

## **ENVIRONMENTAL IMPACT ASSESSMENT**

**Environmental Assessment Scoping Report and Environmental Management Plan for Scrap Metal Recycling and Flame Cutting Activities at Erf 4616, Light Industrial Area, Walvis Bay, Namibia.**

**Prepared for (Proponent):**

**Kontinental Industrial Products (Pty) Ltd.**

**Prepared by (Environmental Consultant):**

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## Document Status

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<b>Document Title:</b>	Final Environmental Assessment Scoping Report and Environmental Management Plan for Scrap Metal Recycling and Flame Cutting Activities at Erf 4616, Light Industrial Area, Walvis Bay, Namibia.
<b>Listed Activity:</b>	Waste Management, Treatment, Handling and Disposal Activities: 2.3 The import, processing, use and recycling, temporary storage, transit or export of waste.

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## Executive Summary

Kontinental Industrial Products (Pty) Ltd (Project Proponent), is a wholly owned subsidiary of Konquest Trading FZE, from the UAE (United Arab Emirates). Kontinental Industrial Products (Pty) Ltd has interests in the areas of scrap metal recycling (buying and selling scrap metals) and intends on establishing and operating such a facility at Walvis Bay. Kontinental Industrial Products (Pty) Ltd intends on recycling both ferrous and non-ferrous metals. These scrap metals would be bought from the public/local suppliers, processed onsite and sold for further processing. Onsite activities by Kontinental Industrial Products (Pty) Ltd as articulated by industry best practice (Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008), would entail:

- Loading and unloading: Scrap metals received on site and unloaded with the use of machinery; trucks, fork lifts, cranes etc.
- Separating Processes: Scrap Metal is sorted manually by labourers and is weighed and categorised accordingly.
- Breaking, Gas/Flame torch cutting and other cutting: Breaking up of scrap into smaller parts through manual labour, cutting using machinery/powertools (i.e angle grinders), cutting using flame torches (i.e acetylene, oxygen)
- Baling and Compacting: Size reduction of the scrap metal using machinery to compress scrap metal in order to ease packaging for export.
- Exporting of Scrap Metal for further processing: Scrap metal is exported via the port of Walvis Bay to overseas clients for further processing.

The site for the suggested Metal Recycling and Flame Cutting Activities measures 643.18m<sup>2</sup> in total and is located within a Light Industrial Area of Walvis Bay Proper on Unit # 6, New Era Building, Erf 4616, which is Zoned as Light Industrial, whereby the surrounding land use is a combination of Light Industrial and General Business. Identified Environmental Impacts are summarised in the table below and range from low to high in their respective Environmental Impact Significance rating. Various mitigation strategies are recommended in the Environmental Management Plan. It is the view of the Environmental Assessment Practitioner that the project is given environmental clearance from the authorities on condition that the Environmental Management Plan is implemented and adhered, and possibly further enhanced with the implementation of a functioning Health, Safety and Environmental Management System.

### Summary of Identified Environmental impacts.

	Operational Phase	Decommissioning Phase	Rehabilitation Phase
<b>Environmental Impact</b>	Impacts on Plants & Animals, Social Impacts and Cultural Heritage. Before Mitigation: (6) Low After Mitigation: (4) Low	Impacts on Plants & Animals, Social Impacts and Cultural Heritage. Before Mitigation: (8) Moderate After Mitigation: (5) Low	Environmental Restoration Fund. Before Mitigation: (5) Low After Mitigation: (4) Low
	Traffic, Site Access and Security. Before Mitigation: (11) Moderate After Mitigation: (5) Low	Health and Safety of Personnel. Before Mitigation: (8) Moderate After Mitigation: (5) Low	
	Waste Management & Pollution Control Before Mitigation: (13) High After Mitigation: (4) Low	Waste Management. Before Mitigation: (5) Low After Mitigation: (4) Low	
	Fire and Explosion Hazards Before Mitigation: (14) High After Mitigation: (6) Low		
	Health and Safety of Operational Personnel. Before Mitigation: (10) High After Mitigation: (4) Low		
	HIV/AIDS and Employee wellness. Before Mitigation: (12) High After Mitigation: (3) Low		

### Description of Environmental Significance Ratings and Associated Scores

Significance Rate	Description	Score
<b>Low</b>	Acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development from being approved.	4 - 7
<b>Moderate</b>	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent project implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment.	8 - 11
<b>High</b>	A serious impact if not mitigated, and may prevent the implementation of the project (if it's a negative impact). These impacts would be considered by society as constituting a major and usually a long-term change to the (natural and/or social) environment and result in severe effects.	12 - 15

<b>Very High</b>	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects, or very beneficial effects.	16 - 20
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## 1. Introduction

Kontinental Industrial Products (Pty) Ltd (Project Proponent), is a wholly owned subsidiary of Konquest Trading FZE, from the UAE (United Arab Emirates). Kontinental Industrial Products (Pty) Ltd has interests in the areas of scrap metal recycling (buying and selling scrap metals) and intends on establishing and operating such a facility at Walvis Bay. Kontinental Industrial Products (Pty) Ltd intends on recycling both ferrous and non-ferrous metals. These scrap metals would be bought from the public/local suppliers, processed onsite and sold for further processing.

Ecolab Environmental cc, has been appointed by Kontinental Industrial Products (Pty) Ltd to conduct an Environmental Assessment for the proposed scrap metal and flame cutting activities.

This Environmental Assessment Report and Management Plan are aimed at providing information on the environmental consequences in order to guide decision makers as well as stakeholders on the proposed activities.

### 1.1 The Environmental Assessment Practitioner (EAP).

EcoLab Environmental cc was established in 2014 and is based in Walvis Bay. Detailed curriculum vitae of the Environmental Assessment Practitioner involved in this Environmental Assessment can be found in **Appendix A**.

### 1.2 Limitations of the Assessment

Information provided to the EAP Team by the proponent included the following:

- Company Profile (**Appendix B**).
- Lease Agreement for premises (**Appendix G**)

The assessment was fundamentally based on secondary data from various sources as well as on stakeholder input throughout the process as explained in Section 4 of this report. Furthermore, the assessment was limited to activities to be carried out onsite, as described in Section 2 of this report.

## 2. Project Description

### 2.1 Nature of the listed activity under assessment

The proposed project requires an Environmental Clearance Certificate in terms of the Environmental Management Act, (Act No.7 of 2007) and Environmental Impact Assessment (EIA) Regulations (2012). The specific listed activities that this particular project subject to Environmental Assessment in terms of Government Notice No. 29 of 2012 are summarised in table 2 below:

**Table 1 Summary of Listed Activity.**

Activity	Description of Relevant Activity	Relevance to Proposed Development
Activity 2: Waste Management, Treatment, Handling and Disposal Activities.	2.3 The import, processing, use and recycling, temporary storage, transit or export of waste.	The proponent intends to collect and recycle scrap metal.

### 2.2 Proposed Site and Surrounding Land Use

The site for the suggested Metal Recycling and Flame Cutting Activities is within a Light Industrial Area of Walvis Bay, Unit # 6, New Era Building, Erf 4616, is Zoned as Light Industrial, whereby the surrounding land use is a combination of Light Industrial and General Business. (see **Appendix C**).

**Table 3 Summary of Proposed Location**

Site Name	Coordinates	Land Owner	Zoning
Unit # 6, New Era Building, Erf 4616 Light Industrial Area, Walvis Bay Proper	22°56'33.8"S 14°31'06.1"E	Kontinental Industrial Products (Pty) Ltd currently leases the premises from New Era Investments (Pty) Ltd <b>(See Appendix G: Lease Agreement)</b>	Light Industrial

The total size of Unit # 6, New Era Building, Erf 4616, from where the proposed Scrap Yard will operate, measures 643.18m<sup>2</sup> in total. Furthermore, the operation of a Scrap Yard is listed as a Consent Use on the zoning certificate of Erf 4616 (see **Appendix D**). This Consent Use would be pursued by the proponent from the Municipality of Walvis Bay through a Town Planning process that is completely liberated and distinct from this Environmental Assessment.



Figure 1 Proposed project site (source: Google Earth Pro, retrieved December 2021).



Figure 2 Premises of Kontinental Industrial Products (Pty) Ltd., Erf 4616, Light Industrial Area, Walvis Bay (Source: Author).

## 2.3 Proposed Activities – Scrap Metal Recycling

Scrap metal recycling involves the gathering of a variety of metals from a wide range of sources, that require many processing techniques depending on the type, size and composition of the scrap. Scrap metals are broadly divided into two broad categories; Ferrous and Non-ferrous scrap (distinguished as those that contain iron and are magnetic, versus those that don't contain iron and are therefore not magnetic). Ferrous scrap metals predominantly contain iron. Generally, ferrous alloys are magnetic, although their magnetic attraction will vary as a consequence of the amount of iron in the alloy. Non-Ferrous scrap metal may contain the following metals: copper, Brass, aluminium, zinc, magnesium, tin, nickel, and lead. Nonferrous metals also include precious and exotic metals. Precious metals are metals with a high market value in any form, such as gold, silver, and platinum. Exotic metals contain rare elements such as cobalt, mercury, titanium, tungsten, arsenic, beryllium, bismuth, cerium, cadmium, niobium, indium, gallium, germanium, lithium, selenium, tantalum, tellurium, vanadium, and zirconium (Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008).

Kontinental Industrial Products (Pty) Ltd intends on recycling both ferrous and non-ferrous metals. These scrap metals would be bought from the public/local suppliers, processed onsite and sold for further processing. Onsite activities by Kontinental Industrial Products (Pty) Ltd as articulated by industry best practice (Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008), would entail:

- A. **Loading and unloading:** Scrap metals received on site and unloaded with the use of machinery; trucks, fork lifts, cranes etc.
- B. **Separating Processes:** Scrap Metal is sorted manually by labourers and is weighed and categorised accordingly.
- C. **Breaking, Gas/Flame torch cutting and other cutting:** Breaking up of scrap into smaller parts through manual labour, cutting using machinery/power tools (i.e angle grinders), cutting using flame torches (i.e acetylene, oxygen)
- D. **Baling and Compacting:** Size reduction of the scrap metal using machinery to compress scrap metal in order to ease packaging for export.
- E. **Exporting of Scrap Metal for further processing:** Scrap metal is exported via the port of Walvis Bay to overseas clients for further processing.



**Figure 3: Inside the proposed sorting area of Kontinental Industrial Products (Pty) Ltd., Erf 4616, Light Industrial Area, Walvis Bay (Source: Author).**



**Figure 4: Weighing equipment of Kontinental Industrial Products (Pty) Ltd., Erf 4616, Light Industrial Area, Walvis Bay (Source: Author).**

### **2.3 Proposed Activities – Flame Cutting**

Kontinental Industrial Products (Pty) Ltd intends on using flame cutting as one of the methods in which they would reduce the size of larger pieces of scrap metal. The proposed flame cutting will make use of thermal gas torches. Common gasses used by thermal gas torches include: Acetylene, LPG, Oxygen and Hydrogen. All of these gases are flammable and carry the inherent hazards of fire and explosion. This hazard is of particular concern when working on materials that have combustible or explosive components (Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008). In order to avoid the accumulation of flame cutting gasses, the proponent intends on carrying out flame cutting activities out in the open at the rear end of the premises as shown in Figure 5 bellow.



**Figure 5: Proposed outdoor flame cutting area of Kontinental Industrial Products (Pty) Ltd., Erf 4616, Light Industrial Area, Walvis Bay (Source: Author).**

Compressed gases may be flammable and/or explosive or may present toxic or asphyxiant hazards if leaks occur. Compressed gas cylinders can also present explosion or missile hazards if exposed to excessive heat or physical damage (Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008). The proponent shall therefore have to establish an Emergency Response Plan that is to be followed in the event of emergencies that may arise from any Fire and Explosion hazards onsite. Drills should routinely be carried out on the suggested Emergency Response Plan in order to assess its effectiveness. The Gas torches also involve storage of flammable and explosive gases on site. The proponent therefore needs to store flame cutting gases in accordance with applicable international good practices and standards, as well as relevant Material and Safety Data Sheets (MSDS) and ensure that all equipment is in good working condition (i.e., detached or punctured hoses can create a safety hazard for nearby

employees) (Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008).

## **2.5 Alternatives and No-Go Alternative**

The proponent has not deliberated any alternatives to the proposed site. The only alternative considered in this report is the "No Project" alternative, which assumes that the project as proposed does not go ahead. The implications of the "No Project" alternative are:

- metal recycling and its accompanying environmental benefits would not be realised.
- the jobs for local youths that the project would have created would not be realised;
- All environmental impacts described in section 6 of this assessment report would not be realised.



### **3. Legal and Administrative Background**

This section shall outline and briefly discuss all the various laws, policies, and national developmental plans that have been considered in the preparation of this scoping report for the proposed development.

#### **3.1 The Namibian Constitution**

Articles 91, 95 and 144 of the Namibian constitution are of particular relevance to the Scoping Exercise of the planned development.

Part of Article 95 recites: "The State shall actively promote and maintain the welfare of the people by adopting policies aimed at...The maintenance 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..." Part of Article 91 recites "The functions of the Ombudsman shall be defined and prescribed by an Act of Parliament and shall include the following... the duty to investigate complaints concerning the over-utilization of living natural resources, the irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia". Article 144 Recites "Unless otherwise provided by this Constitution or Act of Parliament, the general rules of public international law and international agreements binding upon Namibia under this Constitution shall form part of the law of Namibia."

#### **3.2 Namibia's Environmental Assessment Policy (1995).**

The Environmental Assessment Policy of Namibia declares the following: "...Achieving and maintaining sustainable development on all policies, programs and projects undertaken within Namibia. In particular, the wise utilization of the country's natural resources, together with the responsible management of the biophysical environment, must be for the benefit of both present and future generations Namibia shall place a high priority on: (i) maintaining ecosystems and related ecological processes, in particular those important for water supply, food production, health, tourism and sustainable development; (ii) observing the principle of optimum sustainable yield in the exploitation of living natural resources and ecosystems, and the wise utilization of non-renewable resources; (iii) maintaining representative examples of natural habitats; (iv) maintaining maximum biological diversity by ensuring the survival and promoting the conservation in their natural habitat of all species of fauna and flora, in particular those which are endemic,

threatened, endangered, and of high economic, cultural, educational, scientific and conservation interest." The policy also outlines an EA procedure.

### **3.3 Environmental Management Act of Namibia (Act 7 of 2007) and its Regulations (2012).**

The Environmental Management Act (2007) aims to: promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to establish the Sustainable Development Advisory Council; to provide for the appointment of the Environmental Commissioner and environmental officers; to provide for a process of assessment and control of activities which may have significant effects on the environment; and to provide for incidental matters.

The Act further sets out a number of environmental objectives that; guide the implementation of the Act and any other law relating to the protection of the environment; serve as the general framework within which environmental plans must be formulated; and serve as guidelines for any organ of state when making any decision in terms of this Act or any other law relating to the protection of the environment. These Environmental Objectives include (non-exhaustive list):

- The option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term must be adopted to reduce the generation of waste and polluting substances at source;
- A person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by pollution, including costs for measures as are reasonably required to be implemented to prevent further environmental damage;
- Damage to the environment must be prevented and activities which cause such damage must be reduced, limited or controlled.

The Environmental Management Act Regulations specifies scheduled activities that may not be under taken without an Environmental Clearance Certificate from the Environmental Commissioner.

### **3.4 Local Authorities Act (Act No. 23 of 1992).**

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.

### **3.5 Labour Act (Act No. 11 of 2007)**

Provides for Labour Law and the protection and safety of employees. Labour Act, 1992: Regulations relating to the health and safety of employees at work (Government Notice No. 156 of 1997).

### **3.6 Public and Environmental Health Act (Act No. 1 of 2015)**

To provide a framework for a structured uniform public and environmental health system in Namibia; and to provide for incidental matters.

### **3.7 Second Hand Goods Act (Act No. 23 of 1998)**

To regulate the business of dealers in second hand goods and scrap metal, auctioneers and pawnbrokers; and to provide for incidental matters.

### **3.8 Hazardous Substances Ordinance (No. 14 of 1974)**

The Ordinance 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 serves to prevent hazardous substances from causing injury, ill-health or the death of human beings.

### **3.9 Nature Conservation Ordinance (No. 4 of 1975)**

To consolidate and amend the laws relating to the conservation of nature; the establishment of game parks and nature reserves; the control of problem animals; and to provide for matters incidental thereto.

### **3.10 Namibia's 5<sup>th</sup> National Development Plan (NDP 5)**

The fifth National Development Plan is the fifth of a series of seven 5-year national development plans that outline the objectives and aspirations of Namibia's long-term vision as expressed in Vision 2030.

### **3.11 United Nations Sustainable Development Goals (SDG's), 2015.**

The Sustainable Development Goals or Global Goals are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". Of particular importance to the proposed activities is Goal 12: Responsible consumption and production, is of particular importance to this project.

### **3.12 OSHA Guidance for the identification and Control of Safety and Health Hazards in Metal Scrap Recycling (Industry Best Practice), 2008.**

Published by the Occupational Safety and Health Administration of the U.S. Department of Labour, this guide is aimed at assisting safety professionals and industrial hygienists in their efforts to identify, evaluate, and develop appropriate controls for hazards related to metal scrap recycling processes. Furthermore, the publication aims to support with the identification and control of typical health and safety hazards associated with various metal scrap recycling operations and in selecting appropriate control methods.

## 4. Public Consultation

The public participation phase is an integral part of the EIA process, and continues throughout this process. By its very nature, it is a dynamic process where diverse societal interests, needs and values that must be recognised and managed. This requires that public participation provide the opportunity for participation in an open and transparent manner that would add meaningful value to the planning of the proposed project.

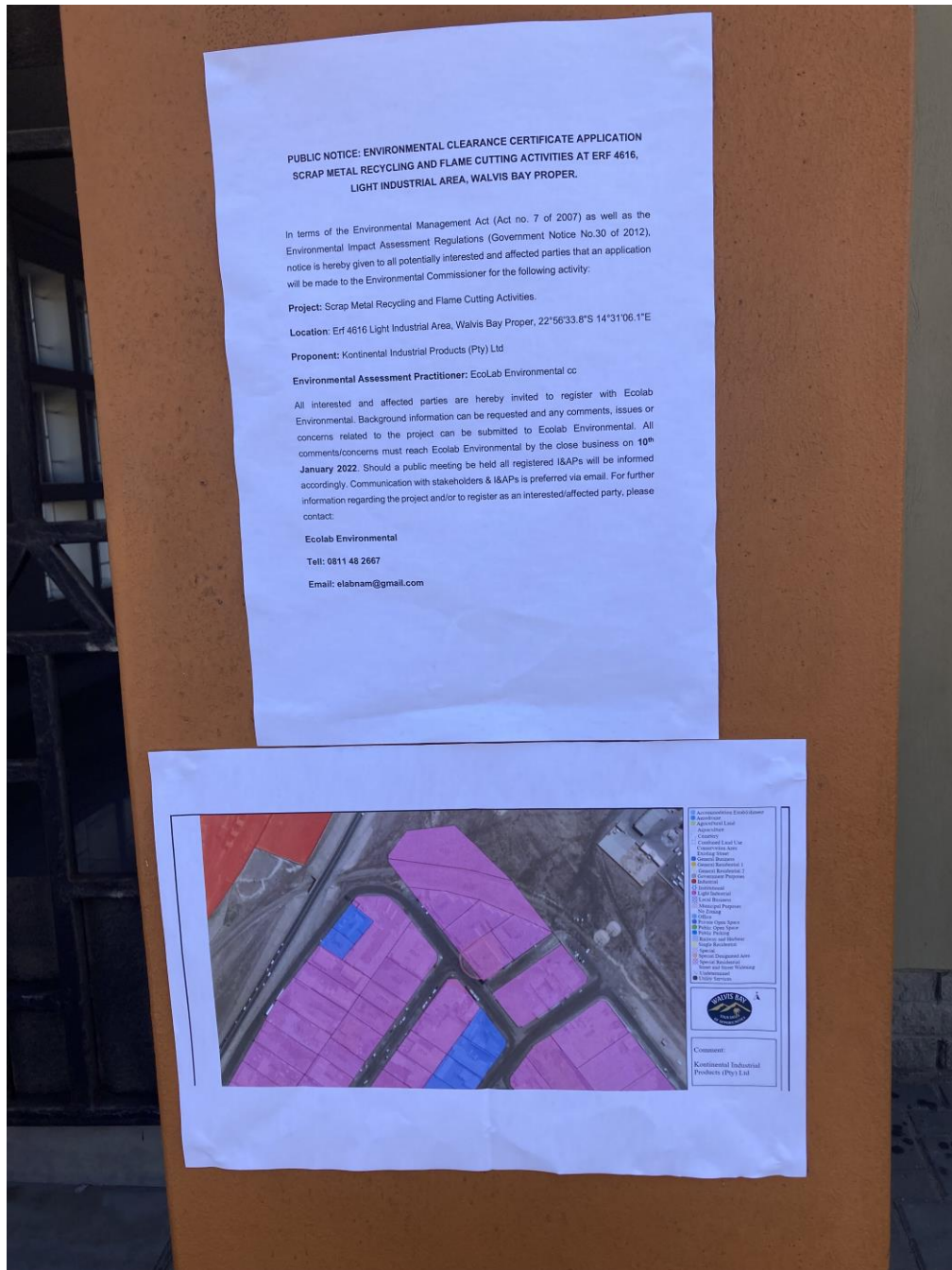
The EAP gave notices to all potential interested and affected parties (I&APs) as per the public consultation process requirements by doing the following:

- a) Production and distribution Background Information Document (BID) (**Appendix E**).
- b) 21 Day public consultation period from 15 December 2021 to 10 January 2021.
- c) Advertisements placed in four (4) different newspapers that are widely distributed in Namibia. The actual copies of these newspaper adverts can be found in **Appendix F**.

**Table 3: Newspaper adverts & dates.**

<b>Newspaper</b>	<b>Dates</b>
Namib Times	Wednesday, 17 December 2022 Wednesday, 10 January 2022
The Republikein	Wednesday, 17 December 2022 Wednesday, 10 January 2022
Namib Sun	Wednesday, 17 December 2022 Wednesday, 10 January 2022
Allgemeine Zeitung	Wednesday, 17 December 2022 Wednesday, 10 January 2022

- d) Distribution of the BID to the adjacent land users (see signed distribution list at **Appendix G**) on and also to all the registered I&APs.
- e) A site notice was also placed at a conspicuous location at the site during the 21-day public consultation period.
- f) The draft scoping report was distributed to stakeholders for comment for a period of 1 week (14 January to 21 January 2021).



**Figure 6: Site notice placed at a conspicuous location at the premises of Kontinental Industrial Products (Pty) Ltd., Erf 4616, Light Industrial Area, Walvis Bay.**

- g) Distribution of the Draft Scoping report to all I&APs and a comment period of seven (7) days was awarded, from 14 January 2022 to 21 January 2022.

h) Stakeholders were actively identified by EcoLab Environmental and were also afforded a copy of the background Information document. Stakeholder/I&AP for the project ranged from various individuals representing a diverse multitude of institutions, such as:

- Municipality of Walvis Bay
- Erongo Regional Council
- Ministry of Environment, Tourism and Forestry
- Adjacent land users/owners

A full list of all I&AP can be found in **Appendix H**. Comments received following the distribution of the BID are summarised in **Table 4**.

**Table 4: Comments and response table.**

Comment	Response	I&AP	Date & means of Communication
<p>The proposed scrap yard should have defined working hours. If possible, should not operate on Sundays.</p>	<p>The facility will make use of standard operating hours 07h00 – 17h00. And make use of overtime where necessary.</p>	<p>Mr. Schmidt Adjacent land User</p>	<p>22<sup>nd</sup> December 2021 Verbal</p>
<p>I would like to submit some points/concerns to the below envisioned activity from the roads maintenance viewpoint;</p> <ol style="list-style-type: none"> <li>1. The increased axle loading induced by the loaded trucks on that specific portion of the road network will cause high surface deterioration. An action plan pertaining to rehabilitating the road surface and extending its lifespan is needed. The infrastructure failure is already evident as the existing scrap metal business which is now a burden to the road users as well as the Municipality.</li> <li>2. A substantial increase in pedestrian movement transporting scrap metal using trolleys and the likes from specifically the suburban areas (Kuissebmond and Naraville) as well as other industrial areas will greatly increase the potential for accidents.</li> <li>3. The available space for processing scrap material is a concern. Where will the material be stored that is offloaded and/or to be loaded.</li> <li>4. How will potential toe lines and bottle necks in vehicular movement be mitigated caused by double axle interlinks that might load or unload scrap metal.</li> <li>5. Responsibility to clean up scraps that fall onto the road network that might damage vehicles' tyres and the likes.</li> </ol>	<ol style="list-style-type: none"> <li>1. See 6.1.2, furthermore, the maintenance of roads is a duty of the local authority.</li> <li>2. See 6.1.2</li> <li>3. See 2.2 &amp; Figure 3</li> <li>4. See 6.1.2</li> <li>5. See 6.1.2</li> </ol>	<p>Mr. Kenneth Angula Superintendent: Roads Engineering Municipality of Walvis Bay.</p>	<p>04 January 2022 Email</p>



<p>I trust that these points are to be considered and if need be we can have a consultation with the parties involved to address the matter.</p>			
<ol style="list-style-type: none"> <li>1. Please register the Health Division of the Municipality of Walvis Bay as an interested party. Allow me to raise health and safety concerns, which should be investigated/taken into consideration during the environmental assessment process.</li> <li>2. According to your report, Gas/Flame torch cutting of scrap into smaller parts (cutting using flame torches i.e acetylene) is going to be conducted inside the premises. Please explain what measures will be taken to prevent the accumulation of toxic gases inside the premises. What improvements w.r.t. Ventilation inside the premises are considered considering that "hot works" are going to be conducted inside the premises.</li> <li>3. What structural changes and operational measures will be done to prevent the outbreak of a fire inside the building.</li> </ol>	<ol style="list-style-type: none"> <li>1. Division Registered.</li> <li>2. See 2.3 &amp; Figure 5</li> <li>3. See 6.1.4</li> </ol>	<p>Mr. Deville Dreyer Chief Health Services: Health Division. Municipality of Walvis Bay</p>	<p>06 January 2022 Email</p>

## 5. Description of the Environment

The proposed site is found within a Light Industrial area in Walvis Bay. This chapter will elaborate on the Socio-Economic as well as the Natural receiving environments in the broader milieu of Walvis Bay as a town.

### 5.1 Socio-Economic Environment

Walvis Bay is the most populace town in the Erongo Region with a total population of just over 70 000 inhabitants. The proposed site falls into the Walvis Bay Urban Constituency, which has over 10 000 private households which are mostly headed by males (67%). The Constituency has a literacy rate of about 99%, while the unemployment rate among the labour force at the town stood at around 27% in 2011.

**Table 5: Summary of Selected Demographic indicators of the Walvis Bay Urban constituency as per the 2011 census (Source Namibia Statistics Agency: Erongo Regional Profile, 2011)**

<b>Population Size</b>		<b>Labour force, 15+ years %</b>	
Total	35 828	In labour force	81
Male	16 478	Employed	73
Female	19 350	Unemployed	27
Sex ratio: Males per 100 females	117	Outside Labour force	15
		Student	47
		Homemaker	12
		Retired etc.	40
<b>Age composition, %</b>		<b>Household main source of income</b>	
Under 5 years	10	Farming	3
5 – 14 years	14	Wages & Salaries	66
15 – 59 years	72	Cash Remittance	9
60+ years	5	Business, non-farming	10
		Pension	9
<b>Marital status: 15+ years, %</b>		<b>Literacy Rate, 15+years</b>	
Never married	57	Never attended school	21
Married with Certificate	29	Currently at school	11
Married Traditionally	1	Left School	67
Married consensually	8		
Divorced/Separated	0		
Widowed	2		
<b>Private Households</b>		<b>Persons Living with Disability %</b>	
Number	10 317	With Disability	2
Average Size	3.2		

## **5.2 Natural Environment**

The proposed site is at the heart of a built-up area that has plenty of paving and tarred roads within a light industrial area, so there is largely a lack of a natural environment to speak of in the immediate vicinity of the proposed site. Thus the Natural Environment shall be discussed in the broader milieu of Walvis Bay as a town.

### **5.2.1 Climate**

Walvis Bay lies within the "cool desert" region of Namibia, a unique biophysical environment caused by the specific climatic conditions in the area that are influenced by the South Atlantic anticyclone, the northward-flowing Benguela Current (with its associated upwelling) and the divergence of the south-east trade winds along the coast<sup>2</sup>. Climatic conditions in the region vary from cool, foggy, windy and hyper-arid conditions along the coast, to dry and hot weather towards the inland areas from which it is separated by the Great Escarpment<sup>2</sup>.

### **5.2.2 Temperature**

In Walvis Bay, average temperature maximum varies between 24 °C and 19.3 °C, while the average minimum ranges between 9.1 °C and 16.5 °C. Highest temperatures are normally encountered during Berg Wind episodes when cold air from the interior flows towards the coast and is heated by compression<sup>1</sup>.

### **5.2.3 Rainfall and Evaporation**

Walvis Bay has a mean annual rainfall of 13.5 mm. Most rain falls in summer between January and April, with the wettest month being March when about 50% of annual rainfall is recorded. Fog is a distinctive feature, and the Bay gets some moisture from 900 hours of coastal sea fogs per year. Monthly average humidity varies between 65% in December and 81% in January/March (DMC-CSIR, 2009, P.77).

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<sup>1</sup> DMC-CSIR (2009) EIA Study for Strategic Expansion of the Walvis Bay Container Terminal. Final Scoping Report. 115 pp. CSIR/CAS/EMS/ER/2009/0017/A. Stellenbosch. With Summary and Appendices, prepared for Namibian Ports Authority.

#### **5.2.4 Surface Wind**

At the coast in Walvis Bay, the prevailing wind is southerly to south, south-westerly, with speeds reaching 10m/s. However, the predominant winds inland are north-easterly to easterly with speeds reaching approximately 3 m/s. The coastal south-westerly winds are responsible for bringing about cool moist air into the coastal region (DMC-CSIR, 2009, P.77).

#### **5.2.5 Geology and Hydrology**

Much of Walvis Bay is underlain by schist with granitic intrusions of the Swakop group which forms part of the Damara Super group and Gariep Complex, a group of rocks laid down during the pre-cambrian era. Much of the geology is exposed, because the harsh climate limits soil development and vegetation growth. Extensive gypsum and calcrete deposits have developed where the relief is low (DMC-CSIR, 2009, P.78).

Groundwater reserves are limited to the Kuiseb and Omaruru alluvial bed aquifers, which supply Coastal towns as well as Arandis, and some uranium mines. These aquifers are situated within the alluvial beds of the Kuiseb and Omaruru rivers. Nearest to the proposed site is the Kuiseb, which is about 45km north-east of the site (DMC-CSIR, 2009, P.78).

## 6. ENVIRONMENTAL ASSESSMENT

The Table below indicates a summary of identified environmental impacts. These impacts are categorized into the relevant stages of the life cycle of the proposed development, namely: Operational Phase, Decommissioning Phase and Rehabilitation Phase. The environmental assessment section of the Scoping Report and the consequent EMP shall also be compartmentalized into these into these environmental impacts and phases.

**Table 6: Summary of identified Environmental Impacts**

	Operational Phase	Decommissioning Phase	Rehabilitation Phase
<b>Environmental Impact</b>	6.1.1 Impacts on Plants & Animals, Social Impacts and Cultural Heritage.	6.2.1 Impacts on Plants & Animals, Social Impacts and Cultural Heritage.	6.3.1 Environmental Restoration Fund.
	6.1.2 Traffic, Site Access and Security.	6.2.2 Health and Safety of Personnel.	
	6.1.3 Waste Management & Pollution Control	6.2.3 Traffic, Site Access and Security.	
	6.1.4 Fire and Explosion Hazards	6.2.4 Waste Management.	
	6.1.5 Health and Safety of Operational Personnel.		
	6.1.6 HIV/AIDS and Employee wellness.		

The evaluation criterion used for the assessment of the impacts is taken from the Rhodes University, Department of Environmental Sciences in the Environmental Impact Assessment Short Course Training. The identified impacts were evaluated in terms of their magnitude considering Temporal (Duration/Frequency) and Spatial (Local, National and Regional) scales as well Severity and Likelihood of occurrence as explained in *tables 6 to 9*. From the points scored by a particular impact in terms of its effect (*tables 5 to 7*) and Likelihood (*table 9*) the sum of these points were then used to determine the overall significance of the particular impact through the use of a

Matrix as indicated in *Table 10*. From table 10, the colour category in which a particular impact falls under is then used in order to determine the significance of the impact as shown below in table 11, either; Low, Moderate, High, Very High. The entire process is repeated for each impact assuming suggested mitigation measures.

**Table 7: Ranking evaluation criterion for the effects of impacts over temporal scales**

Temporal Scale	Description	Score
<b>Short term (ST)</b>	Less than 5 years	1
<b>Medium term (MT)</b>	Between 5-20 years	2
<b>Long term (LT)</b>	Between 20 & 40 years (a generation) and from a human perspective also permanent	3
<b>Permanent (P)</b>	Over 40 years & resulting in a permanent lasting change that will always be there	4

**Table 8: Ranking evaluation criterion for the effects of impacts over spatial scales**

Spatial Scale	Description	Score
<b>Localized (L)</b>	At localized scale and a few hectares in extent	1
<b>Study Area (S)</b>	The proposed site and its immediate environments	2
<b>Regional (R)</b>	District and Regional level	3
<b>National (N)</b>	Country	4
<b>International (I)</b>	Internationally	5

**Table 9: Ranking evaluation criterion for the Severity or Benefits of impacts.**

Severity	Description (Severity / Beneficial effects)	Score
<b>Slight (SL)</b>	Slight impacts to the affected system(s) and/or party(ies)	1
<b>Moderate (M)</b>	Moderate impacts of the affected system(s) and/or party(ies)	2
<b>Severe (SE)</b>	Severe impacts of the affected system(s) and/or party(ies)	4
<b>Very Severe (VS)</b>	Very Severe impacts of the affected system(s) and/or party(ies)	8

**Table 10: Ranking evaluation criterion for the likelihood of potential impacts.**

Likelihood	Description	Score
Unlikely (U)	The Likelihood of these impacts occurring is slight	1
May occur (M)	The likelihood of these impacts occurring is possible	2
Probable (P)	The likelihood of these impacts occurring is probable	3
Definite (D)	The likelihood that this impact will occur is definite	4

**Table 11: Matrix used to determine the overall significance of the impact based on the likelihood and effect of the impact.**

		Effect													
		3	4	5	6	7	8	9	10	11	12	13	14	15	16
Likelihood	1	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	2	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	3	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	4	7	8	9	10	11	12	13	14	15	16	17	18	19	20

**Table 12: Description of Environmental significance ratings and associated range of scores.**

Significance Rate	Description	Score
<b>Low</b>	Acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development from being approved.	4 - 7
<b>Moderate</b>	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent project implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment.	8 - 11
<b>High</b>	A serious impact if not mitigated, and may prevent the implementation of the project (if it's a negative impact). These impacts would be considered by society as constituting a major and usually a long-term change to the (natural and/or social) environment and result in severe effects.	12 - 15
<b>Very High</b>	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects, or very beneficial effects.	16 - 20

## 6.1 Operational Phase Impacts

All operational related impacts of the proposed development shall be discussed in this section in terms of the description of the impact as well as its effects (temporal, spatial & severity), as well as the likelihood of occurrence and proposed mitigation measures.

### 6.1.1 Impacts, on Fauna, Flora, Social and Cultural Heritage.

**DESCRIPTION:** During the years in which the facility shall be operational, impacts on fauna, flora, social and cultural heritage should not be ruled out even though the site is located within a paved and tarred build-up area that also happens to be zoned for light industrial undertakings. Conversely, from a circular economy and sustainability viewpoint, the recycling concept behind the entirety of the proposed activities provides for an affirmative environmental impact which contributes positively to the Global Green Agenda with particular emphasis of United Nation Sustainable Development Goal 12.

**MITIGATION:** Should any pests be kept onsite, such arrangements should be done in accordance with provisions of the local authority and any national laws as well as by-laws regarding these. Furthermore, any occurrences of strange animals/plants as well as dangerous and/or problematic animals (i.e Honey Bees, Hornets, Nesting Birds, Rodent Pests etc) should be brought to the attention of the Walvis Bay Office of the Ministry of Environment, Forestry and Tourism or the Environmental Management and/or Environmental Health Departments of the Municipality of Walvis Bay without delay. All Invasive Plant Species in terms of the Nature Conservation Ordinance Amendment Act, Act 5 of 1996 should be identified with the assistance of the Walvis Bay Office of the Ministry of Environment, Forestry and Tourism or the Environmental Management of the Municipality of Walvis Bay for removal. In the unlikely event of any heritage or archaeological discovery during the operation of the Scrap Metal Recycling & Flame Cutting activities, the Local Authority and National Heritage Council (NHC) should be contacted immediately for proficient guidance regarding the discovery.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(ST) 1	(L) 1	(M) 3	(U) 1	6 LOW
<b>Score Considering Mitigation</b>	(ST) 1	(L) 1	(SL) 1	(U) 1	4 LOW

The overall rating of this impact is low in both unmitigated as well as mitigated conditions, however the severity of impacts is reduced through mitigation. Mitigation is therefore recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.



### 6.1.2 Traffic, Site Access & Security.

**DESCRIPTION:** During the years in which the proposed Scrap Metal Recycling & Flame Cutting facility would be in operation, it is expected that there would be an increased number of trucks on the road leading to the facility compared to present figures. These trucks would typically be delivering/collecting scrap metal. The situation could be worsened should the operation of these trucks not be controlled and should surrounding industrial activity increase. Furthermore, an increase in pedestrian movement transporting scrap metal using trolleys could increase the potential for accidents.

Theft of valuable scrap metal items and operational machinery could become an issue for the operators of the proposed Scrap Metal Recycling & Flame Cutting facility, thus site access needs to be controlled and monitored, while appropriate security measures are to be observed.

**MITIGATION:** Any changes to existing access routes needs the full consent of the Local Authority. Regular communication between the proponent, neighbouring land users, and the local authority on traffic issues concerning the road leading up to the proposed site should be unending. The road leading up to the proposed site should not be blocked or damaged by any vehicle delivering/collecting scrap metal. All vehicles delivering/collecting scrap metal should be documented, and should be held responsible for any scrap that may fall off during transit, and should pick up such scrap at the earliest detection. Pedestrians transporting scrap metal using trolleys on public roads should be reported to the local traffic authorities and should be reminded about the dangers of their actions.

Site access should be restricted and appropriate signage should be put up to warn the public of potential hazards. The proponent should restrict access to the site and the perimeter of the facility should be maintained or improved upon in order to discourage trespassing. All visitors to the site should be documented and should undergo a mandatory site induction.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(LT) 3	(S) 2	(M) 2	(D) 4	11 MODERATE
<b>Score Considering Mitigation</b>	(ST) 1	(L) 1	(SL) 1	(M) 2	5 LOW

The overall rating of this impact is moderate under unmitigated circumstances and low under mitigated conditions. Mitigation is therefore recommended as best practice and as a means of remaining pro-active through construction as well as reducing impacts.

### 6.1.3 Waste Management & Pollution Control

**DESCRIPTION:** During the day-to-day activities of the proposed Scrap Metal Recycling & Flame Cutting facility, different kinds of waste are expected to be generated. These include: general domestic waste, plastics, hazardous waste, inert waste etc.

**MITIGATION:** All waste onsite should be disposed of in receptacles that promote good housekeeping and can hold all waste until such a time that the waste is to be removed from the site without causing any pollution. All waste is to be removed from the site on a regular basis and should under no circumstances be allowed to accumulate to levels deemed inappropriate by local authorities. Contaminated and or Hazardous Wastes should be disposed of in accordance with Local Authority Requirements. No waste should be buried and littering should be strictly prohibited. Drip trays should be placed under oil leaking equipment/machinery and the contents of these trays should be disposed of in a manner that is approved by the local authority. The proponent should practice the Waste Management hierarchy and not accept any scrap items where it is evident from the onset that those items would not be of much scrap metal beneficial use but would rather result in the accumulation of waste on site. While a culture of good housekeeping is to be cultivated and maintained, quantities of all wastes should be recorded and these records are to be maintained in a manner that allows for unhindered future retrieval at a moment's notice.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(LT) 3	(S) 2	(S) 4	(P) 4	13 HIGH
<b>Score Considering Mitigation</b>	(ST) 1	(L) 1	(SL) 1	(M) 1	4 LOW

The overall rating of this impact is high under unmitigated circumstances and low under mitigated conditions. Mitigation is therefore recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.

#### 6.1.4 Fire and Explosion Hazards

**DESCRIPTION:** Dealing with hazardous substances that may be kept and/or handled onsite, presents a fire and explosion hazard that the proponent should not neglect and should take responsibility for and manage accordingly. These hazards include: Flame cutting gasses, solvents, paints and hydrocarbons (non-exhaustive list).

**MITIGATION:** Initially, the proponent should develop Safe Working Procedures for all work to be conducted onsite as well as an Emergency Response Plan that is to be followed in the event of emergencies that may arise from any Fire and Explosion hazards onsite. Drills should routinely be carried out on the suggested Emergency Response Plan in order to assess its effectiveness. Material and Safety Data Sheets (MSDS) should be readily available onsite for all chemicals and substances at all times, and the contents of these documents should be adhered to. MSDS documents as well as relevant industry best practices should be considered in the development of the recommended Safe Working Procedures and Emergency Response Plan. Literature that may be of use to the development of the said emergency response plan includes (non-exhaustive list):

- The safe use of compressed gases in welding, flame cutting and allied processes HSG139 HSE Books 1997 ISBN 978 0 7176 0680 1 [www.hse.gov.uk/pubns/books/HSG139.htm](http://www.hse.gov.uk/pubns/books/HSG139.htm)
- The safe use of compressed gases in welding, flame cutting and allied processes HSG139 HSE Books 1997 ISBN 978 0 7176 0680 1 [www.hse.gov.uk/pubns/books/HSG139.htm](http://www.hse.gov.uk/pubns/books/HSG139.htm)
- Industrial gas cylinder manifolds and distribution pipework/pipelines (excluding acetylene) CP4(rev3) Code of Practice British Compressed Gases Association 2005
- The safe use of oxy-fuel gas equipment (individual portable or mobile cylinder supply) CP7(rev5) Code of Practice British Compressed Gases Association 2008
- Guidance for the storage of gas cylinders in the workplace Guidance Note GN2(rev4) British Compressed Gases Association 201

Corrosive, oxidising and reactive chemicals present similar hazards and require similar control measures as flammable substances. All incidents and near-misses with regard to Fire and Explosion Hazards should be; documented, investigated the outcomes/corrective action implemented in order to prevent re-occurrence by all means. There are a range of instruments/measures that can be used to bring a fire under control or avoid a fire entirely. These include but are not limited to (non-exhaustive list):

- Detailed operational procedures for hazardous substance handling as well as related emergency protocols endorsed and supported by management. These need to be reviewed from time to time and must be complimented by regular drills to assess and improve upon their effectiveness.

- Provision of manual firefighting equipment that is easily accessible and easy to use. Training on the use of the equipment should be provided.
- Fire and emergency systems that are both audible and visible where practically possible.
- Storing of flammables away from ignition sources and oxidizing materials.
- No cell phones or Smoking allowed at high risk areas onsite to avoid distractions and unwanted ignition of fires.
- General good housekeeping practices as well as a culture of safety and compliance to procedures, rules and protocols within the construction team should be fostered.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(P) 3	(R) 3	(SE) 4	(D) 4	14 HIGH
<b>Score Considering Mitigation</b>	(ST) 1	(L) 1	(SL) 1	(M) 3	6 LOW

The overall rating of this impact is moderate under unmitigated circumstances and low under mitigated conditions. Mitigation is therefore strongly recommended as best practice and as a means of remaining pro-active through construction as well as reducing impacts.

### 6.1.5 Health and Safety of Operational Personnel

**DESCRIPTION:** All operational phase related activities (Loading and unloading; Separating Processes; Breaking, Gas/Flame torch cutting and other cutting; Baling and Compacting; Exporting of Scrap Metal for further processing;) require human labour to some degree, be it directly or indirectly, and thus pose an inherent health and safety risk to construction personnel.

**MITIGATION:** It is the responsibility of the proponent to comply with the provisions set forth in the Labour Act 11 of 2007, with special attention to Chapter 4 that primarily outlines Health and Safety in the work place, as well as all other national legislations in this regard.

Recommended mitigating measures include, but not limited to (Non-exhaustive list):

- Covid-19 regulations as set forth by the National Authorities should be adhered to on site without exception.
- Periodic internal safety compliance audits.
- Health and Safety training and speciality programs should be provided as needed to ensure workers are oriented to the specific hazards of individual work assignments and all other present hazards.
- Hazard Risk Identification within Job Profiles/Machinery/Equipment/Work Areas and Tasks that are to be performed.
- Appointment of Safety Officers as custodians of safety within the workplace. In addition to these, Peer Educators and Health and Safety Representatives can also be nominated in constituent working teams in order to foster a culture of health and safety at the construction site.
- Documented Safe Operational and Work Procedures as well as Emergency (including Medical) Procedures and drills. These need to be periodically reviewed for their effectiveness and should be constantly improved upon whenever the opportunity presents itself, particularly following an event of note (including near-misses).
- Daily crew safety talks prior to the commencement of every shift.
- Monthly/Weekly Peer education topics encouraging healthy lifestyle choices, safety at the construction site and outcomes of investigations into near-misses and incident investigations.
- Noise levels should comply with the SANS Code of Practice 10083-2013 (recommended noise levels). SANS 10083:2012 – The Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes.
- Good housekeeping practices in order to avoid unforeseen hazards and obstructions.
- General permits to work and Personal Protective Equipment/Clothing

- Conspicuous signs displaying all potential hazards, PPE requirements, assembly points, waste receptacles of all kinds, emergency numbers for respective emergencies that may arise, MSDS Sheets etc.
- Communication of lessons learnt from previous incidents and corrective action taken to avoid re-occurrence as soon as these are known following an investigation.
- Investigations into the improvement of current practices from a health and safety perspective.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(P) 4	(S) 2	(SE) 4	(D) 4	10 HIGH
<b>Score Considering Mitigation</b>	(ST) 1	(S) 2	(SL) 1	(M) 2	4 LOW

The overall rating of this impact is high under unmitigated conditions and low under mitigated conditions. Thus mitigation is recommended as best practice and as a means of remaining proactive through construction. Kontinental Industrial Products (Pty) Ltd. is strongly recommended to devise an HSE Policy which should receive management commitment in its implementation.

### 6.1.6 HIV/AIDS

**DESCRIPTION:** The proposed activities could increase economic potential in the area that may attract migrant labour from other parts of the country and may affect the spread of communicable diseases such as HIV/AIDS.

**MITIGATION:** The proponent should encourage and promote HIV/AIDS and health awareness among employees and contractors.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(P) 4	(N) 4	(SE) 4	(M) 2	12 HIGH
<b>Score Considering Mitigation</b>	(ST)1	(L) 1	(M) 2	(M) 2	3 LOW

The overall rating of this impact is high under unmitigated conditions and low under mitigated conditions. Mitigation is recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.

## 6.2 Decommissioning Phase Impacts

All decommissioning phase impacts shall be discussed in this section in terms of the description of the impact as well as effects, likelihood and mitigation.

### 6.2.1 Decommissioning of Operations.

**DESCRIPTION:** It is expected that the proposed Scrap Metal Recycling and Flame Cutting Activities may be operational for decades into the future. and as such may produce new habitats and ecological niches for plants and animals. Upon decommissioning of the facility, these newly established habitats and or niches will vanish.

**MITIGATION:** The proponent would have to ensure that no new habitats are created on site (**Points discussed in section 6.1.1 of the environmental assessment are essential and note-worthy in this regard**). Prior to decommissioning, inspections would have to be carried out to confirm that the taking apart and removal of established onsite infrastructure would not result in the unintended destruction of newly formed habitats and niches.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(ST) 2	(S) 2	(M) 2	(M) 2	8 MODERATE
<b>Score Considering Mitigation</b>	(SP) 1	(L) 1	(SL) 1	(U) 2	5 LOW

The overall rating of this impact is moderate under unmitigated conditions and low under mitigated conditions. Mitigation is recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.



### 6.2.2 Health and Safety.

**DESCRIPTION:** During the Decommissioning Phase similar risks to human beings as with the Operational Phase will be present. All other risks associated with decommissioning must be considered.

**MITIGATION:** The decommissioning of onsite operations can cause serious health and safety risks to workers on site i.e injuries and medical treatment incidents. For this reason, adequate measures must be put in place to ensure safety of staff on site, and includes:

**Mitigation measures discussed in section 6.1.5 of the environmental assessment should be re-implemented in this regard.**

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	(ST) 2	(S) 2	(M) 2	(M) 2	8 MODERATE
<b>Score Considering Mitigation</b>	(SP) 1	(L) 1	(SL) 1	(U) 2	5 LOW

The overall rating of this impact is moderate under unmitigated conditions and low under mitigated conditions. Mitigation is recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.

### 6.2.3 Waste Management.

**DESCRIPTION:** Upon decommissioning waste will be produced in the form of uncategorised scrap and other materials.

**MITIGATION:** All waste should be disposed of appropriately considering the type of waste. No waste should be piled up onsite once decommissioning is completed. The municipal dumpsite should be used for waste. No waste should be buried and littering should be strictly prohibited.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	1	2	2	2	5 LOW
<b>Score Considering Mitigation</b>	1	2	1	1	4 LOW

The overall rating of this impact is low under unmitigated and mitigated conditions. Mitigation is recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.

### 6.3 Rehabilitation Phase Impacts

Rehabilitation phase impacts shall be discussed in this section in terms of the description of the impact as well as effects, likelihood and mitigation.

#### 6.3.1 Environmental Restoration Fund

**DESCRIPTION:** As a good corporate citizen, Kontinental Industrial Supplies (Pty) Ltd. has the responsibility to establish an Environmental Restoration fund for future environmental restoration once the project has reached the end of its life span, in order to fund for a responsible environmental legacy.

**MITIGATION:** The purpose of the Environmental Restoration Fund is to finance activities aimed at ecological restoration of the project site should project activities cease and the site is decommissioned and/or repurposed by the local authority.

	Temporal	Spatial	Severity	Likelihood	Significance Rate
<b>Score Before Mitigation</b>	1	2	2	2	5 LOW
<b>Score Considering Mitigation</b>	1	2	1	1	4 LOW

The overall rating of this impact is low under unmitigated and mitigated conditions. Mitigation is recommended as best practice and as a means of remaining pro-active through operations as well as reducing impacts.

## 7. Environmental Management Plan

### The Environmental Management Plan

An Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the developer/contractor/operator complies with the environmental conditions of approval for the project. The EMP essentially links environmental impacts assessed and project activities into environmental actions to be taken to mitigate assessed impacts.

It is further recommended that Kontinental Industrial Supplies (Pty) Ltd. establishes; 1) Health and Safety Audit Regime 2) an Environmental Management Audit Regime, to be used in combination with this EMP for greater effectiveness.

### Overall EMP Responsibility

Roles and responsibilities in the implementation of the planned Scrap Metal Recycling and Flame Cutting Activities are displayed below in Table 13:

**Table 13: Roles and responsibilities of roles players in the EMP.**

Role Player	Obligation
Proponent	The Proponent is to ensure that mitigation recommendations within the EMP are adhered to, as far as reasonably practical. By checking that all approvals, licenses and permits as required by legislation are obtained before specific activities are carried out.
EAP	Compilation of Scoping Report and EMP. May be involved in external environmental audits.
Environmental Compliance Officer	Oversee the implementation of the EMP. Develop and document an Environmental Management System. Perform environmental compliance (internal) audits and follow-up on corrective actions from incidents to ensure compliance. Should be on the vigilant of emergent impacts not identified in the EMP. This role can be executed by existing staff members.
Ministry of Environment, Tourism and Forestry/ Municipality of Walvis Bay	Enforcement of environmental regulations, EMP obedience inspectors and conduct regular project reviews on environmental and incident reports.

## 8. Operational Phase: EMP

Table 14: Proposed mitigation and monitoring measures for Environmental impacts, aspects and risks during operation

Environmental Impact	Mitigation Measures	Monitoring	Responsibility
<p><b>Impacts on Plants &amp; Animals, Social Impacts and Cultural Heritage.</b></p>	<p>Please note that should any pets be kept onsite, such arrangements should be done in accordance with provisions of the local authority and any national laws as well as by-laws regarding these. Furthermore, any occurrences of strange animals/plants as well as dangerous and/or problematic animals (i.e Honey Bees, Hornets, Nesting Birds, Rodent Pests etc) should be brought to the attention of the Walvis Bay Office of the Ministry of Environment, Forestry and Tourism or the Environmental Management and/or Environmental Health Departments of the Municipality of Walvis Bay without delay. All Invasive Plant Species in terms of the Nature Conservation Ordinance Amendment Act, Act 5 of 1996 should be identified with the assistance of the Walvis Bay Office of the Ministry of Environment, Forestry and Tourism or the Environmental Management of the Municipality of Walvis Bay for removal. In the unlikely event of any heritage or archaeological discovery during the operation of the Scrap Metal Recycling &amp; Flame Cutting activities, the Local Authority and National Heritage Council (NHC) should be contacted immediately for proficient guidance regarding the discovery.</p>	<p>Weekly/Monthly review of Monitoring Interventions / Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.</p>	<p>ECO / Proponent</p>

<p><b>Traffic, Site Access &amp; Security</b></p>	<p>Any changes to existing access routes needs the full consent of the Local Authority. Regular communication between the proponent, neighbouring land users, and the local authority on traffic issues concerning the road leading up to the proposed site should be unending. The road leading up to the proposed site should not be blocked or damaged by any vehicle delivering/collecting scrap metal. All vehicles delivering/collecting scrap metal should be documented, and should be held responsible for any scrap that may fall off during transit, and should pick up such scrap at the earliest detection. Pedestrians transporting scrap metal using trolleys on public roads should be reported to the local traffic authorities and should be reminded about the dangers of their actions.</p> <p>Site access should be restricted and appropriate signage should be put up to warn the public of potential hazards. The proponent should restrict access to the site and the perimeter of the facility should be maintained or improved upon in order to discourage trespassing. All visitors to the site should be documented and should undergo a mandatory site induction.</p>	<p>Weekly/Monthly review of Monitoring should be done through Environmental Incidents Interventions / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.</p> <p>All vehicles delivering/collecting scrap metal should be documented and the quantities of scrap delivered/collected as well. This information should be compiled into a report monthly.</p> <p>Regular communication between the proponent, neighbouring land users, and the local authority on traffic issues concerning the road leading up to the proposed site should be unending. These meetings should be documented and should take place at least once annually.</p>	<p>ECO / Proponent</p>
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<p><b>Waste Management &amp; Pollution Control</b></p>	<p>All waste onsite should be disposed of in receptacles that promote good housekeeping and can hold all waste until such a time that the waste is to be removed from the site without causing any pollution. All waste is to be removed from the site on a regular basis and should under no circumstances be allowed to accumulate to levels deemed inappropriate by local authorities. Contaminated and or Hazardous Wastes should be disposed of in accordance with Local Authority Requirements. No waste should be buried and littering should be strictly prohibited. Drip trays should be placed under oil leaking equipment/machinery and the contents of these trays should be disposed of in a manner that is approved by the local authority. The proponent should practice the Waste Management hierarchy and not accept any scrap items where it is evident from the start that those items would not be of much scrap metal beneficial use but would rather result in the accumulation of waste on site. While a culture of good housekeeping is to be cultivated and maintained, quantities of all wastes should be recorded and these records of are to be maintained in a manner that allows for unhindered future retrieval at a moment's notice.</p>	<p>Weekly/Monthly review of Monitoring should be done through Environmental Interventions / Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.</p> <p>Quantities of waste should be documented and compiled into a report monthly/qauterly.</p>	<p>ECO / Proponent</p>
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<p><b>Fire and Explosion Hazards</b></p>	<p>Initially, the proponent should develop Safe Working Procedures for all work to be conducted onsite as well as an Emergency Response Plan that is to be followed in the event of emergencies that may arise from any Fire and Explosion hazards onsite. Drills should routinely be carried out on the suggested Emergency Response Plan in order to assess its effectiveness. Material and Safety Data Sheets (MSDS) should be readily available onsite for all chemicals and substances at all times, and the contents of these documents should be adhered to. MSDS documents as well as relevant industry best practices should be considered in the development of the recommended Safe Working Procedures and Emergency Response Plan. Literature that may be of use to the development of the said emergency response plan includes (non-exhaustive list):</p> <ul style="list-style-type: none"> <li>• The safe use of compressed gases in welding, flame cutting and allied processes HSG139 HSE Books 1997 ISBN 978 0 7176 0680 1 <a href="http://www.hse.gov.uk/pubns/books/HSG139.htm">www.hse.gov.uk/pubns/books/HSG139.htm</a></li> <li>• The safe use of compressed gases in welding, flame cutting and allied processes HSG139 HSE Books 1997 ISBN 978 0 7176 0680 1 <a href="http://www.hse.gov.uk/pubns/books/HSG139.htm">www.hse.gov.uk/pubns/books/HSG139.htm</a></li> <li>• Industrial gas cylinder manifolds and distribution pipework/pipelines (excluding acetylene) CP4(rev3) Code of Practice British Compressed Gases Association 2005</li> <li>• The safe use of oxy-fuel gas equipment (individual portable or mobile cylinder supply) CP7(rev5) Code of Practice British Compressed Gases Association 2008</li> <li>• Guidance for the storage of gas cylinders in the workplace Guidance Note GN2(rev4) British Compressed Gases Association 201</li> </ul> <p>Corrosive, oxidising and reactive chemicals present similar hazards and require similar control measures as flammable substances. All incidents and near-misses with regard to Fire and Explosion Hazards should be; documented, investigated the</p>	<p>Weekly/Monthly review of Monitoring should be done through Health and Safety Interventions / Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.</p>	<p>ECO / Proponent</p>
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	<p>outcomes/corrective action implemented in order to prevent re-occurrence by all means. There are a range of instruments/measures that can be used to bring a fire under control or avoid a fire entirely. These include but are not limited to (non-exhaustive list):</p> <ul style="list-style-type: none"> <li>• Detailed operational procedures for hazardous substance handling as well as related emergency protocols endorsed and supported by management. These need to be reviewed from time to time and must be complimented by regular drills to assess and improve upon their effectiveness.</li> <li>• Provision of manual firefighting equipment that is easily accessible and easy to use. Training on the use of the equipment should be provided.</li> <li>• Fire and emergency systems that are both audible and visible where practically possible.</li> <li>• Storing of flammables away from ignition sources and oxidizing materials.</li> <li>• No cell phones or Smoking allowed at high risk areas onsite to avoid distractions and unwanted ignition of fires.</li> <li>• General good housekeeping practices as well as a culture of safety and compliance to procedures, rules and protocols within the construction team should be fostered.</li> </ul>		
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<p><b>Health and Safety of Operation Personnel</b></p>	<p>It is the responsibility of the proponent to comply with the provisions set forth in the Labour Act 11 of 2007, with special attention to Chapter 4 that primarily outlines Health and Safety in the work place, as well as all other national legislations in this regard.</p> <p>Recommended mitigating measures include, but not limited to (Non-exhaustive list):</p> <ul style="list-style-type: none"> <li>• Covid-19 regulations as set forth by the National Authorities should be adhered to on site without exception.</li> <li>• Periodic internal safety compliance audits.</li> <li>• Health and Safety training and speciality programs should be provided as needed to ensure workers are oriented to the specific hazards of individual work assignments and all other present hazards.</li> <li>• Hazard Risk Identification within Job Profiles/Machinery/Equipment/Work Areas and Tasks that are to be performed.</li> <li>• Appointment of Safety Officers as custodians of safety within the workplace. In addition to these, Peer Educators and Health and Safety Representatives can also be nominated in constituent working teams in order to foster a culture of health and safety at the construction site.</li> <li>• Documented Safe Operational and Work Procedures as well as Emergency (including Medical) Procedures and drills. These need to be periodically reviewed for their effectiveness and should be constantly improved upon whenever the opportunity presents itself, particularly following an event of note (including near-misses).</li> <li>• Daily crew safety talks prior to the commencement of every shift.</li> <li>• Monthly/Weekly Peer education topics encouraging healthy lifestyle choices, safety at the construction site and outcomes of investigations into near-misses and incident investigations.</li> <li>• Noise levels should comply with the SANS Code of Practice 10083-2013 (recommended noise levels). SANS 10083:2012 – The Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes.</li> </ul>	<p>Weekly/Monthly review of Monitoring should be done through Health and Safety Interventions / Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.</p>	<p>ECO / Proponent</p>
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	<ul style="list-style-type: none"><li>• Good housekeeping practices in order to avoid unforeseen hazards and obstructions.</li><li>• General permits to work and Personal Protective Equipment/Clothing</li><li>• Conspicuous signs displaying all potential hazards, PPE requirements, assembly points, waste receptacles of all kinds, emergency numbers for respective emergencies that may arise, MSDS Sheets etc.</li><li>• Communication of lessons learnt from previous incidents and corrective action taken to avoid re-occurrence as soon as these are known following an investigation.</li><li>• Investigations into the improvement of current practices from a health and safety perspective.</li></ul>		
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<p><b>HIV/AIDS and Employee Wellness</b></p>	<p>The proponent should encourage and promote HIV/AIDS and health awareness among O&amp;M employees and contractors.</p>	<p>Weekly/Monthly review of Monitoring should be done through documenting of HIV/AIDS and Employee Wellness Interventions taken .</p>	<p>ECO / Proponent</p>
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## 9. Decommissioning EMP

Table 15: Proposed mitigation and monitoring measures for Environmental impacts, aspects and risks during decommissioning

Environmental Impact	Mitigation Measures	Monitoring	Responsibility
<b>Decommissioning of Operations</b>	The proponent would have to ensure that no new habitats are created on site (Points discussed in section 6.1.1 of the environmental assessment are essential and note-worthy in this regard). Prior to decommissioning, inspections would have to be carried out to confirm that the taking apart and removal of established onsite infrastructure would not result in the unintended destruction of newly formed habitats and niches.	Weekly/Monthly review of Monitoring should be done through Environmental Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.	ECO / Proponent
<b>Health and Safety</b>	All waste should be disposed of appropriately considering the type of waste. No waste should be piled up onsite once decommissioning is completed. The municipal dumpsite should be used for wastes that can be accommodated in this regard, waste that cannot be disposed of at the municipal dump site should be discarded off appropriately at such adequate facilities. No waste should be buried and littering should be strictly prohibited.	Weekly/Monthly review of Monitoring should be done through Health & Safety Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.	ECO / Proponent
<b>Waste Management &amp; Pollution Control</b>	All waste should be disposed of appropriately considering the type of waste. No waste should be piled up onsite once decommissioning is completed. The municipal dumpsite should be used for waste. No waste should be buried and littering should be strictly prohibited.	Weekly/Monthly review of Monitoring should be done through Environmental Incidents / Non-conformities reported as well as corrective action taken should be documented in a report for auditing purposes.	ECO / Proponent

## 10. Rehabilitation EMP

Table 16: Proposed mitigation and monitoring measures for Environmental impacts, aspects and risks during rehabilitation

Environmental Impact	Mitigation Measures	Monitoring	Responsibility
<b>Environmental Restoration Fund</b>	The purpose of the Environmental Restoration Fund is to finance activities aimed at ecological restoration of the project site should project activities cease repurposed by the owner.	Annual review and monitoring.	ECO / Proponent

## **11. Conclusion**

It is the view of the Environmental Assessment Practitioner that the project is granted environmental clearance from the authorities on condition that the Environmental Management Plan is implemented and adhered, and possibly further enhanced with the implementation of a functioning Health, Safety and Environmental Management System.

## 12. Reference

Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling, 2008

The safe use of compressed gases in welding, flame cutting and allied processes HSG139 HSE Books 1997 ISBN 978 0 7176 0680 1 [www.hse.gov.uk/pubns/books/HSG139.htm](http://www.hse.gov.uk/pubns/books/HSG139.htm)

The safe use of compressed gases in welding, flame cutting and allied processes HSG139 HSE Books 1997 ISBN 978 0 7176 0680 1 [www.hse.gov.uk/pubns/books/HSG139.htm](http://www.hse.gov.uk/pubns/books/HSG139.htm)

Industrial gas cylinder manifolds and distribution pipework/pipelines (excluding acetylene) CP4(rev3) Code of Practice British Compressed Gases Association 2005

The safe use of oxy-fuel gas equipment (individual portable or mobile cylinder supply) CP7(rev5) Code of Practice British Compressed Gases Association 2008

Guidance for the storage of gas cylinders in the workplace Guidance Note GN2(rev4) British Compressed Gases Association 201

Namibia Statistics Agency: Erongo Regional Profile, 2011



