its constitution, Namibia has passed numerous laws intended to protect the natural environment and mitigate against adverse environmental impacts.

The Environmental Management Act, 7 of 2007

Environmental Impact Assessments were introduced in the Environmental Management Act, 7 of 2007, which was promulgated and published in Government Gazette 3966, on 27 December 2007 and is regulated by the Ministry of Environment and Tourism (MET). In addition to the Environmental Management Act, 7 of 2007, the Environmental Impact Assessment Regulations were promulgated and published in accordance with the Environmental Management Act, 7 of 2007, in Government Gazette 4878, on 6 February 2012. In accordance with the legal framework

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put forth by the relevant legislation discussed herein, certain activities have been identified, which may not commence without the obtainment of an Environmental Clearance Certificate, to be issued by the MET. The MET, however, will not issue an Environmental Clearance Certificate, without first having regard and considering the Environmental Impact Assessment.

The following activities (**Table 6.1-1**) are relevant to the proposed project. Please note that all activities which might be included in the construction are listed, and form part of the Environmental Clearance.

Table 6.1-1 List of activities that requires Environmental Clearance Certificate.

No	ACTIVITY
	HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE
9.1	The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.

6.1 Applicable Laws and Policies

In the context of the proposed storage activities, there are several laws and policies currently applicable.

6.2 Atmospheric Pollution Prevention Ordinance, 11 of 1976

The Ministry of Health and Social Services is responsible for the regulation of Atmospheric Pollution Prevention, as contemplated in the Atmospheric Pollution Prevention Ordinance, 11 of 1976. There are a number of sections of the aforesaid Ordinance which relates to 'Air Pollution Control Certification, Dust Control, Closure Certificates etc. The following sections, would thus, find application: **Sections 5(1), 7, 8(1), 11(1), (2), (3), 12(1), 13(1), (2), (4), (5), (6), 24(1), 25(1) and (2)**. At present, the Ministry does not grant any certificates as no procedures or guidelines exist. The best practice would be to notify the Ministry of the anticipated emissions.

6.3 Hazardous Substance Ordinance, 14 of 1974

This Ordinance regulates the validity of licenses or registration referred to in Section 5. It deals with hazardous substances of Groups I to IV. However, while environmental aspects are not really explicitly stated, guidelines for the importing, storage, handling, etc. of hazardous substances are set out therein, and is regulated by the Drug Law Enforcement Unit (DLEU) of the Namibian Police Force, which forms part of the Ministry of Safety and Security.

6.4 The Regional Councils Act, 22 of 1992

In terms of the Act, Regional Councils are governed by the Ministry for Regional Local Government Housing and Rural Development (MRLGHRD). The Regional Councils are responsible for the planning and coordination of regional policies and priorities. Section 28 thereof, states that the powers, duties, functions, rights and obligations of regional councils include overseeing the general implementation of regional development activities. They, thus, have the power to undertake, with due regard to the powers, duties and functions of the National Planning Commission, the planning of the development of the region for which it has been established, bearing in mind:

- The natural and other resources and the economic potential of such regions;
- The general land utilisation pattern; and
- The sensitivity of the natural environment.

6.5 The Labour Act, 6 of 1992, as amended by the Labour Act, 11 of 2007

In accordance with the aforementioned Act, the Ministry of Labour and Social Welfare, is the designated Ministry, responsible for the regulation and enforcement of the Act. The Act aims to "*promote and maintain the welfare of the people and to further a policy of labour relations conducive to economic growth, stability and productivity*". It details basic conditions of employment, as well as health, safety and welfare requirements, employers must adhere to.

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6.6 Explosives Act, 26 of 1956, as amended in South Africa to April 1978.

EXPLOSIVES REGULATIONS (GN R1604 in GG 3648 of 8 September 1972)

Summary: This Act regulates the manufacture, storage, sale, transport, import, export, use and possession of a wide range of explosives.

7. ALTERNATIVES

Due to the fact that the Harbour (NamPort) plays a major role in the logistical support of the Bulk Storage activities, makes it difficult to assess alternatives, it is also not feasible at this point in time to assess alternatives. The section below however, lists a number of alternatives that have been considered by **Desert Storage CC** prior to the commencement of the activities at the new location.

The current site determination was made by the following facts:

7.1 Location

The current lease agreement provides the Applicant with the opportunity to obtain a property, which is located within a financially feasible distance from the harbour, NamPort, where the Ammonium Nitrate will be imported to, and is directly accessible by road, being approximately 28 km to the proposed site. Furthermore, the vessel off-loading the Ammonium Nitrate, requires a quick turnaround time, as the Applicant will not be allowed to store the Ammonium Nitrate, within the boundaries of NamPort, thus, making the proposed site ideal, in terms of logistical support.

In light of the ideal positioning of the proposed site, in respect of distance from the harbour, no alternative locations are available, which would be better suited, than the proposed site. Alternative locations, would thus, require the purchase or lease of property, which would be further away from the harbour.

The suitability of the location has been assessed in detail during the EIA process, but based on the initial scoping, the proposed site is deemed suitable as a result of the following factors:

- There is already an existing footprint of use;
- The area has already been disturbed and would be difficult to rehabilitate to agricultural use;
- Similar storage activities are already being conducted in the area;
- The proposed site, is optimally placed, in respect of distance from the harbour; and
- The proposed site is easily accessible for product hauling to and from the site, mainly utilizing the C14, D1984 linking the C14 with the B2 to transport their product to their clients. Hauling trucks travelling from NamPort to and from the site along the C14 road to an established gravel access road (± 8 km South of Walvis Bay) that links the proposed **Desert Storage CC** Storage Facility with the C14.

7.2 Infrastructure

- There are no subterranean sewer lines, power cables, gas lines or other buried services located within the proposed site;
- There is an existing gravel access road; and
- There is already an existing footprint next to the proposed site.

7.3 Engineering Requirements

- The site is not yet compacted, fairly flat and thus requires little or no infill.

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7.4 Socio-Economic

- Many of the direct, indirect and accumulative impacts, which have already been discussed in this report, will have a positive impact of significance on the local community.

7.5 NO-GO Option

The potential negative impacts associated with the activities of **Desert Storage CC** Facility, would be avoided if these activities do not proceed. This in turn will impede the physical development of the region and affect the economy of the country.

Most companies involved in the mining and quarrying industry, manufactures their own explosives to save on costs, and the compound or ingredient most used, has been shown to be Ammonium Nitrate. The Ammonium Nitrate which is commonly used during the manufacturing of the explosives, however, still has to be imported and transported, before it reaches its end destination at the relevant mining and quarrying industry. **Desert Storage CC** aims to cater to and serve the growing market who intends to import and transport Ammonium Nitrate in order to enable companies in the industry to manufacture the explosives.

Therefore, in order for the proposed project to start with its activities, the management and mitigation measure as presented in this report, needs to be implemented to ensure the potential negative impacts on the environment can either be minimized or avoided.

8. IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

The activities described above has the potential to have an impact on the environment. Some environmental aspects and potential impacts were identified during the screening and scoping phases of the Environmental Impact Assessment, which was held in consultation with the relevant authorities, the Interested and Affected Parties (I and AP) and the environmental team.

The following issues were assessed in this process and the findings are presented in this Scoping Report:

8.1 Groundwater and surface water

The area which forms the topic of this study, lies within the part of the country (coastal area) where the mean annual rainfall is less than 50 mm per annum, however fog and suspended salt is typical in the area, therefore contributing to the groundwater levels that fauna and flora survive on.

No underground resources will be utilized for the proposed activity, the underground water sources are therefore unlikely to be impacted. There is, however, already an existing footprint on neighbouring area of the proposed site of a similar related activity n.l. *Native Storage*.

This project does however contain an inherent risk of contamination of the underground water sources. One of the key elements of this project is the transportation of Ammonium Nitrate to and from the storage facility, which has the potential to spill, and such spillage, if not mitigated properly, can result in the aforesaid contamination of the underground water sources. There is however no risk that natural resources will be contaminated in the event of a spillage, as the proposed site for the project is not located near or over the natural drainage areas of the Namib Dessert.

Sufficient good quality groundwater is available for different land users in the coastal towns through the water supply scheme (InnoWind Draft Scoping Baseline Report, 2010), (Christian, 2006) and (Heyns *et al*, 2009) and (Ninham Shand Consulting Services, 2008). Fog and suspended salt are typical to the area.

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8.2 Temperature

It is further typified by mild summers and cool winters with average minimum and maximum temperatures ranging between 10°C and 24°C. According to Seely and Pallet (2008) fog is a prevalent characteristic, extending around 50 km inland over 100 days per year. Fog produces five times more moisture than rain in the central Namib and is much more predictable

Maximum and minimum temperatures in the Namibia Desert near the coast, are moderated by the effects of the cold Benguela current and the regular fog bank (Reptile Uranium Namibia, 2010). According to Christian (2006), the hottest month is February, when maximum air temperatures can reach 40°C, but the average maximum is between 25°C – 30°C. The coldest month is August, when the average minimum temperature is between 8°C and 12°C depending on the distance from the coast (*Ibid*).

The coastal area receives fog and extends about 20 km inland (Mendelsohn et al, 2009). The fog is sufficient to support the biodiversity in the project area.

8.3 Biodiversity

The area in which the proposed building site will be built will however not disturb the natural fauna and flora of the prescribed region, due to the fact that there is already an existing footprint on the proposed site, therefore, the natural growth of the organisms on the site, will not be influenced. New areas will however be cleared which will cause an impact on natural vegetation and the associated loss of habitat for fauna. Furthermore, machinery and vehicles, during the loading and the off-loading of the Ammonium Nitrate, may cause a disturbance to animals that may roam these areas.

Ecologically it is a low energy system because of the lack of water and the plants grow slowly while annual ones can only grow in the years with adequate rain. As a result, a long period of time is required for the vegetation of the area, to recover from disturbances.

8.4 Air quality

As a result of the low potential risk of dust generation on the proposed site for the project, no air quality study has been performed. Although the impact on the quality of the air of the area is unlikely, it will however, be monitored and managed with the Environmental Management Plan.

The information for this section was obtained from data collected by NEHC CC during **January 2018 to December 2018** at a PM₁₀ station – residential area next to NamPort Walvis Bay.

Weather Data

Due to site location and distance from Walvis Bay CPD, approximately 23km to the South-East of Walvis Bay, reflects prevailing winds with a SE course with frequent winds from the SSE as well. Wind roses from the Walvis Bay station are presented in figure 4-1 and 4.2: indicating period and time of day or night. (*1ste of November till 30th of December 2021*).

Existing Sources of Air Pollution

Aside from the existing quarries and the international airport (Rooibank) in the region, there are not many sources of gaseous and particulate emissions in the vicinity of the proposed **Desert Storage CC Facility**. The nearest quarry is approximately 4.5km to the South and with Rooikop International Airport approximately 9.3km to the North-East.

Fugitive dust sources associated with quarry mining activities include drilling and blasting operations, materials handling activities, vehicle-entrainment by haul vehicles and wind-blown dust from tailings impoundments and stockpiles. Quarry mining operations in the area represent potentially the most significant sources of fugitive dust emissions (PM_{2,5} and PM₁₀) with small amounts of Oxides of Nitrogen (NOx), Carbon Monoxide (CO), Sulphur Dioxide (SO₂), Methane,

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and Carbon Dioxide (CO₂) being released during blasting operations or from quarry earth moving equipment.

The C14, D1984 linking the C14 with the B2 main road and the international airport will contribute to gaseous emissions such as CO₂, CO, Hydrocarbons (HCs), SO₂, NO_x, particulates and lead. To a lesser extent, vehicle entrainment on the gravel road leading to the proposed site will add to the particulate load in the area.

Ambient Air Quality Data

No ambient air quality data is available for the actual area. The collected data from the Walvis Bay - Residential PM₁₀ station concentrations conducted as part of the NamPort Container Terminal – EMP Compliance study indicate that the average dust fall out measured with the PM₁₀ was 0.43mg/m³ (439.06µg/m³) in total for the for the whole period of January 2018 to December 2018; or equivalently 0.014mg/m³ (14.21µg/m³) per 24-hour period concentration µg/m³ as prescribed in **TABLE 8.3-1: The ambient air quality guidelines and standards for PM₁₀** below.

Please note that these results are well below the guidelines and standards as set out below for a PM₁₀ sample result.

The area surrounding the proposed **Desert Storage CC** Storage Facility is covered with small sand dunes to the north west and west side with flat sandy topography towards the C14. The topography around this site is unlikely to have a significant influence on the dispersion potential of air emissions from the proposed project. Due to the sandy/dune topography compilation, east weather conditions will have a significant effect on the proposed site.

TABLE 8.4-1: The ambient air quality guidelines and standards for PM₁₀

Authority	Maximum 24-hour Concentration µg/m ³	Annual Average Concentration µg/m ³
SA standards (Air Quality Act)	180(a)	60
RSA SANS limits (SANS:1929,2004)	75(b)(n) 50(c)	40(b)(n) 30(c)
Australian standards	50(d)	-
European Community (EC)	50(e)	30(f) 20(g)
World Bank (General Environmental Guidelines)	70(h)	50(h)
United Kingdom	50(i)	40(j)
United States EPA	150(k)	50(l)
World Health Organisation	(m)	(m)

Notes:

- (a) Not to be exceeded more than three times in one year.
- (b) Limit value. Permissible frequencies of exceedance, margin of tolerance and date by which limit value should be complied with not yet set.
- (c) Target value. Permissible frequencies of exceedance and date by which limit value should be complied with not yet set.
- (d) Australian ambient air quality standards. (<http://www.deh.gov.au/atmosphere/airquality/standards.html>). Not to be exceeded more than 5 days per year. Compliance by 2008.
- (e) EC First Daughter Directive, 1999/30/EC (<http://europa.eu.int/comm/environment/air/ambient.htm>). Compliance by 1 January 2005. Not to be exceeded more than 25 times per calendar year. (By 1 January 2010, no violations of more than 7 times per year will be permitted.)
- (f) EC First Daughter Directive, 1999/30/EC (<http://europa.eu.int/comm/environment/air/ambient.htm>). Compliance by 1 January 2005.
- (g) EC First Daughter Directive, 1999/30/EC (<http://europa.eu.int/comm/environment/air/ambient.htm>). Compliance by 1 January 2010.
- (h) World Bank, 1998. Pollution Prevention and Abatement Handbook. (www.worldbank.org). Ambient air conditions at property boundary.
- (i) UK Air Quality Objectives (www.airquality.co.uk/archive/standards/php). Not to be exceeded more than 35 times per year. Compliance by 31 December 2004.
- (j) UK Air Quality Objectives (www.airquality.co.uk/archive/standards/php). Compliance by 31 December 2004.
- (k) US National Ambient Air Quality Standards (www.epa.gov/air/criteria.html). Not to be exceeded more than once per year.
- (l) US National Ambient Air Quality Standards (www.epa.gov/air/criteria.html). To attain this standard, the 3-year average of the weighted annual mean PM10 concentration at each monitor within an area must not exceed 50 µg/m³.
- (m) WHO (2000) issued linear dose-response relationships for PM10 concentrations and various health endpoints with no specific guideline provided. WHO (2005) made available during early 2006 proposes several interim target levels (see Tables 2-2 and 2-3).
- (n) New SA standards proposed under Government Notice No. 528, 9 June 2006.

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FIGURE 8.4-1: Period, Day-Time and Night-Time Walvis Bay Wind Rose: 01st of November 2021 to 30th of November 2021.

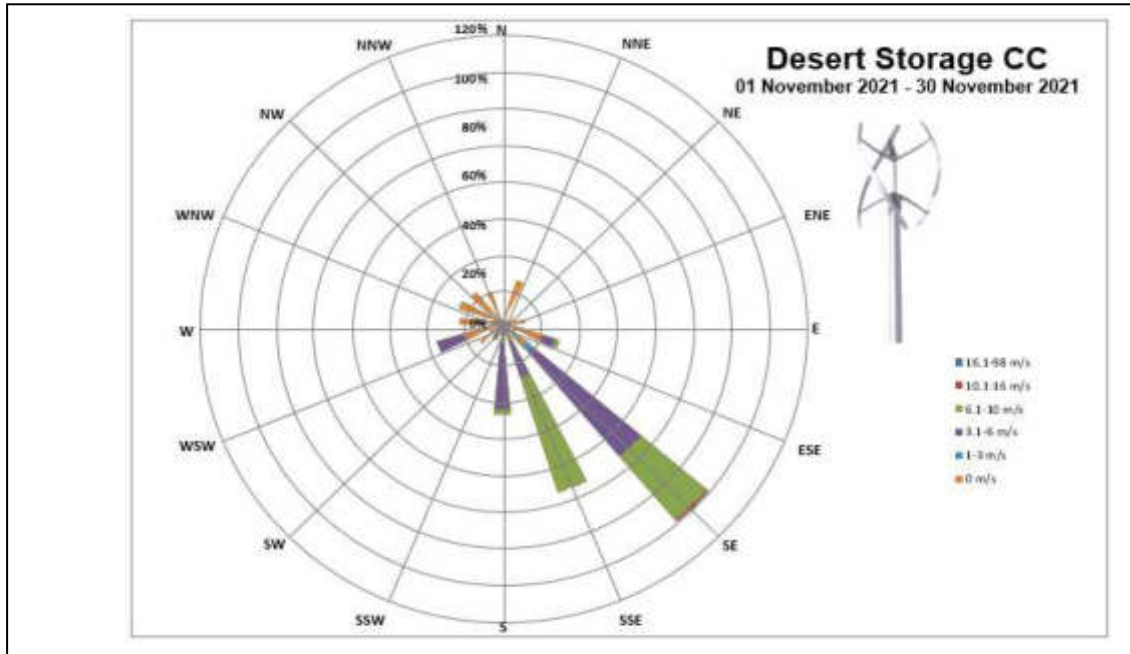
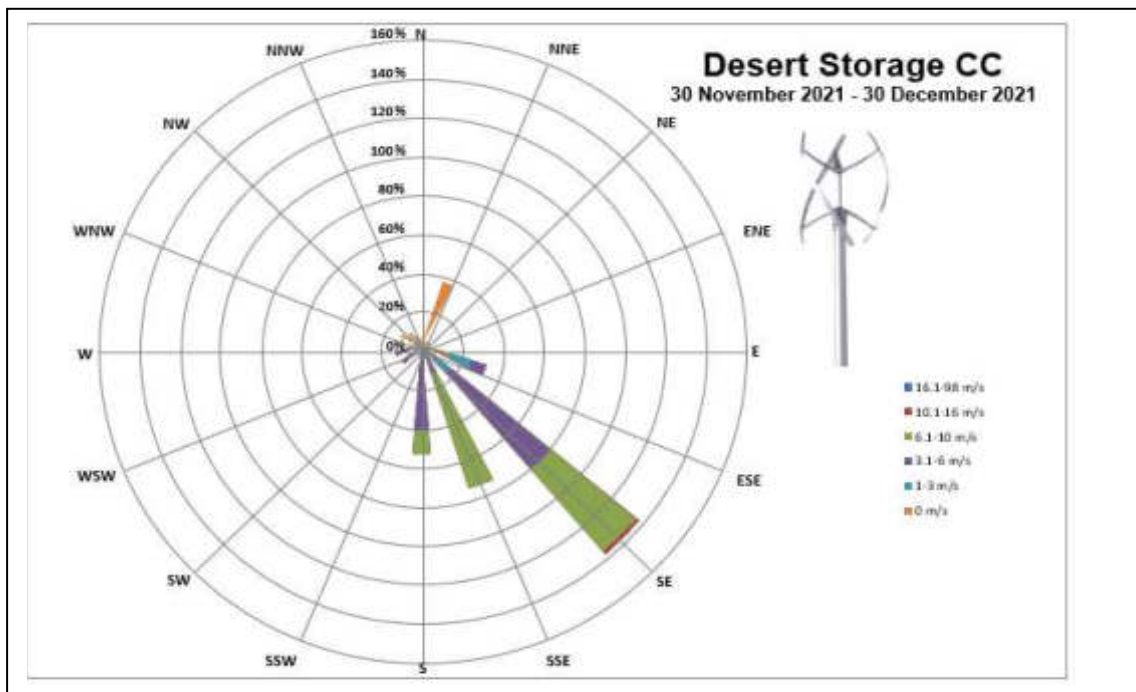


FIGURE 8.4-2: Period, Day-Time and Night-Time Walvis Bay Wind Rose: 30th of November 2021 to 30th of December 2021.



8.5 Noise

Existing noise sources within and around the project site includes:

- Natural sounds from the wind, animals and birds;
- Vehicle movement on the public road network;
- Day to day quarry activities;
- Day to day international airport activities;
- Aircraft Noise from Rookop International Airport,
- Rail transport activities; and
- Noise arising from the day to day activities associated with the town of Walvis Bay.

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Potential receptors of noise are the town of Walvis Bay and tourists that frequent the various attractions and fauna in the surrounding area. The sensitivity of noise receptors usually increases at night when conditions are tranquil and ambient noise levels are at their lowest.

It must be noted that there are some permanent noise receptors in the area namely Rooikop International Airport, BC Stone and some quarries that may also contribute to higher environmental noise within this remote area. The area surrounding the proposed **Desert Storage CC** Facility site will potentially be impacted on, by the noise generated during the construction, operation and closure of the proposed storage facility.

An anticipated impact of the continuous noise generated will be the initial movement of wildlife out of the area. As the fauna become accustomed to the noise, there will be less of an impact and possibly movement back into the storage vicinity.

8.6 Visual

Due to the current low-density occupation and usage of the area in general, any activity or buildings or infrastructure development could create a visual impact and, in general a loss of "sense of place".

8.7 Socio-Economic Structure/Profile

The regional setting of the proposed site is included in Table 8.6-1 and is illustrated in Figure 3.4-1 and Table 3.9-1 respectively.

TABLE 8.7-1: Regional Setting:

Region	Erongo Region
Local authorities	Erongo Regional Council; Walvis Bay Municipality
National authorities	Ministry of Regional Local Government Housing and Rural Development (MRLGHRD), Ministry of Mines and Energy (MME)
Project location	New light industrial zone, currently zoned as agriculture
Closest towns/communities	Walvis Bay
Catchments	Kuiseb river

8.8 Safety

Ammonium nitrate is a chemical compound with the chemical formula NH_4NO_3 . It is a white crystalline solid consisting of ions of ammonium and nitrate. It is highly soluble in water and hygroscopic as a solid, although it does not form hydrates.

It is predominantly used in agriculture as a high-nitrogen fertilizer. Its other major use is as a component of explosive mixtures used in mining, quarrying, and civil construction. It is the major constituent of ANFO (or AN/FO, for ammonium nitrate/fuel oil), a popular industrial explosive; similar formulations have been used in improvised explosive devices.

AMMONIUM NITRATE FERTILIZER is an oxidizing agent. Does not itself readily burn, but accelerates the burning of combustible material with which it may be contaminated. Produces toxic oxides of nitrogen during such reactions. Mixtures with alkyl esters may explode, owing to the formation of alkyl nitrates.

Ammonium nitrate is the ammonium salt of nitric acid and it has a role as a fertilizer, an explosive and an oxidizing agent. It becomes a potential explosive hazard if mixed. Thus, the storage facility does constitute a work-place where hazardous and dangerous substances are stored. In light thereof that the storage facility will be housing dangerous and hazardous substances, a license is required, before operations may commence. Safety impacts were further assessed in the report.

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9. ASSESSMENT OF IMPACTS

9.1 Groundwater

5.1.1 *Impact on groundwater resources*

The potential of the new proposed **Desert Storage CC** Storage Facility on Farm No. 38, within the Walvis Bay Municipal District, will not have a direct or adverse impact on the groundwater resources of the proposed site area. The overall significance is rated as medium in the unmitigated case and low in the mitigated case.

9.1.2 *Reduction of aquifer thickness*

The overall significance is rated as low in the unmitigated case and remains low in the mitigated case.

9.1.3 *Groundwater quality*

Considering that Ammonium Nitrate is intended to be handled, stored, loaded and off-loaded at the proposed site area, there is an inherent risk of the potential seepage and spillage of pollutants, which could possibly result in the contamination of groundwater resources or polluted groundwater seepage. The overall significance is rated as medium in the unmitigated case and low in the mitigated case.

9.2 Surface Water

9.2.1 *Downstream decrease in Surface Water runoff*

The main factor which should be considered is that there are no significant downstream users of the surface water produced by flood events. The overall significance is rated as low and remains low in the mitigated case.

9.2.2 *Pollution of Surface Water runoff*

The study area lies within the part of the country (coastal area) where the mean annual rainfall is less than 50 mm per annum. The overall significance is rated as low in the unmitigated case and remains low in the mitigated case.

9.3 Biodiversity

9.3.1 *Physical destruction and general disturbance to biodiversity*

The area in which the proposed storage site will be built, will however not disturb the natural fauna and flora of the prescribed region, due to the fact that there is already an existing footprint on the proposed site and therefore, the natural growth of the said organisms will not be influenced.

Given the above the unmitigated severity is low and in the mitigated scenario it remains low.

9.4 Visual

9.4.1 *Visual impact and impact on "Sense of Place"*

The severity of visual impacts is determined by assessing the change to the visual landscape as a result of **Desert Storage CC's** activities. The visual landscape is determined by considering: landscape character, sense of place, aesthetic value, sensitivity of the visual resource and sensitive views. In this regard, the general area is considered to have a relatively significant visual landscape.

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Out of a sensitive receptor viewpoint (i.e. the neighboring owners) will not experience significant visual impacts as a result of the proposed activity, during the construction and operation of the storage facility. The unmitigated severity is low and remains low in the mitigated case.

9.5 Third Party Safety

9.5.1 Safety impacts on third parties

Third parties visiting the area and/or using the dirt road that intersects with the proposed access road, could possibly encounter **Desert Storage CC** vehicles. This presents opportunities for accidents and people getting injured or even killed. The unmitigated severity is high however, in the mitigated scenario; this issue can be prevented, which reduces the severity to low.

9.6 Air quality

9.6.1 Air quality impacts on surrounding receptors

The unmitigated severity is low in the unmitigated scenario and remains low in the mitigated case.

9.7 Environmental Noise

9.7.1 Environmental Noise impacts on surrounding receptors

Out of a sensitive receptor viewpoint (i.e. the neighboring owners) will not experience significant environmental noise impacts as a result of the proposed activity, during the operation of the storage facility.

The unmitigated severity is medium in the unmitigated scenario and remains medium in the mitigated case.

9.8 Potential Containerized Explosives

9.8.1 Impacts of Hazardous Chemical Substances / Potential Explosives on surrounding receptors

Importation of Ammonium Nitrate (AN):

Firstly, it must be noted that Ammonium Nitrate is not an explosive on its own. It is been widely used as a fertilizer.

Currently, the Namibian port authorities only allow for a shipment of 8000 tons of Ammonium Nitrate to be imported per shipment. Such a shipment would be imported and off-loaded at the port of Walvis Bay. The shipping owner only allows for 4 days for the off-loading of the shipment. Again, the port authorities only allow for off-loading during day-light hours. The Ammonium Nitrate is imported in 1,0 -1,25t bulk bags. These bags will be off-loaded directly from the ship, onto the trucks.

No Ammonium Nitrate is allowed to be stored in the Port of Walvis Bay. Thus, the crane will drop the bulk bags directly onto the trucks or key side to be loaded on the truck. The trucks will exit the port via the back road, and proceed to the Ammonium Nitrate storage facility on the site. Each truck can carry a load of 34 tons and each load will be off-loaded according to CEP approval and Nampont Crane capability

The trucks will follow the route stipulated by the Walvis Bay Fire brigade, as per the approved route risk assessment, which has been approved by the Municipality of Walvis Bay, the Walvis Bay Fire Department and the Ministry of Safety and Security.

The bags are sealed on top to prevent water ingress onto the product, as well as to minimize the risk of Ammonium Nitrate dust for contamination of the environment.

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10. SITE PROCESS AND OPERATIONS

The proposed Bulk Storage activity will be a new project for **Desert Storage CC** in Namibia. The **Desert Storage CC** proposed new site is approximately 23km South-East of Walvis Bay (refer to **FIGURE 3.4-1** for the location of the new proposed site). Entrance to the proposed site will be from an existing gravel road connected to the C14 National Road.

10.1 Products

Desert Storage CC aims to increase the storage capabilities and capacity of the Port of Walvis Bay, by engaging in the bulk storage of Ammonium Nitrate, which will be used by the mining and quarrying industry in Southern Africa to manufacture explosives, to be used in their mining operations.

A substantial amount of other chemicals is also used in the Mining sector. Currently a full chemical list is not available, but should the need arise to include some of these chemicals it will be added to this list and handled, stored and transported according to legislative requirements. Quantities will be established to customer demands and therefore may change on short notice.

The product, which **Desert Storage CC**, intends to store will comprise of bulk bags of Ammonium Nitrate, which will be transported from the Port of Walvis Bay to customers.

10.2 Material Inventories

Average maximum inventories of **hazardous materials**¹ on the site at any time are given in **Table 10.2-1** below: *(This may change in future according to market requirements)*

Table 10.2-1 – Inventories of hazardous materials			
Material	Volume containment in bags	Specific gravity	Mass (tons)
Ammonium Nitrate	9200 bags @1.25-ton average per bag	1.4	11 500
AVERAGE TOTAL INVENTORY (tons): (maximum capacity)			11 500

¹ **Materials** that is combustible, flammable, explosive, corrosive or toxic

10.3 Buildings

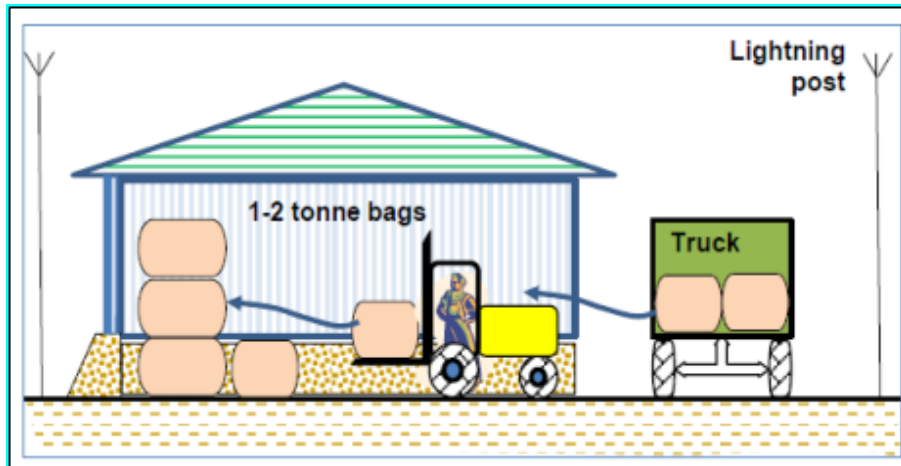
10.3.1 Ammonium Nitrate Store

The Ammonium Nitrate Store will consist of a concrete floor, brick walls up to 1.5m in height, with metal sheeting to the roof, and with a corrugated iron pitched roof. See **Figure 11.3-1** below.

There will be a door, which will provide for forklift entry into the building, for the loading and off-loading of the Ammonium Nitrate bags to and from the trucks. The bulk bags will be stacked in accordance to prior approval from Ministry of Home Affairs, Immigration, Safety and Security.

There will now windows and lighting inside, natural light or battery source lights will be use inside structures. Doors will be left open during loading and offloading processes. All metal structures will be earthed; with lighting conductor at each store and the floors of the stores will be slightly railed to prevent rain water ingress into the building.

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Figure 10.3-1 Elevation view of the Ammonium Nitrate Store

10.4 Licensing

In terms of the Explosives Act, 26 of 1956, read together with the Occupational Health and Safety Act 85 of 1993, any person or company, whom wants to erect and operate a facility, whereby explosives will be stored, must obtain a license to that effect.

Under regulation 7.2.2 of the Explosives Regulation R 1604 OF 8 September 1972 as amended, compiled by Section 30(1) of the Explosives Act, (Act 26 of 1956) as amended stipulates that no explosives magazine or ammonium nitrate storage facility may be constructed before required plans have been approved by the chief inspector of explosives.

10.5 Safety Distances

The Explosive Regulations, which have been promulgated under the EXPLOSIVES ACT 26 OF 1956 EXPLOSIVES and REGULATIONS in terms of the South African Occupational Health and Safety Act, 85 of 1993 were promulgated under (GN R1604 in GG 3648 of 8 September 1972), classifies Ammonium Nitrate under Class 5.1. The aforementioned regulations also provide safety distances for the Ammonium Nitrate, and in respect of the safety distances provided, Ammonium Nitrate, is grouped for this purpose, according to Class 1.4. The Safety Distances are illustrated in **Figure 10.5-1** hereunder.

Please also note that no such regulations have been promulgated under the existing **Labour Act, No. 11 of 2007** in Namibia to make provision for these distances.

However, the maximum distance given in the explosive regulations table is 250 tonnes, whereas the total Ammonium Nitrate, that is proposed to be kept in the store is 11 500 tonnes. So, the various distances in that table for Class 1.4 explosives were plotted against the mass of explosives and equations fitted to the data as shown in the graph in **Figure 11.5-1** below. As can be seen, the safety distances flatten out to an almost constant value for large masses of explosives.

Desert Storage CC will start with $\pm 8000Mt$ Ammonium Nitrate shipments that need to be offloaded and transported from NamPort to the proposed site of **Desert Storage CC**.

They will the gradually increase the shipments to 11 500 tonnes.

Good Practice Guide:

Storage of Solid Technical Grade Ammonium Nitrate by International Industry Working Group on Ammonium Nitrate - SAFEX International - SAFEX Good Explosives Practice Series, GPG 02 rev02 was also used as best practice guide.

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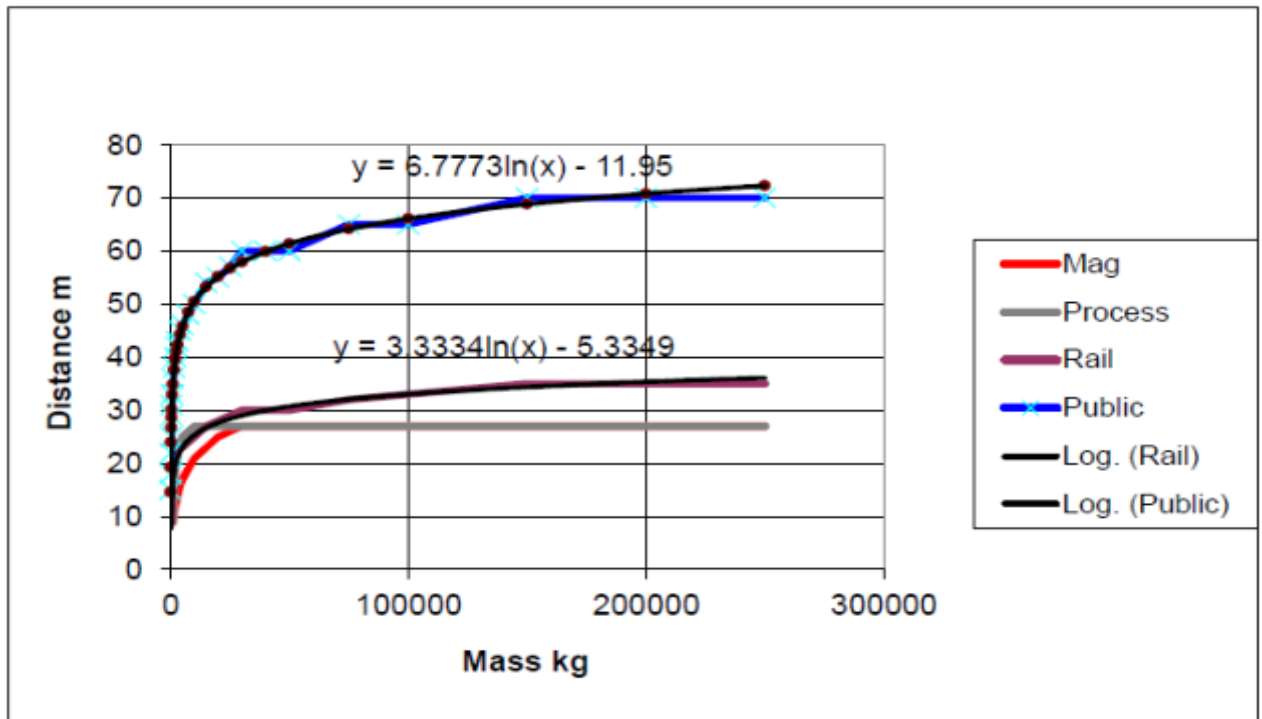


Figure 10.5-1 Plot of Safety distance versus mass of Class 1.4 explosives

The distances to public and rail roads for Ammonium Nitrate are shown in **Table 10.5-2** below. These correspond to the maximum mass of 250 tonnes, in the tables in the regulations, referred to above.

Table 10.5-2: Warehouse safety distances				
Installation ↓	Mass of explosive kg	From magazines m	To rail, roads, m	To public buildings
Classification ↓				
Ammonium nitrate store (e.g.) P-3 Class 5.1 (distances as per Class 1.2 and 1.4)	3 000 000	27	35 (44)	70 (89)

10.6 Hazards Identified

10.6.1 Materials

Hazard data and physical properties were extracted from Material Hazard Data Sheets and other sources in the literature and are shown in the tables below.

10.6.2 Ammonium Nitrate.

Table 10.6-1 Material hazards; Ammonium Nitrate

MATERIAL	AMMONIUM NITRATE
Boiling point at 1 atm. [°C.]	Boils at 140 °C
Vapour pressure at 25°C. [bar.]	0,5 at 120 °C
Odour Ethereal, threshold [ppm.]	Nitrogen dioxides 0,4 or ammoniac 5 - 20
Flash point [°C.]	Not flammable
Auto ignition temperature [°C.]	Non-flammable, but ammonia vapour released may ignite at 651°C (iron catalysed)
Min ignition energy [mJ]	Not combustible, but ammonia vapours released will require 680 mJ
Explosive limits in air [% vol.]	Not flammable, but if ammonia vapours present; 16 to 27

MATERIAL	AMMONIUM NITRATE
Fire ignitability, flash point	Oxidiser, not combustible, will enhance combustion of organic material
Acute Health effects:	
Inhalation	Irritating and corrosive to throat, mucous membranes and respiratory tract. Bronchiectasis with small airway obliteration or interstitial fibrosis may occur.
Threshold limit value [ppm]	NO ₂ = 3 HNO ₃ = 2 NH ₃ = 25
Short term exposure limit. [ppm.]	NO ₂ = 5 HNO ₃ = 4 NH ₃ = 35
Liquid contact	Irritating and corrosive to skin and eyes. Severe corrosion of body tissue due to alkalinity. Hot liquid will burn and blister the skin and cause eye corneal permanent damage. Extensive skin burns can be fatal.
Ingestion	Corrosive to stomach, but regarded low toxicity, e.g. LD50 = 2450 mg/kg (Harmful is 200 - 2000 mg/kg)
Chronic Health effects:	None
Reactivity.	Stable in proper storage and containment. Reacts explosively with reducing agents, e.g. metallic powders, and contact with organic, e.g. wood, fuel, hydrocarbons, alcohol's, etc. Reacts with strong alkalis to liberate ammonia. Hazardous breakdown products are nitrogen oxides (NO, NO ₂ , N ₂ O)
Environmental pollution	Aquatic TLm (data not available).

From the above table one may conclude that the hazards of Ammonium Nitrate have the potential for explosions, fires and the release of toxic fumes of nitrogen oxides and ammonia during explosion or combustion. Splashing may also cause slight irritation when in contact with the skin.

Spilled into waterways, it is harmful to aquatic life.

This table will be expanded in future should the need for storage of other chemicals become necessary.

10.6.3 Site and Equipment Hazards

The main hazards relevant to an explosive's storage facility, are explosion (deflagration, detonation and fires). Although toxic releases may also occur during an explosion or a fire, they are secondary effects to the flammable hazards. Health and environmental hazards on an explosive storage facility is an occupational issue; therefore, toxic release, health and environmental hazards were not considered in this assessment.

The following significant major hazardous events were identified as listed below:

- Ammonium Nitrate Store Explosion

The hazardous event, mentioned above, was analysed in terms of its causes, preventative measures, consequences with protective or mitigation measures. See the detailed Hazard Analysis in **Table 10.8-2**.

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10.7 Risk Analysis

10.7.1 Methodology

Risk constitutes a combination of the likelihood of a hazard occurring and its severity, and therefore, the assessment attempted to achieve the following:

- Identification of hazards as in the previous sections;
- Analysis of the consequences thereof;
- Analysis of the causes that give rise thereto;
- Estimation of the risks;
- Assessing the acceptability of the risks; and
- The treatment of the risks.

This assessment was done with a quantitative method, comprising, a cause analysis to quantify the likelihoods of the hazards using fault trees, followed by a consequence analysis to quantify the severity by the modelling of the hazardous effects, combining the likelihood of the events with the severity of the effects to arrive at the risks in terms of fatalities. Finally, the estimated risks were compared against targets in order to assess their acceptability.

If risks were found not to be acceptable, a search was undertaken to find means of reducing the risk, which were then proposed for actions, i.e. the treatment of the risks.

The pre-operational risk assessment was carried out according to the standard SANS 31010:2010 based on IEC ISO 31010:2009. *See EMP Report.*

10.8 Consequences Analysis

Explosion and fire hazardous events may lead to the following consequences:

- Fatalities and injuries to the workforce;
- Damage to the site and equipment; and
- Fatalities, injuries and damage to the public.

10.8.1 Explosion and fires

Explosions and fires were modelled and input data for the modelling of explosions were based on the following quantities, which were expressed into equivalent TNT as shown in **Table 10.8-1** below.

Table 10.8-1 Input quantities for hazard modelling

No	Section	Equipment & explosive	Mass of explosive kg	Overall TNT efficiency %	Equivalent TNT kg
1	Ammonium nitrate store	Oxidiser	3 000 000	0,32 * 0,3 = 096 ⁵ = 9,6	288 000
2	Ammonium nitrate store	Oxidiser	8 000 000	0,32 * 0,3 = 096 ⁵ = 9,6	768 000

Table 10.8-2 Hazard Analysis

HAZARD ANALYSIS						
Ref no:	Equipment, system, building	Hazardous event	Causes	Preventative measures in place	Consequences	Protective measures in place
1	Ammonium Nitrate Store	Explosion e.g. detonation	<ul style="list-style-type: none"> Spillage of Ammonium Nitrate. Combustible material present such as plastic, wood and oil. Ignition of a fire, electrical fault, forklift tire spin, lightning strike or arson. Decomposition, confinement from stacked bags. Propagation. 	<ul style="list-style-type: none"> Good housekeeping, such as no combustibles or wooden pallets. Electrical inspection and maintenance. Security. 	<ul style="list-style-type: none"> Potential fatalities. Burn injuries. Damage to the building and equipment. 	<ul style="list-style-type: none"> Separation from other buildings and equipment. Extinguishing small fires.
	Ammonium Nitrate Store	Fuming	<ul style="list-style-type: none"> Combustible material present such as plastic, wood and oil. Ignition of a fire, electrical fault, forklift tire spin, lightning strike, or arson. 	<ul style="list-style-type: none"> Good housekeeping such as no combustibles or wooden pallets. Electrical inspection and maintenance. Security. 	<ul style="list-style-type: none"> Potential gassing. Injuries 	<ul style="list-style-type: none"> Extinguishing small fires. Evacuation, first aid and medical treatment.

11. IDENTIFICATION AND DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS

Potential impacts that were identified during the scoping process, in consultation with specialists, are discussed under environmental component headings in this section. These discussions should be read with the corresponding descriptions of the current environment discussed in **section 4 & 5** of the scoping report. This section was also updated after consultation with the I and AP's.

Due to the fact that sufficient information at the scoping stage, preliminary impact assessments are provided and are available in accordance with the methodology described in **Table 11.12**.

Impacts associated with this project are therefore, cumulatively assessed in this Scoping Report. Based on all the available information at this stage, it was possible to compile an EMP at this stage of the process. All management and mitigation measures are therefore, contained in the EMP.

Management and mitigation objectives to address the identified impacts are discussed in this section and the detailed actions are included in the EMP.

TABLE 11.1: CRITERIA FOR ASSESSING IMPACTS

Note: Both the criteria used to assess the impacts and the method of determining the significance of the impacts is outlined in the following table. Part A provides the definition for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D.

Briefly describe the methodology utilized in the rating of significance of impacts.

TABLE 11.1: Criteria for Assessing Impacts

MAGNITUDE	DURATION
10 - Very high/don't know	5 - Permanent (longer than 10 years)
8 - High	4 - Long-term (7 to 10 years; impact ceases after site closure has been obtained)
6 - Moderate	3 - Medium-term (3 months to 7 years; impact ceases after the operational life of the activity)
4 - Low	2 - Short-term (0 to 3 months; impact ceases after the construction phase)
2 - Minor	1 - Immediate

SCALE	PROBABILITY
5 - International	5 - Definite/don't know
4 - National	4 - Highly probable
3 - Regional	3 - Medium probability
2 - Local	2 - Low probability
1 - Site only	1 - Improbable
0 - None	0 - None

Significance Points= (Magnitude + Duration + Scale) x Probability Thus:

SP >60	Indicates High environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30-60	Indicates moderate environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP <30	Indicates low environmental significance	Impacts with little real effect and which will not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.


Table 11.2: Identification and Description of Potential Environmental Impacts.

Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
DIRECT IMPACTS: CONSTRUCTION PHASE			
<p><u>Oil and Groundwater Pollution</u></p> <ul style="list-style-type: none"> • The construction phase will result in increased infiltration of contaminants into the groundwater and soil. • The clearing of the site will result in exposed soil surfaces which may be prone to erosion, creation of dust and sedimentation of streams. • Spillages of oil, lubricants and fuel from construction vehicles, plant and machinery has the potential to contaminate the soil and groundwater. Flora in these areas where contamination occurs will die. • Cement mixing and the storage of fuel must be conducted so as to prevent contamination of the soil and groundwater. • Storm water runoff has the potential to erode the topsoil and result in sedimentation on streams if not controlled. 	<p>Magnitude: 6 Duration: 2 Scale: 1 Probability 4</p> <p>SP= 36 Moderate</p>	<ul style="list-style-type: none"> • Maintenance plan on all earth moving equipment. • Daily inspections on all equipment used on site. • No servicing of any equipment on site. • Refuelling of equipment in demarcated area. • Detailed planning and design of storm water runoff. • Appropriate erosion and storm water management structures must be installed around the construction site. • All construction vehicles, plant, machinery and equipment must be properly maintained to prevent leaks. • Plant and vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work undertaken on machinery on site or campsite area. • Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes. • Products must be stored in adequate storage facilities that are secure, enclosed and banded. • All excavations and foundations must be inspected regularly. • Mulch bags or silt fences are to be placed along the base of this fence to trap any sediment, which may move following rain. These are to be kept clean during construction to prevent any movement of silt out of the demarcated zone. • Once earthworks are complete, disturbed areas are to be stabilised with mulch, straw or other approved methods. • The loading and off-loading areas should all be located on a hardened surface which drains away from storage structures. • Strict procedures for the management of the site must be developed and adhered to. • Staff must be trained to prevent spillages during product dispensing 	<p>Magnitude: 4 Duration: 2 Scale: 1 Probability 2</p> <p>SP= 14 Low</p>

Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<p>Risks of Fires & Explosions</p> <ul style="list-style-type: none"> Storage, handling and transport of the product are potentially dangerous to humans and property due to the risk of fire and explosions. 	<p>Magnitude: 4 Duration: 1 Scale: 1 Probability 4</p> <p>SP= 24 Low</p>	<ul style="list-style-type: none"> The design and construction of the proposed storage area must conform to the following fire safety standards and legislation: <ul style="list-style-type: none"> SANS 10089 (Building Code) Hazardous Substances Ordinance, 14 of 1974 Atmospheric Pollution Prevention Ordinance, 11 of 1976 Labour Act, 6 of 1992, as amended by the Labour Act, 11 of 2007. Fire extinguishers must be easily accessible. The following signs must be installed in accordance with local Fire Department <ul style="list-style-type: none"> "NO SMOKING" "NO NAKED FLAME" "NO CELL PHONES" Staff must be trained adequately so as to identify and minimise the impacts of leaks and to deal with fires. Firefighting facilities must conform to the oil industry standard and be regularly inspected. Possible refuse on site. Removal of vegetation strictly in accordance to the architect layout plan. No spotlight may be used during the construction phase. The site must be managed appropriately and all rubbish and rubble, must be removed to a recognised waste facility. Excess soil and bedrock should be disposed of at an appropriate facility. A certificate of disposal must be obtained for any waste that is disposed of. Waste must not remain on site for more than 2 weeks. Refuse bins must be provided by the contractor for rubbish to be discarded by staff. Excess concrete must be disposed of correctly and at an appropriate facility. No waste may be placed in any excavations on site. Indigenous plants or trees should be planted next to buildings to break the lines of the buildings making them less visually intrusive. Advertising signs should blend in with the environment. Light pollutants should be minimised. The construction foot print must be minimised. Construction / management activities must be limited to the daylight hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays. Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic. 	<p>Magnitude: 2 Duration: 1 Scale: 1 Probability 2</p> <p>SP= 8 Low</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<p>Visual Intrusion & Light Pollution</p> <ul style="list-style-type: none"> Littering and illegal dumping on the site may result in an alteration of the visual character of the site. The development will result in the removal of vegetation and the construction of buildings which may be visually intrusive. Lights from the contractor's camp and the construction site will be visually intrusive. Alteration of the site will alter the visual characteristics of the site and the surroundings. Littering, rubbish and illegal dumping on the site are visually intrusive. The buildings and advertising signs may be visually intrusive. 	<p>Magnitude: 8 Duration: 2 Scale: 2 Probability 4</p> <p>SP= 48 Moderate</p>	<ul style="list-style-type: none"> Should overtime/night work be authorised, the contractor shall be responsible for ensuring that lighting does not cause undue disturbance to neighbouring residents. In this situation low flux and frequency lighting shall be utilised. Littering, rubbish and illegal dumping on the site is NOT allowed. Refuse bins must be provided. These must be sufficient in number. The buildings may not be visually intrusive. The buildings must be regularly painted. All lights used for non-security purposes should be energy efficient for example compact fluorescent lights (CFL). Outside lights will have to be downward shining (eyelid type), low wattage and should not be positioned higher than 1 m above the ground surface. Fluorescent lamps give five times the light and last up to 10 times as long as ordinary bulbs. Areas that have been landscaped must be maintained. 	<p>Magnitude: 4 Duration: 2 Scale: 2 Probability 3</p> <p>SP= 24 Low</p>
<p>Destruction of Flora & Fauna</p> <ul style="list-style-type: none"> Construction activities will disturb the fauna in the area. The clearing of vegetation will result in the loss of habitat, habitat fragmentation and possibly a loss of species on the site. The noises and vibrations resulting from machinery and blasting could impact on faunal species outside the site. Pollution resulting from the construction site such as litter, solid waste, sewerage and spills of oil, lubricants and product could reduce the quality of the habitats in the surrounding area and directly impact on the health and welfare of the fauna and flora surrounding the site. Due to the disturbance of the site alien plants will be able to establish and could become a problem by infesting neighbouring land. 	<p>Magnitude: 6 Duration: 2 Scale: 1 Probability 2</p> <p>SP= 18 Low</p>	<ul style="list-style-type: none"> Removal of vegetation strictly in accordance to the site layout plan. Formal building activity must commence as soon as possible after earth moving activities. Noise and vibration be mitigated by day time work and equipment operating with adequate exhaust system. Site clearing is to be limited to only the area necessary for carrying out the specified works so the destruction of vegetation should be minimised. No littering by construction workers is permitted. Any litter will be collected and removed off-site. Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention. Stockpiles of vegetation are only to be located in areas approved by the ECO, and may not exceed 2 m in height. Methods of stacking must consider for the possible creation of a fire hazard. No burning of stockpiled vegetation is permitted All alien plants on site will be removed during construction. Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material). Alien vegetation re-growth must be controlled throughout the entire site during the construction period. Disturbance to birds, animals and reptiles and their habitats should be prevented at all times. The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution. 	<p>Magnitude: 2 Duration: 1 Scale: 1 Probability 1</p> <p>SP= 4 Low</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<p>Traffic & Access</p> <ul style="list-style-type: none"> Increased traffic congestion could possibly occur as a result of construction vehicles moving onto and off the site during construction. 	<p>Magnitude: 8 Duration: 5 Scale: 3 Probability 5</p> <p>SP= 80 High</p>	<ul style="list-style-type: none"> Surrounding business and residential areas to be informed of the time frame of construction phase. Minimize unnecessary movement of vehicles to and from the construction site. The access, being on an important national road will need to meet certain criteria of the Roads Authority. Should the entrance to the site be security controlled this is to be positioned at a minimum distance of 80m from the edge of the provincial road. B2 approaches to the proposed site turn off a high visibility W102 (priority crossroad sign) with information plate "heavy vehicles turning" is required. All signage and road markings for the proposed site turn off should be in accordance with the Namibia Road Traffic Signs specifications. 	<p>Magnitude: 6 Duration: 5 Scale: 3 Probability 4</p> <p>SP= 56 High</p>
<p>Noise Pollution</p> <ul style="list-style-type: none"> There will be an increase in noise during the construction of the proposed facility - machinery, equipment and vehicles, hammering. The noise emanating from the B2 is not expected to increase significantly in terms of the current noise levels. The noise generated by the diesel trucks idling and revving, and other vehicles braking and accelerating may increase. <p>Noise from the proposed facility will include:</p> <ul style="list-style-type: none"> Loading and off-loading of raw material – Truck movement. General noise from facility equipment. 	<p>Magnitude: 4 Duration: 2 Scale: 2 Probability 3</p> <p>SP= 24 Low</p>	<ul style="list-style-type: none"> Surrounding business and residential areas to be informed of the timeframe of construction phase. Construction activities to occur during day time hours only i.e. 08:00 - 17:00; Contractors to be conscious of the noise generated during their specific activities, and to limit excessive noise generation where possible. Noise levels shall be kept within acceptable limits, and the construction crew must abide by National Noise Laws and local by-laws regarding noise. If work is to be undertaken outside of normal work hours permission, must be obtained. Prior to commencing any such activity, the Contractor is also to advise the potentially affected neighbouring residents. Notification could include letter-drops. No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. Construction / management activities involving use of the service vehicle, machinery, hammering etc, must be limited to the hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays. Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc) must be preceded by notice being given to the affected neighbours at least 24 hours in advance. Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc) must be used as per operating instructions and maintained properly during site operations. Noise levels should comply with the SANS Code of Practice 100103 - 0994 (recommended noise levels). 	<p>Magnitude: 4 Duration: 3 Scale: 2 Probability 2</p> <p>SP= 18 Low</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<p><u>Atmosphere Pollution and Odours</u></p> <ul style="list-style-type: none"> • The increased dust, smoke and emissions resulting from construction activities (vegetation clearing, site preparation, earthworks, uncovered topsoil stockpiles and sand piles, loads on vehicles and the burning of waste); vehicles, plant and machinery poses a health hazard to construction staff and people living and working in the vicinity of the site. • Vapours produced by the raw materials may be hazardous to human health. These emissions may occur during the loading and off-loading product. 	<p>Magnitude: 4 Duration: 2 Scale: 2 Probability 3</p> <p>SP= 24 Low</p>	<ul style="list-style-type: none"> • Maintenance plan on all earth moving equipment. • Daily inspections on all equipment used on site. • Dust suppression actions including wetting of soil prior to earth moving actions. • Consideration of wind direction and wind speed during earth moving actions. • The building area is to be physically screened off with a shade net fence at least 1.8m in height, to prevent dust from being blown onto the road or neighbouring properties. • Dust generation should be kept to a minimum at all times • Dust must be suppressed on access roads and construction areas during dry periods by the regular application of water or a biodegradable soil stabilisation agent. • Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution. • It is recommended that the clearing of vegetation from the site should be selective and done just before construction so as to minimise erosion and dust. • Should construction in areas that have been stripped not commence within a short period of time, the exposed areas shall be re-vegetated or stabilised. • Sand stockpiles are to be covered with Hessian, shade cloth or DPC plastic. • Where possible stockpiles are to be located in sheltered areas and the usable/cut face orientated away from the direction of the prevailing wind for that season. • Excavating, handling or transporting erodible materials in high wind or when dust plumes are visible shall be avoided. • All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials. • Emissions from the proposed storage area will be low level and thus disperse into the atmosphere. • The emissions from the storage area would be dispersed according to the prevailing wind direction, with increased distance the concentration of the emitted particles will decrease. 	<p>Magnitude: 4 Duration: 2 Scale: 1 Probability 2</p> <p>SP= 14 Low</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<p>Safety & Security</p> <ul style="list-style-type: none"> • A construction site can be a dangerous place and thus, could result in harm to people and property. Safety of staff, customers and property may be compromised as a result of the fire risk associated with the specific product stored on site. 	<p>Magnitude: 4 Duration: 1 Scale: 1 Probability 2</p> <p>SP= 12 Low</p>	<ul style="list-style-type: none"> • Construction site fenced off. • Access control implemented. • No unauthorized personnel on site. • Signs should be erected on all entrance gates, indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime. • Single and double storey structures may be founded on normal strip footings or isolated footings taken directly from the weathered siltstone at levels around 1 m below the existing ground surface. If and where the minimum building regulation depth of 0.5m cannot be achieved in the medium hard rock, these footings must be anchored into the rock by steel dowels or equivalent methods to prevent sliding. • The site and crew are to be managed in strict accordance with the Labour Act, 6 of 1992, as amended by the Labour Act, 11 of 2007, and the National Building Regulations. • All structures that are vulnerable to high winds must be secured (including scaffolds and toilets). • All manhole openings are to be covered and clearly demarcated with danger tape. • Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times. • The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken on or near public roads. • Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.). • All vehicles and equipment used on site must be operated by appropriately trained and / or licensed individuals in compliance with all safety measures as laid out in the Labour Act, 6 of 1992, as amended by the Labour Act, 11 of 2007. • An environmental awareness training programme for all staff members shall be put in place by the contractor. Before commencing any work, all staff members shall be appropriately briefed about the EMP and the relevant occupational health and safety issues. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • Access to raw material and other equipment stores is to be strictly controlled. • No unauthorized firearms are permitted on site. • Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately, and that the impacts thereof are minimised. This will also 	<p>Magnitude: 2 Duration: 1 Scale: 1 Probability 2</p> <p>SP= 8 Low</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
		ensure that potential liabilities and damage to life and the environment are avoided. <ul style="list-style-type: none"> • Adequate emergency facilities must be provided for the treatment of any emergency on the site. • The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. • Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times. • The contractor must have a basic spill control kit available at each construction crew camp and around the construction site. The spill control kits must include absorptive material that can handle all forms of hydrocarbon as well as floating blankets / pillows that can be placed on water courses. • Appropriate measures should be in place for the correct storage and handling of raw material as well as the procedures for dealing with dangerous situations. • Staff should be adequately trained with respect to dealing with crime. • Equipment and materials should only be handled by staff that have been supervised and adequately trained. • Staff must be regularly updated regarding safety procedures. • Emergency facilities must be available and adequately supplied for use by staff and visitors. 	
<p>Hygiene</p> <ul style="list-style-type: none"> • The health of workers may be adversely affected by unhygienic working conditions on the construction site. • Workers may be exposed to diseases such as tick bite fever, malaria, HIV-AIDS. • Unhygienic conditions result in the transmission of diseases. <p>Areas of potential concern include the ablutions, cooking areas, selling of food and standing water on the site.</p>	<p>Magnitude: 4 Duration: 1 Scale: 1 Probability 2</p> <p>SP= 12 Low</p>	<ul style="list-style-type: none"> • Supply of adequate ablution facility on site. • Running water on site. • Adequate resting area for construction workers. • Induction training to all construction workers. • Medical fitness certificates for all construction workers. • The contractor shall make available safe drinking water for human consumption at the site offices and all other working areas. • Washing and toilet facilities shall be provided on site and in the contractor's camp. • Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 20 workers using the camp. Toilet paper must be provided. • The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. • The chemical toilets must be emptied on a regular basis. • The chemical toilets must be sited, considering the possibility of the prevailing wind unfavourably dispersing unpleasant odours. 	<p>Magnitude: 2 Duration: 1 Scale: 1 Probability 2</p> <p>SP= 8 Low</p>

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
Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
		<ul style="list-style-type: none"> HIV AIDS awareness and education should be undertaken by all contracting staff. Cognisance must be taken of the fact that the site is in close proximity to the B2 which is a major transportation route associated with the spreading of the disease. Care should be taken to adequately drain areas surrounding water points in order to avoid the development of pools of standing water, as these tend to be a breeding source of flies, mosquitoes and other vectors. Management policies and strategies must be in place to prevent unhygienic conditions developing. Care should be taken to adequately drain areas surrounding water points in order to avoid the development of pools of standing water, as they tend to be a breeding source of flies, mosquitoes and other vectors. Paved areas, back yards, passages and service areas must be adequately graded, drained and paved to prevent water standing. 	
<p>Construction Traffic Construction traffic may result in increased traffic congestion on the C14, D1984 linking the C14 with the B2 to transport their product to their clients. Hauling trucks travelling from NamPort.</p>	<p>Magnitude: 8 Duration: 2 Scale: 3 Probability 4</p> <p>SP= 52 Moderate</p>	<ul style="list-style-type: none"> Minimize unnecessary movement of vehicles to and from the construction site. Surrounding business and residential areas to be informed of the timeframe of construction phase. 	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 3</p> <p>SP= 30 Moderate</p>
<p>Security Construction sites by their nature act as a magnet to the unemployed, so large numbers of people may gather on or around the site. These people must be kept off the site for safety reasons. Furthermore, criminals may also utilise the opportunity to steal items from the site.</p>	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 3</p> <p>SP= 30 Moderate</p>	<ul style="list-style-type: none"> Construction site fenced off. Access control implemented. No unauthorized personnel on site. 	<p>Magnitude: 4 Duration: 2 Scale: 1 Probability 2</p> <p>SP= 14 Low</p>
<p>Spread of Alien Vegetation Due to the disturbance of the site alien plants will be able to establish and could become a problem by infesting neighbouring land.</p>	<p>Magnitude: 4 Duration: 2 Scale: 1 Probability 2</p> <p>SP= 14 Low</p>	<ul style="list-style-type: none"> Removal of vegetation strictly in accordance to the architect layout plan. Formal building activity must commence as soon as possible after earth moving activities had occurred. 	<p>Magnitude: 2 Duration: 1 Scale: 1 Probability 1</p> <p>SP= 4 Low</p>
<p>Socio Economic</p> <ul style="list-style-type: none"> Constructing of the proposed development will result in direct jobs being created for the construction of the various facilities. Indirectly, jobs are also created in industries that provide goods, materials and services. For example, an additional amount of goods used in construction will be required from business and industries related to the construction sector. The proposed development will lead to an increase in the level local employment in the areas surrounding the development site. Both short-term and long-term employment will be created in this case. 	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 4</p> <p>SP= 40 Moderate</p>	<ul style="list-style-type: none"> Utilize as far as possible local community in the construction phase. Utilize as far as possible the local community in regard to services, support and obtaining goods and materials. 	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 4</p> <p>SP= 40 Moderate</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
<ul style="list-style-type: none"> The development will lead to the increase in the number of convenience facilities in the primary market area. 			
CUMULATIVE IMPACTS: CONSTRUCTION PHASE			
<p>Surface Water Pollution</p> <ul style="list-style-type: none"> Flora and fauna in these areas where contamination occurs will die. Spillages of oil, lubricants and product from vehicles as well as possible spillages resulting from the loading and offloading of Ammonium Nitrate at the proposed storage facility, has the potential to contaminate surface water. 	<p>Magnitude: 6 Duration: 5 Scale: 2 Probability 3</p> <p>SP= 39 Moderate</p>	<ul style="list-style-type: none"> Maintenance plan on all earth moving equipment. Daily inspections on all equipment used on site. No servicing of any equipment on site. Oil trays for all equipment while not in use. Refuelling of equipment in demarcated area. Detailed planning and design of storm water runoff. 	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 3</p> <p>SP= 30 Moderate</p>
<p>Increased run off of Water</p> <ul style="list-style-type: none"> The increase in paved areas such as the construction camp, roads and driveways will increase the amount of storm water runoff and thus, reduce the infiltration of water into the groundwater. This may result in erosion of areas that are not paved. Storm water runoff has the potential to erode the topsoil and result in sedimentation of streams if not controlled. The increase in paved areas such as the roads and driveways and forecourt will increase the amount of storm water runoff and thus, reduce the infiltration of water into the groundwater. This may result in erosion of areas that are not paved. 	<p>Magnitude: 4 Duration: 1 Scale: 2 Probability 3</p> <p>SP= 21 Low</p>	<ul style="list-style-type: none"> Detailed planning and design of storm water runoff. Removal of vegetation strictly in accordance to the architect layout plan. Formal building activity must commence as soon as possible after earth moving activities occurred. 	<p>Magnitude: 4 Duration: 1 Scale: 2 Probability 2</p> <p>SP= 14 Low</p>
<p>Groundwater Pollution</p> <ul style="list-style-type: none"> The construction phase will result in increased infiltration of contaminants into the groundwater and soil. The clearing of the site will result in exposed soil surfaces which may be prone to erosion, creation of dust and sedimentation of streams. Cement mixing and the storage of product must be conducted so as to prevent contamination of the soil and groundwater. The construction phase will result in increased infiltration of contaminants into the groundwater and soil. Spillages of oil, lubricants and product from vehicles as well as spillages resulting from the loading and offloading of Ammonium Nitrate at the proposed storage facility, have the 	<p>Magnitude: 4 Duration: 1 Scale: 2 Probability 3</p> <p>SP= 21 Low</p>	<ul style="list-style-type: none"> Maintenance plan on all earth moving equipment. Daily inspections on all equipment used on site. No servicing of any equipment on site. Oil trays for all equipment while not in use. Refuelling of equipment in demarcated area. Detailed planning and design of storm water runoff. 	<p>Magnitude: 4 Duration: 1 Scale: 2 Probability 2</p> <p>SP= 14 Low</p>

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Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
potential to contaminate the soil and groundwater. Flora in these areas where contamination occurs will die.			
<p>Socio Economic</p> <ul style="list-style-type: none"> Constructing the proposed development will result in direct jobs being created for the construction of the various facilities. Indirectly, jobs are also created in industries that provide goods, materials and services. For example, an additional amount of goods used in construction will be required from businesses and industries related to the construction sector. The proposed development will lead to the increase in the level of local employment in the areas surrounding the development site. Both short-term and long-term employment will be created in this case. The development will lead to the increase in the number of convenience facilities in the primary market area. 	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 4</p> <p>SP= 40 Moderate</p>	<ul style="list-style-type: none"> Utilize as far as possible local community in the construction phase. Utilize as far as possible the local community in regard to services, support and obtaining goods and materials. 	<p>Magnitude: 6 Duration: 2 Scale: 2 Probability 4</p> <p>SP= 40 Moderate</p>
<p>Faunal Displacement</p> <p>The displacement of fauna as a result of an increase in ambient noises, vibrations is likely to remain even with mitigation.</p>	<p>Magnitude: 4 Duration: 2 Scale: 1 Probability 2</p> <p>SP= 14 Low</p>	<ul style="list-style-type: none"> Removal of vegetation strictly in accordance to the architect's layout plan. Formal building activity must commence as soon as possible after earth moving activities occurred. 	<p>Magnitude: 2 Duration: 1 Scale: 1 Probability 1</p> <p>SP= 4 Low</p>

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Criteria for ranking the SPATIAL SCALE of IMPACTS	H	Permanent. Beyond closure. Long term.			
	L	Localised - Within the site boundary.			
	M	Fairly widespread – Beyond the site boundary. Local			
	H	Widespread – Far beyond site boundary. Regional/ national			
PART B: DETERMINING CONSEQUENCE					
SEVERITY = L					
DURATION	Long term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short term	L	Low	Low	Medium
SEVERITY = M					
DURATION	Long term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Low	Medium	Medium
SEVERITY = H					
DURATION	Long term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Medium	Medium	High
			L	M	H
			Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
SPATIAL SCALE					
PART C: DETERMINING SIGNIFICANCE					
PROBABILITY	Definite/ Continuous	H	Medium	Medium	High
	Possible/ frequent	M	Medium	Medium	High
	Unlikely/ seldom	L	Low	Low	Medium
			L	M	H
CONSEQUENCE					
PART D: INTERPRETATION OF SIGNIFICANCE					
Significance		Decision guideline			
High		It would influence the decision regardless of any possible mitigation.			
Medium		It should have an influence on the decision unless it is mitigated.			
Low		It will not have an influence on the decision.			

*H = high, M= medium and L= low and + denotes a positive impact.

Against the above background, the potential impacts associated with all the phases (construction, operations, decommissioning and closure) have been conceptually identified and described, and reference has been made to the studies/investigations that are required to provide the necessary additional information.

11.1 Topography

Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	X

The following potential impacts on the topography may occur if the project is implemented:

- Hazardous excavations and the dangers they present to animals and humans;
- Alteration of drainage patterns;
- Surface subsidence and the impact this can have on water drainage and topography; and
- Visual aspects. No additional work is required to address this issue in more detail.

11.2 Soils and land capability

Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	X

A loss of topsoil (through sterilisation, erosion or contamination) would generally result in, a decrease in the rehabilitation and the future land use potential of any land that is disturbed by the project. In particular, the soil crust is seen as an important soil component in the desert environment. No additional work is required to address this issue in more detail.

11.3 Land use

Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	

The project will be located in an area which has been currently zoned as “*industrial*” and more specifically on Farm No. 38, within Walvis Bay Municipal District. It must be noted that other sections of the neighbouring farms are already occupied by lease holders utilising it as industrial sites, the actual special frame work for these areas has changed from agriculture to industrial. While the project may have the potential to negatively impact on surrounding land uses such as neighbouring sections (not yet occupied), it may also contribute towards positive socio-economic benefits of the surrounding area, in particular the town of Walvis Bay. No additional work is required to address this issue in more detail.

11.4 Natural vegetation and animal life

Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	

The development of the project could cumulatively cause a loss of natural vegetation. This could lead to habitat fragmentation and degradation. It follows that the existence of and/or the habits of animal life (vertebrates and invertebrates) may also be impacted in a negative manner. Together, these impacts may cause a reduction in ecosystem functionality. No additional work is required to address this issue in more detail.

11.5 Surface water

12.5.1 Altering drainage patterns Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	X

Although rainfall is scarce in the region, if and when ever significant rainfall events do occur, it will cause temporary flow of surface water. The proposed infrastructure could have a negative impact on drainage patterns, as can drainage have a negative impact on infrastructure. The selection of project alternatives will influence this impact to a limited extent. No additional work is required to address this issue in more detail.

11.5.2 Contamination of surface water Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	

Projects of this nature will generally present a number of possible pollution sources which could have a negative impact on surface and sub-surface water quality, if left unmanaged. Typically, the following pollution sources exist: fuel and lubricant spillage (during construction and loading and off-loading), sewage, dirty water circuit, hazardous waste, general waste and erosion of particles from exposed soils. No additional work is required to address this issue in more detail.

11.6 Groundwater contamination**Phase in which impact(s) may occur**

Construction	Operational	Decommissioning	Closure
X	X	X	X

Groundwater could become contaminated from a number of sources as detailed in **section 5.1**. No additional work is required to address this issue in more detail.

11.7 Air quality**Phase in which impact(s) may occur**

Construction	Operational	Decommissioning	Closure
X	X	X	

This project is not considered to produce any air pollution sources and therefore, do not pose a negative impact on ambient air quality, ecosystem functionality and surrounding land uses. The only source of air pollution may be during the construction phase, and will include the construction of infrastructure, including the storage facility, and associated infrastructures. In addition, the development of access roads and on-site roads will be required. Vehicle-entrainment of dust from construction sites represents a relatively large source of fugitive dust emissions. Gaseous and particulate emissions from vehicle tailpipes are far lower and therefore, of less significance in terms of their impacts. No additional work is required to address this issue in more detail.

11.8 Noise**Phase in which impact(s) may occur**

Construction	Operational	Decommissioning	Closure
X	X	X	

This project is considered to have a medium impact in regard to generated noise, that could be heard from surrounding areas. Taking into consideration that no night work will be performed; this is when ambient noise levels are at their lowest. Commissioning / operational stage requires additional monitoring to address this issue in more detail.

11.9 Visual**Phase in which impact(s) may occur**

Construction	Operational	Decommissioning	Closure
X	X	X	

The proposed project site is located adjacent to the South side of the C14 leading to the International Airport to the East side, which is one of the tourist routes in Namibia connecting

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Walvis Bay with Sossusvlei. The site is furthermore, not located in close proximity to the residential areas of the town of Walvis Bay. Although the proposed project area is located within an area currently utilised as a new industrial area of Walvis Bay, only a few other industrial complexes have been constructed to date. The project is expected to have an impact on the visual aspects of the surrounding area. No additional work is required to address this issue in more detail.

11.10 Socio-economic

Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	X

The proposed project is likely to have the following positive and/or negative impacts:

Further jobs will be created through the provision of services - such as the collection of waste from the site, the transport of raw materials to and from the site, storage facility service and maintenance, and accounting and insurance services. These posts may become redundant when the facility ceases to operate. During the project construction phase of a period of six (6) to twelve (12) months, activities will potentially utilize up to/ approximately 50 people for the period. The operational phase of the project will use existing employees and approximately thirty-two (32) new employees. Although the number is small, the project will nevertheless contribute to the improvement of the living standards of the nearby community. These numbers exclude services and support personnel.

11.11 Health and Safety

Phase in which impact(s) may occur

Construction	Operational	Decommissioning	Closure
X	X	X	X

The storage facility will have a health and safety programme in place that complies with local legislation and with international best practices.

To achieve this, **Desert Storage CC** will:

- Assess and respond to risk by identifying hazards to health and safety;
- Provide and maintain a working environment that is safe;
- Provide and maintain a working environment which manages health and safety risks;
- Ensure an adequate supply of health and safety equipment;
- Staff the plant with due regard to health and safety;
- Establish a health and safety policy;
- Prepare and implement "Codes of Practice"; and
- Provide health and safety training.

11.12 Environmental Monitoring and Audit Programs

Desert Storage CC intends to contain spillages in a bunded area. The Ammonium Nitrate will be swept up and either recycled in process or bagged and used as lawn fertiliser.

Management will conduct Environmental Monitoring and Audit Programs to assess whether the established environmental, safety and healthy criteria are being met.

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12. WAY FORWARD

12.1 WAY FORWARD FOR THE SCOPING REPORT

The way forward for the EIA scoping phase is as follows:

- MET review the final scoping (including assessment) Report and EMP (this report) and provide record of its decision; and
- Sufficient information is available and no further specialist investigations will be required.

13. CONCLUSIONS

Although the proposed project will be using chemicals with hazardous properties, various mitigation measures will be implemented to minimise the adverse effects thereof, on vegetation, surface and groundwater and human health in general, and have been successfully identified and assessed as part of this EIA Scoping process. Relevant mitigation measures have been provided and are included in the EMP that accompanies this scoping report.

The Mining and Quarrying Industry is expected to expand and therefore, there will be an increase in demand in the industry for Ammonium Nitrate and other chemicals, in order to enable companies in the mining and quarrying industry to manufacture their own explosives to be used in the industry. Thus, **Desert Storage CC** will meet and satisfy this increasing demand in Ammonium Nitrate. In this scenario the project is expected to operate for the life cycle of 25 years and thus provide quality and sustainable employment to the local people. The proposed project will also increase the storage capabilities and storage capacity of NamPort.

NEHC believes that a thorough assessment of the proposed project has been achieved and that an environmental clearance certificate (ECC) could be issued on condition that the management and mitigation measure in the EMP be adhered to.

The project is viable and beneficial to the overall economy of Namibia.

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17. REFERENCES

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
ANNEXURE A: ENVIRONMENTAL INCIDENT LOG

Date	Incident	Comments (Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)	Mitigation Measure (Give details and attach documentation as far as possible)	ECO Signature

ANNEXURE B: COMPLAINTS RECORD SHEET

RECORD OF COMPLAINTS	PAGE OF	DATE: / /
Complainant:		
Capacity of complainant:		
Complaint recorded by:		
Complaint:		
Corrective measure:		
ECO: Date:		
Notes by ECO:		

**APPENDIX A:
THE MINISTRY OF ENVIRONMENT AND TOURISM
(MET): APPLICATION FOR CLEARANCE**

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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**REPUBLIC OF NAMIBIA
ENVIRONMENTAL MANAGEMENT ACT, 2007
(Section 32)
APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE**




PART A: DETAILS OF APPLICANT

1. Name: (person or business)	Desert Storage CC
2. Business Registration / Identity No. (if applicable)	CC 2016/16463
3. Correspondence Address:	P.O. Box 2101 Walvis Bay
4. Name of Contact Person:	Johan Cornelissen
5. Position of Contact Person:	Environmental Consultant
6. Telephone No.:	+264 64 404 146
7. Fax No.:	+264 64 404 179

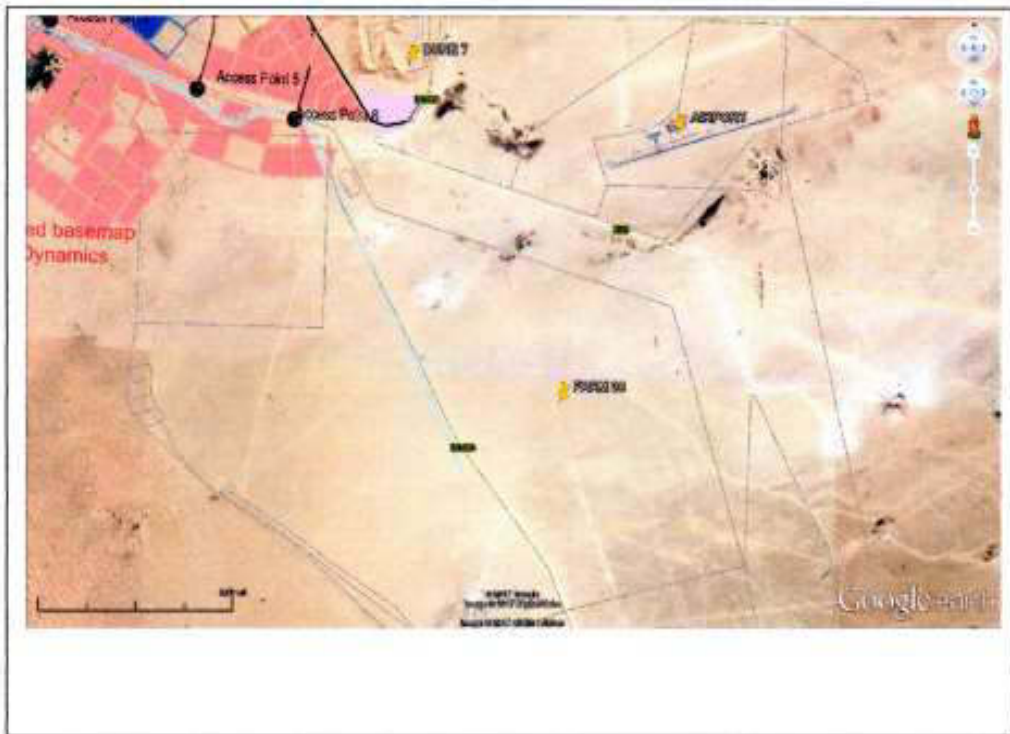
**PART B: SCOPE OF THE ENVIRONMENTAL CLEARANCE
CERTIFICATE**

1. The environmental clearance certificate is for:	The Storage and Handling of Bulk Emulsion
2. Details of the activity(s) covered by the environmental clearance certificate: [Note: Please attach plans to show the location and scope of the designated activity(s), and use additional sheets if necessary:	
Title of Activity:	Storage and Handling
Nature of Activity:	Bulk Handling and Storage of Bulk Emulsion
Location of Activity:	+ 15kms South of Walvis Bay Farm No 38
Scale and Scope of Activity:	Handling and Storage of Bulk Emulsion


I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand the environmental clearance certificate may be suspended, amended or cancelled if any information given above is false, misleading, wrong or incomplete.


 Signature of Applicant _____ JOHAN CORNELISSEN _____ Environmental Practitioner _____
 Full Name in Block Letters Position
 on behalf of National Environmental Health Consultants CC _____ 09/11/2021 _____
 Date

INSERT MAPS HERE



APPENDIX B: NEWSPAPER ADVERTISEMENT

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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Newspaper Add template:

**NOTICE FOR ENVIRONMENTAL IMPACT ASSESSMENT
PROCESS (EIA) OF THE PROPOSED BULK AMMONIUM NITRATE STORAGE AT FARM
38 IN WALVIS BAY MUNICIPAL DISTRICT**

CALL FOR PUBLIC PARTICIPATION

Desert Storage has appointed National Environmental Health Consultants (NEHC CC) to conduct the Environmental Impact Assessment (EIA) for above mentioned project in order to obtain an Environmental Clearance Certificate as per the requirements of the Environmental Management Act (Act No. 7 of 2007), the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) and within the framework of the Terms of Reference of this project all interested and affected parties need to be consulted to ensure that their concerns are taken into account for the following activity:

DESCRIPTION OF PROPOSED ACTIVITY: Ammonium Nitrate Bulk Storage

**Location: Farm No: 38, Walvis Bay Municipal District approximately
± 15kms South of Walvis Bay**

HAZARDOUS SUBSTANCE HANDLING AND STORAGE

9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.

Name of Proponent: Desert Storage

**Name of Consultant:
NEHC CC
P O Box 8416,
SWAKOPMUND**

**Contact Person:
Johan Cornelissen
Tel: 064 404 146
Fax No.: 064 404 179
E-mail: info@nehcafrica.com**

**Date for comments and/or registration is 30 days from
3 November 2021**

(last date: 2 December 2021)

In order to be identified as an interested and / or affected party, please submit your name, interest in the project and contact information to the consultants above within the said date mentioned above in writing.

Project Reference Number: 2021/139/J

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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News Paper Add: Republikein 8 November 2021

I DON'T DRIVE UNDER THE INFLUENCE. I'D RATHER TAKE STEER CLEAR OF ALCOHOL IF YOU INTEND ON DRIVING. ALCOHOL AND STRONG SUBSTANCES IMPAIR YOUR ABILITY TO DRIVE SAFELY. THE ROAD TO ZERO DEATHS & SERIOUS INJURIES STARTS WITH YOU.
 Tip: Take a taxi or call a friend when you consume more than one glass of wine, a dumble of beer or a couple of drinks.



Maandag 8 November 2021

Republikein

Jou land. Jou taal. Jou koerant.



Italy is famous for the variety of coffees it produces. Cappuccinos are loved among coffee lovers and despite its vague history, many people still appreciate the comfort it brings. Thus, comes a happy day called Cappuccino Day, where people from all over can order a frothy and whipped cup of coffee and eat with whatever meal they're having. Let's take a look at how Cappuccino Day came to be.

CALL FOR PUBLIC PARTICIPATION

DESERT STORAGE has appointed National Environmental Health Consultants (NEHC CC) to conduct the Environmental Impact Assessment (EIA) for the above mentioned project in order to obtain an Environmental Clearance Certificate as per the requirements of the Environmental Management Act (Act No. 7 of 2007), the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) and within the framework of the Terms of Reference of this project all interested and affected parties need to be consulted to ensure that their concerns are taken into account for the following activity:

DESCRIPTION OF PROPOSED ACTIVITY:
 BULK EMULSION STORAGE

LOCATION: FARM NO. 36, WALVIS BAY MUNICIPAL DISTRICT APPROXIMATELY 15KMS SOUTH OF WALVIS BAY

HAZARDOUS SUBSTANCE HANDLING AND STORAGE
 9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.

NAME OF PROPONENT:
 DESERT STORAGE

NAME OF CONSULTANT:
 NEHC CC
 P O BOX 8416,
 SWAKOPMUND

CONTACT PERSON:
 JOHAN CORNELISSEN
 TEL: 064 404 146
 FAX NO.: 064 404 175
 E-MAIL:
 info@nehc.co.za

DATE FOR COMMENTS AND/OR REGISTRATION IS 30 DAYS FROM 3 NOVEMBER 2021 (LAST DATE: 2 DECEMBER 2021)

In order to be identified as an interested and / or affected party, please submit your name, interest in the project and contact information to the consultants above within the said date mentioned above in writing.

PROJECT REFERENCE NUMBER: 2021/139/3

Experience in surgical and emergency units as well as roles in leadership and training is of advantage. Send CVs to: manager@treesidesites.com

DM0202100394028

ERINDI PRIVATE GAME RESERVE: VACANCY: NAMIBIAN FIELD GUIDES WANTED. QUALIFICATION REQUIREMENTS: FGASA NQF4 Field Guide Qualification, FGASA NQF4 Trails Guide Qualification, FGASA NQF2 Apprentice Field Guide Qualification with the Apprentice Trails Guide. Qualifications may be considered. Other similar FORMAL ACCREDITED field guide qualifications will be considered. Valid FGASA membership. Valid Code B or C driver's license. Valid PA (Professional Authorization) [Previously a POP (Public Driving Permit)]. Valid First Aid certificate. PFCC (Professional Firearms Trainer, Council) unit standard. Valid FGASA ARH (Advanced Rifle Handling) certificate. **EXPERIENCE REQUIREMENTS:** Dangerous game experience on foot and in vehicles. Field guiding experience. 4x4 Driving experience. Vehicle maintenance experience. Knowledge of wildlife and game lodge activities. Excellent guest and children skills required.

RESPONSIBILITIES: Conduct world class interpretive game drives among 6 of the magnificent 7. Childrens game drives and activities. Excellent guest care and management skills. 2 - 3 Game drives daily. Walking activities. Ultimate care of game drive kits & game viewers. Constant self-improvement through self-studies, training & external guide courses. Willingness to get involved in all aspects of Erindi Private Game Reserve. Closing Date: 20 November 2021. Please submit a detailed CV with contactable references to Erindi Private Game Reserve; hr@erindi.com (Please put the reference "Field Guide Application"). **DO NOT APPLY IF YOU DO NOT MEET THE RELEVANT REQUIREMENTS.** Please do not apply if you are not a resident or citizen of Namibia.

DM0202100393994

Market Watch

Om te adverteer skakel:

Kleinadvertensies
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News Paper Add: Republikein 8 November 2021

NS1

Woesdag 3 November 2021

Republikein

Jou land. Jou taal. Jou koerant.

BAY MUNICIPAL DISTRICT
CALL FOR PUBLIC PARTICIPATION

DESERT STORAGE has appointed National Environmental Health Consultants (NEHC CC) to conduct the Environmental Impact Assessment (EIA) for above mentioned project in order to obtain an Environmental Clearance Certificate as per the requirements of the Environmental Management Act (Act No. 7 of 2007), the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) and within the framework of the Terms of Reference of this project all interested and affected parties need to be consulted to ensure that their concerns are taken into account for the following activity:

**DESCRIPTION OF PROPOSED ACTIVITY:
BULK EMULSION STORAGE**

LOCATION: FARM NO. 38, WALVIS BAY MUNICIPAL DISTRICT APPROXIMATELY 15KMS SOUTH OF WALVIS BAY

HAZARDOUS SUBSTANCE HANDLING AND STORAGE
3.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.

**NAME OF PROPONENT:
DESERT STORAGE**

**NAME OF CONSULTANT:
NEHC CC
P O BOX 8416,
SWAKOPMUND**

**CONTACT PERSON:
JOHAN CORNELISSEN
TEL: 064 404 145
FAX NO.: 064 404 179
E-MAIL:
info@nehcafrica.com**

DATE FOR COMMENTS AND/OR REGISTRATION 15 30 DAYS FROM 3 NOVEMBER 2021 (LAST DATE: 2 DECEMBER 2021)
In order to be identified as an interested and / or affected party, please submit your name, interest in the project and contact information to the consultants above within the said date mentioned above in writing.

PROJECT REFERENCE NUMBER: 2021/139/3

081-8550131. DM01

009

WILDLIFE CONSERVATION PORTFOLIO AND FUND OPERATIONS
We are part of our portfolio at Namkuse Wildlife Minimum Requirements degree, preferably of finance/ economic conservation. Training life Management. 3 working experience wildlife conservation. Experience with multi teams, as well as with the Southern African on would be a strong termine funding needs compelling and proposals for trusts or ons to secure funds a mixed portfolio of to best practice standards reporting deadlines terms and conditions are satisfied. Ability to build and maintain donor database. Do maintain income and future tracking and systems. Understand life foundation operational care, specifically cheetahs and endemics. Fluency in written English, Afrikaans, French, French and German to maintain relationships international donors history to inform appeals. Working knowledge analytic tools (Google Analytics, AdWords and etc.). Understanding WordPress, CSS and plus. Proficient in Please e-mail your cover letter to: jobs@com Please put reference: Harnas Fund Operating Date: 15 November Only short-listed will be contacted. DM02

OTIS ELEVATOR CO
Lift Mechanic require minimum 5 years experience be a lift mechanic. E-mail: sophia.coetzee@otis.com DM02

OTIS ELEVATOR CO
Elevator and escalator installer/training officer Minimum 10 years experience elevator and escalator mechanic certificate and in electrical engineering required. E-mail: CV.coetzee@otis.com DM02


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FTB TRANSPORT
huur binne en buite Ons vervoer alles. I geduit. Skakel vir besprekings. PW 081-48348 DM02


J.P. WIESE TOOL HIRE
concrete mixers, air-compressors, generators, dump trucks, levels, mers and many more. 061-229704. Zirk Prosperita. DM02

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen	Project No: 2021/139/J
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
APPENDIX C: PICTURE OF SITE NOTICE BOARD

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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<p>Date: 21st day of January 2022</p>	<p>Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay</p>	<p>Occupational Hygienist Johan Cornelissen </p>	<p>Project No: 2021/139/J</p>
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APPENDIX D: I and AP's REGISTER

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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Email Date 08 November 2021 – Stefanus Gariseb - Namport

acc@nehcafrica.com

From: acc@nehcafrica.com
Sent: 08 November 2021 08:49 AM
To: 'Stefanus Gariseb (Namport)'
Cc: 'info@nehcafrica.com'
Subject: RE: 2021 11 03 Notice of Intent - Desert Storage
Attachments: IAP Registration and Comments Form.docx

Tracking:

Recipient	Read
'Stefanus Gariseb (Namport)' info@nehcafrica.com	
Info @ Nehc	Read: 08/11/2021 01:23 PM

Good day Stefanus

Thank you well received.

Please find attached.

Kind Regards, Vriendelike Groete,

Jeanette Smit
 Account Assistant

NAMIBIA
 AM 22/02
 P. O. Box 8411
 SWAKOPMUND
 13001
 Tel: +264 84 434 340
 Fax: +264 84 854 179

SOUTH AFRICA
 018057-0376
 P. O. Box 2437
 BRITS
 0250
 Tel: +27 83 525 1802
 Fax: 086 525 5972

NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
 Approved Inspection Authority
ISO/EC 17020

employment & labour
 Department
 Employment, Industrial
REPUBLIC OF SOUTH AFRICA
 Reg. No. 096011-03-6

Ministry of Labour,
 Industrial Relations and
 Employment Creation
NAMIBIA

www.nehc.co.za

sanas OHAIA

Namibia: 2 Weber St, Swakopmund | South Africa: 2 Fouzand Street, Brits 0150

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

From: Stefanus Gariseb (Namport) <s.gariseb@namport.com.na>
Sent: 04 November 2021 03:38 PM
To: acc@nehcafrica.com
Cc: info@nehcafrica.com
Subject: RE: 2021 11 03 Notice of Intent - Desert Storage

Dear Jeanette

Herewith, please find our registration as a IAP.

Kind regards,



Stefanus Gariseb (Namport) Manager: SHEQ

Tel: +264 64 208 2206
s.gariseb@namport.com.na

No. 17, Rikumbi Kandanga Rd.
P. O. Box 361, Walvis Bay,
Namibia



COMMITTED

OUR VALUES

For more information on COVID-19 call the Ministry of Health and Social Services 24/7 TOLL FREE on 0800 100 100

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CAVEAT: The Standard Conditions of Service of Namport shall apply to all services rendered by it, unless otherwise agreed to in writing by the duly authorized representatives. Said Conditions are available at www.namport.com or will be made available on written request.

From: acc@nehcafrica.com <acc@nehcafrica.com>
Sent: Wednesday, 3 November 2021 10:46 am
To: Stefanus Gariseb (Namport) <s.gariseb@namport.com.na>
Cc: info@nehcafrica.com
Subject: 2021 11 03 Notice of Intent - Desert Storage

Good day Stefanus

Herewith please see attached for your information.

Kind Regards, Vriendelike Groete,

Jeanette Smit
Account Assistant

NAMIBIA
AIR 22702
P. O. Box 8448
SWAKOPMUND
13001
Tel: +264 64 424 290
Fax: +264 64 496 139

SOUTH AFRICA
DH057-03036
P. O. Box 2477
BRITS
0250
Tel: +27 82 551 6542
fax: 206 535 5972

NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
Approved Inspection Authority
ISO/IEC 17020

sanas

OHIA

employment & labour
Department
Republic of South Africa
Reg. No. DH057-03036

Ministry of Labour,
Industrial Relations and
Employment Creation
NAMIBIA

Namibia: 2 Walker St, Swakopmund | South Africa: 2 Poyzand Street, Brits 0150

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen	Project No: 2021/139/J
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acc@nehcafrica.com

From: Stefanus Gariseb (Namport) <s.gariseb@namport.com.na>
Sent: 04 November 2021 03:38 PM
To: acc@nehcafrica.com
Cc: info@nehcafrica.com
Subject: RE: 2021 11 03 Notice of Intent - Desert Storage
Attachments: NAMPORT - Desert Storage_Registration as IAP.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Dear Jeanette

Herewith, please find our registration as a IAP.

Kind regards,



Stefanus Gariseb (Namport) Manager: SHEQ

Tel: +264 64 208 2206
 s.gariseb@namport.com.na

No. 17, Rikumbi Kandanga Rd,
 P. O. Box 361, Walvis Bay
 Namibia



COMMITTED CONNECTED

OUR VALUES

For more information on COVID-19 call the Ministry of Health and Social Services 24/7 TOLL FREE on 0800 100 100

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CAVEAT: The Standard Conditions of Service of Namport shall apply to all services rendered by it, unless otherwise agreed to in writing by the duly authorised representatives of the client. The said Conditions are available at www.namport.com or will be made available on written request.

From: acc@nehcafrica.com <acc@nehcafrica.com>
Sent: Wednesday, 3 November 2021 10:46 am
To: Stefanus Gariseb (Namport) <s.gariseb@namport.com.na>
Cc: info@nehcafrica.com
Subject: 2021 11 03 Notice of Intent - Desert Storage

Good day Stefanus

Herewith please see attached for your information.

Kind Regards, Vriendelike Groete,

Jeanette Smit
 Account Assistant

Email Date 10 November 2021 Thomas Mbokoma Jonas – Native Storage

acc@nehcafrica.com

From: Thomas Mbokoma Jonas <thomas@nativeholding.com>
Sent: 25 November 2021 09:18 PM
To: acc@nehcafrica.com
Subject: IAP Registration
Attachments: IAP Registration and Comments Form.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Good day

Find attached IAP Registration

Thomas M Jonas
 Managing Director
 +264 8123 27933

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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**INTERESTED AND AFFECTED PARTIES REGISTRATION
AND COMMENTS FORM**

**FOR THE PROPOSED HAZARDOUS BULK STORAGE FACILITY –
DESERT STORAGE Project No: 2021/139/J**

Date: 25 November 2021 Register No: DS003
 Name: Thomas Jonas
 P. O. Box: 80946, Windhoek , Namibia
 Street Address: Ugab street, Langstrand, Walvis Bay
 Tel. No.: _____ Cell Phone: 0812327933
 Email: thomas@nativeholding.com

Please identify your interest on the proposed project:

I am a principal at Native Storage Facility where we operate a similar project.

Please write your comments, concerns or questions here:

The Walvis Bay Municipality is in the process of developing a township on Farm 38.

Do advice location of your envisaged project.

Please return completed forms to: acc@nehcafrica.com before 03 December 2021

For more details to register as an IAP, or to submit comments to NEHC CC, please contact Mr. Johan Cornelissen:
info@nehcafrica.com

NEHC CC
info@nehcafrica.com



Email Dated 10 November 2021 - David Leech – Native Storage

acc@nehcafrica.com

From: acc@nehcafrica.com
Sent: 10 November 2021 12:41 PM
To: 'd.leech@transworldcargo.net'
Subject: RE: 2021 11 03 Notice of Intent - Desert Storage
Attachments: IAP Registration and Comments Form.docx

Good day David

Please see attached IAP form

Thank you

Kind Regards, Vriendelike Groete,

Jeanette Smit
 Account Assistant

NAMIBIA
 AIA 22/02
 P. O. Box 9431
 SWAKOPMUND
 13001
 Tel: +264 64 434 246
 Fax: +264 64 406 179

SOUTH AFRICA
 OHS 57-C026
 P. O. Box 2477
 BRITZ
 0150
 Tel: +27 82 514 532
 Fax: 266 5 16 5072

NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
Approved Inspection Authority
ISO/EC 17020

sanas **OHAIA**

Ministry of Labour, Industrial Relations and Employment Creation
NAMIBIA

employment & labour
 Department
 Employment and Labour
REPUBLIC OF SOUTH AFRICA
 Reg. No. 09051-C0-6

Namibia: 2 Woker St, Swakopmund | South Africa: 2 Thousand Street, Britz 0150

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

From: acc@nehcafrica.com <acc@nehcafrica.com>
Sent: 04 November 2021 11:28 AM
To: 'd.leech@transworldcargo.net' <d.leech@transworldcargo.net>
Subject: RE: 2021 11 03 Notice of Intent - Desert Storage

Good day David

As per your Telephone conversation with Johan Cornelissen this morning.

Please forward your relation with Native Storage and how communication will work from hereon forward.

Kind Regards, Vriendelike Groete,

Jeanette Smit
 Account Assistant

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen	Project No: 2021/139/J
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NAMIBIA
 A/R 71/01
 P. O. Box 441E
 SWAKOPMUND
 15001
 Tel: +264 64 434 346
 Fax: +264 64 404 329
 WWW.NEHC.CO.ZA

SOUTH AFRICA
 OH057-C026
 P. O. Box 2477
 BR17
 0260
 Tel: +27 82 514 532
 Fax: 286 535 5932

NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
Approved Inspection Authority
ISO/EC 17020

employment & labour
 Department of Labour
REPUBLIC OF SOUTH AFRICA
 Res. No. OH057-C0 4

Ministry of Labour,
 Industrial Relations and
 Employment Creation
NAMIBIA

Namibia: 2 Waker It, Swakopmund | South Africa: 2 Touzand Street, Brs 0260

sanas **OHAIA**

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

From: acc@nehcafrica.com <acc@nehcafrica.com>
 Sent: 03 November 2021 12:37 PM
 To: 'd.leech@transworldcargo.net' <d.leech@transworldcargo.net>
 Subject: 2021 11 03 Notice of Intent - Desert Storage
 Importance: High

Good day David

Herewith please see attached for your information.

Please be so kind and send us the details and contact person for Native Storage if possible.

Thank you
 Kind Regards, Vriendelike Groete,

Jeanette Smit
 Account Assistant

NAMIBIA
 A/R 71/01
 P. O. Box 441E
 SWAKOPMUND
 15001
 Tel: +264 64 434 346
 Fax: +264 64 404 329
 WWW.NEHC.CO.ZA

SOUTH AFRICA
 OH057-C026
 P. O. Box 2477
 BR17
 0260
 Tel: +27 82 514 532
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NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
Approved Inspection Authority
ISO/EC 17020

employment & labour
 Department of Labour
REPUBLIC OF SOUTH AFRICA
 Res. No. OH057-C0 4

Ministry of Labour,
 Industrial Relations and
 Employment Creation
NAMIBIA

Namibia: 2 Waker It, Swakopmund | South Africa: 2 Touzand Street, Brs 0260

sanas **OHAIA**

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen	Project No: 2021/139/J
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**INTERESTED AND AFFECTED PARTIES REGISTRATION
AND COMMENTS FORM**

**FOR THE PROPOSED HAZARDOUS BULK STORAGE FACILITY –
DESERT STORAGE Project No: 2021/139/J**

Date: 15.11.21 Register No: DS003
 Name: David Leech
 P. O. Box _____
 Street Address 34 Ben Amathila Avenue, Walvis Bay
 Tel. No.: 064 276000 Cell Phone 0818097880
 Email d.leech@transworldcargo.net

Please identify your interest on the proposed project:

Currently involved in the surrounding area

Please write your comments, concerns or questions here:

Need to know exact locations of planned site.

Please return completed forms to: acc@nehcafrica.com before 03 December 2021

For more details to register as an IAP, or to submit comments to NEHC CC, please contact Mr. Johan Cornelissen:
info@nehcafrica.com

NEHC CC
info@nehcafrica.com



Good day David

Please see correct register number on the Document for Van Der Walt Logistics, VDW001

Sorry for the Inconvenience

Kind Regards, Vriendelike Groete,

Jeanette Smit
Account Assistant

NAMIBIA
AIR 22/01
P. O. Box 0410
SWAKOPMUND
13001
Tel: +264 64 424 340
Fax: +264 64 458 178

SOUTH AFRICA
OHNS/PCD/26
P. O. Box 2477
59175
0250
Tel: +27 20 5144532
Fax: 086 535 5972

NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
Approved Inspection Authority
ISO/EC 17020

sanas **OHAIA**

employment & labour
Department of Labour
REPUBLIC OF SOUTH AFRICA
Reg. No. OH051-CD-6

Ministry of Labour,
Industrial Relations and
Employment Creation
NAMIBIA

www.NEHC.CO.ZA

Herold, 2 Willem II, Swakopmund | South Africa, 2 Foupiers Street, Brak 0250

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

From: David Leech <d.leech@transworldcargo.net>
Sent: 16 November 2021 02:11 PM
To: acc <acc@nehcafrica.com>
Cc: Kai Schnaitmann <k.schnaitmann@transworldcargo.net>
Subject: Re: Notice of Intent - Desert Storage and VDW Logistics

Good Day Jeanette,

Thanks for this, not sure if you sent me the correct document as this one is completed by me.

Thanks

Kind Regards

David Leech
Logistics Coordinator

E: d.leech@transworldcargo.net
O: +264 64 276 000
M: +264 81 151 1678
34 Ben Amathila Avenue, Walvis Bay, NA - Map
www.transworldcargo.net

From: "acc" <acc@nehcafrica.com>
To: "d leech" <d.leech@transworldcargo.net>

Sent: Tuesday, November 16, 2021 12:38:59 PM
Subject: RE: Notice of Intent - Desert Storage and VDW Logistics

Good day David

Thank you for your documents, Your Document for Van Der Walt Logistics (Pty) Ltd does not have the correct details. Please see registration document for Van Der Walt Logistics (Pty) Ltd for your reference

Kind Regards, Vriendelike Groete,

Jeanette Smit
 Account Assistant

NAMIBIA
 AIR 21/02
 P. O. Box 8434
 SWAKOPMUND
 19001
 Tel: +264 64 454 346
 Fax: +264 64 454 379
 WWW.NEHC.CO.ZA

SOUTH AFRICA
 09657-0036
 P. O. Box 2477
 88171
 0250
 Tel: +27 21 514 1552
 Fax: 206 536 5012

NEHC CC | National Environmental Health Consultants
OCCUPATIONAL HYGIENISTS
Approved Inspection Authority
ISO/IEC 17020

employment & labour
 Department of Employment and Labour
 REPUBLIC OF SOUTH AFRICA
 Reg. No. D0051-01-6

Ministry of Labour,
 Industrial Relations and
 Employment Creation
NAMIBIA

Namibia: 2 Walker St, Swakopmund | South Africa: 2 Touzard Street, Brx 0150

sanas **OSHA**

SAFETY | HEALTH | OCCUPATIONAL HYGIENE | ENVIRONMENT | ISO SYSTEMS | RISK ASSESSMENTS | ASBESTOS

From: David Leech <d.leech@transworldcargo.net>
Sent: 15 November 2021 03:46 PM
To: acc@nehcafrica.com
Subject: Notice of Intent - Desert Storage and VDW Logistics

Good Day,

Please find attached my registration letters for both EIA's,

Thanks


Kind Regards,

David Leech
 Logistics Coordinator

E: d.leech@transworldcargo.net
O: +264 64 276 000
M: +264 81 151 1678
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www.transworldcargo.net

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen	Project No: 2021/139/J
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APPENDIX E: ISSUES AND RESPONSE REPORT

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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ADMINISTRATIVE MANUAL

Doc. No:
ADM-FRM-174

Title: **EIA I&A Comments and Response**

Page No: **1 of 1**

Prepared by:
C. Verster

Checked by:
L. Cornelissen

Approved by:
J. Cornelissen

Rev:
01

Date:
29 June 2014


Project Description: Desert Storage
Date of Placement: 3 November 2021

Project No: 2021/139/J
Closing Date 2 December 2021

Registration No	Date	Comments Received via	Source / Commentator:	Questions / Comments:	Responses:
DS001	4/11/2021	Email	Namport Stefanus Gariseb	No IAP Comment form Document completed, was email on the 04/11 to Stefanus See email from Stefanus to register as IAP but no IAP Comment form was completed	
DS002	9/11/2021	Email	Thomas Jonas Native Storage	Principal at Native Storage Facility where we operate a similar project, The Walvis Bay Municipality is in the process of Developing a township on Farm 38. Do advice location of your envisaged project?	
DS003	15/11/2021	Email	David Leech Native Storage	Currently involved in the surrounding area, need to know exact location of planned site?	



APPENDIX F: CURRICULUM VITAE

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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Johan Cornelissen

DOB: 8 April 1965 | ID: 650408 5019 086

Tel: +264 811 491 032 | Email: johan@nehcafrica.com | P. O. Box 8416, Swakopmund, Namibia

Curriculum Vitae

PROFESSION

Occupational Hygienist – ROH 0159

DATE OF BIRTH

8 April 1965

NATIONALITY

RSA, Permit for Permanent Residence - 21582

MEMBERSHIP IN PROFESSIONAL AND OTHER BODY REGISTRATIONS

- 2015 to date: British Occupational Hygiene Society (BOHS)
- 2014 to date: SANS ISO/IEC 17020 accredited for "Inspection of Occupational Hygiene Workplaces".
- 2012 to date: A member of the International Occupational Hygiene Association (IOHA) which is in its turn recognized by the International Labour and the World Health Organisations.
- 2011 to date: Board of Registration for Occupational Hygiene, Safety and Associated Professionals
- 2008 to date: The South African Society of Occupational Health Nursing Practitioners
- 2007 to date: Environmental Practitioner
- 1986 to date: Occupational Hygienist registered at SAIOH – Registration Nr: 0159
- 1986 to date: Department of Labour, South Africa – Approved Inspection Authority
- 2005 to date: Ministry of Labour, Namibia – Approved Inspection Authority
- 1986 to date: South African Medical and Dental Council

KEY AREAS OF COMPETENCE

Analytical Occupational Hygienist and Environmental practitioner with a comprehensive understanding of the interaction between Health, Safety, Occupational Hygiene, Environmental and Quality within commercial settings, complete with a strong background in science and specific interest in the impact of the environment on health.

- Occupational Hygiene Planning , Implementation and Managing, Surveys and Monitoring of work related Stress Factors (Noise, Illumination, Dust, Lead, Asbestos, Vibration, VOC, Hazardous Chemicals, Ergonomics, Radiation, ext.).
- Proficient in sampling techniques
- Environmental Assessment Process (Impact Assessments, Strategic Assessments and Integrated Assessments, Environmental Management Plans)
- Development of cost-effective strategies to encourage employee health
- Broad knowledge basis with scientific principles
- Environmental Health specialising in Food Safety, Processing and Auditing
- Air Quality Management (Isokinetic Stack Sampling, Ventilation and Aspiration Systems)
- Project Planning, Management and Development
- Management Systems Implementation and training (ISO 9001 / ISO 14001 / OHSAS 18001 / HASSP)
- Safety and Health Auditing / Risk Assessments and Investigations

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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KEY QUALIFICATIONS, EDUCATION AND TRAINING

2016 to date	Current enrolled in Master of Science Healthcare – MSc Healthcare	ALDERSGATE COLLEGE – Philippines
2013	Asbestos Fibre Counting (PCM)	National Institute for Occupational Health
2013	Key knowledge Certificate - Legislation	North West University of Potchefstroom
2010	Radiation Safety Officer Course (RSO)	The Uranium Institute Namibia
2009 NIOH	Understanding Asbestos	National Institute for Occupational Health
2009 NIOH	Stoffenmanager Exposure Assessment and Control Tool	National Institute for Occupational Health
2007	Lead Auditor Training ISO 9001, 14001 and OSHAS 18001	QMI
2007	Integrated Management Systems	QMI
2004	TWR Certificate in Audiometry 171	WITS University
1999	Occupational Health and Safety Act	UNISA
1996	Certificate in Occupational Hygiene Legislation	Technicon Pretoria
1996	Baccalaureus Technologiae Environmental Health	Technicon Pretoria
1994	National Higher Diploma Public Health	Technicon Pretoria
1986	National Diploma Public Health	Technicon Pretoria
1985	Certificate in Industrial Audiometry and Calibration	Technicon Pretoria

PROFESSIONAL EXPERIENCE

Technical Experience

May 1994 – Current

**Business Owner for NEHC South Africa and NEHC Namibia:
National Environmental Health Consultants CC (NEHC CC)
Swakopmund, Namibia | Brits, South Africa**

Current Roles and Responsibilities

Occupational Hygiene Work related Stress Factor Measurement and Monitoring	Physical measuring of all Occupational Hygiene Stress factors in various industries in Africa, Namibia, Uganda, Malawi, Tanzania, Kenya and South Africa (E.g., asbestos, lead, dust exposure, noise, chemicals, illumination, biological, radiation, ventilation, ergonomics etc.)
Environmental Impact Assessments (EIA)	Completion, Management and auditing of EIA's at various industries in South Africa and Namibia: (e.g., Petrochemical, agriculture, township developments, production, mining, fishing and manufacturing)
Environmental Management Plans (EMP)	Development and Monitoring of EMP's for various sectors
Occupational Safety, Health, Hygiene & Environmental Risk Assessments (SHE)	Comprehensive risk assessments with legal compliant suggestions and implementation of Occupational Safety, Health, Hygiene and Environmental programmes
Health, Safety and Environmental Management Systems	Implementation of management systems using ISO 9001 ; 14001; OSHAS 18001 Internal Audits of ISO 9001; 14001; OSHAS 18001. 'Lead Auditor' and associated training.
Environmental Health Monitoring	Food Safety, water and food sampling and analyses, disease vectors, solid and liquid waste, personal health, hygiene and legislation training
Air Monitoring	Dust fall-out, PM 10 & PM 2.5 and asbestos air monitoring for various industries. Isokinetic Stack sampling, Ventilation and Aspiration Systems.

Date:
21st day of January 2022

Company:
DESERT STORAGE CC – BULK STORAGE FACILITY – EIA
- Walvis Bay

Occupational Hygienist
Johan Cornelissen

Project No:
2021/139/J

Auditing	Comprehensive internal and external Safety, Health, Hygiene, Environment and Quality audits. Evaluating and reporting on findings, evaluating and identifying HEGs.
Safety Monitoring	PPE, legal compliance audits, safe work procedures, construction safety, Accident and Incident investigations

Recent Projects – 2011-2018**Namibia and South Africa****Air Monitoring – Asbestos Namibia**

RÖSSING URANIUM (NAMIBIA).	Inspection and remedial action recommendation of houses in Arandis. Arandis asbestos project.
ARANDIS TOWN COUNCIL / RÖSSING URANIUM (NAMIBIA). NAMDEB DIAMOND CORPORATION (PTY) LTD. NAMIBIA TRAINING AUTHORITY (NTA)	The provision of monitoring of asbestos for demolition at Namdeb's operation. Monitoring the removal of asbestos roofing.
RESOLVE MARINE	Chamarel Project- Demolishing - Asbestos Exposure.
P&I ASSOCIATES (Pty) Ltd:	Chamarel Project – Asbestos Exposure Monitoring & Protecting & Indemnity Club Training and Correspondents.
SMIT SALVAGE:	Chamarel Project – Caretaker Phase, Asbestos Exposure Monitoring.
MINISTRY OF WORKS:	Air monitoring during demolishing of old Oshakati Exposure Monitoring.
TUNACOR:	Building of new cold storage facility.
NAMPOWER:	Demolishing of old facilities Walvis Bay.
ENGEN:	Demolishing of old facilities Walvis Bay.
MINISTRY OF HEALTH:	Asbestos Exposure Monitoring, Windhoek.

Environmental Impact Assessments (EIA) and Environmental Management plans (EMP)

ENAEX	EIA / EMP - Explosives Mixing Plant
SPITZKOPPE REST CAMP	EIA / EMP - Rest Camp
KAAP AGRI	Interested and Affected Party (EIA)
TSUMEB ABATTOIR	EIA / EMP – Filling Station
WESTPORT RESOURCES NAMIBIA - NAMIBPLAAS	EIA / EMP – Uranium Mining
OMATJETE MINING COMPANY	EIA / EMP – Gold Exploration
WESTPORT RESOURCES NAMIBIA - VALENCIA MINE	EIA / EMP -: Residential Village
BME	EIA / EMP - Explosives Plant and Storage Facility Arandis
ERONGO LOGISTICS (PTY) LTD:	EIA / EMP - Storage Facility, Swakopmund
SEAL PRODUCTS (PTY) LTD:	EIA / EMP - Abattoir, Hentiesbay
TOTAL BRITS:	EIA / EMP - Filling Station and Associated Facilities, Pretoria North (SA)
EHLERS FARMING:	EIA / EMP - Broiler, Brits
SEVE SEASONS TRADING:	EIA / EMP - Residential Development, Brits (SA)
EXPACTO CHROME	EIA / EMP - Chrome wash Plant, Rustenburg (SA)
MONSANTO SA (PTY) LTD:	EIA / EMP - Expansion on existing Plant and Dryer facilities, Lichtenburg
CEDDARFALLS:	EIA / EMP - Township Development, Brits (SA)
SAND ROSE INVESTMENTS:	EIA / EMP – Town Development & Planning

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Occupational Hygiene Work related Stress Factor Measurement and Monitoring	Various industries: Ministries: Off-Shore Mining; Mining; Fishing; Construction; Manufacturing; Packaging; Engineering; Chemical
Occupational Health, Hygiene & Environmental Risk Assessments (SHE)	Various industries: Off-Shore Mining; Mining; Fishing; Construction; Manufacturing; Packaging; Engineering; Chemical
Auditing	Various industries: Off-Shore Mining; Mining; Fishing; Construction; Manufacturing; Packaging; Engineering; Chemical

KEY PROJECTS – 2014-2018

ARANDIS TOWN COUNCIL / RÖSSING: Arandis asbestos project.

NAMDEB DIAMOND CORPORATION (PTY) LTD: The provision of monitoring of asbestos for demolition at Namdeb's operation.

NAMIBIA TRAINING AUTHORITY (NTA): Monitoring the removal of asbestos roofing.

NAMPORT: Walvis Bay and Lüderitz: Occupational Hygiene Surveys.

Namibia Training Authority (NTA): Technical Working Group – Unit Standard Development - Occupational Health & Safety.

NAMPORT: Walvis Bay: Asbestos Inspection and remedial action recommendations.

Dundee Precious Metals Tsumeb: Occupational Hygiene Surveys.

Cenored: Occupational Hygiene Surveys - Whole Region.

RCL Foods Randfontein: Occupational Hygiene Surveys.

ENAEX: Explosives Mixing Plant.

Puma energy: Occupational Hygiene Surveys.

NAMPORT EMP: Independent Compliance Appointment for the New Container Terminal, Walvis Bay.

WESTPORT RESOURCES NAMIBIA, NAMIBPLAAS: Appointed to complete an EIA.

B2 GOLD MINE: Baseline Occupational Hygiene Surveys.

SWAKOP URANIUM MINE Pty Ltd: Baseline Health and Safety Risk Assessment and baseline Occupational Hygiene Survey (5 year appointment).

LANGER HEINRICH URANIUM MINE (Pty) Ltd: Occupational Hygiene Surveys.

MINISTRY OF ENVIRONMENT AND TOURISM / MINISTRY OF HEALTH AND SOCIAL SERVICES / WORLD HEALTH ORGANISATION: Appointed as Specialist Consultant for above mentioned Ministries to evaluate the impact of Namibia Custom Smelters (Copper) on employees and neighbouring town of Tsumeb.

P&I ASSOCIATES (PTY) LTD: Appointed as Specialist Consultant to evaluate and identify possible Asbestos exposure on the burned Chamarel (Vessel) - classified as an environmental disaster, off shore.

ELGIN BROWN & HAMMER NAMIBIA: Dry Dock: Implementation of OSHAS 18001 System.

PREVIOUS WORK EXPERIENCE

1994 – To date: National Environmental Health Consultants CC – Senior Hygienist and Environmental Practitioner

- Occupational Safety, Health, Hygiene, Environment and Quality consultant for various industries.
- Appointed as preferred SHEQ consultant for Monsanto South Africa (Pty) Ltd, also serving their Africa Plants since 1995
- Appointed as Kwezi V3 Civil Engineers SHEQ consultants on all their projects in the North West Province (SA) since 2008
- Appointed as De Beers Marine Namibia's preferred SHEQ consultant since 2005

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen	Project No: 2021/139/J
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- Compiling of EIAs and EMPs for various clients

1989 – 1994: Brits Town Council, North West Province - Health and Senior Health Inspector for the Council

- Enforcement of applicable legislation within the Brits Town Council jurisdiction.
- Public and Environmental Health
- Food Safety
- Meat Inspections(Abattoir)
- Evaluation of EIA AND EMP's by consultants within the Councils jurisdiction.
- Water Sampling
- Approval of building Plans
- Waste Management

1984 – 1989: Department of Health and Population Development - Health Inspector in Training / Health Inspector

- Enforcement of applicable legislation within the Department of Health and Population Development jurisdiction.
- Public and Environmental Health
- Evaluation of EIA AND EMP's by consultants within the Departments jurisdiction.
- Water Sampling
- Waste Management
- Hazardous Chemicals
- Ministerial Compliance
- Schedule 7 Medicine Control
- Inspections of all Ministerial Premises.
- Communicable and contagious disease control.
- Vector Control

1987 – 1989 SADF Medical Corps – Lt. Health Officer

- Enforcement of applicable legislation within the SADF jurisdiction.
- Public and Environmental Health
- Evaluation of EIA AND EMP's by consultants within the SADF's jurisdiction.
- Water Sampling
- Waste Management
- Inspections of all SADF Premises.
- Communicable and contagious disease control.
- Vector Control

LANGUAGE PROFICIENCY


	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

OTHER REFEREES


Dr. Herma Strauss Principle Medix Namibia Tel: 064 – 221 050 E-mail: herman@medixx.com.na	Dr. Ali El Sherif Chief Medical Officer Ministry of Health and Social Services Namibia Tel: +264 81124480 E-mail: elsherif@mhss.gov.na	Me. Quinta Nendongo SHEQ Aveng Water Treatment (Pty) Ltd Namibia Tel: +264 812227111	Mrs. M van der Merwe Chief Health and Environmental Services of Tshwane Local Municipality Tel: +27 82 498 0685
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Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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**APPENDIX G:
BASELINE ENVIRONMENTAL NOISE STUDY
(ATTACHED)**

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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APPENDIX H: BASIS FOR SAFETY

Date: 21 st day of January 2022	Company: DESERT STORAGE CC – BULK STORAGE FACILITY – EIA - Walvis Bay	Occupational Hygienist Johan Cornelissen 	Project No: 2021/139/J
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CURRENT LEGISLATION AND BEST PRACTICE:

Explosives Act 26 of 1956, as amended in South Africa to April 1978.

Technology safeguards

- (i) The emulsion facility forms part of the Solar Mining Services factory, which will be located within secure fenced area with 24-hour security to prevent access by unauthorised persons.
- (ii) The factory will be managed and operated by SOLAR personnel to a 'World Class' Safety Management System. This is a set of procedures covering the process safety elements of: operating procedures; training; mechanical integrity; hot maintenance work control; change management; incident investigation; emergency planning; compliance audits.
- (iii) Under the RSA OHS Act (85/1993) Explosives Regulations, an explosives licence is required from the Department of Labour; who will require an appointed explosives manager; and safety distances, among other requirements.
- (iv) Under the RSA Explosives Act (15/2003) Explosives Regulations, a permit is required from the Chief Inspector of Explosives (CIE); who will require confirmation of adequate security measures.
- (v) Avoidance of other sources of ignition. No sensitizer or detonators is allowed on the emulsion plant. No open fires, smoking is allowed. Any maintenance requiring hot-work requires a special permit-to-work.

Material safeguards

- (vi) RSA legislation for the regulation of transport of dangerous goods classifies sensitised emulsion as Blasting Explosive Type E (0241) Class 1.1 (Explosive - mass explosion hazard), in terms of SANS10228: 2010 "The identification and classification of dangerous goods for transport". It may not be transported.
- (vii) The same legislation classifies non-sensitised base emulsion intermediate for blasting explosive as Ammonium Nitrate Emulsion (3375) Class 5.1 (Oxidiser).
- (viii) Although SANS 10228 applies to the transportation of dangerous goods, the RSA regulators (DoL and SAPS) use the same classification for fixed installations, specifically for demarcating safety distances. They have classified non-sensitised base emulsion as Class 1.4 (Explosive – small hazard) due to the possibility for contamination to occur in a fixed installation.
- (viii) There exists a Minimum Burning Pressure (UN Manual of Tests Series 8) for ammonium nitrate/ fuel emulsion which must be exceeded for combustion to propagate. For base emulsion this is in excess of 67bar. The emulsion plant is designed for 5.5bar, which is limited by the air supply pressure, and so cannot exceed the MBP.
- (x) There exists a Critical Diameter for propagation of a detonation wave at a stable velocity in an explosive, below which the explosive will not perform as intended. For emulsion this is ~500 m. The emulsion plant piping ranges from 80 mm to 25 mm, and hence is less than the critical diameter.

Equipment safeguards

- (i) Following the emulsion pump guidelines, Canada (2003) which have been found to be acceptable for service on base explosive emulsion, and gives the safeguards required on each type of pump

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- (ii) Avoidance of electrical sources of ignition. Good engineering practice is to identify spaces where flammable/ explosive compositions (gas or dust) may exist (Hazardous Area Classification), and to then exclude electrical apparatus, or select appropriate explosion protected electrical apparatus, in those spaces. The plant has been classified as Zone 2 (no flammable vapours or explosive dust), and Ingress Protection IP65 electrical apparatus will be used.
- (iii) Avoidance of static electrical charges. Although Base emulsion is not static sensitive, good engineering practice on explosives plants is to ensure proper earthing of all equipment.
- (iv) Local fire extinguishers and fire hoses are provided, to allow rapid extinguishing of (non-emulsion) fires.

EMERGENCY RESPONSE

The development and operation of proposed Bulk Emulsion Plant and associated storage infrastructure requires the installation of equipment that will house and contain hazardous substances. At the same time, the transport of dangerous goods will form an integral part of the operation of such a development. Accidents such as fire, explosion, spills or release of hazardous materials endanger life, property and the environment.

Emergency Planning:

- Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided
- Adequate emergency facilities must be provided for the treatment of any emergency on the site
- The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle
- Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction crew camps at all times
- All employees must receive documented initial training and annual refresher training on the facility's fire procedure
- Emergency Plan and Evacuation Plan.

Management of Fire Risks:

- "No Smoking" and "No Open Flame" signs to be prominently displayed.
- The Risk Controller is responsible for ensuring that fire risks are surveyed, documented and assessed Adequate numbers of the correct equipment have been installed
- Equipment must comply with the Automatic Sprinkler inspection Bureau (ASIB), insurance and local Fire
- Department requirements and recommendations. The Risk Controller must monitor and ensure that the standards are complied with
- Departmental Managers are responsible for ensuring that the requirements of this standard are adhered to within their respective area of responsibility. They must ensure that equipment is operational, kept clean, not damaged and is refilled immediately after use
- The maintenance, repair or replacement of any item of fire equipment is the responsibility of the Emergency coordinator, in liaison with departmental managers. Risk Controller to assist

Incident Reporting:

- The contractor shall take corrective action to mitigate an incident appropriate to the nature and scale of the incident, immediately after the occurrence of the incident

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- Residual environmental damage that remains after having taken corrective action shall be rehabilitated
- Change operating procedures where necessary to prevent recurrence of similar accident
- Record all incidents on an Environmental Incident Report, within 24 hours of the incident occurring. Additional documents, including photos shall be appended to the incident report to provide a comprehensive record of the incident and the corrective and preventative action taken. Failure to do so shall result in a penalty
- All incidents will be investigated in collaboration with the ECO. The focus of these investigations shall not be to apportion blame to specific employees, but to ascertain the facts of the incident and to prevent a recurrence of similar incidents

A full concise Emergency Response Plan must be developed and submitted to the MET for approval before commencement of construction of the facility.

SPILL CONTINGENCY

It is important that the responsible party shall adhere to National emergency response procedures. All officials of the responsible organ are required to adopt these standards that include spill and leak detection and management.

The Material Safety Data Sheets for the material and emergency response will be stored on site. The MSDS indicate the relevant actions to be taken should certain incidents (spills/exposure) occur with raw materials/products.

Customer Spill and Leak Procedure

The avoidance of spills and leaks is especially important from a safety and legal point of view. Spills or leaks can be dangerous as they can cause a fire or explosion and may involve high cleaning costs when natural resources are contaminated. Installations are designed and built to limit the possibility of product spills and leaks. Within your premises you are responsible for environmental control and must ensure that pollution near tank systems is avoided at all times. If the Stock Monitoring and Control Procedures are used properly, it will be possible to detect a leak at an early stage. Damage to the environment and cleaning costs will then be minimized.

Spill and Leak Prevention

- All personnel who have any duties associated with fuel, oil use or tank systems should know their individual responsibilities for controlling and/or reducing pollution. Employees should be well informed and apply the appropriate techniques
- All employees involved in spillages and leaks must be informed about the spill/leak emergency response plan and must know how to act in the event of a spillage or leak
- Equipment installed or used to avoid pollution should be operated efficiently and well maintained
- Spill cleanup equipment, like absorbing fibres (Drizit), squeegees, sandbags, etc. should be located in a clean, dry and easily accessible storage facility
- Spill fighting material should be kept near places where spills and leaks are most likely to occur, i.e. near pumps. Customers should have materials like absorbing fibres (Drizit) and sandbags in place. The proposed procedure:
 - Place two 2 000litres waste bins at each area
 - One bin to be used for storage of unused fibres (e.g. unused Drizit) and one bin to be used for receiving the used fibres (e.g. used Drizit)
 - Apply the fibres (Drizit) as per the instructions as soon as the spill occurs. Used fibres (Drizit) should be disposed of in an environmentally friendly way by either burning or dispatching to a class 1 waste dump, using companies such as Waste-tech
- Ensure that Emergency Spill/Leak Response Plans and the necessary associated equipment are appropriate for your operation and are the subject of regular exercises, where possible in conjunction with the industry and/or local authorities

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- Provide regular training for key response employees in dealing with emergencies

Spill Response

It is not possible to give detailed recommendations on how to clean up specific kinds of spillages as the method and materials used will depend on the type of product handled, the amount involved, the wind, weather, equipment available, etc. However, all spills, minor or major, should be cleaned up as soon as they occur. Whatever the spill, there are five basic steps in dealing with spillages:

- Limit the spillage
- Contain the spillage
- Remove the spilled product
- Final clean up and soil rehabilitation
- Complete spillage report

Containment of the oil near the point of spillage localizes the problem, minimizes pollution and makes it easier to remove the pollution. Cleaning of the spill depends on whether there is a major spill and whether there is a spill on paving or on soil. A major spill is any spill where more than 200litres of product is involved.

Minor Spills

Minor spills (less than 200litres) should be treated as follows:

Soak up the spill with unused fibres (e.g. unused Drizit) from the waste bin. If the spill has soaked into the ground, the soil should be ploughed to allow aeration. Water can then be used to bring the oil spill to the surface and mopped up immediately with absorbent fibres (Drizit). Collect the used fibres (used Drizit) in the bin for used fibres.

Major Spills

Spills less than 200litres but threatening to streams, rivers, water supply, etc. and incidents of lesser magnitude that have or might attract public, press or authoritative attention have to be considered as major spills. Major spills of oil or fuel on paving or non-permeable surfaces should be treated as follows:

- Wherever possible, try to limit the spillage by turning off all activities that caused the spill, i.e. closing a valve that has been accidentally opened, plugging the hole where the product is leaking or stop pumping through a ruptured pipeline, hose or overflowing tank.
 - Contain spill immediately with absorbing fibres (e.g. Drizit), sandbags, sand or soil.
- Prevent any of the spilled oil substances from entering your drain, storm water systems, septic tanks or from contaminating any natural water systems by forming a barrier from soil, sand, sandbags or absorbing materials. If any of the spill should enter the storm water system, the flow must be intercepted before it can contaminate other environments.
- If natural water systems are contaminated, use straw bales, absorbent booms and sandbag dams for containment and absorption.
 - Mop up as much of the spillage as possible by using absorbing materials,
 - Contact your field manager and ask for support.

Major spillage of oil or fuel on soil or permeable surface should be treated as follows:

- Wherever possible, limit the spillage by turning off all activities that causes the spill. Close all applicable valves, plug the hole where the product is leaking or stop pumping through a ruptured pipeline, hose or overflowing tank.
- Contain the spill and prevent spread of the substance by using sandbags, sand or soil, absorbent booms or planking to divert flow.
- Prevent any of the oil substances from entering your drains, storm water systems or septic tanks, or from contaminating any natural water systems by forming a barrier from soil, sand, sandbags or absorbing materials.
- Prevent any of the oil substances from contaminating groundwater. It may be necessary to remove contaminated soil for disposal or rehabilitation.

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- Remove or mop up as much of the spill as possible by using spill fighting materials. Water the soil to bring oil to the surface and "mop up" with absorbent material such as Drizit.
- Plough soil for aeration and apply fertilizer/suitable neutralizing chemicals if viable (not detergents).
- Contact your field manager and ask for support.
- All contaminated spill prevention material (such as fibres, Drizit, soils, sandbags etc) have to be disposed of in an environmentally acceptable way, e.g. by using Waste-tech.

Spill Reporting

The MET, external auditor, bulk raw material suppliers and local protection services should be notified whenever:

- A spill in excess of 200litres occurs. For oil spill incidents of lesser magnitude with impact on water sources, rivers, streams, etc., or that are likely to attract public or press attention, the supplier should be notified.
- For every major spill (over 200litres of product) that occurs, the Incident Report Form must be completed. Investigate spill cause and implement recommendations for preventing re-occurrence.
- If watercourses and ground water are contaminated, then the MET and NAMWater must be notified.

Customer Inspection

- Site operating staff should check regularly if the tank system, pipe-work and equipment are in good condition. For example, a dirty pump or weathered hose or tube might need maintenance. A spillage resulting from malfunctioning equipment might be prevented. Inform Operational Manager when tank systems, pipe-work or equipment need maintenance.


Leak Reporting Procedure

- Notify the supplier immediately of any suspected leaks in a tank system or malfunctioning of equipment.
- Any loss or suspected loss must be confirmed in writing.
- For every suspected leak in aboveground or underground tanks the Incident Report Form has to be completed.
- Investigate leak cause (in co-operation with supplier) and implement recommendations for preventing reoccurrence.


A full concise Spill Contingency Plan must be developed and submitted to the MET for approval before commencement of construction of the facility.

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**APPENDIX I:
MATERIAL SAFETY DATA SHEET
(ATTACHED)**

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APPENDIX J: RECORD OF REPORT DISTRIBUTION

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RECORD OF REPORT DISTRIBUTION

NEHC Reference:	2021/139/J
Title:	Scoping Report for DESERT STORAGE CC BULK PRODUCTS STORAGE FACILITY.
Report Number:	Report No.: 1
Proponent:	DESERT STORAGE CC

Name	Entity	Format	Date issued	Issuer
Damian Nchindo	Ministry of Environment and Tourism	2 x Hardcopies + 2 x CD's		L. Cornelissen
Inspector-Gen. S.H. Ndeitunga or Dept. Commissioner: T. H. Nghiyoonanye	Ministry of Home Affairs, Immigration, Safety and Security	1 x Hard Copy + 1 x CD		L. Cornelissen
Phillipus Baard	Desert Storage CC	CD/ memory stick		L. Cornelissen
Piet van Niekerk or Jack Robert Manate	Mun of WVB Man. Housing & Properties	Hard Copy + CD		L. Cornelissen

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