

ENVIRONMENTAL SCOPING ASSESSMENT REPORT
FOR
THE PROPOSED CONSTRUCTION AND OPERATION OF A PETROLEUM DEPOT IN KATIMA
MULILO, ZAMBEZI REGION



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Compiled by:

Namib Consulting Services Cc
P. O. Box 96093
Windhoek
Email: namibconsulting@gmail.com

For

Munitenge Service Station CC
P O. Box 2436
Ngweze
Namibia


Report Information	
<i>Project</i>	Proposed Construction and Operation of a Petroleum Depot in Katima Mulilo, Zambezi Region
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<i>Author (s):</i> <i>Lead Environmental Assessment Practitioner:</i>	<p>Mr. Siyamana Mulele</p> <ol style="list-style-type: none"> 1. Holds a master's degree in environmental management and Sustainability. 2. Registered member of the Environmental Assessment Practitioners Association of Namibia (EAPAN) 3. Registered Senior Geoscientist with the Geoscience Council of Namibia (GCN). 4. Practicing Hydrogeologist & Environmentalist for 19 years
<i>Environmental Assessment Practitioner</i>	<p>Mr. Sililo Sitengu</p> <ol style="list-style-type: none"> 1. Holds a B.Sc. (Honours) Degree in Applied Environmental Technology. 2. Practicing Ecologist for 19 years.
<i>Client</i>	<p>Munitenge Service Station CC</p> <p>P O. Box 2436</p> <p>Ngweze</p> <p>Namibia</p>
<i>Signature</i>	<p>Lead Practitioner</p> 

Table of Contents

Executive Summary.....	i
Abbreviations	vi
1. Introduction.....	1
1.1 Project Background	1
1.2 Locality and Land Use.....	1
1.2.1 Location.....	1
1.2.2 Land Use/Zoning	1
2. Project Description	3
2.1 Proposed Activities	3
2.1.1 Preconstruction Stage	3
2.1.2 Construction Stage.....	4
2.1.3 Operation Stage	5
3. Project Desirability	5
4. Site Description	6
4.1 Site Outlook	6
4.2 Climate	6
4.3 Topography	7
4.4 Soils.....	7
4.5 Geology	7
4.6 Hydrology and Geohydrology	7
4.7 Biodiversity and Habitats.....	8
4.8 Socio-Economic	8
5. Project Alternatives	8
5.1 The Go Ahead Alternative	8
5.2 Status Quo Alternative	9
5.3 Evaluation of Alternatives	9
6. Policy and Legislative Framework	10
7. Public Participation Process	15
7.1 Stakeholder Identification	15
7.1.1 Competent Authorities	15
7.1.2 Interested and Affected Parties.....	16
7.2 BID Preparation and Sharing	16
7.3 Public Meeting Notices	16
7.4 Posters and Other Notices	16
7.5 Public Meeting and Surrounding Neighbours Engagement	17
7.5.1 Public Meeting.....	17
7.5.2 Neighbor Residents Engagements	17

7.5.3	Directed Engagement.....	17
7.6	Meeting and Engagement Outcomes.....	17
8.	Environmental Impacts Assessment.....	18
8.1	Impact Identification.....	18
8.2	Impact Assessment Methodology.....	18
8.2.1	Risk Ranking.....	19
8.3	Identification and Evaluation of Potential Impacts.....	20
8.4	Impacts Mitigation.....	22
9.	Project Impact Significance and Environmental Management Plan.....	26
10.	Conclusion and Recommendations.....	27
	References.....	28
	List of Appendices.....	29

List of Figures

Figure 1	locality of the Portion 113 of Katima Mulilo Townlands.....	2
Figure 2	Land use zoning around the proposed site.....	2
Figure 3	Side view of the AGST.....	3
Figure 4	Top view of the AGST with two dispensing areas.....	4
Figure 5	Site outlook.....	6
Figure 6	Public notes at project site and in Katima Mulilo Town.....	17
Figure 7:	Risk analysis Matrix.....	19

Table of Figures

Table 1	Review of Legislation of relevance to the project.....	10
Table 2	Identified stakeholders.....	15
Table 3	Newspaper Notices information.....	16
Table 4	Potential Impacts Significance analysis.....	20
Table 5	Identification of Mitigation Controls.....	22

Executive Summary

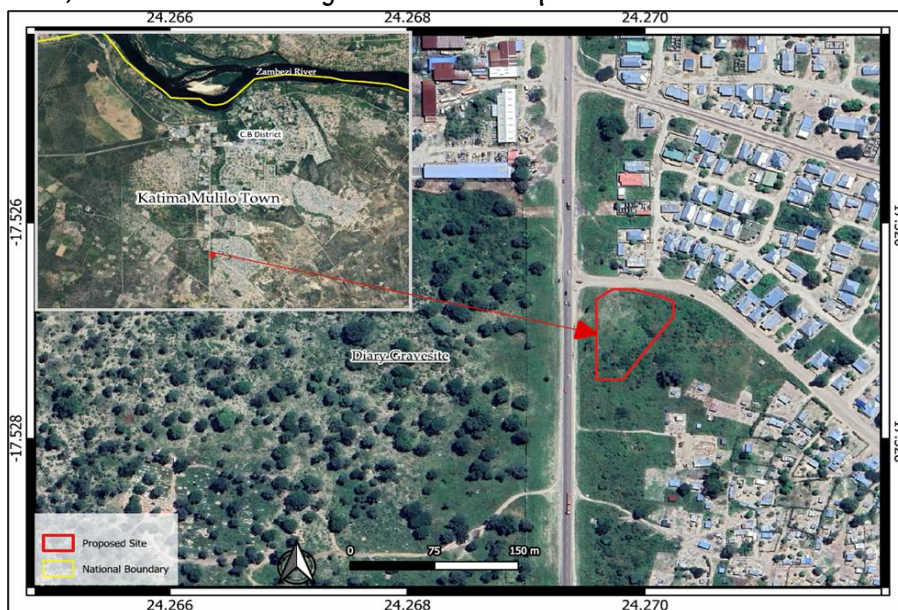
1. Introduction

Munitenge Service Station CC plans to establish a petroleum depot on Portion 113 of Farm Katima Mulilo Townlands No. 1328, situated within Katima Mulilo Town. This proposed development falls under activities regulated by the Environmental Management Act (EMA No. 7 of 2007), which require the issuance of an Environmental Clearance Certificate (ECC) prior to commencement. The planned facility will be specifically designed to cater to bulk fuel consumers—exceeding 200 litres—within the region, distinguishing it from typical retail fuel stations that serve a broader customer base.

Namib Consulting Services CC was subsequently tasked with ensuring compliance with the Environmental Management Act (No. 7 of 2007) by initiating the process of submitting an Environmental Clearance Certificate (ECC) application for the proposed activity to the Ministry of Environment, Forestry and Tourism (MEFT). This report has been prepared for submission in support of the ECC application, aligning with the prescribed screening criteria established by the Office of the Environmental Commissioner.

2. Locality and Land Uses

The proposed development site, situated within Katima Mulilo town on a portion of the Townlands No. 1328, spans an area of 4,415 square meters and is in the southern areas of the town adjacent to the B8 Highway. To the north and slightly eastward, the site is bordered by residential areas, while the southeastern portion remains largely undeveloped, aside from scattered informal residences situated at a distance, which contrast with the town's zoning plan. Directly west of the site lies the B8 Highway, running in a north-south direction, and across from the highway is the town's gravesite, which connects to a light industrial area positioned to its north.



3. Description of the Proposed Activity

The proposed undertaking entails the establishment and operation of a bulk fuel depot designed to cater to wholesale bulk consumers in the region. As defined by petroleum products legislation, bulk consumers are those requiring volumes of 200 liters or more. The initiative is categorized into three critical phases: preconstruction, construction, and operation, with each phase encompassing specific sub-activities as outlined below.

- The preconstruction phase encompasses critical sub-activities such as securing land ownership, establishing agreements with fuel suppliers, conducting detailed planning and design for the site and structures, and ensuring full compliance with relevant legislative requirements.
- The construction phase will encompass various critical sub-activities, including land clearing and leveling, trenching and excavation, masonry work, the installation of storage tanks and related accessories, as well as the establishment of essential services required to prepare the site for operational commissioning.
- Operation Phase: This phase encompasses various sub-activities, including the transportation and delivery of fuel to the depot, its transfer and storage, and subsequent dispensing to bulk consumers, along with the maintenance and servicing of associated equipment and infrastructure.

4. Regulatory Framework Review

The activity outlined is specified in the Annexure to Schedule (GN. No 29 of 2012) under the Environmental Management Act (No. 7 of 2007) as one requiring an environmental clearance certificate (ECC) prior to initiation. In addition to being governed by this legislation, the activity also triggers compliance with other applicable sector-specific legislative requirements, as outlined below. Therefore, the list of these legislations include: the Namibian Constitution (1990), Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (GN 30 of 2012), the Labour Act (No. 11 of 2007), Petroleum Products and Energy Act of Namibia (No. 13 of 1990) and the Petroleum Products Regulations of 2000, the Atmospheric Pollution Prevention Ordinance (No. 11 of 1976), Hazardous Substances Ordinance (No. 14 of 1974), Public and Environmental Health Act (No.1 of 2015), The National Heritage Act (No. 24 of 2004), and Industry Standards and best practices.

5. Public Participation

The Public Consultation Process (PCP) is a requirement of Regulations 21 to 24 of the EIA Regulations of the Environmental Management Act. The following steps were undertaken in fulfilment of the requirements thereof:

1. Identifications of stakeholders
2. Preparation of background information document
3. Notification of Interested and Affected Parties
4. Public Meeting

The following institutions were identified in the PPP as key institutions; The Ministry of Industries, Mines and Energy, The Katima Mulilo Town Council and Ministry of Environment, Forestry and Tourism. Other stakeholders include the

existing neighbors of portion 113 to the north, the Zambezi Regional Council and the general public of the town of Katima Mulilo.

Submission of comments was opened over a two-week period from the 7th of July 2025 coming to expire on the 22 July 2025, with a public meeting held on the 21 July 2025 at the Community Hall in Katima Mulilo. While the initial efforts yielded minimal input to the project, additional efforts were carried out in March of 2026 that included engagement with these stakeholders to solicit input on the proposed activity. These additional efforts were able to get input across the above-mentioned stakeholders. In summary, these issues that have been accounted in the identification and evaluation of impacts include:

- Dust generation from trucks diverting to the facility for refuelling and the need for redressal
- Re-confirming of consent to the proposed activity by the local authority
- Welcoming the proposal for potential employment opportunities from public and Regional Council.

6. The Receiving Environment

Portion 113 of Farm Katima Mulilo Townlands is zoned for undetermined use by the Katima Mulilo Town Council. The present proposal pursues an opportunity to utilise the portion for light industrial activity through a petroleum depot. The Town's zoning cadastral indicates the surroundings of the portion as mostly residential although at present only the northern part is developed.

Presently, the site consists mainly seasonal grasses and bushes of the previous wet season but clears-out during the dry season of the year. The grasses and bushes serve some significance to microfauna that utilise it for microhabitats. Located alongside the main road and residences, the site is exposed to constant human disturbances that lessens its faunal value.

7. Project Alternatives

Two key alternative we considered feasible to the proposed activity: the go-ahead or status quo alternatives. The 'go ahead alternative' proved favourable due to several factors including availability of land and its location beside the highway, a welcome development that can usher some employment to the locals, as well as widening the petroleum supply services to the consumers of the region.

Although the go-ahead alternative presents some risks related to pollution and fire as the most significant, these are not unique impacts to the proposed development and are manageable with application of best practices in this type of activity.

8. Environmental and Social Impacts and Mitigation

Potential environmental and social impacts were identified from the description of the proposed activity. The following impacts were evaluated as significant using the 5x5 risk analysis in the three phases of project development.

Preconstruction includes omission of key design standards for the facility, overlook legislative requirements and inability to secure supply of petroleum products.

The list of impacts in the Construction phase include Noise, dust, vibration and emissions, injury or fatalities from onsite works/machinery, soil and groundwater pollution with hazardous substances, environmental pollution with solid waste, theft or damage to structures and damage to the town basic service infrastructure.

In Operation phase, the following are envisaged impacts, pollution from accidental bulk spillage of hazardous substances during transportation or storage or dispensing, fire and explosion during transportation or storage onsite, pollution of soils or subsurface from maintenance works, nuisance smell to the environment and dust generation from diverting trucks.

9. Environmental Management Plan

A subsidiary environmental management plan has been assembled as part of the report, outlining critical risks and strategies for their management, along with clearly defined roles and responsibilities to support a sustainable implementation approach for the proposed project. The plan integrates essential controls required to mitigate identified high, very high, and extreme risks to environmental and social receptors. These controls are derived from industry-standard measures, recognized as effective for addressing such risks. The implementation of this plan establishes a sustainable framework to guide the development of the proposed project.

10. Conclusion and Recommendations

The Environmental Impact Assessment (EIA) indicates that projects of this nature invariably affect the environment and local communities; however, the implementation of appropriate controls can significantly mitigate irreversible damage to both ecological and social systems within the area and beyond. The Environmental Assessment Practitioner (EAP) asserts that the majority of identified negative impacts can typically be minimized by adhering to the mitigation measures outlined in the Environmental Management Plan.

It is essential that all stakeholders involved in the project's implementation diligently fulfill their responsibilities to optimize its benefits while mitigating or minimizing potential adverse impacts to acceptable levels. Based on the information presented in the Environmental Impact Assessment (EIA) report and the Environmental Management Plan (EMP), the Environmental Assessment Practitioner (EAP) recommends approval of the project.

Abbreviations

EAP	: Environmental Assessment Practitioners.
ECC	: Environmental Clearance Certificate
EIA	: Environmental Impact Assessment
EMA	: Environmental Management Act (No. 7 of 2007)
MEFT	: Ministry of Environmental, Forestry and Tourism
MME	: Ministry of Mines and Energy
AGST	: Above Ground Storage Tank

1. Introduction

1.1 Project Background

The supply of petroleum products specifically diesel and petrol is essential service to today's daily activities both subsistence and economic. Several fuel retail stations in the town of Katima Mulilo offer this essential service to a range of diverse customers including small to bulk consumers. An opportunity exists in tailoring supply to specific consumer category within the region. Munitenge Service Station CC, the Proponent for this activity, intends to take up an opportunity to construct and operate a petroleum depot in the town of Katima Mulilo in the Zambezi Region, that will focus on bulk storage and supply of diesel to bulk users (>200 litres).

The Proponent appointed Namib Consulting Services CC to ensure regulatory compliance to the Environmental Management Act (No. 7 of 2007) for the proposed activity by preparing required documents towards submission of an application for an environmental clearance certificate (ECC) to the Ministry of Environment, Forestry and Tourism. This report therefore comprises an environmental scoping assessment report and consolidates an environmental management plan for the proposed construction and operation of a petroleum depot on Portion 113 of farm Katima Mulilo Townlands No. 1328 in Katima Mulilo Town by Munitenge Service Station CC.

1.2 Locality and Land Use

1.2.1 Location

The site for the proposed construction and operation of petroleum depot is located within the Katima Mulilo Town, on a portion of the townlands referred as Portion 113. The portion consists of 4 415 square meters of land and is located south of the town on entry into the town from Kongola along the B8 Highway. The Site is located some 3 kilometres to the central business district (CBD) (Figure 1).

1.2.2 Land Use/Zoning

The denoted portion of land is zoned as 'undetermined' on the town's zoning plan and is surrounded mainly by residences on the northern side that are only structures currently in existence and extending away eastward, while the southern and southern eastern sides remain undeveloped except for some informal residences located some distance away. These observable informal homes in the southeastern parts are a contrast to the actual town plan as depicted in Figure 2.

The B8 Highway is located on the western side of the site, with the Diary Gravesite located across. The gravesite is adjoined to its north by a light industrial area comprising workshops. The proposed activity appears to align with those that are across on the western side of the Highway.



Figure 1 locality of the Portion 113 of Katima Mulilo Townlands

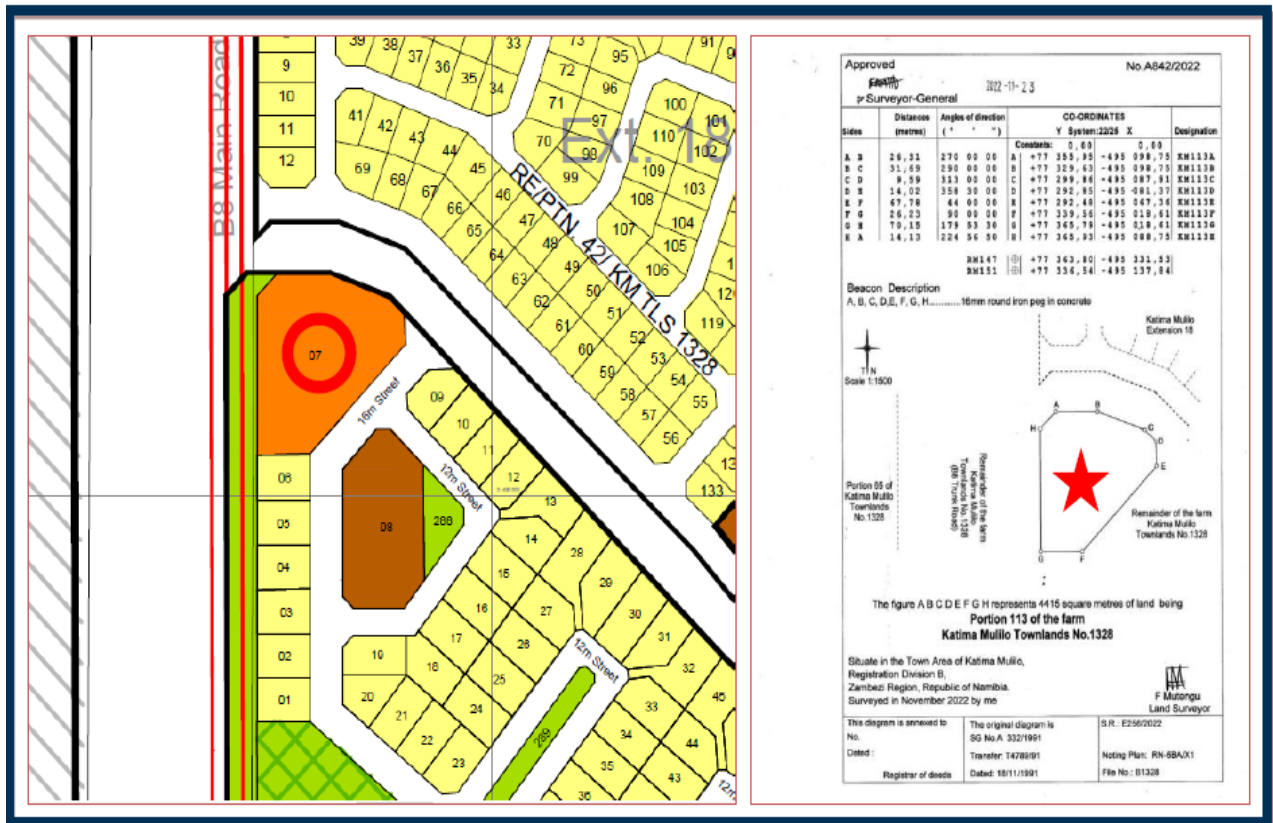


Figure 2 Land use zoning around the proposed site

2. Project Description

2.1 Proposed Activities

The development proposed on portion 113 of farm Katima Mulilo Townlands No. 1328 is to construct and operate a bulk petroleum depot, to mainly handle and dispense diesel fuel. The associated key activities for the proposed project can be aggregated into three stages or phases of a project: preconstruction, construction and operation of the envisaged facility. Due to the site's urban location, future decommissioning is expected to involve repurposing the land for alternative uses that comply with the town's zoning regulations, rather than restoring it to its undeveloped state. Accordingly, attention is directed toward the sub-activities outlined in the three previously mentioned phases.

2.1.1 Preconstruction Stage

The preconstruction stage comprises the planning and design for the proposed bulk petroleum storage and distribution facility. Identified sub-activities associated with this phase will include the following:

- i. *Securing of land ownership* – the referred portion of land is located within the Katima Mulilo Town and therefore, necessary processes for allocation requires fulfilment to comply with the legislative processes for acquisition. The portion has been securely allocated to the proponent for development (Appendix 3 (a)).
- ii. *Site survey, layout planning and design* –the proponent envisages to ensure appropriate survey, planning and design for the site. This involves addressing key infrastructure that will be necessary such as an office building with basic services including sanitary rooms and storeroom, bulk fuel storage tank of capacity of 23 000 litres, and associated containment structures and paving areas. The preliminary design for the proposed above ground storage tank (AGST) and paved dispensing areas can be seen in Figure 3 & 4 with more details in Appendix 4. These will also requires addressing access to the site from the highway for trucks and ensuring adherence to requirements of access roads to the highway.

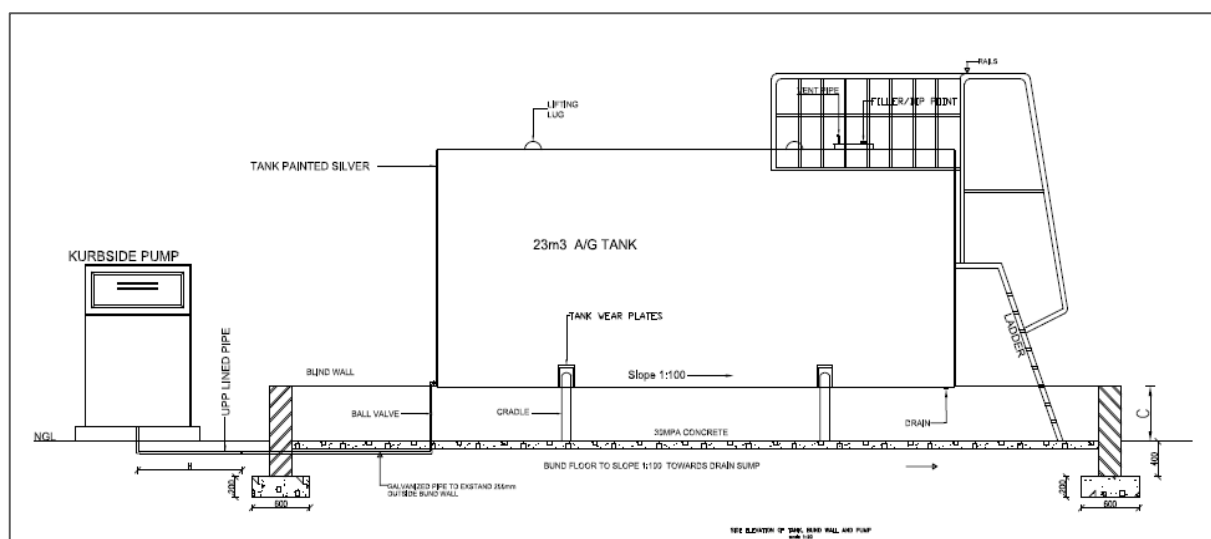


Figure 3 Side view of the AGST

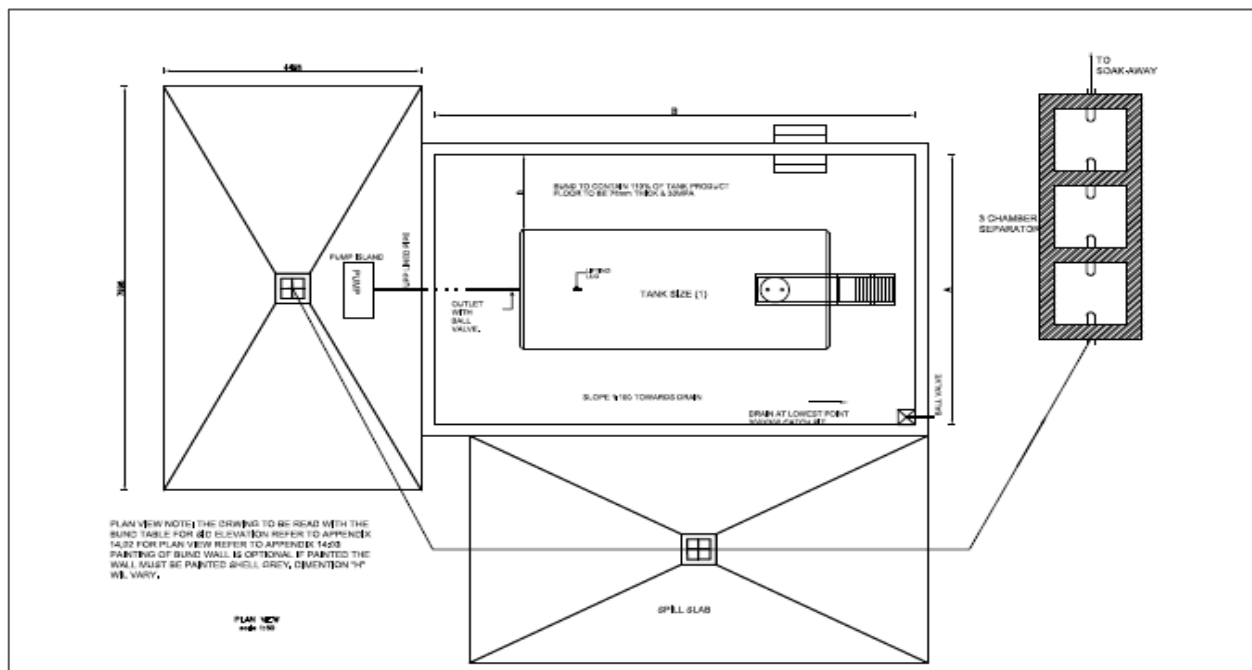


Figure 4 Top view of the AGST with two dispensing areas

- iii. *Ensure compliance to sectorial regulatory requirements* – the proposed activity is subject to regulatory compliance to sectorial legislation including the requirements of the Environmental Management Act, that is a basis for this assessment, but also the requirements set out by the Petroleum Products Act.
- iv. *Ensure availability of basic services* – it is necessary that the proposed facility connects to basic municipal services such as potable water, sewer and electricity reticulations of the local authority. Since the site is located in proximity to a serviced residential area to the north, the availability of the mentioned municipal services appears certain, however appropriate applications processes will be required for connections.
- v. *Secure product suppliers* – much of petroleum products of Namibia are delivered to the port of Walvis Bay that is located some approximatae1 400 km away. Thereon this product is conveyed to various parts of the country. It is essential for this proposal that the proponent secures supply of petroleum products. Munitenge has secured a wholesale licences for petroleum products through its subsidiary Earthways Group Investments CC.

2.1.2 Construction Stage

Sub-activities associated with this stage focuses on the implementation of the approved plans established from the preconstruction phase. These sub-activities will include;

- i. *Site clearing and marking* for excavation and digging of foundation areas.
- ii. *Masonry work* for the office building with associated sub-facilities that include sanitary rooms, a storage room for equipment and materials and bunds area for the bulk storage.

- iii. *Paving of area as per site design, including installation of the bulk fuel storage.* The proposed storage for the fuel will be above ground storage tank (AGST) (Appendix 4).
- iv. Lastly it is envisaged that *connecting of all basic services* including power, potable water and sewer services will be carried out in preparation for operations of the facility.

2.1.3 Operation Stage

Sub-activities associated with operation phase of the facility will involve:

- i. *Transportation and delivery of diesel fuel from suppliers* – involving the conveyance of fuel from areas of supply mainly from central or western part of the country to the Zambezi Region.
- ii. *Dispensing of fuel to bulk customers* – involving distribution of fuel to bulk consumers.
- iii. *Facility maintenance* – continuous maintenance of the facilities onsite, including storage tank, buildings and paving areas.

3. Project Desirability

The Zambezi Region is bordered by three countries, Angola and Zambia in the north and Botswana to the east. The Walvis Bay-Ndola-Lubumbashi Development Corridor (WBNLDC) also referred as the Trans-Zambezi highway is a trade route that connects the Walvis Bay port to towns and cities in Zambia to the Democratic Republic of Congo. This trade route provides economic opportunities along the way that include supply of fuel to trucks that frequent the road, transporting various cargo to and from the port of Walvis Bay. While, the town of Katima Mulilo has several fuel stations, their services are undifferentiated across the customer range and thus provides no incentives that tailor to specific needs.

Further to above, fuel supply is an essential service in many areas of the economy of the region. Activities including tourism and hospitality and agriculture are associated with remote areas, where fuel supply is limited. Tourism operations such as lodges seek to store fuel supplies in ample quantities to sustain their operations and these are replenished at some intervals. Similar to these are mechanised agricultural operations that are remote from the town of Katima Mulilo and require fuel supply and storage in considerable quantities.

While these consumers can be serviced from existing retail fuel stations, a dedicated facility towards these bulk users could enhance service delivery as an alternative that offers dedicated services at alternative prices. This will enhance economic activities of the town but also create employment opportunities for some locals. Premised on the above, the proposed activity has value to deliver to the town of Katima Mulilo and to the region.

4. Site Description

4.1 Site Outlook

The condition of the site is outlined below from multiple perspectives, emphasizing its underdeveloped state. On the northern side, the site is bordered by only two nearby formal residences, as illustrated in Figure 1.



Figure 5 Site outlook

4.2 Climate

The overall climate of Zambezi region is characterised by Mendelson & Robetson (1997) as distinctly more tropical than any of the regions in Namibia, ultimately experiencing higher rainfall, and slight less evaporation and warmer winters. Rainfall averages at 700mm per annum in the far north-east parts of the region to about 500mm per annum in the southwestern parts (MLR 2015).

4.3 Topography

The geomorphological characteristics of the region are predominantly flat, with minimal distinguishable natural elevations or prominent features. This description equally applies to the proposed development site and much of its surrounding area.

4.4 Soils

While much of the flood-prone areas of the region are characterized by high clayish to sand content, the upper-land of the region characterizing the western direction consists of increasing sand content (Mendelson and Roberts, 1997). These soils are called aerosols and are extremely poor in nutrients as water drains through the sandy texture easily and little water is held in the surface layers where most plants have their roots. The targeted site also comprises mainly sandy soils, despite some proximity to the flood-prone areas of the eastern part of the region.

4.5 Geology

The vast Zambezi region belong to the quaternary age Kalahari sand group. It is widely believed the Kalahari sand cover originally represent a series of sand dunes oriented mainly in a linear manner. This implies that contrary to present day tropical to sub-tropical conditions, the region was generally dry during the deposition of the wind-blown sand dunes. Kalahari sands form cover of varying thickness across the region, however established to average around 216m southwest of Katima Mulilo (Miller, 2008). The base of the Kalahari sand cover is marked by the presence of Karoo basalts, which are exposed at the rapids near Katima Mulilo, and near Ngoma to the east, however, more of these basaltic rocks are extensively exposed within the Island of Impalila (Miller, 2008). This description tends to suggest that these basement rocks exposed some 6km northeast at the Katima rapids, lie beneath the extensive Kalahari sands in these areas.

4.6 Hydrology and Geohydrology

The site is located some 3 kilometres away from the Zambezi River that is in the northern direction. There are no clear discernible hydrological features of a catchment system in the area and further restricted by location in a built environment.

The overall hydrogeological nature of the subsurface is mainly primary aquifers and in numerous cases perched aquifers appear providing easily accessible shallow groundwater in many parts of the region. Within the vicinity of the site, there is no data pertaining to the groundwater table, however generally shallow depth of up to 20m meters may be found. The site is located within a local authority area, and thus the use of groundwater is negligible to none, however, the potential shallow occurrence lends vulnerability to pollution that could widely disperse over time.

4.7 Biodiversity and Habitats

The site is located within a local authority area and prone to constant disturbance despite being undeveloped. During the summer rainfall season, the area is covered by common seasonal grasses that clear out in the course of succeeding months of winter dryness and cold conditions. During the rainy season, the appearance of these seasonal grasses provides some temporal microhabitat for various microfauna such as invertebrates. The area does not comprise any macro flora species.

4.8 Socio-Economic

The 2023 Population Census found that the population of the Zambezi Region stands at 142 373 with females making up 51% of the population. The working age group make up 60% of the regional population however only 20% are employed in various sectors both rural and urban.

The above summary of the region's profile of socioeconomics from the 2023 census indicates a dire employment situation that prevails and thus the need for various opportunities that can lessen the number of those that are unemployed.

5. Project Alternatives

It is imperative in the assessment of proposal for development to establish and evaluate alternatives to the proposed activity. Therefore, this assessment established the following feasible alternatives: go-ahead and status quo. These alternatives are discussed and evaluated below.

5.1 The Go Ahead Alternative

The project desirability part of this report has outlined the nobility of the proposed development. It is, therefore, a further emphasis that implementing the project enhances economic activities to the town and the region as a whole through availability of a range of fuel supply services in the region. Furthermore, once operational, the facility has potential to create employment to the local residents of the town that are unemployed.

Premised on the above, it is socio-economically advantageous for the project to proceed as planned. Nonetheless, implementation of the proposed activity may have social and environmental disadvantages, such as potential pollution of the soil and subsurface environment, while clearing and development of the site will permanently erode the ability to serve as temporal microhabitat during certain seasons of the year. In addition, the envisaged development further poses risks of fire and explosion, a hazard to the people onsite and surroundings areas as well as infrastructure. These require to be managed to ensure that the project is realised.

5.2 Status Quo Alternative

The 'Status quo' alternative interprets a forgone opportunity to establish the envisaged facility. This alternative has environmental advantages that includes the site continuing to serve as temporal microhabitat for microfauna while the risks of pollution of the soil and subsurface environment are evaded. However contrary, this area is annually cleared, thus removing any ecological value of substance.

Socially, not developing the proposed facility provides that the risk of fire explosions to people and infrastructure are avoided.

5.3 Evaluation of Alternatives

Contrary to these stated advantages under the status quo alternative, it is inevitable that the proposed site will remain in future even without the implementation of the proposed activity. Meanwhile, risks of fire and pollution have been controlled with the application of best industry practice and regulatory compliance. Lastly, the status of unemployment of youth across the country including in the Zambezi region, proves the nobility for the proposed development to support central government efforts of total poverty alleviation across the country.

Premised on the above evaluation, the go ahead alternative provides the most value socially with minimal environmental implications, however needing appropriate management of identified risks in line with industry best practice and standards.

6. Policy and Legislative Framework

Beside the requirements of the Environmental Management Act (No. 7 of 2007) that lists the proposed activity, other sectorial legislations area enlisted by the proposed activity. It is thus important to review national and local regulatory framework of any legislation or by-laws enlisted by the proposed activity and the specific relevant requirements. Table 1 below provides the review of the legislation and regulations of relevance to the proposed activity.

Table 1 Review of Legislation of relevance to the project

Legislative Instruments	Requirement	Relevance
Namibian constitution (1990)	Article 95 (l) on maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources in a sustainable way for the benefit of all Namibians, both present and future.	Conservation of natural resources for the benefit of the present and future generations.
Environmental management Act No. 7 of 2007 including GN No. 29 of 2012 list of activities and GN No. 30 of 2012 environmental impact assessment regulations	The Annexure to Schedule (GN. No. 29 of 2012) lists activities that cannot be undertaken without an environmental clearance certificate. EIA regulations prescribe the requirements for environmental impacts assessments, including the public participation and compilation of impacts assessment documentation and management plans for review by the Environmental Commissioner.	- Activity 9 of the Annexure under GN No. 29 of 2012, pertains to Hazardous Substance Treatment, Handling and Storage. Specific elicited sub-activity is 9.4; 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 require an EIA. Therefore, the proposed activity - cannot be undertaken without an environmental clearance certificate, that prompts a public participation process.
Water Resources Management No. 11 of 2013.	Section 68 of the Act prohibits pollution of water sources directly or indirectly.	The process flow for the development provides areas of risk to water sources such as groundwater and thus requirement for measures of control.
Labour Act of 2007 and Regulations	The objectives of the Act are to ensure the health, safety and welfare of employees but also outlines the rights and obligations of employers. The Act through its regulations prescribes the requirements pertaining to labour matters such as: - Health and safety of employees in the work environment	The process flow for the proposed development provides certainty of employing persons for work in the various phases and thus it is necessary to ensure compliance as per requirements of the Act with regard to various facets of a labour relation.

	<ul style="list-style-type: none"> - Discriminatory practices - Remunerations and other employee benefits - Work hours and beyond - Fair labour practices, disciplinary actions and employee rights to belong to labour associations. 	
The National Heritage Act (No. 24 of 2004)	Through section 46, prohibition is placed on removing or demolish, destroy or despoil, develop or excavate all or part of a protected place. Under subsequent sections of the act, such can be only conducted under provisions of an exemption or under a permit issued by the council. Moreover, should during operations an object of historical significance be uncovered, the operations are to be halted immediately.	There are very few listed heritage sites in Zambezi region. The proposed site does not appear on the list. However, in any event, chance finds (e.g. A grave or stone markings) be uncovered or discovered during executing of works, thus a prescribed procedure need be in place.
Petroleum Products and Energy Act of Namibia (Act No. 13 Of 1990) through Petroleum Products Regulations GN No. 155 of 2000.	<p>The Act through Section 23(2), sets out the regulations that prescribe all requirements that relate to petroleum products including possession, sale and other acts, upon which the proposed activity is subject to. The Act elicits the following requirements:</p> <p><i>Chapter 2, Part II - Regulation 3 prohibits operating a retail outlet or conduct the business of a wholesaler except with possession of a license for retail, or wholesaler or a consumer installation.</i></p> <p>Regulation 3A further prohibits purchasing or acquiring petroleum products from unlicensed suppliers.</p> <p>Regulations 8 provides for the sale of petroleum products in bulk quantities and conditions thereof.</p>	<p>The proposed activity is required to comply with the among listed:</p> <ul style="list-style-type: none"> - The application for a retail license, with specific focus on wholesale license. This has been secured through a subsidiary company, Earthways Group Investments CC - Authorization for consumer installations. - Completion and submission of form pp/10 for installation of the tank storage - Ensure fire installation incorporated into designs. - Ensure environmental protection from spillages incorporated into planning and design of flow process and infrastructure.

	<p><i>Part III</i> - Regulation 11,12 and 14 sets out the processes to acquire and conditions for a wholesale license for petroleum products in terms of appropriate forms to be completed and conditions associated to the license.</p> <p><i>Chapter 3, Part II</i> - Regulation 40 through 42 prescribes safe handling and disposing of petroleum products and standards for infrastructure such as buildings, roads and plant that deal in petroleum products to ensure safety of people and environment. This part further prescribes the requirements for the plant in safeguarding people and the environment.</p> <p><i>Part IV</i> - Regulation 47-48 prescribes the requirement to fire precautions outlining the obligations towards safeguarding fire risks and fire emergencies</p> <p><i>Part V</i> - Regulation 49 on petroleum product spills sets out the procedure required with regard to spills of petroleum products. A major spill defined as 200 liters and above is required to be reported on Form PP/11.</p>	
<p>Atmospheric Pollution Prevention Ordinance 11 of 1976</p>	<p>Section 24 requires persons located in dust protection zones to take prescribed steps or (where no steps have been prescribed) adopt the best practicable means for preventing dust from becoming so dispersed or causing nuisance. Section 35 relates to measures taken to control the emissions from vehicles.</p>	<p>Although the Act relates mostly to emissions of dust and noxious gases in prescribed areas, necessary measures need to ensure the release of noxious gases and dust is minimized in proximity to human settlement areas and prevent pollution. The proposed area is located in proximity to residences and thus need careful planning</p>

		and measures to reduce dust, but also where possible minimize the release of noxious polluting gases.
Hazardous Substances Ordinance 14 of 1974	The Act aims to provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure. Though amended by the Atomic Energy and Radiation Protection Act No. 5 of 2005, it requires application in the prescribed manner and on payment of the prescribed fee (if any) and subject to the prescribed conditions and further conditions as may be determined, issue to any natural person a license to carry on business as a supplier of group I hazardous substances.	Restriction on import, storage and sale of group I declared hazardous substances without a permit.
Public and Environmental Health Act (No.1 of 2015)	Provides a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters. Sections 47, 48, 49, 53 and 54 relate to issues of safety of water supplies, foods, waste disposal and sanitation in a local authority with the power to inspect and issue compliance.	While the act prescribes local authorities as focal institutions to ensure orderly conduct of activities to ensure public safety and health. All waste disposal and sanitation must be in accordance with the requirements of the Act. The site is in a local authority area and subscribes to conduct of the local authority in terms of waste disposal to ensure safety, health and public order
National Solid Waste Management Strategy	The strategy aims to strengthen institutional and legal framework for management of solid waste serving as a guide to institutions such as local authorities on sound waste management practices.	Consider the principles of waste management in setting up measures for management of solid waste.
National Industry Standards	Namibia has not robustly established standards across the sectors to address practices and operations. However, with the few established, use of south African national standards and other international standard remains the mainstay of ensuring sound operational industry practices.	The following standards are important to embed in the development phases of the proposed activity: <ul style="list-style-type: none"> - SANS 10131:2004 or latest in the design of above ground storage tank. - SANS 10089-1 Storage and distribution of petroleum products in above ground bulk installations.

		<ul style="list-style-type: none"> - SANS 1518 - Transport of dangerous goods, design requirements for road vehicles and portable tanks. - SANS 10263 - The warehousing of dangerous goods - Part 0: General Requirements. - 34 NAMS/SANS 102321:2019- Transport of dangerous goods - Emergency information systems Part 1: Emergency information system for road transport. (Gazette No. 6868) - NAMS/SANS 10233:2018 - Transport of dangerous goods - Intermediate bulk containers for road and rail transport: (Gazette No. 6737) - NAMS/SANS 10228:2018 - The identification and classification of dangerous goods for transport by road and rail modes (Gazette. No. 6737).
<p>Roads Act (No. 4 of 2025)</p>	<p>The Act serves to provide for control over actions within the road reserve; to provide for building restrictions and advertising on roads. Section 38 of the act requires under subsection (5) (a) A person may not erect a structure in an area consisting of land - situated in a township area alongside a road within a distance of 45 metres from the centre line of a road.</p> <p>47. (1) A person may not, without authorisation by the Roads Authority as contemplated in subsection (2) or contrary to the terms and conditions of that authorisation</p> <p>(a) erect a structure within the road reserve,</p>	<p>Adherence to the stipulations in providing for access to the Highway from the site.</p>

7. Public Participation Process

The public consultation process enables individuals or groups who may be impacted by or have an interest in a proposed project or activity to express their concerns or provide comments regarding the listed undertaking. As outlined in Regulation 21 of the Environmental Impact Assessment, this process serves as a framework for assessors to facilitate meaningful public participation.

To adhere to the requirements outlined in the specified regulation, the following actions were implemented to fulfill the objectives of the public participation process.

- i. Stakeholder identification
- ii. Bid preparation and sharing
- iii. Notification of Interested and affected parties
- iv. Public meeting

In addition to the above, additional directed consultations were carried out due to the poor performance of the public meeting.

These efforts are elaborated in subsections below.

7.1 Stakeholder Identification

The stakeholders were identified as outlined below relating to the proposed activity.

7.1.1 Competent Authorities

The following key stakeholders were identified in the public Consultation process

Table 2 Identified stakeholders

Stakeholder	Purpose	Responsible
Ministry of Mines and Energy	Application for fuel retail license and fulfilment of other conditions/requirements	Proponent
Ministry of Environment Forestry and Tourism	Notice of intent to conduct an EIA and submission of an application for an ECC	EAP
The Katima Mulilo Town Council	Land ownership Approval of consent use as proposed	Proponent
	Review of the proposal of the EIA documentation	EAP

7.1.2 Interested and Affected Parties

The following we identified as potential interested or affected:

- i. Neighbours in the surroundings of Portion 113 of Katima Mulilo Townlands
- ii. General public in Katima Mulilo Town

7.2 BID Preparation and Sharing

A Background Information Document (BID) as per Appendix 1 was compiled outlining the proposed activity with a map indicating the proposed site and shared with any interested and affected parties.

7.3 Public Meeting Notices

Notices were placed in daily newspapers that are distributed throughout the country (Table 3). These provided briefly the proposed activity, its location, the proponent and invitation for the public to register as I&APs (Appendix 2).

Table 3 Newspaper Notices information

Date	Publication	Distribution	Language
17 July 2025	Windhoek Observer	National	English
09 July 2025	Windhoek Observer	National	English
09 July 2025	New Era	National	English
15 July 2025	New Era	National	English

During the additional stakeholder engagement efforts, notifications were issued to the identified stakeholders, drawing on insights gained from previous unsuccessful endeavours of broad national notifications. These notifications were served directly in the following ways:

- Correspondence to the Zambezi regional council
- Correspondence to the Katima Mulilo Town Council
- Correspondence to the Katima Urban Constituency office
- Direct engagement of members of public found in proximity to the locality.

7.4 Posters and Other Notices

Complementary to notices distributed in nationally circulated newsprint media, notices were prepared and posted at several conspicuous points in the town of Katima Mulilo as shown in Figure 6, in the initial public notification phase. Moreover, the notice also appeared on regional WhatsApp development platform groups.



Figure 6 Public notes at project site and in Katima Mulilo Town

7.5 Public Meeting and Surrounding Neighbours Engagement

7.5.1 Public Meeting

A public meeting was arranged on the 22 of July 2025 at the Katima Mulilo Community Hall as per notices circulated on media platforms in the initial phases of the public consultation process.

7.5.2 Neighbor Residents Engagements

Efforts were made to consult the two properties located in proximity to the location. Their inputs have been included in Appendix 5 of this report.

7.5.3 Directed Engagement

To expand efforts of stakeholder engagements, consultations were carried out in March 2026 to further solicit inputs towards the proposed activity. The efforts involved directed engagements with some members of the public around the site, the Local Authority and the Regional Council.

7.6 Meeting and Engagement Outcomes

While the public meeting held in July of 2025 proved futile and no concerns were received, additional engagement with stakeholders gained the following inputs, also included in the minutes of engagements.

- (a) *Neighbours to the locality* – these stakeholders welcome the proposed activity although express desire for arising opportunities to prioritise these neighbours.

- (b) *Local Authority* – The Katima Mulilo Town Council expressed consent to the proposed land use but also provided comments regarding to potential dust generation, pollution and risk of fire hazard that may come with the activity.
- (c) *Regional council* – expressed less jurisdiction over the area but under the local authority, however, cautioned that recently the adjacent area seems to being re-invaded by informal settlers and it is critical to ensure that the land is secure from these irreversible actions. Despite the caution, the proposed project is welcomed on basis of putting measures in place that protect the environment and people and provide employment opportunities.
- (d) *General public* – these welcome the project and look forward to the opportunities that may arise once implemented.

8. Environmental Impacts Assessment

8.1 Impact Identification

The potential impacts from the proposed activity were identified based on detailing the project’s sub-activities and expected interactions with the surrounding environment (physical, ecological, and/or human receptors). An understanding of the potential sources of impacts and impact pathways was supported by:

- i. An understanding of baseline conditions and potential receptor
- ii. The spatial and temporal extent of the project area of influence
- iii. Professional knowledge and experience of comparable projects or developments.

In addition to the above, the process took into consideration any information from stakeholders, including authorities, experts, and the public.

The process of identification and understanding of project activities and impacts was an iterative process conducted throughout the EIA process as more project and environmental and social baseline information became available.

8.2 Impact Assessment Methodology

In analysing the risk level, the combination of “impact” and “likelihood” was used to determine the overall significance of each identified risk (Low, Medium, High, Very High or Extreme). This risk matrix is similar to that adopted from the United Nations Development Programme’s risk matrix of the 2021 SES Policy. The 5x5 Matrix is therefore accepted internationally in the analysis of environmental and social risks of proposed projects or programmes. The tool has advantages of reducing the need to conduct time consuming quantitative analyses by simplifying how various risk levels are represented (Figure 3) into the two parameters of ‘Impact’ and ‘Probability or likelihood’ of occurrence.

8.2.1 Risk Ranking

- i. 1-4: Acceptable – no further action needed and maintaining control measures is encouraged
- ii. 5-9: Marginal acceptable – will require monitoring as minimum tool to ensure status is maintained or further reduced. Include controls only where deemed necessary.
- iii. 10-16: Unacceptable – elicits strategies for control in a timely manner
- iv. 17-25: Impermissible – project design must be addressed prior proceeding or in the design phase to ensure project feasibility for implementation. In operational phase these lead to ceasing of operation needing immediate action.

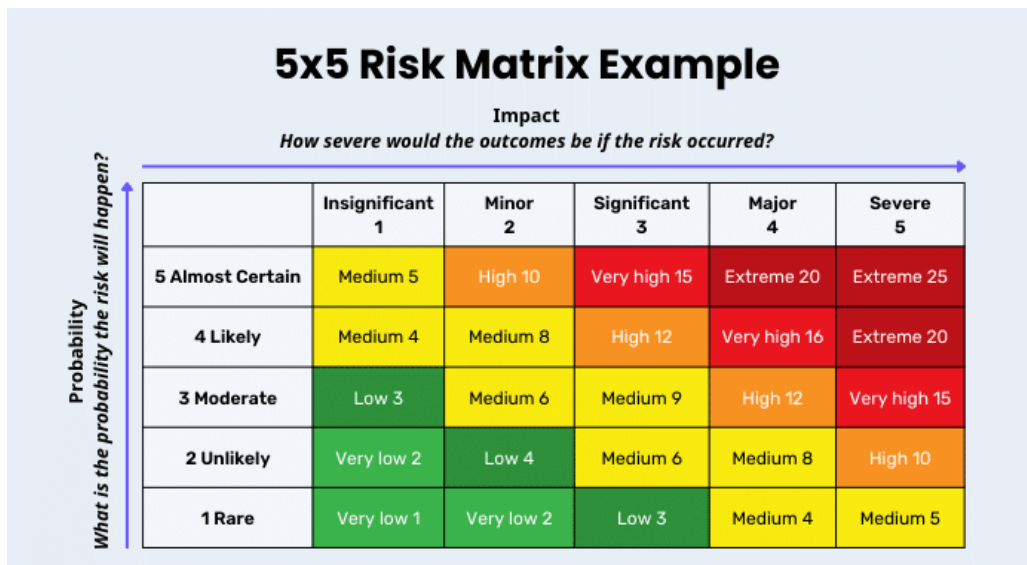


Figure 7: Risk analysis Matrix

8.3 Identification and Evaluation of Potential Impacts

The above risk analysis matrix was used in the analysis of the significance of the potential impacts as per Table 4.

Table 4 Potential Impacts Significance analysis

Activity/Aspect	Potential Impact	Impact Nature	Impact Rating	Likelihood Rating	Score	Overall Significance
PRE-CONSTRUCTION						
Insecurity of land ownership	Comprised development opportunity	Adverse	5	1	5	Medium
Site layout planning and design	Omission of important design standards to the facility	Adverse	4	3	12	High
Ensure compliance to sectorial regulatory requirements	Overlook critical legislative requirements for the activity	Adverse	5	3	15	Very High
Secure product suppliers	Inability to secure supplier or adequate supply the envisaged petroleum product	Adverse	5	3	15	Very high
CONSTRUCTION						
Land clearing, landscaping and excavation and masonry construction work	Loss of vegetation and associated microhabitat and micro-fauna	Adverse	1	5	5	Medium
	Disturbance to soil stability and hydrological flow paths	Adverse	1	3	3	Low
	Noise, dust and vibration and air pollution generation by earth moving vehicles	Adverse	3	5	12	Very high
	Accidents leading to injury or fatality from moving machinery or any other equipment or work to members of the public or site personnel	Adverse	5	3	15	Very high
	Soil or subsurface pollution from leakage or spill of lubricant or fuels from site machinery and equipment onsite.	Adverse	3	4	12	High
	Temporal employment from the construction works	Beneficial				
	Pollution from unmanaged solid waste	Adverse	4	4	16	Very high
	Obstruction of traffic on the adjacent B8 highway	Adverse	3	3	9	Medium

Activity/Aspect	Potential Impact	Impact Nature	Impact Rating	Likelihood Rating	Score	Overall Significance	
	Disturb heritage sites	Adverse	5	1	5	Medium	
	Damage to existing council structures such as reticulating lines for power, telecommunication, water and sewer	Adverse	4	3	12	High	
Procurement and storage of buildings materials	Damage to site structures or theft of materials	Adverse	4	3	12	High	
	Support local businesses that supply construction materials	Beneficial					
OPERATION							
Transportation of petroleum products to site	Liability for accidental release of hazardous substances into the environment during transportation	Adverse	5	4	20	Extreme	
	Liability for accidental fires and explosion during transportation	Adverse	5	5	25	Extreme	
Operation through delivery, bulk storage and eventually dispensing to bulk customers.	Contamination of soil and groundwater from spillage during transfer into the storage tank, during storage and during transfer to bulk customers.	Adverse	4	5	20	Extreme	
	Nuisance smell to the surroundings	Adverse	3	4	12	High	
	Accidental fire and explosion	Adverse	5	5	25	Extreme	
	Provide alternative access to bulk fuel services for the region	Beneficial					
	Site utilization will ensure payment of services to the local authority and other service providers.	Beneficial					
Maintenance works to all facilities	Contamination of adjacent soils or subsurface from unmanaged repair works	Adverse	4	3	12	High	
	pollution of surroundings from unmanaged disposal of waste and defunct equipment	Adverse	4	3	12	High	
Diversion of vehicles from highway for refueling	Dust generation from that is likely to cause nuisance and health concern to the surrounding area	Adverse	3	5	15	Very High	
	Increased risk of accidents	Adverse	5	4	20	Extreme	

8.4 Impacts Mitigation

Environmental risk assessment is conducted to determine potential risks and facilitate informed risk management decisions. This systematic process entails identifying, evaluating, selecting, and implementing measures aimed at mitigating risks to human health and ecosystems. Risks associated with a proposed activity can be addressed through various strategies, such as risk elimination, transfer, retention, or reduction. Table 5 below outlines the measures identified to address and mitigate significant risks effectively.

Table 5 Identification of Mitigation Controls

Impact	Significance	Mitigation Controls
PRE-CONSTRUCTION		
Omission of important design standards to the facility	High	<ul style="list-style-type: none"> ⇒ Ensure design consider prevent spillages of fuels to the ground and prevention of fire risks. ⇒ Design to take into consideration the following Guidelines: <ul style="list-style-type: none"> - SANS 10131:2004 or latest in the design of above ground storage tank. - SANS 10089-1 Storage and distribution of petroleum products in above ground bulk installations. - SANS 1518 - Transport of dangerous goods, design requirements for road vehicles and portable tanks. - SANS 10263 - The warehousing of dangerous goods - Part 0: General Requirements.
Overlook critical legislative requirements for the activity	Very High	⇒ Review legislative requirements towards the envisaged activity and ensure compliance.
Inability to secure supplier or adequate supply the envisaged petroleum product.	Very high	⇒ Proactively explore and secure supplier for the envisaged activities
CONSTRUCTION		
Noise, dust, vibration and emissions from construction activities generation from construction works	Very high	<ul style="list-style-type: none"> ⇒ All construction works to be carried out only during designated working hours (i.e. 07:00 -17:00). ⇒ Placement of placards at the construction site notifying and cautioning of the construction activities. ⇒ Any construction vehicles or machinery to be switched off when not in use. ⇒ Reduce or avoid dust generating activities on windy days. ⇒ Damp surfaces where necessary to minimise excessive dust generation.
Accidents leading to injury or fatality from moving machinery or power	Very high	⇒ No construction activities to be performed in dusk conditions.

equipment or any site works to a member of the public or site personnel		<ul style="list-style-type: none"> ⇒ Place placard signage or danger tapes to inform and caution the public on construction works. ⇒ No unauthorised persons should be allowed onsite. ⇒ Barricade the construction area where possible to avoid open accessibility to the public. ⇒ Ensure site personnel are provided with personal protective equipment (helmets, gloves, respirators, work suits, earplugs, goggles and safety shoes) as may be necessary for the different types of work. ⇒ Site personnel to be provided with regular onsite safety and health talks before commencement of work or to new workers. ⇒ Ensure all accidents are reported to the site responsible for timely investigation and rectification of faults and closeout. ⇒ Provide onsite first aid kit and training for minor incidents. ⇒ Ensure arrangement for timely access to medical treatment for accidents with severe consequences beyond first aid.
Soil or subsurface pollution from leakage or spill of lubricant or fuels from site machinery and equipment onsite.	High	<ul style="list-style-type: none"> ⇒ Daily inspection of all machinery before use for any signs of leaks for lubricants or fuels and continuous observation during operations to avoid excess leakages to the open surfaces. ⇒ In case of a spill, it is required that the procedure includes the following procedure. <ul style="list-style-type: none"> i. The source of the spill / leak shall be isolated, to contain discharging. This may include replacement of caps to prevent further discharge of the substance. ii. Condon/mark the area of coverage of the spill with danger cones. iii. Apply appropriate spill containment material for the spill such as an absorbent to clean up spillages. iv. Log the incident for record v. Investigate cause of the spill and take necessary corrective action to avoid recurrence. ⇒ Conduct training of all personnel with responsibility of handling petroleum products or other hazardous substances. ⇒ Any spillage of more than 200 liters must be reported to the Ministry of Mines and Energy. ⇒ Ensure availability of drip trays as may be necessary for minor leakages or spills onsite. ⇒ Ensure contaminated soils is scoped for disposal at appropriate at sites.
Pollution from unmanaged solid wastes	Very high	<ul style="list-style-type: none"> ⇒ No solid waste including cement bags, cardboards, offcut planks, plastics packaging. Offcut metals shall be loosely placed onsite.

		<ul style="list-style-type: none"> ⇒ No burying or burning of redundant construction packaging materials or allow to scatter onsite. ⇒ The use of waste skip or drum container for collection and storage of construction waste onsite is highly recommended ⇒ All domestic waste to be collected and prepared for collection in line with local municipal services. ⇒ Obtain permission for disposal of any construction related waste at municipal waste facility if necessary. ⇒ Practice good housekeeping across the site. ⇒ As far as practically possible, implement waste management hierarchy through promoting avoidance, minimization, differentiation of waste into tins, bottles, papers, kitchen waste, office waste for potential recycling or reuse.
Obstruction of traffic on the adjacent B8 highway	Medium	<ul style="list-style-type: none"> ⇒ Place temporary construction signage by the B8 Highway roadside to caution road users in both directions. ⇒ No disposal of any waste or material on roads or street.
Disturb heritage sites	Medium	<ul style="list-style-type: none"> ⇒ The site does not appear on the list of declared or yet declared heritage sites and thus the likelihood of any buried material or heritage value is minimal. Nonetheless, for a chance find, during works such as excavation and trenching, it will be required to halt work and report that matter to the National Heritage Council or Local Police. ⇒ Onsite workers to be made aware of the established procedure for siting of strange objects.
Damage to existing structures such as reticulating lines for power, telecommunication, water and sewer	High	<ul style="list-style-type: none"> ⇒ Obtain site clearance prior any construction activities on location of any service lines. ⇒ Place cautionary signs and mark areas to ensure construction teams operates sensibly in the area. ⇒ No work should be carried out without clearance of service lines established.
Damage to site structures or theft of materials	High	<ul style="list-style-type: none"> ⇒ Employ guards for the protection of materials at all times. ⇒ Construct temporal secure shelter for the housing of materials from unfavourable weather conditions.
OPERATION		
Liability for accidental release of hazardous substances into the environment during transportation	Extreme	<ul style="list-style-type: none"> ⇒ Ensure suppliers hold appropriate licences for the service of bulk supply of petroleum products across the country. ⇒ Ensure supplier contracts address environmental and social liability in the transportation of petroleum products across the country.

		⇒ No transportation of petroleum products without adequate measures in place to address environmental risks.
Liability for accidental fires and explosion during transportation	Extreme	⇒ Ensure contracts address fire liabilities in the transportation of petroleum products across the country. ⇒ Ensure supplier has firefighting protocols for accidents.
Contamination of soil and groundwater from spillages during transfer into the storage tank, during storage and during servicing of bulk customers.	Extreme	⇒ Subscribe operations to best practices guidelines in the industry including SANS 10089-1 Storage and distribution of petroleum products in above ground bulk installations, SANS 10263 - The warehousing of dangerous goods - Part 0: General Requirements. ⇒ All fuel transfers to be undertaken on paved areas. ⇒ Use shutoff nozzles to prevent accidental spills ⇒ Install sand bucket or other absorbent for minor spillages at the depot. ⇒ Ensure all transfer are done by trained personnel ⇒ Paving area to channel flows to an oil water separator. No spillages should come into contact with the open surfaces. ⇒ Use of sand buckets to treat minor spills with proper after use handling of contaminated sand. ⇒ Ensure spill containment toolkit onsite. ⇒ The containment bund wall should be designed with capacity not less than 100% capacity of the tank storage in case of large-scale spillages (SANS 10131 for above ground storage). Preferably, the bund wall shall not be less than 110% capacity of the volume of stored product.
Nuisance smell to the surroundings	High	⇒ Use of nozzles fitted with automatic shut off devices. ⇒ Provide gas marks for people offloading the fuel as may be necessary. ⇒ Ensure that vent pipes for pressure release of fuels in the tanks are high enough and placed far from people or activities.
Accidental fire and explosion	Extreme	⇒ Install an automatic fire alarm system with heat and smoke detectors in all buildings. ⇒ Ensure that all firefighting equipment are strategically positioned, regularly maintained and serviced. ⇒ Provide for emergency fire hydrants for firefighting. ⇒ Conduct regular fire drills/simulations to sensitize workers and maintain records. ⇒ Provide fire hazard signs such as 'No Smoking' signs, direction to exit in case of any fire incidence and emergency contact numbers, fire assembly point and no-cell phone usage close to fuelling pumps. ⇒ Provisions of marked fire exits or assemble areas and ensure that these routes are unobstructed at all times.

Contamination of adjacent soils or subsurface from unmanaged repair works.	High	<ul style="list-style-type: none"> ⇒ No repair work shall be done on open surface areas. ⇒ No defunct equipment or material leaking of hazardous liquids to be placed on open surfaces areas.
Pollution of surroundings from unmanaged disposal of refuse.	High	<ul style="list-style-type: none"> ⇒ Consider safe re-use of certain items including cans or plastic containers where possible. ⇒ As far possible implement proper waste separation to for recycling opportunities. ⇒ All contaminated soils be handled according to the established spill handling protocol to avoid further contamination of areas and resources. ⇒ All items and materials that are non-reusable to be disposed safely at appropriate disposal sites.
Dust generation from heavy vehicles off the main highway for refueling	Very high	<ul style="list-style-type: none"> ⇒ An off-ramp from the highway shall be paved. ⇒ The depot footprint area to be utilised for all customers shall be paved. ⇒ Construct speed reducing structure where necessary ⇒ Apply wetting in some area to alleviate dust generation
Increased risk of accidents	Extreme	<ul style="list-style-type: none"> ⇒ Ensure road access complies with national road design standards to and from site onto the highway. ⇒ Place adequate and visible road signage to warn of potential hazards to pedestrian and vehicles.

9. Project Impact Significance and Environmental Management Plan

The evaluation of impacts detailed in the prior section a range of severity levels based on the criteria applied. Established potential impacts rate across low to extreme. Those of low to medium are acceptable even in a state where they are unmitigated. However, those of high to very high require satisfactory mitigation measures, while extreme significance require throughout project scope revision. Many of the impacts of high to extreme from the evaluation in the prior section are typical of activities within this sector. These are particularly on fire safety, potential pollution and safety and health of employees on the job. Therefore, mitigation measures established in table 5 if well-structured for implementation can prove adequate to ensure these risks are mitigated towards low to medium impact.

The primary challenge in ensuring successful impact mitigation is the degree of effort dedicated to the implementation of mitigation measures and the thorough monitoring required to confirm their effectiveness. Therefore, this assessment determines that the proposed activity is feasible, provided it is undertaken within the framework of a structured plan, incorporating the mitigation measures outlined in this evaluation and further refined into a detailed environmental management plan.

10. Conclusion and Recommendations

This report consolidates a scoping report for the proposed construction and operation of a petroleum depot on portion 113 of Katima Mulilo Townlands by Munitenge Services Station. CC. This scoping report validates that the proposed activity is listed on the annexure of the schedule for activities that cannot be carried out without an environmental clearance certificate issued by the Environmental Commissioner.

The elaboration and evaluation of the sub-activities across various project development phases revealed that, although the average level of risk ranges from high to extreme, these risks are manageable and align with typical scenarios within this sector. This report identifies mitigation measures that adhere to industry standards and best practices to address the key risks identified. These measures encompass a combination of administrative and engineering controls recognized as standard within the field. When incorporated into a well-structured management plan with clearly defined implementation roles and responsibilities, these measures are considered sufficient to effectively mitigate the risks.

References

Mendelsohn J & C Roberts. 1997. An Environmental Profile and Atlas of Caprivi. Environmental Profiles Project. Directorate of Environmental Affairs. Windhoek, Namibia.

Miller. R. MG. 2008. Geological of Namibia. Geological Survey of Namibia. Ministry of Mines and Energy, Windhoek, Namibia

Ministry of land Reform.2015. Baseline Report (Volume 1) for the Zambezi Integrated Regional Land-use Plan

National Statistics Agency 2023. Population and housing census; Main Report & Labour Force Report

List of Appendices

Appendix 1: Environmental Management Plan

Appendix 2: Project Screening Notice

Appendix 3: Notifications

Appendix 4: Neighbours Consent

Appendix 5: Minutes of PPP and Attendance Register

Appendix 6: Authority Lettes

Appendix 7: Site Map

Appendix 8: CVs of EAPs

Appendix 9: Draft Above Ground Storage Design

Appendix 10: Background Information Document

APPENDIX 1: ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX 2: PROJECT SCREENING NOTICE

APPENDIX 3: NOTIFICATIONS

APPENDIX 4: NEIGHBOURS CONSENT

APPENDIX 5: MINUTES OF PPP AND ATTENDANCE REGISTER

APPENDIX 6: AUTHORITY LETTES

APPENDIX 7: SITE MAP

APPENDIX 8: CVS OF EAPS

APPENDIX 9: DRAFT ABOVE GROUND STORAGE DESIGN

APPENDIX 10: BACKGROUND INFORMATIO DOCUMENT