



***ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE RENEWAL OF THE ENVIRONMENTAL CLEARANCE FOR THE CONSTRUCTION OF FACILITIES AND STORAGE AND HANDLING OF PETROLEUM PRODUCTS ON ERF 3447, WALVIS BAY***

***MARCH 2021***

***APP - 002408***

<p><b>Project Name:</b></p>	<p><b>ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE RENEWAL OF THE ENVIRONMENTAL CLEARANCE FOR THE CONSTRUCTION OF FACILITIES AND STORAGE AND HANDLING OF PETROLEUM PRODUCTS ON ERF 3447, WALVIS BAY</b></p>
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## EXECUTIVE SUMMARY

**Green Earth Environmental Consultants** have been appointed by BHL Group (the Proponent) to attend to and complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) **to renew the Environmental Clearance (EC)** for the construction of facilities and storage and handling of petroleum products on Erf 3447, Walvis Bay as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012).

Environam Consultants Trading conducted and submitted an EIA and EMP on behalf of CCC Petroleum CC, the previous owner and Proponent, **‘for the establishment and operation of a fuel storage facility’** for this site in August 2019. An ECC for the activity was issued in January 2020. The site (Erf 3447, Walvis Bay) has since been purchased by BHL Group, who intends to decommission the existing fuel storage and handling facility and relocate it to an alternative position on the site to optimize the utilization of the site as well as improve the flow of traffic and parking of vehicles on the site. A new ECC, to be issued to the new Proponent, is required for the decommissioning of the existing facility and construction and operation of the new facility.

The Proponent intends to install 2 x 65 000l tanks for diesel on the site. The facility will mainly be used for the filling of their own fleet of vehicles.

The preparation and operation of the proposed facility involves the following activities:

<b>Construction activities:</b>	<b>Operational activities:</b>
The safe removal of the existing fuel storage tank and handling facilities and cleaning up of the site	Handling (receiving and dispensing) of petroleum products
Preparation of the new site as per civil and geotechnical requirements	Storage of petroleum products
Construction of infrastructure like offices, workshops, guard houses, storage tanks, bund walls, pipelines, fuel handling/dispensing facilities, access roads and parking areas	Filling of trucks and vehicles, loading and offloading of commodities transported for customers, parking, and servicing of vehicles.
Installation of water, electrical and sewer networks, and facilities	Administrative activities
Installation of fire protection equipment	Safety and security activities
Installation of spill control facilities	Support services for tanker berth

The land within the immediate vicinity of the proposed project site is predominately characterised by business and industrial activities.

The key characteristics/environmental impacts of the proposed project are as follows:

<b>Impact on environment:</b>	<b>Nature of impact:</b>
Creation of employment and transfer of skills	Positive as employment will be created during construction and operations which will also result in the transfer of skills which is important in the current economic climate
More efficient use of Erf 3447, Walvis Bay, improvement of vehicle movement and parking on site and improvement in site safety	Positive as the harbour facilities were recently upgraded to increase its capacity to handle imports and exports
Improved access to new fuel storage locality for vehicles delivering fuel, vehicles filling up as well as for fire brigade in case of a fire or to observe and contain spillages	Positive for the transport industry but negative due to additional pressure on Namibia's roads and rail infrastructure as well as road safety
Impact on utilization of municipal and other infrastructure and facilities	Negative during construction due to municipal infrastructure which must be relocated to accommodate the facilities but positive due to the better utilization of existing municipal infrastructure
Fire hazards associated with storage and handling of products	The unlikely event of a fire from operations or products stored onsite will have a serious negative impact on neighbouring properties
Dust	Negative only during construction, once facility is constructed all access roads and parking areas will be paved or tarred to mitigate dust emissions
Impact on traffic	Limited as the site is surrounded by streets on all sides
Noise	Negative during construction but low and on par with the noise levels associated with the uses of an industrial area during operation
Cultural/Heritage	No items of archeologic value or graves were observed during the site visit which means the impact will be low, if however, any such items or graves are found during construction the impact will be high and irreversible
Visual impact	Low as the facility will be constructed in an existing industrial area
Impact on groundwater, surface water and soil	The impact will be negative in case of spilling of petroleum products during handling and storage, the risk should be mitigated through the installation of spilling control infrastructure and equipment

Health and safety	Low if mitigated during construction and operation
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The environmental impacts during the operational phase of the proposed project:

<b>IMPACTS DURING OPERATIONAL PHASE</b>			
<b>Aspect</b>	<b>Impact Type</b>	<b>Significance of impacts Unmitigated</b>	<b>Significance of impacts Mitigated</b>
Ecology Impacts	-	L	L
Dust and Air Quality	-	M	L
Groundwater Contamination	-	L	L
Waste Generation	-	M	L
Failure of Reticulation Pipeline	-	L	L
Fires and Explosions	-	L	L
Safety and Security	-	M	L

<b>IMPACT EVALUATION CRITERION (DEAT 2006):</b>		
<b>Criteria</b>	<b>Rating (Severity)</b>	
<b>Impact Type</b>	+	Positive
	O	No Impact
	-	Negative
<b>Significance of impacts</b>	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

The type of activities that will be carried out on the site does not negatively affect the amenity of the locality and the activities do not adversely affect the environmental quality of the area as it is located in an existing industrial area. None of the potential impacts identified are regarded as having a significant impact to the extent that the proposed project should not be allowed. However, the operational activities further on need to be controlled and monitored by the assigned managers and the Proponent (BHL Group).

The Environmental Impact Assessment Renewal which follows upon this paragraph was conducted in accordance with the guidelines and stipulations of the Environmental Management Act (No 7 of 2007) meaning that all possible impacts have been considered and the details are presented in the report.

Based upon the conclusions and recommendations of the Environmental Impact Assessment Report and Environmental Management Plan following this paragraph, the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism is herewith requested to:

1. Accept the Environmental Impact Assessment Renewal Report.
2. Approve the Environmental Management Plan.

3. Issue a Renewed Environmental Clearance Certificate for the construction of facilities and storage and handling of petroleum products on Erf 3447, Walvis Bay for BHL Group and for the following “listed activities”:

***ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES***

- *The construction of facilities for the refining of gas, oil and petroleum products.*

***HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE***

- *The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

# TABLE OF CONTENTS

LIST OF FIGURES.....	9
LIST OF TABLES .....	9
LIST OF ABBREVIATIONS .....	10
LIST OF APPENDIXES .....	11
1. INTRODUCTION .....	12
2. TERMS OF REFERENCE .....	13
3. NEED AND DESIRABILITY .....	14
4. PROJECT DESCRIPTION .....	15
4.1. PROJECT LOCATION AND ERF INFORMATION.....	15
4.2. CURRENT USE OF THE SITE .....	19
4.3. PROJECT PROPOSAL AND DESCRIPTION .....	20
5. ALTERNATIVES TO THE PROPOSED PROJECT.....	25
6. MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM APPROVAL.....	26
7. BULK SERVICES AND INFRASTRUCTURE .....	28
7.1. ACCESS AND INTERNAL ROADS.....	28
7.2. WATER SUPPLY.....	28
7.3. ELECTRICITY RETICULATION .....	28
7.4. SEWAGE TREATMENT AND DISPOSAL.....	28
7.5. SOLID WASTE DISPOSAL/REFUSE REMOVAL .....	28
7.6. STORMWATER MANAGEMENT .....	28
8. APPROACH TO THE STUDY .....	28
9. ASSUMPTIONS AND LIMITATIONS .....	29
10. ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS .....	30
11. AFFECTED RECEIVING ENVIRONMENT.....	37
11.1. CLIMATE .....	37
11.2. GEOLOGY, SOILS AND GEOHYDROLOGY.....	38
11.3. BIODIVERSITY AND VEGETATION.....	39
11.4. WALVIS BAY'S WATER RESOURCES .....	40
11.5. CORROSION .....	40
11.6. SOCIAL-ECONOMIC COMPONENT .....	40
11.7. SENSE OF PLACE .....	42
11.8. CULTURAL HERITAGE.....	42
11.9. HEALTH.....	42
12. IMPACT ASSESSMENT AND EVALUATION.....	43
12.1. KEY ENVIRONMENTAL ISSUES .....	44
12.1.1. POTENTIAL SURFACE AND GROUNDWATER POLLUTION.....	44

12.1.2.	ACCESS, TRAFFIC AND SAFETY .....	45
12.1.3.	SEWER SYSTEM.....	45
12.2.	IMPACTS DURING CONSTRUCTION .....	45
12.2.1.	WATER USAGE.....	45
12.2.2.	ECOLOGICAL IMPACTS.....	46
12.2.3.	DUST POLLUTION AND AIR QUALITY .....	46
12.2.4.	NOISE IMPACT.....	46
12.2.5.	HEALTH, SAFETY AND SECURITY.....	47
12.2.6.	CONTAMINATION OF GROUNDWATER.....	47
12.2.7.	SEDIMENTATION AND EROSION .....	48
12.2.8.	GENERATION OF WASTE .....	48
12.2.9.	CONTAMINATION OF SURFACE WATER .....	49
12.2.10.	TRAFFIC AND ROAD SAFETY .....	49
12.2.11.	FIRES AND EXPLOSIONS .....	49
12.2.12.	SENSE OF PLACE .....	50
12.3.	IMPACTS DURING OPERATIONAL PHASE.....	50
12.3.1.	ECOLOGICAL IMPACTS.....	50
12.3.2.	DUST POLLUTION AND AIR QUALITY .....	50
12.3.3.	CONTAMINATION OF GROUNDWATER.....	51
12.3.4.	GENERATION OF WASTE .....	51
12.3.5.	FAILURE IN RETICULATION PIPELINES.....	51
12.3.6.	FIRES AND EXPLOSIONS .....	52
12.3.7.	HEALTH, SAFETY AND SECURITY.....	52
12.4.	CUMULATIVE IMPACTS .....	52
13.	INCOMPLETE OR UNAVAILABLE INFORMATION.....	53
14.	CONCLUSION .....	53
15.	RECOMMENDATION.....	54



## LIST OF FIGURES

<i>Figure 1: Transportation Trucks</i> .....	14
<i>Figure 2: Locality Plan of Erf 3447, Walvis Bay</i> .....	16
<i>Figure 3: Erf 3447, Walvis Bay</i> .....	17
<i>Figure 4: Erf 3447, Walvis Bay Plan with Image</i> .....	18
<i>Figure 5: Photo of site</i> .....	19
<i>Figure 6: Activities on Project Site</i> .....	20
<i>Figure 7: Photo showing locality of diesel tanks</i> .....	21
<i>Figure 8: Current site layout</i> .....	21
<i>Figure 9: Existing diesel tank and pump</i> .....	22
<i>Figure 10: Layout and utilization</i> .....	23
<i>Figure 11: Fuel facility</i> .....	24
<i>Figure 12: Clearance Certificate</i> .....	27
<i>Figure 13: Town Planning Scheme</i> .....	32
<i>Figure 14: Flowchart of the Impact Process</i> .....	36
<i>Figure 15: Wind summary graph</i> .....	37
<i>Figure 16: Average temperatures (Atlas of Namibia)</i> .....	38
<i>Figure 17: Geological Divisions (Atlas of Namibia)</i> .....	39
<i>Figure 18: Biomes of Namibia (Atlas of Namibia)</i> .....	39
<i>Figure 19: Project site location</i> .....	41
<i>Figure 20: Neighbouring activities</i> .....	42

## LIST OF TABLES

<i>Table 1: Laws, Acts, Regulations and Policies</i> .....	32
<i>Table 2: Climate Data</i> .....	37
<i>Table 3: Impact Evaluation Criterion (DEAT 2006)</i> .....	43

## **LIST OF ABBREVIATIONS**

ADO	Automotive Diesel Oil
DCM	Deputy Chief of Mission
EC	Environmental Clearance
ECO	Environment Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&APs	Interested and Affected Parties
MEFT	Ministry of Environment, Forestry and Tourism
SQM	Square Meters
TIA	Transport Impact Assessment
ULP	Unleaded Petrol

## **LIST OF APPENDIXES**

APPENDIX A: CURRICULUM VITAE OF CHARLIE DU TOIT

APPENDIX B: CURRICULUM VITAE OF CARIEN VAN DER WALT

APPENDIX C: ENVIRONMENTAL MANAGEMENT PLAN

# 1. INTRODUCTION

**Green Earth Environmental Consultants** have been appointed by BHL Group (the Proponent) to attend to and complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) **to renew the Environmental Clearance Certificate (ECC)** for the construction of facilities and storage and handling of petroleum products on Erf 3447, Walvis Bay as per the requirements of the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012).

In August 2019, Environam Consultants Trading conducted and submitted an EIA and EMP on behalf of CCC Petroleum CC, the previous owner and Proponent of Erf 3447, Walvis Bay, **'for the establishment and operation of a fuel storage facility'** for this site. An ECC for the activity was issued in January 2020. The site (Erf 3447, Walvis Bay) has recently been purchased by BHL Group, who intends to decommission the existing fuel storage and handling facility and relocate it to an alternative position on the site to optimize the utilization of the site as well as improve the flow of traffic and parking of vehicles on the site.

It is required to renew the Environmental Clearance Certificate (ECC), to be issued to the new Proponent, as the existing storage and handling facility will be decommissioned and the construction and operation of the new facility will take place.

The Environmental Management Act (No 7 of 2007) requires that an Environmental Impact Assessment Renewal be conducted to request a Clearance Certificate Renewal for the following "listed activities":

## **ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES**

- *The construction of facilities for the refining of gas, oil and petroleum products.*

## **HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE**

- *The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

The Environmental Impact Assessment Renewal below contains information on the proposed project and the surrounding areas, the proposed operations and activities, the applicable legislation to the study conducted, the methodology that was followed, the public consultation that was conducted, and the receiving environment's sensitivity, any potential ecological, environmental and social impacts.

## 2. TERMS OF REFERENCE

The Proponent (BHL Group (Pty) Ltd) purchased the site from the previous owner and intends to decommission the existing fuel storage and handling facility and relocate it to an alternative position on the site.

**To be able to implement and continue with the project, the Environmental Clearance must be renewed.** For this environmental impact exercise, Green Earth Environmental Consultants followed the terms of reference as stipulated under the Environmental Management Act.

The aim of the environmental impact assessment was:

- To comply with Namibia's Environmental Management Act (2007) and its regulations (2012);
- To ascertain existing environmental conditions on the site and to determine its environmental sensitivity;
- To inform I&APs and relevant authorities of the details of the proposed development and to provide them with an opportunity to raise issues and concerns;
- To assess the significance of issues and concerns raised;
- To compile a report detailing all identified issues and possible impacts, stipulating the way forward and identify specialist investigations required;
- To outline management guidelines in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.

The tasks that were undertaken for the Environmental Impact Assessment included the evaluation of the following: climate, water (hydrology), vegetation, geology, soils, social, cultural heritage, groundwater, sedimentation, erosion, biodiversity, sense of place, socio-economic environment, health, safety and traffic.

The renewed EIA and EMP from the assessment will be submitted to the Environmental Commissioner for consideration. Environmental Clearance Renewal will only be obtained (from the DEA) once the new EIA and EMP has been examined and approved for the listed activity.

The methods that were used to assess the environmental issues and alternatives included the collection of data on the project site and area from the proponent, Municipality and identified stakeholders. Consequences of impacts were determined in five categories: nature of project, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity.

All other permits, licenses or certificates that are further on required for the operation of the proposed project still needs to be applied for by the proponent.

### 3. NEED AND DESIRABILITY

BHL was registered in Zambia December 2004, specializing in the Transport of various commodities with value added services and facilities within Zambia and sub-Saharan Africa with business currently conducted in but not limited to Zambia, DRC, and Namibia. They transport various commodities to and from Walvis Bay acting as an overland link between the Port of Walvis Bay and their clients in sub-Saharan Africa.



*Figure 1: Transportation Trucks*

Need - Walvis Bay provides the shortest route for landlocked countries in southern Africa with regards to imports and exports. Hence, trucks contribute to a high percentage of the traffic flow in and out of the town. The Proponent recently purchased Erf 3447, Walvis Bay to be used as site for their activities in Walvis Bay. One of the activities is to refill their vehicles on site for which purposes an onsite diesel storage and handling facility is required. This site has facilities for the storage and handling of diesel. This storage facility comprises of two self-bunded tanks with a volume of 31 000 liters each installed above ground on an area of  $\pm 1250 \text{ m}^2$  basically in the center of Erf 3447. BHL Group intends to increase the storage facility to 2 x 65 000l above ground tanks to create sufficient capacity to ensure continuous supply to their fleet. To accommodate the proposed additional storage, the current storage and handling facility will be decommissioned, and a new storage and handling facility will be constructed at a new locality on the site. Relocating the facility will improve the utilisation of the site as well as the safety in the movement and parking of vehicles on the site.

Desirability – Erf 3447, Walvis Bay is 30 786  $\text{m}^2$  in extent and zoned light industrial. The Erf is flat, walled in and large enough to accommodate the proposed activities. The site is surrounded by streets on all sides which allows good and safe access to the vehicles entering or exiting the site. The site is also surrounded by other industrial and business uses and thus suited for the proposed activity.

There is thus a need for the Proponent to relocate the fuel storage and handling facility and it is desirable to do it on this site.

## **4. PROJECT DESCRIPTION**

### **4.1. PROJECT LOCATION AND ERF INFORMATION**

Erf 3447 is located in Gobabeb Avenue and Hidipo Hamutenya Drive in the industrial area of Walvis Bay. The erf is 30 786 m<sup>2</sup> in extent and zoned light industrial. See *Figures* below for the locality of Erf 3447:

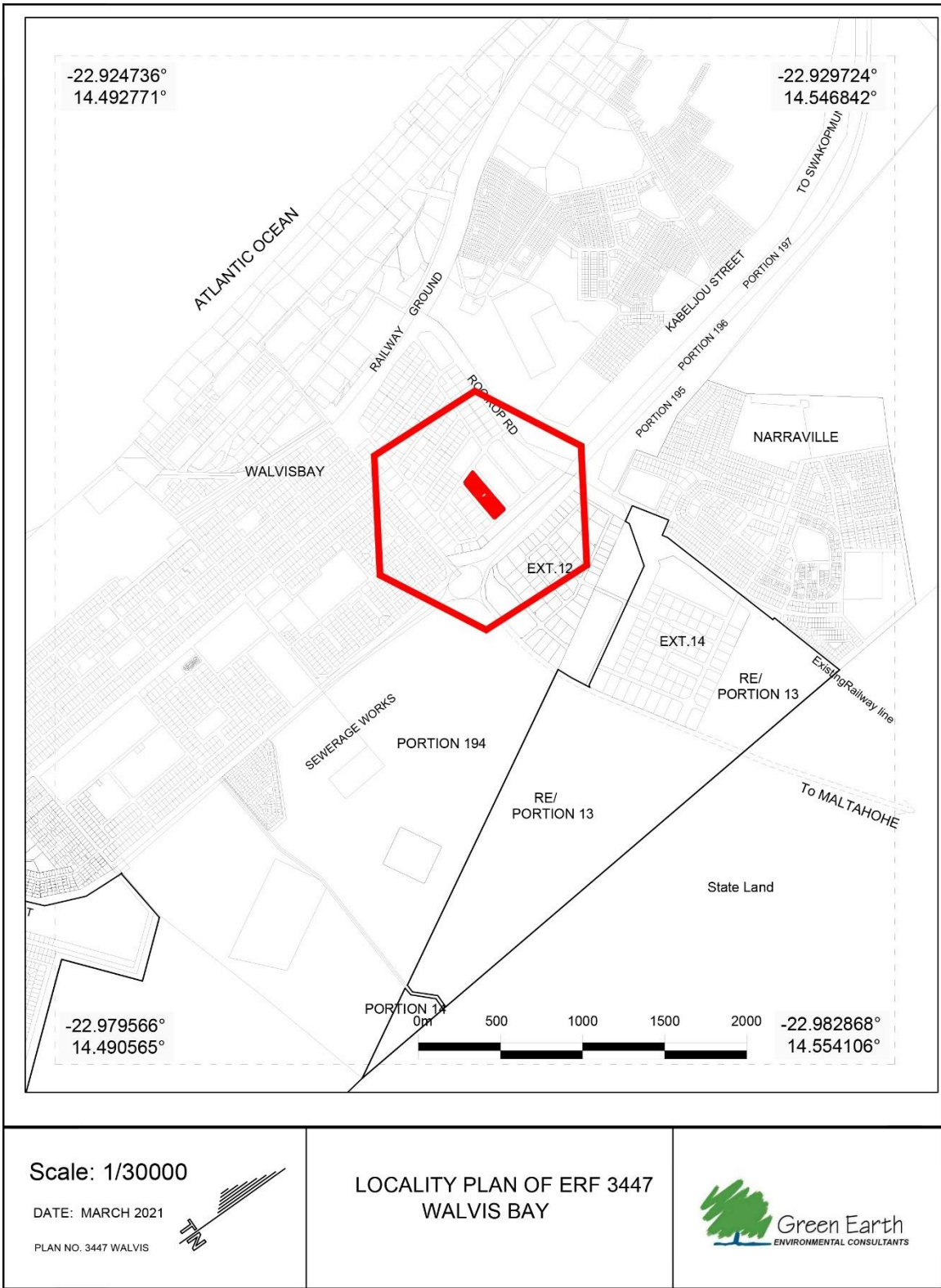
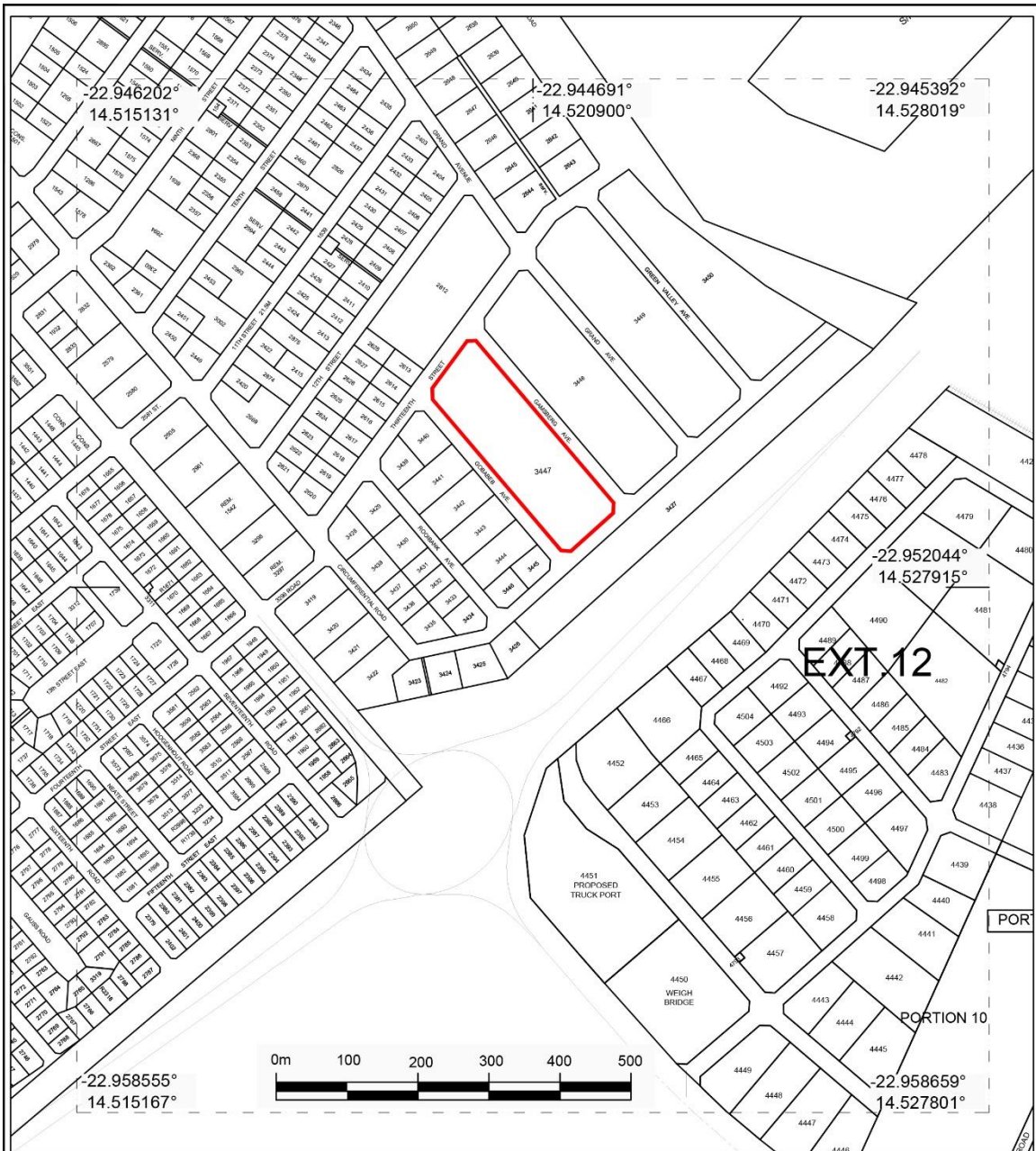


Figure 2: Locality Plan of Erf 3447, Walvis Bay





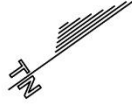

<p>DATE: MARCH 2021</p> <p>PLAN NO. 3447 WALVIS</p> 	<p>LOCALITY PLAN OF ERF 3447 WALVIS BAY</p>	
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Figure 3: Erf 3447, Walvis Bay



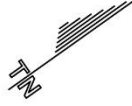

<p>DATE: MARCH 2021 PLAN NO. 3447 WALVIS</p> 	<p>LOCALITY PLAN OF ERF 3447 WALVIS BAY</p>	
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Figure 4: Erf 3447, Walvis Bay Plan with Image

The Erf is surrounded by streets on four (4) sides and is currently taking access from three (3) sides. All the streets are tarred or paved. The erf is located in the industrial area of Walvis Bay and the surrounding areas has a character of mix uses including industrial,

warehousing and business uses. The erf is flat, cleared of all vegetation and walled in by a concrete wall.

## 4.2. CURRENT USE OF THE SITE

CCC Petroleum CC, the previous owner of the site, is a close corporation that is dealing with transport and logistics of fuel and goods in Namibia. They established and operated a fuel storage facility and transport and logistics facility on the site. The site has now been taken over by BHL Group (the Proponent) to be used for the same purposes.

The site is currently used for:

- The parking of trucks (mainly large interlinks), servicing, loading, and offloading of trucks
- The storage and handling of containers and goods
- The parking of supporting vehicles (light commercial vehicles and forklifts)
- Admin offices, canteen facilities and ablution facilities
- The storage and handling of diesel for the filling of the vehicles
- Workshop
- Security offices for access control

The photo below shows the current activities on the site:

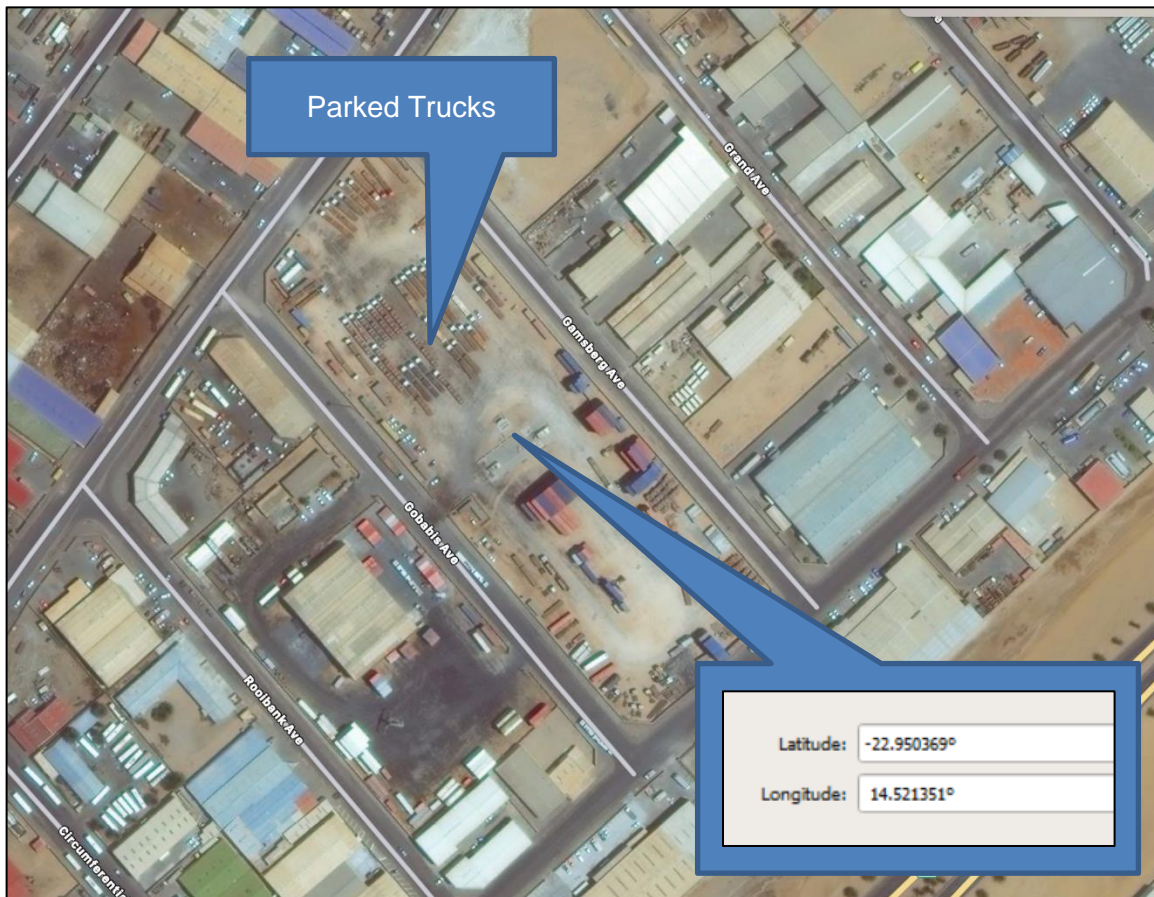


Figure 5: Photo of site



Figure 6: Activities on Project Site

### 4.3. PROJECT PROPOSAL AND DESCRIPTION

The current diesel storage and handling facility is located in the center of the site. The storage facility comprises of two self-bunded tanks with a volume of 31 000 liters each. The offices as well as canteen and ablution facilities are currently housed in containers especially amended for these uses. This is not ideal.



Figure 7: Photo showing locality of diesel tanks

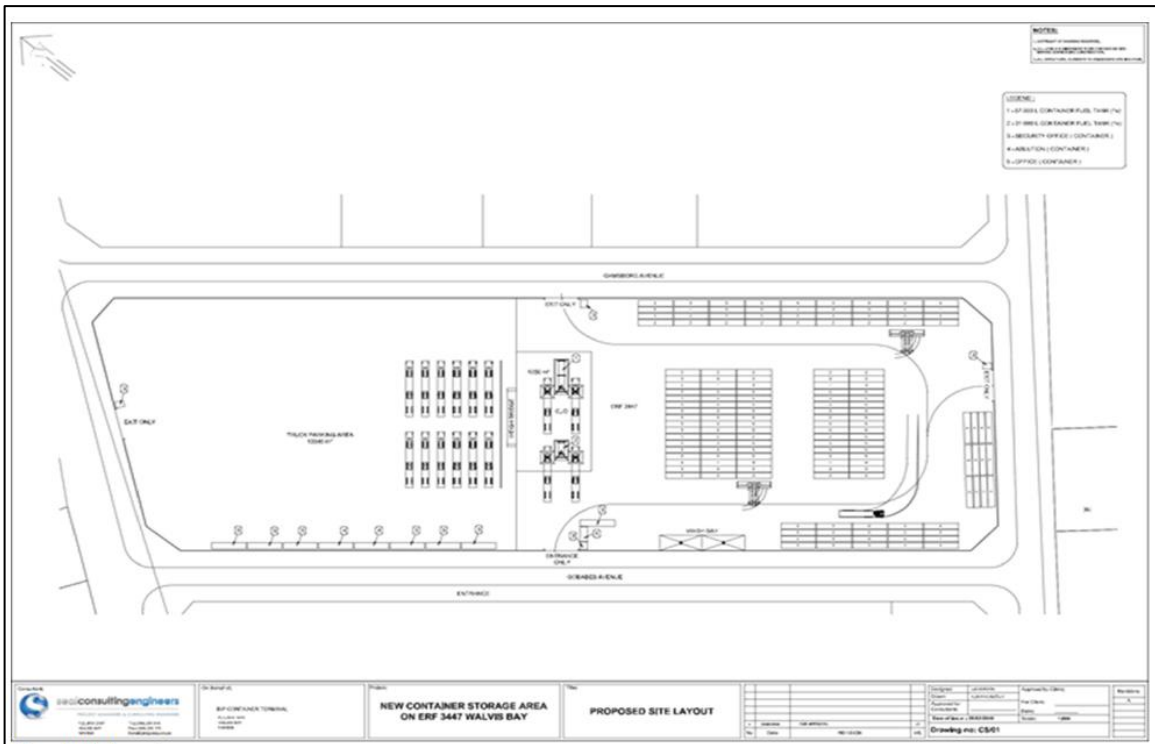


Figure 8: Current site layout



Figure 9: Existing diesel tank and pump

This locality has the following problems:

- It complicates the movement/maneuvering of vehicles
- It basically cuts the site in half hampering the efficient use of the site
- Accessing the storage facility in case of a fire or spillage is difficult
- Vehicles that need to fill up must navigate through parked vehicles, containers or vehicles being loaded or offloaded
- Conflict of traffic (trucks, forklifts, office vehicles and pedestrians) is a serious safety concern
- Increasing storage capacity at this location will take a lot of additional space further hampering the efficient use of the site and movement of vehicles

The new owner (the Proponent) intends to revise the current site layout to use the site more efficiently and to increase the safety in the use of the site. The containers currently housing the offices and staff amenities will be replaced by permanent structures with dedicated parking areas as well as internal driveways and roads. The diesel storage and handling facility will be relocated to the southwestern boundary of the site to allow an in-and-out access from Gobabeb Ave. A wash bay will also be constructed along the southwestern boundary of the erf to be accessed from Gobabeb Ave.

Vehicles visiting the site to load or offload goods, for parking purposes or to be attended to at the workshop will access from Hidipo Hamutenya Drive and exit at Circumferential

Road. Customers visiting the office will have a separate parking and access to keep the trucks and office visitors apart.

See plan below for the new site layout and utilization:

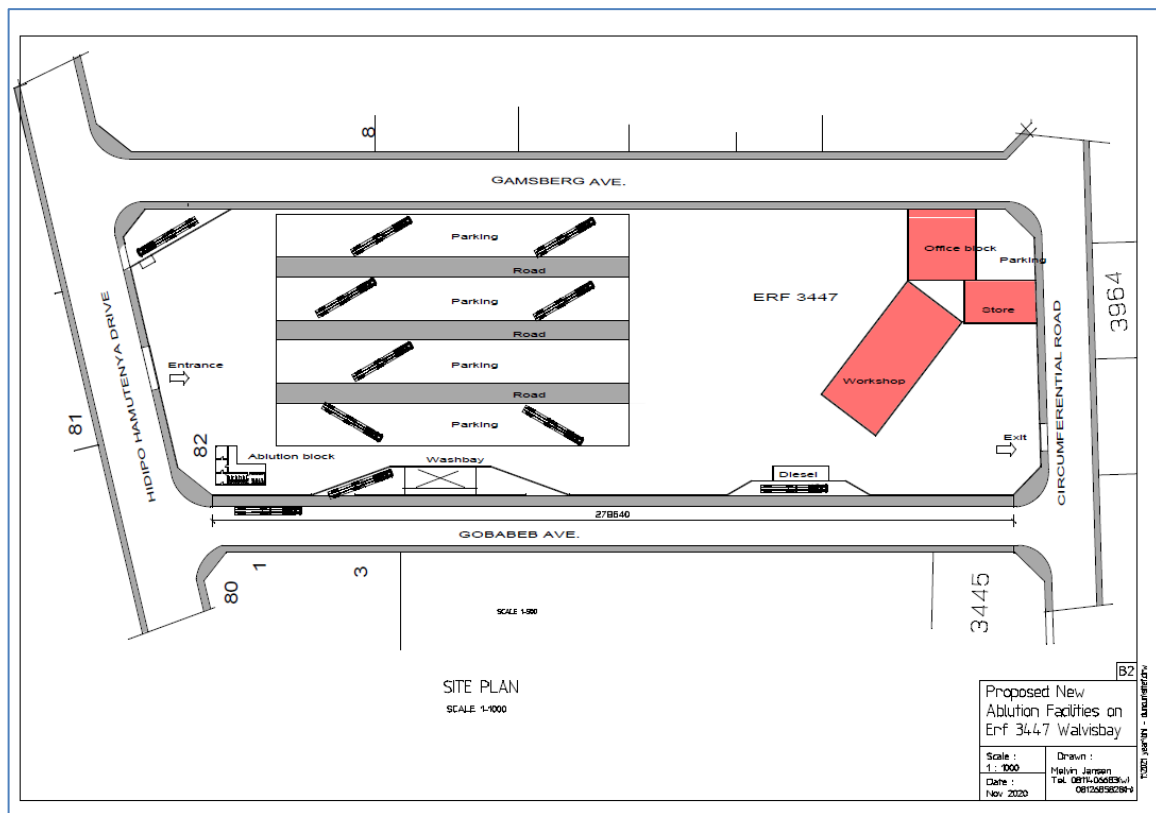


Figure 10: Layout and utilization

The following activities forms part of the amendment of the site layout and utilization:

#### Decommissioning of existing diesel storage facility

The current diesel storage and handling facilities will be decommissioned and removed. To decommission the existing facility, the following activities will be undertaken in accordance with the Ministry of Mines and Energy's Requirements:

- The tanks will be emptied from any diesel
- The pumps, pipes and electrical connections will be disconnected
- The tanks will be uploaded and removed to an off-site storage area
- Spill containment infrastructure will be cleaned and removed

#### Construction of office, workshop and store

The containers currently used will be removed and replaced by permanent buildings. It is intended to construct an office facility, workshop, and stage area. Building plans will be submitted to Walvis Bay Municipality and construction will be in accordance with the approved building plans and the municipal building regulations.

### Construction of internal roads and parking areas

The new site layout makes provision for the construction of internal roads and parking areas to improve the flow of vehicles and safety of the site. Plans for the infrastructure to be constructed will be submitted to Walvis Bay Municipality for approval before construction starts.

### Construction of a wash bay

A wash bay will be constructed to wash vehicles and equipment. The wash bay area will include paved washing bays to prevent wash water from seeping into the soil and from draining to neighbouring areas. It is advised that equipment be installed for efficient use and the recycling of the water. Wash water must be contained, stored, cleaned to be recycled in accordance with Municipal requirements.

### The construction of a new diesel storage and handling facility

A new diesel storage and handling facility comprising of 2 x 65 000l above ground self-bunded tanks with the necessary safety features as required by the MME will be installed. The tanks will be supplied with fuel by road tankers, operated by duly licensed and specialized transport companies, which will discharge via filler points. Filling of the tanks will be carried out on an “as and when required” basis, but it is envisaged that tanks will require filling on average once every two weeks.



Figure 11: Fuel facility

The proposed fuel facility will consist of the following:

- Facilities for the storage and handling Diesel 50ppm;
- The total tank capacity proposed for the site is 130000 L;
- 2 X aboveground tanks with the capacity of 65000 L each;
- There will be 2 dispensing points;
- The facility will only operate during normal business hours;
- The site is under 24-hour security, walled in and gated with access control on a 24-hour basis;
- It will be double wall tanks in accordance with EN12285 standards;



- Spill containment infrastructure, with an oil/water separator will be installed to protect against spillages in accordance with the Ministry of Mines and Energy's Requirements;
- The proposed facility will include bund walls and floors with traps to contain spillages which might happen during the handling of diesel;
- The tanks will be linked via underground pipes to the relevant fuel dispenser points (curb side pump);
- The curb side pump will be installed over a spill slab with a trap to prevent any spilled diesel from leaching into the soil. The trap sump will be linked to a 3-chamber separator which will collect any spilled diesel for proper disposal;
- The driveway areas will be paved;
- A concrete slab will be constructed around the island, under the canopy (around pumps);
- The refuelling area to be covered by an overhead canopy;
- The entire driveway area, the area surrounding the dispensing points and area below the canopy will be raised by land infill and sloped and landscaped and provided with proper drainage in order not to be subject to storm water damage/flooding.

Below is a summary of the typical operational activities to be undertaken on the new fuel storage and handling site:

- Movement of pump attendants
- Filling of vehicles with fuel (both light and heavy-duty vehicles)
- Filling of fuel into the aboveground tanks by direct closed transfer
- Administrative activities related to the facility

## **5. ALTERNATIVES TO THE PROPOSED PROJECT**

The following options were considered for the proposed activity:

### The no-go option

The option of keeping the diesel storage and handling facility at its current locality was considered as it would be the lowest cost and no further permits or licenses are required. It was however decided not to opt for the no-go option due to the following reasons:

- The current locality complicates the movement/manoeuvring of vehicles
- It basically cuts the site in half hampering the efficient use of the site
- Accessing the storage facility in case of a fire or spillage is difficult
- Vehicles that need to fill up must navigate through parked vehicles, containers or vehicles being loaded or offloaded
- Conflict of traffic (trucks, forklifts, office vehicles and pedestrians) is a serious safety concern
- Increasing storage capacity at this location will take a lot of additional space further hampering the efficient use of the site and movement of vehicles.

The proponent therefore decided to relocate the facility to another locality on the site.

### Finding an alternative site

The Proponent recently purchased Erf 3447, Walvis Bay. The reason for purchasing this site is due to:

- The size of the site. It is 30 786 m<sup>2</sup> in extent and thus large enough to accommodate the needs of the Proponent.
- The site has no fixed structures on it. Even the diesel storage facility consists of above ground tanks which can be easily relocated. This allows the Proponent to do a customized development on the site which will cater for their specific requirements.
- The site is ideally located for the services (transport and logistics) offered by the Proponent.
- It has already an ECC for the specific activity.
- The site is easily accessible.

The Proponent does not own alternative sites in Walvis Bay, therefore it was decided that this site is the best for the proposed activity.

## **6. MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM APPROVAL**

The current Environmental Clearance Certificate was issued by the Ministry of Environment, Forestry and Tourism on 20 January 2020 which only expires on 19 January 2023. See below a copy of the current Certificate:



**REPUBLIC OF NAMIBIA**  
**MINISTRY OF ENVIRONMENT AND TOURISM**  
OFFICE OF THE ENVIRONMENTAL COMMISSIONER

**ENVIRONMENTAL CLEARANCE CERTIFICATE**

**ISSUED**

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

**TO**

CCC Petroleum cc  
P. O . Box 8406, Narraville, Walvis BAY, Corner of 5th street and 5th road.

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Establishment and Operations of a Fuel Storage Facility in Walvis  
Bay, Erongo Region.



DEPUTY ENVIRONMENTAL COMMISSIONER

Issued on the date: 2020-01-20

Expires on this date: 2023-01-20

(See conditions printed over leaf)

Reduce  
Reuse



Figure 12: Clearance Certificate

The purpose of this submission is to renew the Environmental Clearance for a further 3 (three) years to allow the Proponent to decommission the existing diesel storage facility and construct and operate a new diesel storage and handling facility on the site.

## **7. BULK SERVICES AND INFRASTRUCTURE**

### **7.1. ACCESS AND INTERNAL ROADS**

Access to the proposed project site will be obtained from Hidipo Hamutenya Drive and Circumferential Road.

### **7.2. WATER SUPPLY**

Water is supplied directly from the municipality's water reticulation system.

### **7.3. ELECTRICITY RETICULATION**

Electricity is supplied by Erongo Red through their electrical distribution network.

### **7.4. SEWAGE TREATMENT AND DISPOSAL**

The sewage is connected to the sewer system of the municipality.

### **7.5. SOLID WASTE DISPOSAL/REFUSE REMOVAL**

Solid waste disposal is handled in accordance with the regulations of the municipality.

### **7.6. STORMWATER MANAGEMENT**

The stormwater management system will be accommodated in the building plans.

## **8. APPROACH TO THE STUDY**

The assessment included the following activities:

a) Desktop sensitivity assessment

Literature, legislation and guidance documents related to the natural environment and land use activities available on the site and area in general were reviewed to determine potential environmental issues and concerns.

b) Site assessment (site visit)

The project site and the immediate neighbourhood and surrounding area were assessed through several site visits to investigate the environmental parameters on site to enable

further understanding of the potential impacts on site. Meetings were conducted with the Proponent and Mr. Melvin Jansen of Walvis Bay Municipality to obtain specific information regarding the site and project proposed.

#### c) Public participation

Environam Consultants Trading did the public participation for the initial EIA.

Public consultation was conducted as follows:

- A site notice was placed onsite on Erf 3447 in Gobabeb Avenue.
- Direct neighbours were given the Background Information Document (BID) with a comment sheet attached to raise any comments, issues or concerns related to the proposed project. A list of I&APs was generated from this exercise.
- Public consultation notices were also advertised in the one national newspaper (The Namibian) and one local newspaper (Namib Times) for two consecutive weeks.
- The Namibian 24 June 2019 and 01 July 2019.
- Namib Times 21 June 2019 and 28 June 2019.

#### d) Scoping

Based on the desk top study, site visits and public participation, the environmental impacts were determined in five categories: nature of project, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity. The findings of the scoping have been incorporated in the environmental impact assessment report below.

#### e) Environmental Management Plan (EMP)

To minimize the impact on the environment, mitigation measures have been identified to be implemented during planning, construction and implementation. These measures have been included in the Environmental Management Plan to guide the planning, construction and operation of the project which can also be used by the relevant authorities to ensure that the project is planned, developed and operated with the minimum impact on the environment.

## **9. ASSUMPTIONS AND LIMITATIONS**

It is assumed that the information provided by the proponent (BHL Group), and other relevant parties are accurate. Alternative sites were not evaluated as the proposed site is the site owned by the proponent. The site was visited several times and any happenings after this are not mentioned in this report. (The assessment was based on the prevailing environmental conditions and not on future happenings on the site.) However, it is assumed that there will be no significant changes to the proposed project, and the environment will not adversely be affected between the compilation of the assessment and the implementation of the proposed activities.

## 10. ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programs and policies deemed to have adverse impacts on the environment require an EIA according to Namibian legislation. The administrative, legal and policy requirements to be considered during the Renewal of the Environmental Assessment for the project are the following:

- The Namibian Constitution
- The Environmental Management Act (No. 7 of 2007) and Regulations (2012)
- The Walvis Bay Town Planning Scheme
- Other Laws, Acts, Regulations and Policies

### THE NAMIBIAN CONSTITUTION

Article 95 of Namibia's constitution provides that: "The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following: Management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall ensure that the natural resources and features like rivers, plants, trees as well as water resources are protected and sustained by providing measures against destroying the environment and the natural resources. This article recommends that a relatively high level of environmental protection is called for in respect of activities which might impact on these natural resources. Article 144 of the Namibian Constitution deals with environmental law and it states:

"Unless otherwise provided by this Constitution or Act of Parliament, the general rules of public international agreements binding upon Namibia under this Constitution shall form part of the law of Namibia". This article incorporates international law, if it conforms to the Constitution, automatically as "law of the land". These include international agreements, conventions, protocols, covenants, charters, statutes, acts, declarations, concords, exchanges of notes, agreed minutes, memoranda of understanding, and agreements (Ruppel & Ruppel-Schlichting, 2013). It is therefore important that the international agreements and conventions are considered (see section 4.9).

In considering the environmental rights, the proponent, BHL Group, should consider the following in devising an action plan in response to these articles:

- Implement a "zero-harm" policy, which would guide decisions and operations.
- Ensure that no management practice or decision result in the degradation of future natural resources.
- Take a decision on how this part of the Constitution will be implemented as part of the Environmental Control System (ECS).

## **ENVIRONMENTAL MANAGEMENT ACT (NO. 7 OF 2007) AND REGULATIONS (2012)**

The Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) of the Environmental Management Act (No. 7 of 2007) that came into effect in 2012 requires/recommends that a Renewed Environmental Impact Assessment and an Environmental Management Plan (EMP) be conducted for the following listed activities to obtain an Environmental Clearance Certificate:

### ***ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES***

- *The construction of facilities for the refining of gas, oil and petroleum products.*

### ***HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE***

- *The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

Cumulative impacts associated with the project must be included as well as the public consultation. The Act further requires all major industries and developers to prepare waste management plans and present these to the local authorities for approval.

The Act, Regulations, Procedures and Guidelines have integrated the following sustainability principles. They need to be given due consideration, particularly to achieve proper waste management and pollution control:

### **Cradle to Grave Responsibility**

This principle provides that those who handle or manufacture potentially harmful products must be liable for their safe production, use and disposal and that those who initiate potentially polluting activities must be liable for their commissioning, operation and decommissioning.

### **Precautionary Principle**

It provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach must be adopted.

### **The Polluter Pays Principle**

A person who generates waste or causes pollution must, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

### **Public Participation and Access to Information**

In the context of environmental management, citizens must have access to information and the right to participate in decisions making.

The proposed project and land use will not have a negative impact on the public as the surrounding uses are also characterised by industrial and business activities.

## THE WALVIS BAY TOWN PLANNING SCHEME

Walvis Bay Town Planning Amendment Scheme No. 35 (7 December 2015) applies to the area as indicated on the scheme maps and corresponds with the Townlands Diagram for Walvis Bay Town and Townlands. Erf 3447, Walvis Bay falls within the area of the Scheme.

The general purpose of this Scheme is the coordinated and harmonious development of the area of Walvis Bay (including, where necessary, the reconstruction and redevelopment of any part which has already been subdivided whether there are buildings on it or not) in such a way as will most effectively tend to promote health, safety, order, amenity, convenience and general welfare as well as efficiency and economy in the process of development and improvement of communications, and where it is expedient in order to promote proper planning or development, may provide for the suspending the operation of any provision of law or any bylaw or regulation made under such law, in so far as such provision is similar to or inconsistent with any of the provisions so the Scheme.

According to the Town Planning Scheme, Erf 3447 is zoned 'light industrial'. Clause 20 of the Town Planning Scheme allows the primary uses as stipulated below on an erf which is zoned 'heavy industrial':

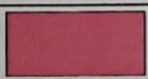
COLUMN (1) Zone	COLUMN (2) Map Reference	COLUMN (3) Purposes for which the land may be used and buildings may be erected and used	COLUMN (4) Purposes for which land may be used and buildings may be erected and used with the Consent of Council
Light Industrial		<ul style="list-style-type: none"> <li>. Light Industry</li> <li>. Service Industry</li> <li>. Service Station</li> <li>. Warehouse</li> <li>. Storage Premises</li> <li>. Building Yard</li> <li>. Office Premises</li> </ul>	<ul style="list-style-type: none"> <li>. Panel Beating</li> <li>. Scrap Yard</li> <li>. Business Premises</li> <li>. Retail</li> <li>. Caretaker Unit</li> <li>. Place of Instruction</li> <li>. Place of Amusement</li> <li>. Funeral Parlour</li> <li>. Restaurant</li> </ul>

Figure 13: Town Planning Scheme

### CONCLUSION AND IMPACT

The Town Planning Scheme confirms that Erf 3447, Walvis Bay may be used for a service station, warehousing, and storage purposes as it is included as a 'primary use' as per Clause 20.1 of the Scheme.

## OTHER LAWS, ACTS, REGULATIONS AND POLICIES

Table 1: Laws, Acts, Regulations and Policies

Laws, Acts, Regulations & Policies consulted:	
Petroleum Products and	The <b>Petroleum Products and Energy Act of Namibia (No 13 of 1990)</b> makes provision for impact assessments for new proposed



<b>Energy Act of Namibia (No 13 of 1990)</b>	fuel facilities and petroleum products known to have detrimental effects on the environment. It specifies that petroleum facilities must comply with relevant SANS specifications. The specific important Petroleum Products Regulations promulgated in terms of the Petroleum Products and Energy Act 13 of 1990 (3 July 2000) that should be referred to are: Regulation 3, 16, 20, 21, 24, 27, 29, 32, 40(2), 49 & 50.
<b>Pollution Control and Waste Management Bill (guideline only)</b>	The <b>Pollution Control and Waste Management Bill</b> is currently in preparation and is therefore included as a guideline only. Of particular reference to the development, Parts 2, 7 and 8 apply. Part 2 provides that no person shall discharge or cause to be discharged, any pollutant to the air from a process except under and in accordance with the provisions of an air pollution license issued under section 23. Part 2 also further provides for procedures to be followed in license application, fees to be paid and required terms of conditions for air pollution licenses. Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances. The competent authority for the purposes of section 74 shall maintain a register of substances notified in accordance with that section and the register shall be maintained in accordance with the provisions. Part 8 provides for emergency preparedness by the person handling hazardous substances, through emergency response plans.
<b>Water Resources Management Act</b>	The <b>Water Resources Management Act (No 24 of 2004)</b> stipulates conditions that ensure effluent that is produced to be of a certain standard. There should also be controls on the disposal of sewage, the purification of effluent, measures should be taken to ensure the prevention of surface and groundwater pollution and water resources should be used in a sustainable manner.
<b>Hazardous Substances Ordinance (No 14 of 1974)</b>	The <b>Ordinance</b> applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings.
<b>The Local Authorities Act (No 23 of 1992)</b>	The purpose of the <b>Local Authorities Act</b> is to provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority councils; and to provide for incidental matters.
<b>Atmospheric Pollution Prevention Ordinance of Namibia (No 11 of 1976)</b>	Part 2 of the <b>Ordinance</b> governs the control of noxious or offensive gases. The Ordinance prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. The registration certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process.

<b>Nature Conservation Ordinance</b>	The <b>Nature Conservation Ordinance (No 4 of 1975)</b> covers game parks and nature reserves, the hunting and protection of wild animals, problem animals, fish and indigenous plant species. The Ministry of Environment, Forestry and Tourism (MEFT) administer it and provides for the establishment of the Nature Conservation Board.
<b>Forestry Act</b>	The <b>Forestry Act (No 12 of 2001)</b> specifies that there be a general protection of the receiving and surrounding environment. The protection of natural vegetation is of great importance, the Forestry Act especially stipulates that no living tree, bush, shrub or indigenous plants within 100m from any river, stream or watercourse, may be removed without the necessary license.
<b>Soil Conservation Act</b>	The <b>Soil Conservation Act (No 76 of 1969)</b> stipulates that the combating and preventing of soil erosion should take place; the soil should also be conserved, protected and improved, vegetation and water sources and resources should also be preserved and maintained. When proper mitigation measures are followed along the construction and implementation phase of the project, the natural characteristics of the property is expected to have a moderate to low impact on the environment.
<b>Labour Act</b>	<p>The <b>Labour Act of 2007 (No 11)</b> contains regulations relating to the Health, Safety and Welfare of employees at work. These regulations are prescribed for among others safety relating to hazardous substances, exposure limits and physical hazards. Regulations relating to the Health and Safety of Employees at Work promulgated in terms of the Labour Act 6 of 1992 (GN156, GG1617 of 1 August 1997):</p> <p><b>Regulation 178(2) (d), 180</b> refers to Chemical safety data sheets (CSDS) for all hazardous chemical substances must be prepared by the manufacturer or supplier thereof. These must be provided to every employer using such substances. The CSDS must contain essential health and safety information.</p> <p><b>Regulation 178(2)(d), 182</b> refers to hazardous substances must at any time be stored in such a manner that they do not create a risk to the health and safety of employees or other persons, nor any risk of contamination of the environment, due to seeping, leaking, fire or accidental release.</p> <p><b>Regulation 183</b> states amongst other things that hazardous waste and deposits must be removed at intervals and by methods appropriate to the type of hazard which they constitute.</p>
<b>Integrated Urban and Spatial Development Framework for Walvis Bay</b>	To transform Walvis Bay to be the primary industrial city in Namibia. The Framework aims to ensure that appropriate levels of environmental management is enforced for all developments in Walvis Bay.

<b>Walvis Bay Integrated Environmental Policy</b>	The Municipality of Walvis Bay intends to move towards its responsibility to manage the environment of Walvis Bay together with the town's residents and institutions. Focus will be placed on the conservation and protection of the environment.
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**CONCLUSION AND IMPACT**

Green Earth Environmental Consultants believe the above administrative, legal and policy requirements which specifically guides and governs the project at the proposed site will be followed and complied with in the assessment of the activity.

A flowchart indicating the entire EIA process is shown in the *Figure* below:

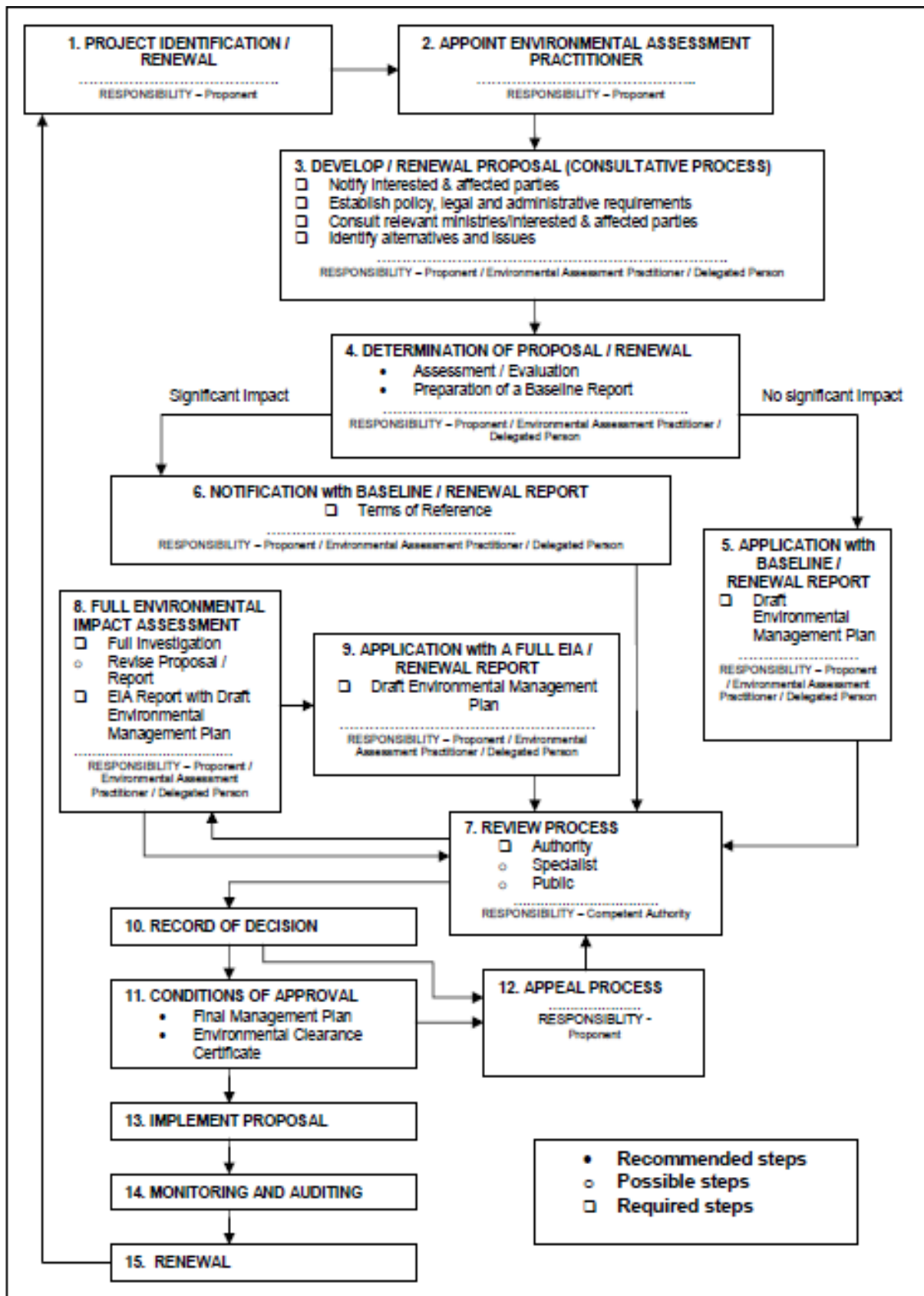


Figure 14: Flowchart of the Impact Process

# 11. AFFECTED RECEIVING ENVIRONMENT

## 11.1. CLIMATE

A summary of climate conditions is presented below:

Table 2: Climate Data

Classification of climate	Desert
Precipitation	0-50
Variation in annual rainfall (%)	<100
Average annual evaporation (mm/a)	2400-2600
Water deficit (mm/a)	1701-1900
Fog	Approximately 900 hours of fog per year
Temperature	Average maximum: Between 24°C in March/April and 19.3°C in September Average minimum: Between 16.5°C in February and 9°C in August Average annual >16°C

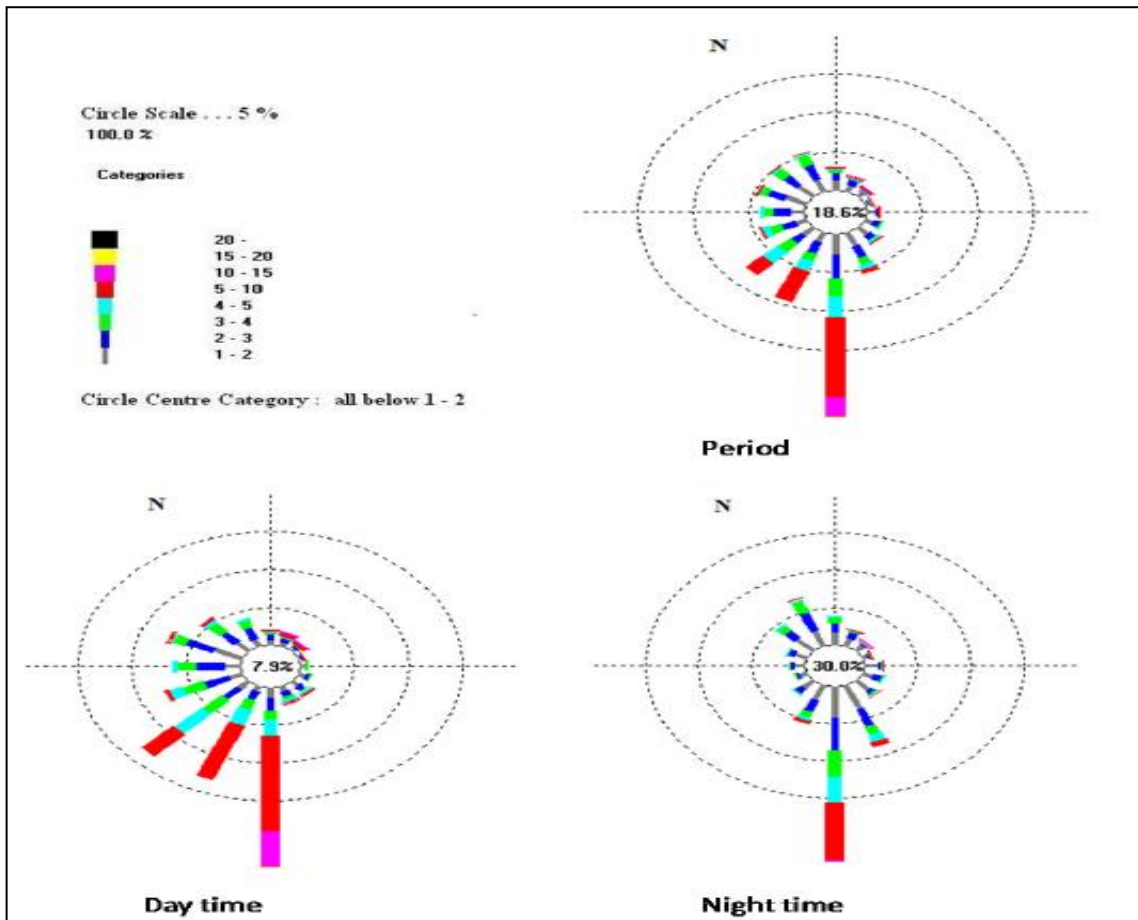


Figure 15: Wind summary graph

Strong winds in the coastal areas may aggravate dust impacts during the construction phase. The fuel storage and handling facilities as well as the supporting structures to be constructed must meet all prescribed Municipal requirements and therefore should not pose any environmental threat due to Walvis Bay's climatic conditions.

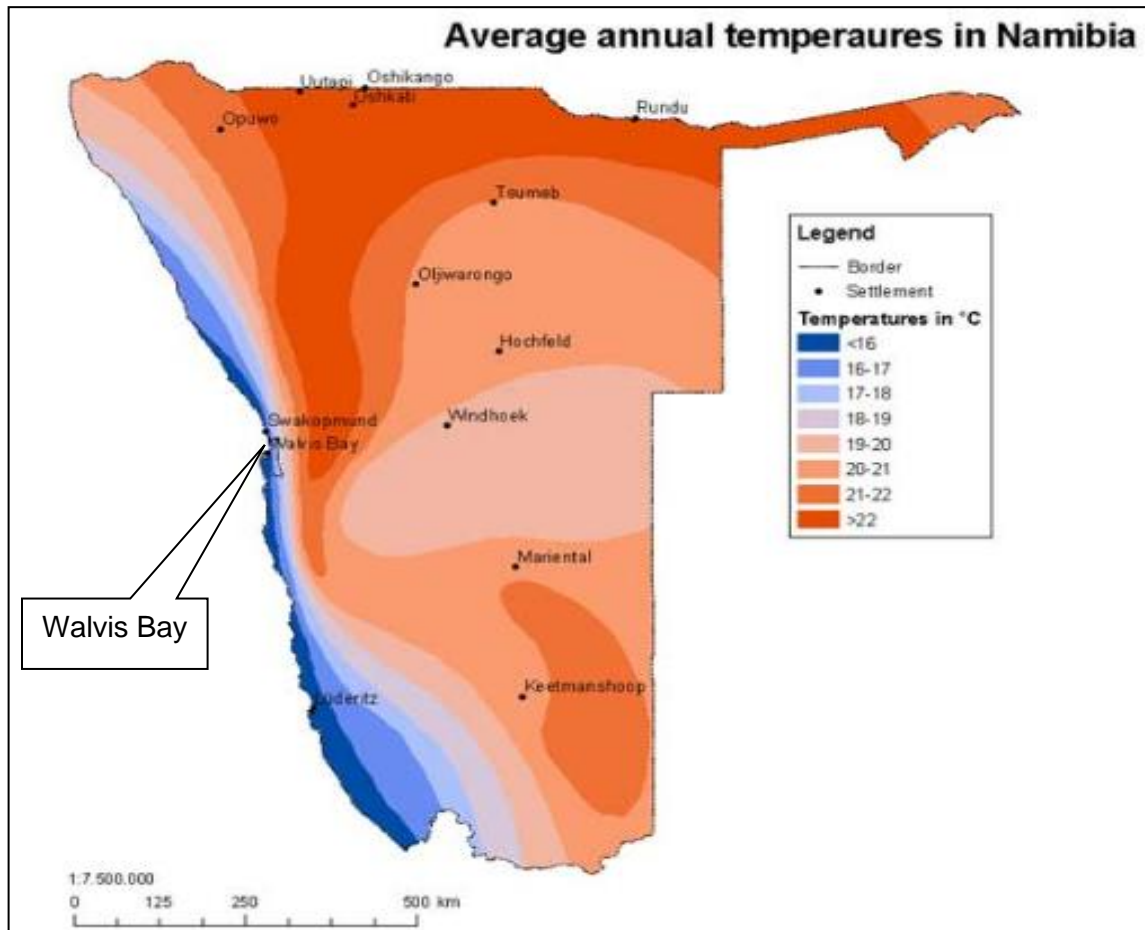


Figure 16: Average temperatures (Atlas of Namibia)

## 11.2. GEOLOGY, SOILS AND GEOHYDROLOGY

Groundwater is not abstracted for human consumption in Walvis Bay. The Municipality of Walvis Bay currently purchases fresh/potable water from NamWater, which source water from the Kuiseb Water Supply Scheme.

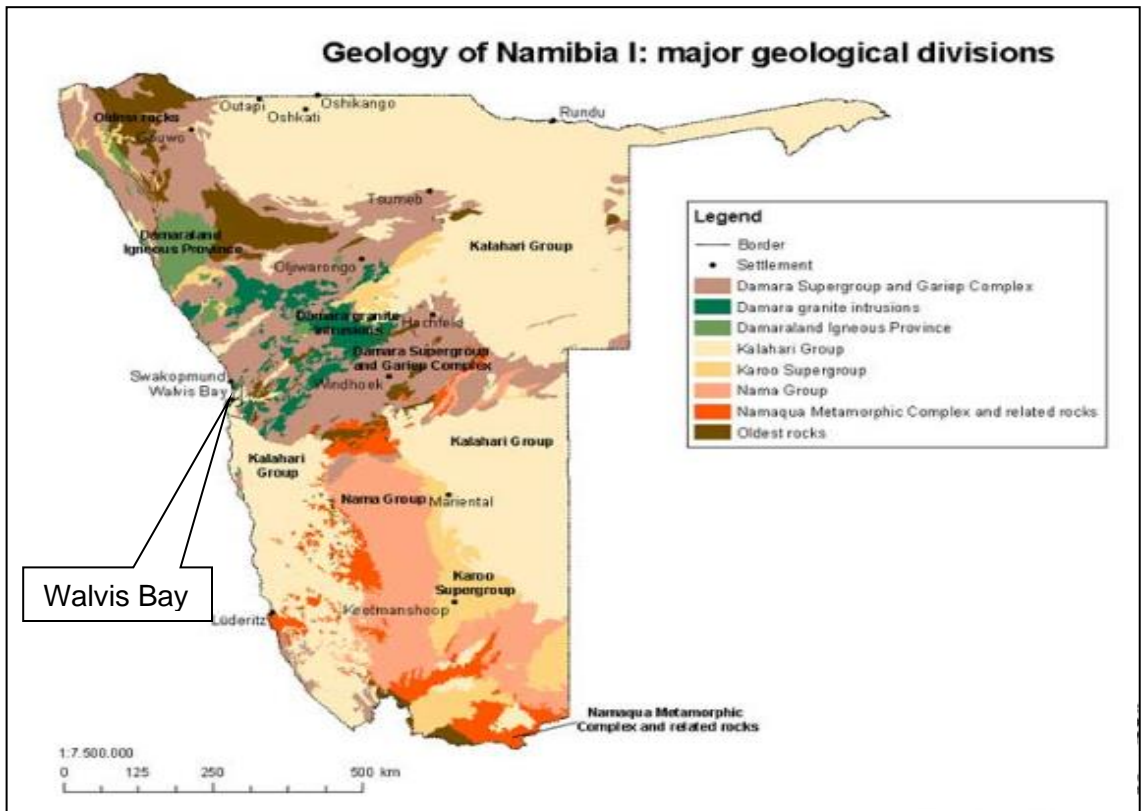


Figure 17: Geological Divisions (Atlas of Namibia)

### 11.3. BIODIVERSITY AND VEGETATION

Erf 3447, Walvis Bay is located within the already established industrial area. The habitat for fauna is therefore fragmented. There is no noteworthy fauna or flora present at the site.

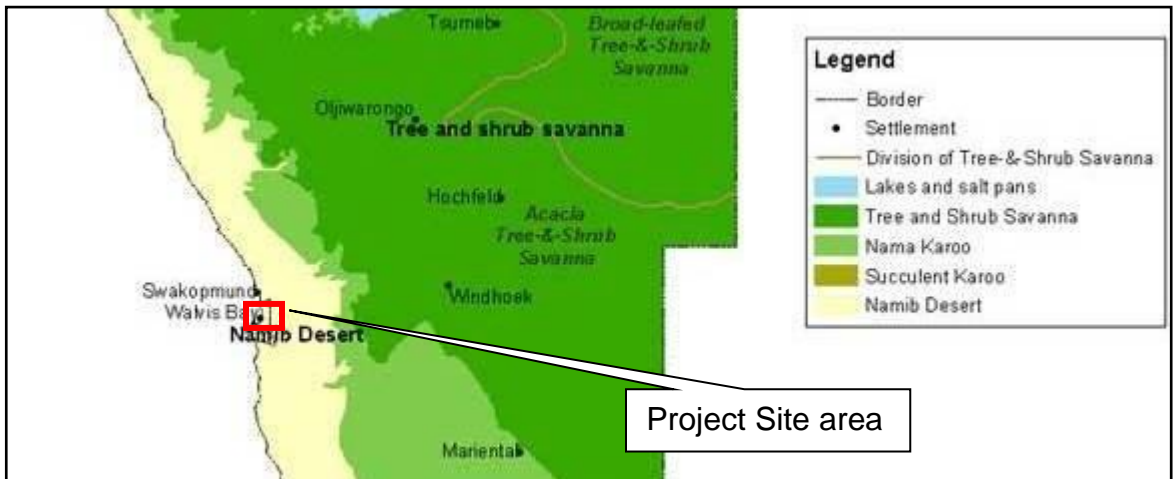


Figure 18: Biomes of Namibia (Atlas of Namibia)

The proposed service station development will be constructed in an area where limited fauna or flora has been observed. No lichen fields were observed in the area. The project site has already been levelled and used as a fuel depot for some time. No impact on local

fauna and flora is expected and the proposed location of the service station development is located far enough from the Ramsar site (Wetland of International Importance) not to have an impact on it.

The project site is in a transformed state showing evidence of human interference. The site was previously cleared. No protected plant species or protected vegetation was observed on the site. Topographically there are no special features to be taken into account with the development.

#### **11.4. WALVIS BAY'S WATER RESOURCES**

From figures provided by the Municipality, it is projected that the population will grow from the current 79 500 (2014) to 180 000 by 2030. The population will thus more than double in 16 years' time. The Municipality of Walvis Bay currently purchases fresh/potable water from NamWater, which source water from the Kuiseb Water Supply Scheme. This area does not fall within a Water Control Area, but groundwater remains the property of the Government of Namibia. The development of Erf 3447, Walvis Bay poses no threat to the potable water supply as it is not located close to the Kuiseb Water Supply Scheme.

#### **11.5. CORROSION**

Since the project site is located in Walvis Bay, which is known for extensive corrosion, it is believed that the equipment constructed and used on site will be exposed to corrosion to a large degree. The corrosion is due to the salty nature of the soil and nearby ocean where fog and winds distribute it. Corrosion causes equipment (especially metal such as pipelines and concrete buildings) to deteriorate over time.

#### **11.6. SOCIAL-ECONOMIC COMPONENT**

The proposed development falls within the Erongo Region with a population of 150,400 and a density of 2.4 people/km<sup>2</sup> (*National Planning Commission, 2012*). The Erongo Region shows promise in terms of socio-economic factors. It has one of the lowest unemployment rates of all regions in Namibia (22.6%), and only 5.1% of households in the Erongo Region are considered poor. Furthermore, 97% of the population is considered literate and 72%, the highest for any Namibian region, has some form of education at secondary level.

From figures provided by the Municipality, it is projected that the population of Walvis Bay will grow from the current 79 500 (2014) to 180 000 by 2030. The population will thus more than double in 16 years' time. The current growth rate is 4.7%.

The largest part of Walvis Bay's population resides in the Kuisebmond area ( $\pm$ 33 790) and secondly in Narraville ( $\pm$ 6668) (2012 figures). This high growth is anticipated to expected high influx of people due to the expansion of port, establishment of many industries etc.

The National unemployment rate is 34% although the Erongo Region has an unemployment rate of 23%. The fishing industry is the major employer of low skilled workers on a permanent and seasonal basis. The total employment of this sector is estimated at 2.2%



of the total Namibian workforce (*Namibia Statistics Agency, 2009/2010*). The major constraints of industrial development are the lack of sufficient water supply, the lack of a large enough local market and the excessive focus on the fishing industry. Most industries that exist at the coast are either secondary or tertiary suppliers to the fishing industry or linked to port-related activities.

HIV/AIDS has a strong and adverse socio-economic impact on livelihoods of people in Namibia and the region. The incidence of HIV/AIDS in Namibia displays a declining trend. It is important that the proponent and subcontractors educate and inform the workforce on the risk, impact as well as consequence of contracting HIV.

Walvis Bay will benefit from more employment opportunities, skills and technology transfer during construction and operations of the development. The spending power of locals is likely to increase because of employment during the construction and operational phase.

The site where Erf 3447 is located is surrounded by land that is zoned for 'business' and 'industrial' uses. This area has already been developed and is fully serviced with municipal bulk services. The buildings erected in this area are mainly used for warehousing, bulk storage of fuel, manufacturing and retail purposes. The proposed development will not have a negative impact on the social environment as it is in line with the current uses in this area. It will thus have a positive impact on the social environment. The socio-economic characteristics of the area are continuously changing as more economic activities are established within the area.



Figure 19: Project site location



Figure 20: Neighbouring activities

## 11.7. SENSE OF PLACE

Erf 3447, Walvis Bay is situated in reaching distance to bulk infrastructural networks consisting of roads and electricity. The proposed activities will not have a large/negative impact on the sense of place in the area. An untidy or badly managed site can detract from the ecological well-being and individuality of the area. Unnecessary disturbance to the surroundings could be caused by poorly planned or poorly managed operational activities. The project site should be kept neat and clean where possible. Vegetation should not be removed or harmed if not necessary since it covers topsoil which prevents erosion. Noise and dust should be limited in the construction phase because of the neighbouring activities.

## 11.8. CULTURAL HERITAGE

The proposed project site is not known to have any historical significance prior to or after Independence in 1990. The specific area does not have any National Monuments and the specific site has no record of any cultural or historical importance or on-site resemblance of any nature. No graveyard or related article was found on the site.

## 11.9. HEALTH

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Proper Protective Equipment). A health and safety officer should be employed to manage, coordinate and monitor risk and hazard

and report all health and safety related issues in the workplace. The introduction of external workers into the area is sometimes accompanied with criminal activities posing security risks for neighbours. However, the proponent will take certain measures to prevent any activity of this sort. The welfare and quality of life of the neighbours and workforce needs to be considered for the project to be a success on its environmental performance. Conversely, the process should not affect the overall health of persons related to the project including the neighbours.

The current global Coronavirus (Covid-19) pandemic and the associated State of Emergency and health restrictions globally may result in some delays and logistic disruptions. The pandemic might have an impact on obtaining equipment, specialist workforce mobilisation and implementation of the project. The health restrictions may have an impact on campsite set-up, traveling of personal/workers and building of the infrastructure. The proponent, contractor and subcontractors should adhere to all the international, regional and local Covid-19 health restrictions and protocols.

## 12. IMPACT ASSESSMENT AND EVALUATION

The Environmental Impact Assessment sets out potential positive and negative environmental impacts associated with the proposed project. The following assessment methodology will be used to examine each impact identified, see *Table* below:

*Table 3: Impact Evaluation Criterion (DEAT 2006)*

Criteria	Rating (Severity)	
Impact Type	+	Positive
	O	No Impact
	-	Negative
Significance of impact being either	L	Low (Little or no impact)
	M	Medium (Manageable impacts)
	H	High (Adverse impact)

Probability:	Duration:
5 – Definite/don't know	5 - Permanent
4 – Highly probable	4 – Long-term (impact ceases)
3 – Medium probability	3 – Medium term (5 – 15 years)
2 – Low probability	2 – Short-term (0 – 5 years)
1 – Improbable	1 - Immediate
0 - None	

Scale:	Magnitude:
5 – International	10 – Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate
2 – Local	4 - Low
1 – Site only	2 - Minor
	0 - None

The impacts on the receiving environment are discussed in the paragraphs below.

## 12.1. KEY ENVIRONMENTAL ISSUES

The key environmental issues identified are the risk of surface and ground water pollution, the impact on access, traffic and safety and the current capacity of the Walvis Bay sewer system.

### 12.1.1. POTENTIAL SURFACE AND GROUNDWATER POLLUTION

Prevention of potential leakages that could lead to surface water and groundwater pollution is crucial. Proper containment mechanisms must be installed to contain any release that might take place from spillages during loading/offloading of vehicles. These mechanisms include the following:

- All loading and offloading should be done on surfaces with adequate spillage control.
- Spillage control procedures must be in place according to SANS 10089 (1) standards.
- These include bunding around the loading areas with appropriate slopes (1:100), as well as the construction of bund walls and floors that are liquid tight and that are not prone to deterioration under the effects of any petroleum product.
- Because of the shallow water table in the area, the bunded areas must be sealed using industry approved methods (SANS).
- The procedures followed to prevent environmental damage during service and maintenance, and compliance with these procedures, including the correct use of sumps and regular reporting of spillages, must be audited and corrections made where necessary.
- The condition of the fuel reticulation system, both existing and new, will have to be checked regularly and repaired if necessary, to prevent leakages.
- Proper training of operators must be conducted on a regular basis.
- Any spillage of more than 200l must be reported to the relevant authorities and remediation implemented.
- Spill clean-up equipment must be available on site.

### **12.1.2. ACCESS, TRAFFIC AND SAFETY**

Access to Erf 3447 is currently from Gobabeb Ave, Hidipo Hamutenya Drive and Circumferential Road which forms the boundary of the Erf. The upgrading and use of the site will result in a significant increase in traffic which if not managed properly will have a negative impact on the flow of traffic and safety of the users of the road.

The fuel depot will be mainly used for the refuelling of large interlinks (35m long) of which some of them will overnight at the site. The flow of traffic through the site should be designed as such as not to allow the parking of trucks in the streets nearby even if it is temporarily while awaiting their turn to be filled up. Enough parking should be created on site for trucks using the overnight facilities to prevent the blocking of traffic in the streets which will cause congestion of the street, have an impact on traffic flow and endanger the safety of other street users.

### **12.1.3. SEWER SYSTEM**

The Walvis Bay Municipality does not provide specific limits for allowable discharges into the sewerage system. Since no separate industrial sewage treatment plant exists, the guidelines of the Local Authorities Act (No 23 of 1992) and Drainage and Plumbing By-Law of 1958 (updated in 1982) is followed. The Walvis Bay Municipality is in the process of updating the Drainage and Plumbing By-Law and this should be promulgated in the near future. It is the Applicant's responsibility to familiarize themselves with the details once promulgated and to adhere to any regulations applicable to the development in Walvis Bay.

## **12.2. IMPACTS DURING CONSTRUCTION**

Some of the impacts that the project will have on the environment includes water will be used for the construction and operational activities, electricity will be used, and wastewater will be produced on the site that will have to be handled.

### **12.2.1. WATER USAGE**

Water is a scarce resource in Namibia and therefore water usage should be monitored and limited to prevent unnecessary wastage. The proposed project will make use of water in its construction phase and in the operational phase for maintenance.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-	2	3	4	3	M	L

## 12.2.2. ECOLOGICAL IMPACTS

The proposed project will be constructed in a disturbed natural area which has limited vegetation. Special care should be taken to limit the destruction or damage of any vegetation. However, impacts on fauna and flora are expected to be minimal. Disturbance of areas outside the designated working zone is not allowed.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-	1	2	4	2	L	L

## 12.2.3. DUST POLLUTION AND AIR QUALITY

Dust generated during the transportation of building materials; construction and installation of bulk services, and problems thereof are expected to be low and site specific due to the nature of the topsoil. Dust is expected to be worse during the winter months when strong winds occur. Release of various particulates from the site during the construction phase and exhaust fumes from vehicles and machinery related to the construction of bulk services are also expected to take place. Dust is regarded as a nuisance as it reduces visibility, affects the human health and retards plant growth.

It is recommended that regular dust suppression be included in the construction activities when dust becomes an issue. No unnecessary revving of engines or operation of vehicles is allowed. In general, the servicing of these extensions is envisaged to have minimal impacts on the surrounding air quality.

### Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	2	2	M	L

## 12.2.4. NOISE IMPACT

An increase of ambient noise levels at the proposed site is expected due to the construction activities. Noise pollution due to heavy-duty equipment and machinery will be generated.

It is not expected that the noise generated during construction will impact any third parties due to the distance of the neighbouring activities. Ensure all mufflers on vehicles are in full operational order; and any audio equipment should not be played at levels considered intrusive by others. The construction workers should be equipped with ear protection equipment.

#### Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Noise	-	2	1	4	2	M	L

### 12.2.5. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and public are of great importance. Workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Proper Protective Equipment). A health and safety officer should be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the workplace.

Safety issues could arise from the earthmoving equipment and tools that will be used on site during the construction phase. This increases the possibility of injuries and the contractor must ensure that all staff members are made aware of the potential risks of injuries on site. The presence of equipment lying around on site may also encourage criminal activities (theft).

Sensitize operators of earthmoving equipment and tools to switch off engines of vehicles or machinery not being used. The contractor is advised to ensure that the team is equipped with first aid kits and that they are available on site, always. Workers should be equipped with adequate personal protective gear and properly trained in first aid and safety awareness.

No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises. Proper barricading and/or fencing around the site especially trenches for pipes and drains should be erected to avoid entrance of animals and/or unauthorized persons. Safety regulatory signs should be placed at strategic locations to ensure awareness. Adequate lighting within and around the construction locations should be erected when visibility becomes an issue.

#### Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	M	L

### 12.2.6. CONTAMINATION OF GROUNDWATER

Care must be taken to avoid contamination of soil and groundwater. Use drip trays when doing maintenance on machinery. Maintenance should be done on dedicated areas with linings or concrete flooring. The risk can be lowered further through proper training of

staff. All spills must be cleaned up immediately. Excavations should be backfilled and sealed with appropriate material if it is not to be used further.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater	-	2	2	2	2	M	L

### 12.2.7. SEDIMENTATION AND EROSION

Vegetation stabilizes the area against wind erosion. Vegetation clearance and creation of impermeable surfaces could result in erosion in areas across the proposed area. The clearance of vegetation will further reduce the capacity of the land surface to slow down the flow of surface water, thus decreasing infiltration, and increasing both the quantity and velocity of surface water runoff. The proposed construction activities will increase the number of impermeable surfaces and therefore decrease the amount of groundwater infiltration. As a result, the amount of storm water during rainfall events could increase. If proper storm water management measures are not implemented this will impact negatively on the water courses close to the site.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Erosion and Sedimentation	-	1	2	4	2	M	L

### 12.2.8. GENERATION OF WASTE

This can be in a form of rubble, cement bags, pipe and electrical wire cuttings. The waste should be gathered and stored in enclosed containers to prevent it from being blown away by the wind. Contaminated soil due to oil leakages, lubricants and grease from the construction equipment and machinery may also be generated during the construction phase.

The oil leakages, lubricants and grease must be addressed. Contaminated soil must be removed and disposed of at a hazardous waste landfill. The contractor must provide containers on-site, to store any hazardous waste produced. Regular inspection and house-keeping procedure monitoring should be maintained by the contractor.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste	-	1	1	4	2	M	L



## 12.2.9. CONTAMINATION OF SURFACE WATER

Contamination of surface water might occur through oil leakages, lubricants and grease from the equipment and machinery during the installation, construction and maintenance of bulk services at the site. Oil spills may form a film on water surfaces in the nearby streams causing physical damage to water-borne organisms.

Machinery should not be serviced at the construction site to avoid spills. All spills should be cleaned up as soon as possible. Hydrocarbon contaminated clothing or equipment's should not be washed within 25m of any surface water body.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Surface water	-	2	2	4	3	M	L

## 12.2.10. TRAFFIC AND ROAD SAFETY

All drivers of delivery vehicles and construction machinery should have the necessary driver's licenses and documents to operate these machines. Speed limit warning signs must be erected to minimise accidents. Heavy-duty vehicles and machinery must be tagged with reflective signs or tapes to maximize visibility and avoid accidents.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-	2	2	4	3	M	L

## 12.2.11. FIRES AND EXPLOSIONS

There should be enough water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and they are serviced. All personnel must be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	2	4	2	M	L

## 12.2.12. SENSE OF PLACE

The placement, design and construction of the proposed project should be as such as to have the least possible impact on the natural environment. The proposed activities will not have a large/negative impact on the sense of place in the area since it will be constructed in a manner that will not affect the neighbouring land and it will not be visually unpleasing.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Nuisance Pollution	-	1	1	2	2	L	L

## 12.3. IMPACTS DURING OPERATIONAL PHASE

### 12.3.1. ECOLOGICAL IMPACTS

Staff and visitors should only make use of walkways and existing roads to minimise the impact on vegetation. No firewood may be collected on the site. Minimise the area of disturbance by restricting movement to the designated working areas during maintenance and drives.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology Impacts	-	1	2	4	2	L	L

### 12.3.2. DUST POLLUTION AND AIR QUALITY

Vehicles transporting goods and staff will contribute to the release of hydrocarbon vapours, carbon monoxide and sulphur oxides into the air. Possible release of sewer odour, due to sewer system failure or maintenance might also occur. All maintenance of bulk services and infrastructure at the project site must be designed to enable environmental protection.

### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	4	4	M	L

### 12.3.3. CONTAMINATION OF GROUNDWATER

Spillages might also occur during maintenance of the sewer system. This could have impacts on groundwater especially in cases of large sewer spills. Proper containment should be used in cases of sewerage system maintenance to avoid any possible leakages. Oil and chemical spillages may have a health impact on groundwater users. Potential impact on the natural environment from possible polluted groundwater also exists.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater contamination	-	2	2	4	2	L	L

### 12.3.4. GENERATION OF WASTE

Household waste from the activities at the project site and from the staff working at the site will be generated. This waste will be collected, sorted to be recycled and stored in on site for transportation and disposal at an approved landfill site.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Waste Generation	-	1	2	2	2	M	L

### 12.3.5. FAILURE IN RETICULATION PIPELINES

There may be a potential release of sewage, storm-water or water into the environment due to pipeline/system failure. As a result, the spillage could be released into the environment and could potentially be health hazard to surface and groundwater. Proper reticulation pipelines and drainage systems should be installed. Regular bulk services infrastructure and system inspection should be conducted.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Failure of Reticulation Pipeline	-	1	1	4	2	M	L

### 12.3.6. FIRES AND EXPLOSIONS

Food will be prepared on gas fired stoves. There should be enough water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and are serviced. All personnel must be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Fires and Explosions	-	2	1	4	2	M	L

### 12.3.7. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Proper Protective Equipment). Workers should be warned not to approach or chase any wild animals occurring on the site.

No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-	1	3	4	2	M	L

## 12.4. CUMULATIVE IMPACTS

These are impacts on the environment, which results from the incremental impacts of the construction and operation of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of what person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period. In relation to an activity, it means the impact of an activity that in it may not become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.

Possible cumulative impacts associated with the proposed project includes sewer damages/maintenance, vegetation and animal disturbance, uncontrolled traffic and destruction of the natural environment. These impacts could become significant especially if it is not

properly supervised and controlled. This could collectively impact on the environmental conditions in the area. Cumulative impacts could occur in both the construction and operational phase.

#### Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative Impacts	-	1	3	4	3	L	L

### 13. INCOMPLETE OR UNAVAILABLE INFORMATION

The exact amount of people that will be employed will depend on the type and scope of the activities and the number of individuals needed at each phase of the operations. The Environmental Management Plan (EMP) will therefore include all the possible negative effects of the project in general that could be operated on the site in order to prevent any pollution or harmful impacts whether to neighbours or the environment.

### 14. CONCLUSION

In line with the Environmental Management Act (No 7 of 2007), *Green Earth Environmental Consultants* have been appointed to conduct an Environmental Impact Assessment (EIA) and prepare an Environmental Management Plan (EMP) for the Environmental Clearance Renewal for the construction of facilities and storage and handling of petroleum products on Erf 3447, Walvis Bay for BHL Group.

The specific site has the full potential to be used for the proposed activities. It is believed that the activities will not have a severe negative effect on the environment. It is also believed that this project can largely benefit the economic and employment needs of the area.

The negative environmental impacts that may be visible in the operational phase of the project include increases in solid waste generation and wastewater generation, can result in an increase in traffic on the nearby roads and there can be an impact on the occupational health and safety of workers. As a result of the above-mentioned possible negative impacts on the receiving and surrounding environment, an Environmental Management Plan (EMP) is required to eliminate and guide the operational phase of the project. The operations of BHL Group are believed to be an asset to the residents of Walvis Bay and the Namibian citizens because employment will be made available and petroleum products for which there is a need.

After assessing all information available on this project, *Green Earth Environmental Consultants* are of the opinion that the project of BHL Group will not have a large impact on the environment. The accompanying EMP will focus on mitigation measures that will remediate or eradicate the negative or adverse impacts.

## 15. RECOMMENDATION

It is therefore recommended that the Ministry of Environment, Forestry and Tourism through the Environmental Commissioner support and approve the Environmental Clearance Renewal for the construction of facilities and storage and handling of petroleum products on Erf 3447, Walvis Bay for BHL Group and to issue a Renewed Environmental Clearance for the following 'Listed Activities':

### ***ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES***

- *The construction of facilities for the refining of gas, oil and petroleum products.*

### ***HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE***

- *The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.*
- *Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin.*

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## APPENDIX A: CURRICULUM VITAE OF CHARLIE DU TOIT

1. **Position:** Environmental Practitioner
2. **Name/Surname:** Charl du Toit
3. **Date of Birth:** 29 October 1960
4. **Nationality:** Namibian
  
5. **Education:**

Name of Institution	University of Stellenbosch, South Africa	
Degree/Qualification	Hons B (B + A) in Business Administration and Management	
Date Obtained	1985-1987	
Name of Institution	University of Stellenbosch, South Africa	
Degree/Qualification	BSc Agric Hons (Chemistry, Agronomy and Soil Science)	
Date Obtained	1979-1982	
Name of Institution	Boland Agricultural High School, Paarl, South Africa	
Degree/Qualification	Grade 12	
Date Obtained	1974-1978	
  
6. **Membership of Professional Association:** EAPAN Member (Membership Number: 112)
  
7. **Languages:**

	<u>Speaking</u>	<u>Reading</u>	<u>Writing</u>
English	Good	Good	Good
Afrikaans	Good	Good	Good
  
8. **Employment Record:**

<u>From</u>	<u>To</u>	<u>Employer</u>	<u>Position(s) held</u>
2009	Present	Green Earth Environmental Consultants	Environmental Practitioner
2005	2008	Elmarie Du Toit Town Planning Consultants	Manager
2003	2005	Pupkewitz Mega-build	General Manager
1995	2003	Agra Cooperative Limited	Manager Trade
1989	1995	Namibia Development Corporation Ministry of Agriculture	Chief Agricultural Consultant Agricultural Researcher
1985	1988		

### Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.





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**Charl du Toit**

## APPENDIX B: CURRICULUM VITAE OF CARIEN VAN DER WALT

1. **Position:** Environmental Consultant
2. **Name/Surname:** Carien van der Walt
3. **Date of Birth:** 6 August 1990
4. **Nationality:** Namibian

5. **Education:**

Institution	Degree/Diploma	Years
University of Stellenbosch	B.A. (Degree) Environment and Development	2009 to 2011
University of South Africa	B.A. (Honours) Environmental Management	2012 to 2013

6. **Membership of Professional Associations:**

EAPAN Member (Membership Number: 113)

7. **Languages:**

Language	Speaking	Reading	Writing
English	Good	Good	Good
Afrikaans	Good	Good	Good

8. **Employment Record:**

From	To	Employer	Positions Held
07/2013	Present	Green Earth Environmental Consultants	Environmental Consultant
06/2012	03/2013	Enviro Management Consultants Namibia	Environmental Consultant
12/2011	05/2012	Green Earth Environmental Consultants	Environmental Consultant

9. **Detailed Tasks Assigned:**

Conducting the Environmental Impact Assessment, Environmental Management Plan, Public Participation, Environmental Compliance and Environmental Control Officer

**Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engage.

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Carien van der Walt

## **APPENDIX C: ENVIRONMENTAL MANAGEMENT PLAN**