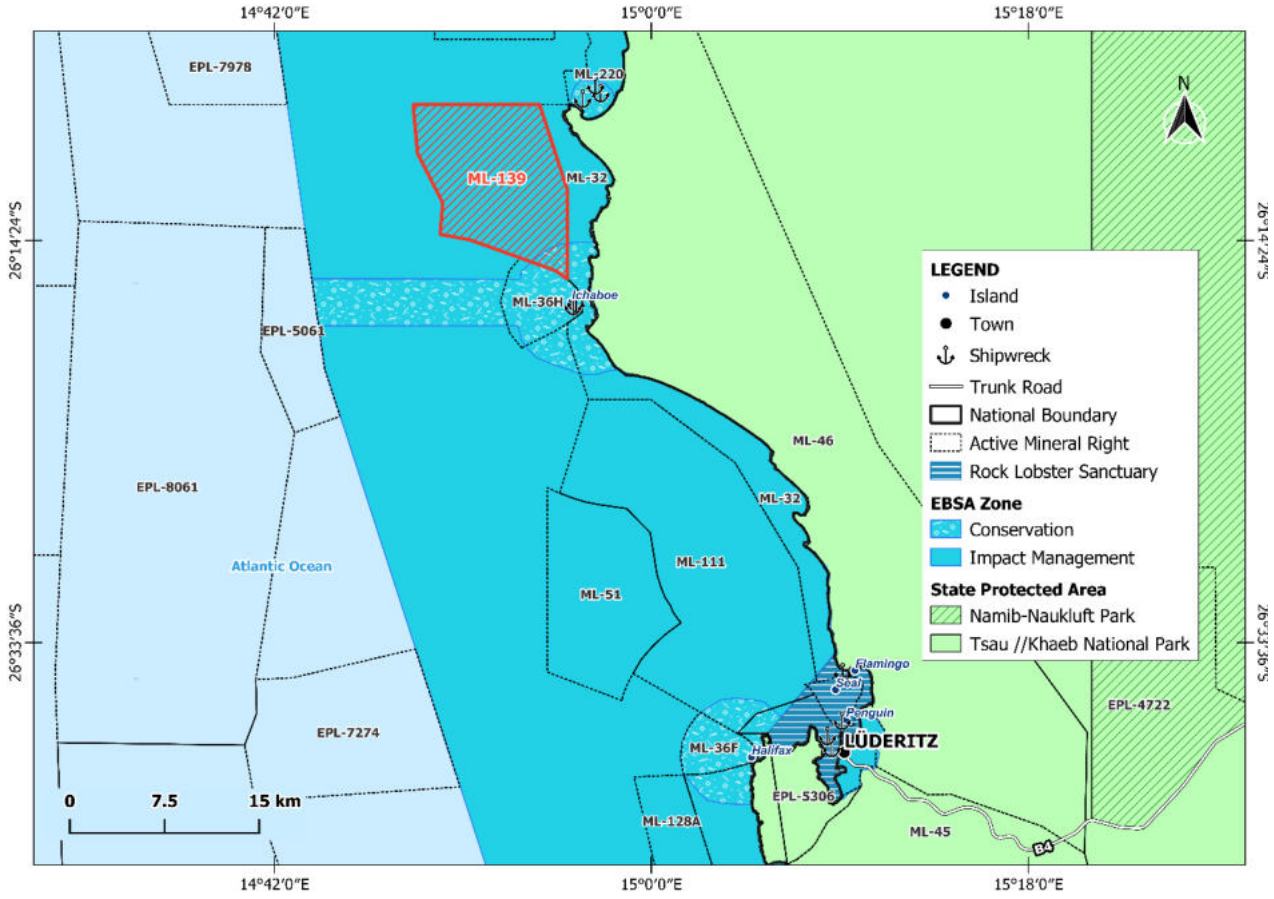
APP-002677 (17 January 2024)

IMPLEMENTATION OF AND COMPLIANCE WITH THE UPDATED (*2017*) ENVIRONMENTAL MANAGEMENT PLAN FOR MARINE DIAMOND EXPLORATION AND MINING BY DIAMOND FIELDS (NAMIBIA) (PTY) LTD IN MINING LICENSE (ML) 139, LŰDERITZ AREA, //KARAS REGION, NAMIBIA



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Prepared by:

environmental consulting

Prepared for:

DIAMOND FIELDS (NAMIBIA) (PTY) LTD

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ABBREVIATIONS / ACRONYMS / SYMBOLS / UNITS

The following is a list of the abbreviations, acronyms, symbols, and units used in this Report:

AIDS	Acquired Immunodeficiency Syndrome
AU	African Union
AUV	Autonomous Underwater Vehicle
BCC	Benguela Current Convention
BVI	British Virgin Islands
CBD	Convention on Biological Diversity
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea
DEA	Directorate of Environmental Affairs
DEAF	Directorate of Environmental Affairs and Forestry
DFN	Diamond Fields (Namibia) Pty Ltd
EAF	Ecosystems Approach to Fisheries Management
EAP	Environmental Assessment Practitioner
EAPAN	Environmental Assessment Professionals of Namibia
EBSA	Ecologically or Biologically Significant Marine Area
ECC	Environmental Clearance Certificate
ED	Executive Director
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
ESIA	Environmental and Social Impact Assessment
GRN	Government of the Republic of Namibia
ha	hectare
HIV	Human Immunodeficiency Virus
I&AP	Interested and Affected Party
IBA	Important Bird Area
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
IEMA	Institute of Environmental Management and Assessment
IFC	International Finance Corporation
ILO	International Labour Organization
IMO	International Martime Organization
JBDM	JBDM Ltd
km	kilometre
LAC	Legal Assistance Centre
m	Metre
MARPOL	International Convention for the Prevention of Pollution from Ships
MAWF	Ministry of Agriculture, Water and Forestry
MAWLR	Ministry of Agriculture, Water and Land Reform
MET	Ministry of Environment and Tourism
MEFT	Ministry of Environment, Forestry and Tourism
MFMR	Ministry of Fisheries and Marine Resources
ML	Mining License
MME	Ministry of Mines and Energy
MPA	Marine Protected Area
MUCH	Maritime and Underwater Cultural Heritage
MV	Motor Vessel
NamPort	Namibian Ports Authority
NCE	Namibia Chamber of Environment
NDC	Namibian Diamond Company (Pty) Ltd
NDP5	National Development Plan 5
NHC	National Heritage Council of Namibia
NIMPA	Namibian Islands' Marine Protected Area
NMPCP	National Marine Pollution Contingency Plan
OPRC	Oil Pollution Preparedness, Response and Co-operation
RBS	Risk-Based Solutions

RMP	Radiation Management Plan
ROV	Remotely Operated Vehicle
SA	South Africa
SADC	Southern African Development Community
SAR	(International Convention on Maritime) Search and Rescue
SEA	Strategic Environmental Assessment
SOLAS	(International Convention for the) Safety of Life at Sea
TSX	Toronto Stock Exchange
UK	United Kingdom
UN	United Nations
UNAM	University of Namibia
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

1 Introduction

1.1 Background

JBDM Ltd (JBDM) is a British Virgin Islands (BVI) incorporated company with head office in Mauritius. In 2023, JBDM acquired Namibian marine mining assets in the form of Diamond Fields (Namibia) (Pty) Ltd (DFN) with mid-water Mining License (ML) 111 and ML139, as well as the Namibian Diamond Company (Pty) Ltd (NDC) with shallow-water ML32.

During 2021 to 2022, the majority shareholder of Diamond Fields (Namibia) (Pty) Ltd, Kimberley Overseas (held by the Canadian TSX (Toronto Stock Exchange)-Venture listed company Diamond Fields Resources Inc.), shifted its focus to gold exploration and mining with the acquisition of three gold projects in West Africa.

The Jean Boulle Group (see https://jeanboullegroup.com/), with various mining interests through Greenland to Madagascar but with a diamond primary focus through JBDM, purchased the available shareholding in DFN which was released in June 2023 by Diamond Fields Resources Inc. (now DFR Gold Inc.).

Concerning Namibia, JBDM has acquired not only the controlling shares in Diamond Fields (Namibia) (Pty) Ltd which holds marine ML111 and ML139, but also a 70% stake in Namibian Diamond Company (Pty) Ltd which holds marine ML32.

ML111 covers an area of 31175.3998 hectares (ha); the ML was granted to Diamond Fields (Namibia) (Pty) Ltd by the Ministry of Mines and Energy (MME) on 04 December 2015 for a period of 10 years. ML139 was granted to DFN by MME on 05 November 2007; the ML comprises 13587.8989 ha and is valid until 04 November 2029 (Murphy and Amukeshe, 2022; https://portals.landfolio.com/namibia/; Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm., 28 August 2023).

> According to Diamond Fields (Namibia) (Pty) Ltd (2020), mining operations on DFN's marine diamond concessions were conducted on an irregular basis under various joint venture and contracting arrangements between 2001 and 2004. During late 2004, DFN acquired its own twin airlift mining vessel, MV DF Discoverer, which began mining on the licence area in mid-2005. However, as result of the global economic downturn in 2008, all operations were suspended. At the time (2020), it was foreseen that with the conclusion of the Joint Venture Agreement with IMDH (International Mining and Dredging Holdings Group), DFN was to start marine diamond mining with ongoing exploration operations in the ML139.

An Environmental Clearance Certificate (ECC) was issued by the Office of the Environmental Commissioner, Ministry of Environment and Tourism (MET) (now Ministry of Environment, Forestry and Tourism (MEFT)) on 03 July 2014 (see Risk-Based Solutions (RBS), 2017).

In May 2017, Risk-Based Solutions (RBS) prepared a report entitled: *Diamond Fields (Namibia) (PTY) LTD Final Updated Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) Report to Support the Application for Environmental Clearance Certificate (ECC) for Marine Diamond Mining and Exploration in the Mining License (ML) No. 139, Lüderitz Area, Southern Namibia*.

The renewed ECC was issued by the Office of the Environmental Commissioner on 20 September 2017 and expired on 20 September 2020 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

On 16 September 2020, Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, applied for the renewal of the ECC. Diamond Fields (Namibia) (Pty) Ltd was granted **ECC-01152** by the Office of the Environmental Commissioner, MEFT, for marine diamond exploration and mining in ML139 on 05 January 2021 (ECC-01152 expired on 05 January 2024) (see Annexure A). Bi-Annual Environmental Reports (in the form of letters informing the Permanent Secretary/Executive Director's Office of ML 139 NIL RETURN) have been submitted to the MEFT during the past three (3) years (2021-2023) (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

An application for the renewal of ECC-01152 (240117002677) was submitted to the MEFT, on 17 January 2024 (see Annexure A). The application was verified (**APP-002677;** 18 January 2024) and MEFT requested

that the following documents be uploaded: i) *updated EMP to effect amendment*; ii) *confirmation of screening notice received (through email) in terms of assessment procedures (Section 35 (1)(a)(b) of the Environmental Management Act, No 7 of 2007)* (see Annexure A); iii) *preliminary site map with coordinates (decimal degrees) and a legend*; iv) *copy of the previous Environmental Clearance Certificate issued in terms of Section 37(1)(a) of EMA*; and v) *CV of Environmental Assessment Practitioner (EAP)*.

1.2 Project Location

ML139 is located within the mid-shallow marine environment (20 to 120 metres (m)), 47 kilometres (km) north of Lüderitz (Diamond Fields (Namibia) (Pty) Ltd, 2020), //Karas Region, Namibia.

The license area, 13587.8989 ha in size, falls within the Namibian Islands' Marine Protected Area (NIMPA), and to the south and north of the line fish and rock lobster sanctuaries, respectively. ML139 is bordered by ML103A (Samicor Diamond Mining (Pty) Ltd) 5.7 km (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.) to the north, ML220 (L K Mining (Pty) Ltd) to the north-east, ML32 (Namibian Diamond Company (Pty) Ltd) to the east, and ML36H (Samicor Diamond Mining (Pty) Ltd) to the south. The waters of the Port of Lüderitz, operated by the Namibian Ports Authority (NamPort) can be found further south (see Figure 1).

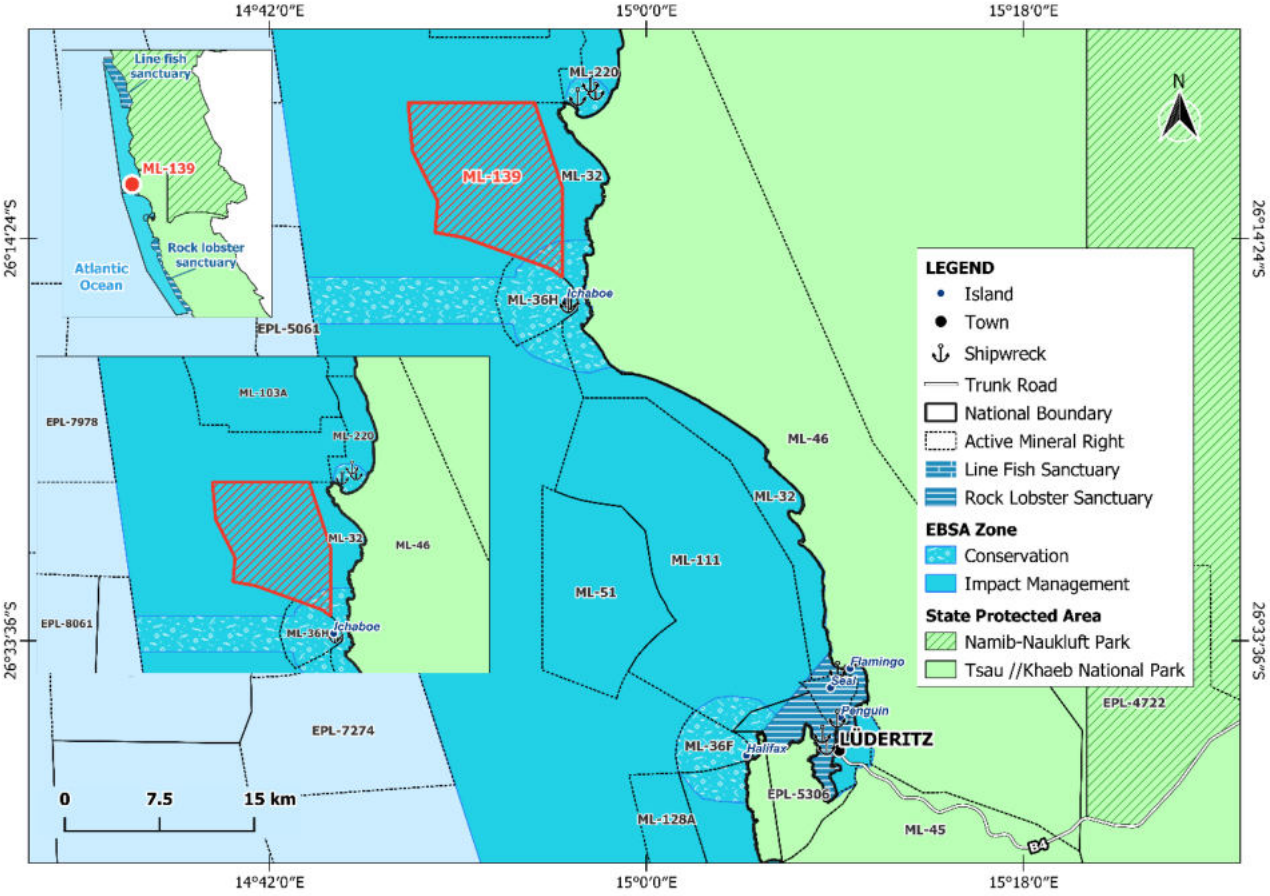


Figure 1: Map showing the location of Mining License (ML) 139, Lüderitz area, //Karas Region, Namibia (*Source: A. N. Nicodemus, GIS Specialist, 15 December 2023*).

Fourteen (14) islands can be found close to the shore in the area between Walvis Bay and the Orange River mouth. These include: Hollamsbird, Mercury, Ichaboe, Seal, Penguin, Halifax, Long North, Long South, Possession, Albatross, Pomona, Plumpudding, Sinclair, and Little Roastbeef (Atlas of Namibia Team, 2022). Ichaboe Island is closest to ML139 (see Figure 1).

The NIMPA was declared in 2009 (Government of the Republic of Namibia (GRN), 2009). It stretches for 400 kilometres (km) from Meob Bay in the north (24°38'S) to Chamais Bay in the south (27°57'S). The NIMPA

extends roughly 30 km from the high water mark into the sea; Lüderitz is roughly at its centre (Currie *et al*., 2009; Kemper and Roux, 2023).

Currie *et al*. (2009) indicated that it is intended that the Marine Protected Area (MPA) will contribute to: i) *sound management and conservation of marine resources under Namibia's jurisdiction*; ii) *the protection of spawning and nursery grounds of the commercially exploited rock lobster (Jasus lalandii) and that of certain fish stocks and other marine resources, to promote stock recovery*; iii) *protection of the foraging requirements of top predators in the Benguela Upwelling Ecosystem, including a number of globally threatened seabirds*; iv) *MFMR's* (Ministry of Fisheries and Marine Resources) *"precautionary principle" management strategy, whereby representative habitats are set aside to mitigate potential future threats, as well as MFMR's legal obligations to EAF* (Ecosystems Approach to Fisheries Management) *management*; v) *improved vigilance with regard to risks posed by shipping-related threats, such as oil spills*; vi) continued collection of oceanographic and biological data from offshore island sites, constituting important monitored indicators of the state of Namibia's marine environment and coastal ecosystem (contributing an integral link to Namibia's environmental monitoring system); vii) awareness, in a regional context, regarding novel approaches to the declaration and management of offshore MPAs; and viii) *enhancement of Namibia's international relations by illustrating steadfast commitment to international environmental treaties, regional and national needs and requirements, and international law.*

Kemper and Roux (2023) noted that the overall extent and shape of the NIMPA is based on known foraging ranges of breeding African Penguins that nest on some of the islands (i.e. Ichaboe, Halifax and Possession Islands) (Currie *et al*., 2009; Ludynia *et al*., 2012), but also covers large proportions of the key foraging ranges of other threatened seabirds breeding there (Ludynia *et al*., 2012). Also, the NIMPA aims to protect key habitats of resident and migratory marine mammals and explicitly prohibits marine operations, the erection of structures, and the fixing of moorings or lines, that obstruct known cetacean pathways within the NIMPA (see Part 5 Regulation 13 of the Regulations relating to Namibian Islands' Marine Protected Area, 2012).

The NIMPA is dived into four zones of protection (Currie *et al*., 2009). Zone 4 represents areas of priority conservation and highest protection status (i.e. on the islands, islets, rocks, rock lobster sanctuaries and line fish sanctuaries). Zone 3 restrictions are enforceable to a perimeter of 120 m (or less in specified cases in the approved management zonations) around each island, islet or rock. Zone 2 enforceable conditions apply to near-shore and on-shore mining areas up to a water depth of 30 m and Zone 1 represents the buffer zone with generalised and the fewest restrictions (GRN, 2012).

According to Kemper and Roux (2023), the MFMR is in the process of revising the Regulations relating to NIMPA (2012), with the aim of updating and aligning the Regulations to other existing legislation and to address some gaps and inconsistencies in the current legislation.

Important Bird Areas (IBAs) are areas that are considered critical for birds at a global or regional scale. The areas do not carry legal weight, but they provide decision-makers with an inventory of areas of high bird conservation importance. In Namibia, there are 19 designated global IBAs; three of these are found in the broader project area (Barnes, 1998; BirdLife International, 2023; see Kemper and Roux, 2023): Ichaboe Island IBA (NA016); the Lüderitz Bay Islands IBA (NA017) (consisting of four islands: Flamingo Island (joined to the mainland); Seal Island; Penguin Island; and Halifax Island); and Possession Island IBA (NA018). Note that the broader project area also falls entirely into a proposed marine IBA, the Sperrgebiet Marine IBA (http://maps.birdlife.org/marineibas/; see Kemper and Roux, 2023).

The NIMPA was also proposed as a Type 2 Ecologically or Biologically Significant Marine Area (EBSA) (see https://cmr.mandela.ac.za/Research-Projects/EBSA-Portal/Namibia/Namibian-EBSA-Status-Assessment-Management; and MARISMA EBSA Workstream, 2020).

EBSAs are areas that provide crucial services to an ecosystem or components thereof and must meet a number of stringent criteria to qualify. These criteria evaluate a site's uniqueness (which includes the occurrence of endemic species), its significance for species life histories, threatened species and/or habitats, the proportion of sensitive site habitats and their susceptibility to human-induced degradation, its support of biological productivity and biodiversity, as well as a site's state of naturalness/degradation (Appiott *et al*,. 2016; see Kemper and Roux, 2023).

As part of a regional marine spatial planning management and governance programme, headed by the Benguela Current Convention (BCC), seven EBSAs in Namibia have been designated or are being proposed (four are situated in Namibia, one is shared with Angola, and two are shared with South Africa).

The Namibian Islands EBSA currently only includes the four main seabird breeding islands (i.e. Mercury, Ichaboe, Halifax and Possession). A proposal to extend the EBSA to include the entire NIMPA (and thus the key seabird foraging areas) has been submitted to the Convention on Biological Diversity (CBD) for ratification in December 2022 (MARISMA EBSA Workstream 2020; see Kemper and Roux, 2023).

On 11 Oktober 2023, the "Namibian Islands' Marine Protected Area (NIMPA) Plus" Project was launched in Lűderitz. The aim of the project is to protect NIMPA, which is under threat from pollution, climate change, ineffective management, and a society disconnected from marine values. The NIMPA+ project motto is ''Strengthening Namibia's marine protected area and improving the livelihood opportunities of the coastal communities''. The ''overall objective of the project is to strengthen the management of the NIMPA to secure important populations of biodiversity and marine ecosystem services, in turn securing income opportunities for coastal communities and diversifying their livelihood opportunities, while working towards the designation of more MPAs and other effective area-based conservation measures (OECMs) at the national level''. The project's four specific objectives are to: i) strengthen the formal management system of NIMPA and the capacities needed to implement it effectively; ii) engender broad support for NIMPA from civil society and engaged coastal communities; iii) strengthen and diversify coastal livelihoods; and iv) support the designation of two new MPAs' based on the successes of NIMPA.

The Namibia Nature Foundation (NNF), together with its consortium partners Blue Marine Foundation, GRID Arendal (a Centre collaborating with UNEP), the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB), the Namibian Foundation for the Conservation of Seabirds (NAMCOB), COSDEC (Community Skills Development Centre), and the South Atlantic Environmental Research Institute, in partnership with the government, will be implementing the project funded by Blue Action Fund, OCEANS5; Albatross Task Force, Shark Conservation Fund, NCE (Namibia Chamber of Environment), and Debmarine Namdeb Foundation (see https://www.facebook.com). The project commenced in April 2023 and is set to be implemented over a period of five years (see https://iono.fm/e/1368971).

1.3 Terms of Reference

LM Environmental Consulting was appointed by Diamond Fields (Namibia) (Pty) Ltd to update the Legislative Requirements and Environmental Management Plan (EMP) (as applicable) in aid of an application for the renewal of the Environmental Clearance Certificate (ECC) on 14 December 2023.

1.4 Environmental Assessment Practitioner

The author of this Report is Dr Lima Maartens who has more than 31 years' experience in natural resource management (*she gained her doctorate (Ph.D.) in Fisheries Science from Rhodes University, South Africa (SA) while working for the Namibian Ministry of Fisheries and Marine Resources (MFMR) in 2000*), lecturing (*University of Namibia (UNAM)*), environmental science and management (*De Beers Marine Namibia and the Canadian Forsys Metals Corp*), and consulting (*LM Environmental Consulting was established by Dr Maartens in October 2009*).

Sectors that she worked in as an Environmental Assessment Practitioner (EAP) include: exploration (including offshore oil and gas); mining and quarrying; renewable energy (solar and wind); tourism; manufacturing; agriculture; aqua- and mariculture; township, property (including medicine storage facilities) and waterfront developments, transport (rail and road), and infrastructure.

Dr Maartens is registered as a Lead Practitioner and Reviewer with the Environmental Assessment Professionals of Namibia (EAPAN) (she served on the Executive Committee during 2016/17), an Associate Member and Environmental Auditor with the Institute of Environmental Management and Assessment (IEMA) in the United Kingdom (UK), a Full Member of the Namibia Chamber of Environment (NCE), and a Member of the Namibia Scientific Society.

She has published five peer-reviewed scientific research articles (and three as co-author), six popular articles (and one as co-author), one book chapter (and one book chapter as co-author), 163 technical reports (LM Environmental Consulting), three technical reports (for De Beers Marine Namibia), and one conference paper.

2 Regulatory Framework - Updated

The most pertinent legislation (Ruppel and Ruppel-Schlichting, 2022; and Legal Assistance Centre (LAC), 2023a, b), with the aim of informing Diamond Fields (Namibia) (Pty) Ltd of the legal requirements pertaining to exploration and mining activities in ML139 is listed in Table 1.

Table 1: Regulatory framework for Diamond Fields (Namibia) (Pty) Ltd's exploration and mining activities in Mining License (ML) 139, north north-west of Lűderitz, //Karas Region, Namibia.

National Law
Acts of Parliament, Regulations, Ordinances, Proclamations
The Constitution of the Republic of Namibia 1990 (and First Amendment Act 34 of 1998, Second Amendment Act 7 of 2010, and Third Amendment Act 8 of 2014)
Employees' Compensation Act 30 of 1941 (as amended in South Africa prior to Namibian independence) (Amendment Act 5 of 1995 amends the Act substantially and changes its name from the Workmen's Compensation Act to the Employees' Compensation Act) (and the General Regulations 1961 (as amended))
Merchant Shipping Act 57 of 1951 (and amendments: Act 7 of 1991, Namibian Ports Authority Act 2 of 1994, and Wreck and Salvage Act 5 of 2004) (and the Record Book Regulations 1977 (amended 1998), Previous Examination Regulations for Certificates of Competence as Marine Motormen and Fishermen (repealed in 2004), Construction and Equipment Regulations for fishing vessels 2002, Manning of Ships Regulations 2003, Certificates of Qualifications Regulations 2004 (amended in 2007), Merchant Shipping Fees Regulations 2009, and Merchant Shipping (Radio Installations) Regulations 2010)
Sea Shore Ordinance 37 of 1958
Soil Conservation Act 76 of 1969 (as amended in South Africa to March 1978)
Hazardous Substance Ordinance 14 of 1974 (and the General Regulations 1979; no post-independence regulations have been promulgated)
International Health Regulations Act 28 of 1974 (as amended to December 1977); the International Health Regulations were replaced in turn by the International Health Regulations, 2005, which entered into force internationally on 15 June 2007 (*Source: World Health Organisation (WHO)*). Namibia is bound by these 2005 Regulations from that date in accordance with Articles 21(a) and 22 of the WHO Constitution.
Nature Conservation Ordinance 4 of 1975 (and the Regulations Relating to Nature Conservation 1976 and the amended Regulations)
Atmospheric Pollution Prevention Ordinance 11 of 1976 (Regulations are authorised by several sections of the Act; no post-independence regulations have been promulgated)
Marine Traffic Act 2 of 1981 (as amended by the Marine Traffic Amendment Act 5 of 1983, the Marine Traffic Amendment Act 15 of 1991, and the Namibian Ports Authority Act 2 of 1994)
Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981 (as amended by the Prevention and Combating of Pollution of the Sea by Oil Amendment Act 59 of 1985 (RSA), Prevention and Combating of Pollution of the Sea by Oil Amendment Act 63 of 1987 (RSA), and Act 24 of 1991, the Namibian Ports Authority Act 2 of 1994; and Act 5 of 2019)
Territorial Sea and Exclusive Economic Zone of Namibia Act 3 of 1990 (and Territorial Sea and Exclusive Economic Zone of Namibia Amendment Act 30 of 1991)
Petroleum Products and Energy Act 13 of 1990 (as amended by the Petroleum Products and Energy Amendment Act 29 of 1994, Act 3 of 2000, and Act 16 of 2003) (and the Regulations relating to the purchase, sale, supply, acquisition, possession, disposal, storage, transportation, recovery and re-refinement of used mineral oil 1991, Petroleum Products Regulations 2000 (amended in 2002 and 2016), Regulations for arbitration procedures 2003, Regulations on funding of approved agencies 2004 (withdrawn 2005) (GN 247/2013 purports to amend the regulations in GN 230/2004, leaving the correct text of these regulations uncertain), and the Regulations relating to the reselling price of petrol and petrol products (issued frequently, with each one revoking or replacing the previous one)
Foreign Investment Act 27 of 1990 (and amendment Act 24 of 1993) (and the Regulations 1992)
Regional Councils Act 22 of 1992 (and Amendment Acts 17 of 1997, 30 of 2000, 12 of 2002, 12 of 2010, 16 of 2010, and 7 of 2017) (and the Regulations: Commercialisation Regulations 2001; Joint Business Venture Regulations 2001; and Tender Board Regulations 2001)
Local Authorities Act 23 of 1992 (and amendments) (and the Model Pound Regulations 1994, the Model Electricity Supply Regulations 1996, Model Water Supply Regulations 1996, Model Sewerage and Drainage Regulations 1996, Model Regulations for the Control of Dogs in Local Authority Areas 2008, Commercialisation Regulations 2001 (amended in 2007), Joint Business Venture Regulations 2001 (amended in 2007), and Tender Board Regulations 2001 (replaced in 2011), and Recruitment and Selection Regulations for Local Authority Councils 2019)
Local Authorities Act 23 of 1992 & Town of Lüderitz: Regulations relating to waste management 2004 & Environmental Management Plan for the Operation and Management of the existing Lüderitz Dumpsite in //Kharas Region (see Green Gain Environmental Consultants cc, 2021) and Comprehensive Environmental Management Plan for the Operations and Maintenance of the Existing Effluent Treatment Plant in Lüderitz, //Karas Region (see Excel Dynamic Solutions (Pty) Ltd, 2023). Note that Environmental and Social Impact Assessments (ESIAs) are currently underway for the development of new industrial waste treatment and disposal facilities at Lüderitz, as well as Walvis Bay (Knight Piésold (Pty) Ltd, pers. comm.).

Minerals (Prospecting and Mining) Act 33 of 1992 (and Minerals (Prospecting and Mining) Amendment Act 8 of 2008)
Namibian Ports Authority Act 2 of 1994 (as amended by the National Transport Services Holding Company Act 28 of 1998, the Namibian Ports Authority Amendment Act 12 of 2000, and the State-owned Enterprises Governance Act 2 of 2006) (and the Port Regulations 2001) & Environmental Management Plan for the Operations of the Port of Lüderitz (Faul *et al*., 2019).
Social Security Act 34 of 1994 (as amended by the State-owned Enterprises Governance Act 2 of 2006/ Public Enterprises Governance Act 2 of 2006, and the Labour Act 11 of 2007 (and the General Regulations 1995, and amendments))
Arms and Ammunition Act 7 of 1996 (and amendments: Combating of Domestic Violence Act 4 of 2003; and General Law Amendment Act 14 of 2005) (and the General Regulations 1998)
Namibia Water Corporation Act 12 of 1997 (and amendments: Namibia Water Corporation Amendment Act 17 of 2001; Water Resources Management Act 24 of 2004 (it never came into force and has been repealed by the Water Resources Management Act 11 of 2013); State-owned Enterprises Governance Act 2 of 2006 (re-named the Public Enterprises Governance Act 2 of 2006); and the Water Resources Management Act 11 of 2013)
Affirmative Action (Employment) Act 29 of 1998 (as amended by Act 6 of 2007 and the Labour Act 11 of 2007) (and the General Regulations 1999)
Diamond Act 13 of 1999 (and the Regulations relating to the Search of Employees and Visitors in Diamond Areas 1950; the Diamond Regulations 2000; and the Amendment of the Diamond Regulations 2003)
Road Traffic and Transport Act 22 of 1999 (as amended by the Road Traffic and Transport Amendment Act 6 of 2008) (and the Road Traffic and Transport Regulations 2001)
Marine Resources Act 27 of 2000 (and the Regulations relating to the Namibian Islands' Marine Protected Area 2012)
Wreck and Salvage Act 5 of 2004
Research, Science and Technology Act 23 of 2004 (amended by the State-owned Enterprises Governance Act 2 of 2006/Public Enterprises Governance Act 2 of 2006) (and the Regulations 2011 (amended 2016))
National Heritage Act 27 of 2004 (as amended by the State-owned Enterprises Governance Act 2 of 2006/Public Enterprises Governance Act 2 of 2006) (and the National Heritage Regulations 2005)
Atomic Energy and Radiation Protection Act 5 of 2005 (and the Radiation Protection and Waste Disposal Regulations 2011)
Electricity Act 4 of 2007 (and the Electricity Regulations: Technical 2004, the Electricity Regulations: Administrative 2011, and the Namibian Electricity Safety Code 2011 (amended 2012))
Environmental Management Act 7 of 2007 (and the Environmental Impact Assessment Regulations 2012)
Labour Act 11 of 2007 (and the Labour Amendment Act 2 of 2012) (and the Regulations relating to the Health and Safety of Employees at Work 1997, and the Labour General Regulations 2008)
Namibian Islands' Marine Protected Area (NIMPA) 2009
Tobacco Products Control Act 1 of 2010 (and the Regulations 2014)
Water Resources Management Act 11 of 2013 and the Water Resources Management Regulations 2023
Public and Environmental Health Act 1 of 2015 (and section 20(1) of the National Health Act 2 of 2015) (and the Public Health Covid-19 General Regulations 2021) (and amendments)
Civil Aviation Act 6 of 2016 (and the State Airport Regulations 1963 (and amendments); Air Navigation Regulations 1976 (and amendments) (and supplemented by Safety Directive No. DCA 97-1 1997); Regulations Regarding the Investigation of Aircraft Accidents 2000; Namibian Civil Aviation Regulations 2001 (NAM-CARS) (and amendments); and the Civil Aviation Technical Standards (CATS))
Marine Notice No. 02 of 2017: Requirements and Conditions for the Transfer of Oil within Namibian Waters
Marine Notice No.04 of 2018: Garbage Management Requirements in Namibia under MARPOL Annex V
Policies, Guidelines, National Strategies & Action Plans
Policies
Conservation of Biotic Diversity and Habitat Protection 1994
Namibia: National Code on HIV/AIDS in Employment 2000
Minerals Policy of Namibia 2002
Namibia's *Draft* Wetland Policy 2004
National Policy on HIV/AIDS 2007
National Gender Policy 2010 - 2020
National Health Policy Framework 2010-2020 - "towards quality health and social welfare services"
National Policy on Climate Change for Namibia 2011
National Policy on Coastal Management for Namibia 2012
National Policy on Prospecting and Mining in Protected Areas 2018
National Strategies & Action Plans
Namibia's Green Plan 1992
Vision 2030 2004
Towards a Coastal Policy for Namibia, Green Paper 2009
National Climate Change Strategy & Action Plan (2013 – 2020)
Namibia's Second National Biodiversity Strategy and Action Plan (NBSAP 2) (2013 – 2022)
Namibia's 5th National Development Plan (NDP5) – Working together towards prosperity (2017/18 – 2021/22)
National Marine Pollution Contingency Plan (NMPCP) 2017
National Solid Waste Management Strategy 2018

National Parks Environmental Management Plans (EMPs)
Management Plan for Tsau //Khaeb (Sperrgebiet) National Park 2020/2021-2029/2030
Town Planning Schemes, Structure Plans, & Land Use Plans
Lűderitz Town Planning Amendment Scheme No. 5 2003
Lüderitz Structure Plan: Towards A Model Town. Volume 1, *Final Draft* 2014
Strategic Environmental Assessments (SEAs)
Strategic Environmental Assessment (SEA) for the coastal areas of the Hardap and //Karas Regions 2012
Good Industry Practice
Radiation Safety Officer's Handbook 2018
Best Practice Guide. Environmental Principles for Mining in Namibia 2019
International Law
African Union (AU)
African Charter on Human and Peoples' Rights (Banjul Charter) 1981, the Protocol to the African Charter on Human and Peoples' Rights on the establishment of the African Court on Human and Peoples' Rights 1998 (non-binding), and the Protocol to the African Charter for Human and Peoples' Rights on the Rights of Women in Africa 2003
Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and Protocol (Abidjan Convention) 1981 (Additional Protocol to the Abidjan Convention concerning Cooperation in the Protection and Development of Marine and Coastal Environment from Land-based Sources and Activities in the Western, Central and Southern African Region 2012)
African Convention on the Conservation of Nature and Natural Resources (Revised Version) 2003 (non-binding)
Constitution of the African Civil Aviation Commission (AFCAC) 2009 (Revised Version)
Agreement for the Establishment of the Africa Institute for the Environmentally Sound Management of Hazardous and Other Wastes Agreement 2004
Southern African Development Community (SADC)
Treaty of the Southern African Development Community (SADC) 1992 (and Agreement Amending the Treaty 2001; Agreement Amending Article 22 of the Treaty 2007; Agreement Amending the Treaty 2008; Agreement Amending the Treaty 2009 – DES; and Agreement Amending the Treaty 2009 – ORGAN)
SADC Protocol on Mining 1997
SADC Protocol on Health 1999
Charter of Fundamental Social Rights in SADC 2003
SADC Protocol on Gender and Development 2008 (and an Agreement Amending the SADC Protocol on Gender and Development 2016)
SADC Protocol on Environmental Management for Sustainable Development 2014 (not yet binding)
SADC Protocol on Employment and Labour 2014 (not yet binding)
Charter Establishing the SADC Aviation Safety Organisation (SASO) 2015 (not yet binding)
United Nations (UN) / International Conventions
Constitution of the International Labour Organization (ILO) 1919 (as amended), and *Instrument of Amendment of the ILO Constitution, 1986 (not yet binding), and the Instrument of Amendment of the ILO Constitution 1997
Convention on International Civil Aviation (also known as Chicago Convention) 1944 (and Protocol relating to an Amendment to the Convention on International Civil Aviation [Final Paragraph, Russian Text] Montreal 1977; Protocol on the Authentic Quadrilingual Text of the Convention on International Civil Aviation (Chicago, 1944) Montreal 1977; Protocol relating to an Amendment to the Convention on International Civil Aviation [Article 83bis] Montreal 1980; Protocol relating to an Amendment to the Convention on International Civil Aviation [Article 3bis] Montreal 1984; Protocol relating to an Amendment to the Convention on International Civil Aviation [Article 56] Montreal 1989; Protocol relating to an Amendment to the Convention on International Civil Aviation [Article 50(a)] Montreal 1990; *Protocol relating to an Amendment to the Convention on International Civil Aviation [Final Paragraph, Arabic Text] Montreal 1995 (not yet binding); *Protocol on the Authentic Quinquelingual Text of the Convention on International Civil Aviation Montreal 1995 (not yet binding); *Protocol relating to an Amendment to the Convention on International Civil Aviation [Final Paragraph, Chinese Text] Montreal 1998 (not yet binding); *Protocol on the Authentic Six-Language Text of the Convention on International Civil Aviation (Chicago, 1944) Montreal, 1998 (not yet binding))
Constitution of the World Health Organization (WHO) 1946 (and *Amendment to Article 7 of the Constitution of the World Health Organization 1965 (not yet binding); *Amendment to Article 74 of the Constitution of the World Health Organization 1978 (not yet binding); Amendments to Articles 24 and 25 of the Constitution of the World Health Organization 1986; and Amendments to Articles 24 and 25 of the Constitution of the World Health Organization 1998)
Convention on the International Maritime Organization (IMO) 1948 (and Amendments to Articles 17 and 18 of the Convention on the International Maritime Organization, 1964, which entered into force internationally on 6 October 1967; Amendment to article 28 of the Convention on the International Maritime Organization, 1965, which entered into force internationally on 3 November 1968; Amendments to Articles 10, 16, 17, 18, 20, 28, 31 and 32 of the Convention on the International Maritime Organization, 1974, which entered into force internationally on 1 April 1978; Amendments to the title and substantive provisions of the Convention on the International Maritime Organization, 1975/1977, which entered into force internationally on 22 May 1982, except for the amendment to article 51 which entered into force on 28 July 1982 in accordance with article 62 of the Convention as amended; Amendments to the Convention on the International Maritime Organization relating to the institutionalization of the Committee on Technical Co-operation in the Convention, 1977, which entered into force internationally on 10 November 1984; Amendments to Articles 17, 18, 20 and 51 of the Convention on the International Maritime Organization, 1979, which entered into force internationally on 10 November 1984; Amendments to the Convention on the International Maritime Organization

(institutionalization of the Facilitation Committee), 1991; and Amendments to Articles 16, 17 and 19(b) of the Convention on the International Maritime Organization, 1993)
ILO Convention concerning Discrimination in Respect of Employment and Occupation (No. 111) 1958 (and including the Forced Labour Convention 1930 (No. 29); Abolition of Forced Labour Convention 1957 (No. 105); Freedom of Association and Protection of the Right to Organise Convention 1948 (No. 87); Right to Organise and Collective Bargaining Convention, 1949 (No. 98); Equal Remuneration Convention 1951 (No. 100); Discrimination (Employment and Occupation) Convention 1958 (No. 111); Minimum Age Convention 1973 (No. 138); and Worst Forms of Child Labour Convention 1999 (No. 182))
International Convention on Load Lines (LL) 1966 (as amended) and the Protocol of 1988 relating to the International Convention on Load Lines 1966
International Convention on the Elimination of All Forms of Racial Discrimination 1966
International Covenant on Civil and Political Rights (ICCPR**)** 1966 (and the Optional Protocol to the International Covenant on Civil and Political Rights 1966 and the Second Optional Protocol to the International Covenant on Civil and Political Rights, aiming at the Abolition of the Death Penalty 1989)
International Covenant on Economic, Social and Cultural Rights (ICESCR) 1966
International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION) 1969 and the Protocol relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil (INTERVENTION PROT) 1973
Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention) 1971 (and Protocol to amend the Convention on Wetlands of International Importance especially Waterfowl Habitat 1982, and Amendments to Article 6 and 7 of the Convention on Wetlands of International Importance especially Waterfowl Habitat 1987)
Convention Concerning the Protection of the World Cultural and Natural Heritage 1972
Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) 1972 (as amended in 1981, 1987, 1989, 1993, 2001, 2007 and 2013)
International Convention for the Prevention of Pollution from Ships (MARPOL) 1973, as modified by the Protocol of 1978 ("MARPOL 73/78") (and Annex I - Regulations for the Prevention of Pollution by Oil; Annex II - Regulations for the Control of Pollution by Noxious Liquid Substances (NLS) in bulk; Annex III - Regulations for the Prevention of Pollution by Harmful Substances in Packaged Form; and Annex V - Regulations for the Prevention of Pollution by Garbage from Ships)
International Convention for the Safety of Life at Sea (SOLAS) 1974 (as amended) (and its Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974)
International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978 (and 17 sets of amendments)
Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) 1979 and Optional Protocol to the Convention on the Elimination of all Forms of Discrimination against Women 1999
International Convention on Maritime Search and Rescue (SAR) 1979 (as amended)
United Nations Convention on the Law of the Sea (UNCLOS) 1982 (and the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, 1994 and the United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Fish Stocks Agreement) 1995)
Vienna Convention for the Protection of the Ozone Layer 1985 and the Montreal Protocol on Substances that Deplete the Ozone Layer 1987 (and Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted by the Second Meeting of the Parties at London on 29 June 1990 (London Amendment); Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted by the Fourth Meeting of the Parties at Copenhagen on 25 November 1992 (Copenhagen Amendment); Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted by the Ninth Meeting of the Parties at Montreal on 17 September 1997 (Montreal Amendment); Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted by the Eleventh Meeting of the Parties at Beijing on 3 December 1999 (Beijing Amendment); and Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted by the Twenty-Eighth Meeting of the Parties at Kigali from 10 to 15 October 2016 (Kigali Amendment))
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention) 1989 and the Amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1995
International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) 1990
Convention on Biological Diversity (Biodiversity Convention) 1992, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, Montreal 2000, and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity 2010
Protocol of 1992 to Amend the International Convention on Civil Liability for Oil Pollution Damage 1969 (CCL PROT 1992) and Protocol of 1992 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1971 (FUND PROT 1992) (1992 Fund Convention)
United Nations Framework Convention on Climate Change (UNFCCC) 1992, the Kyoto Protocol to the UN Framework Convention on Climate Change 1997 (and the not yet binding Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change 2012), and the Paris Agreement 2015
Convention on the Law of the Non-Navigational Uses of International Watercourses 1997

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention) 1998 (with Annexes as amended)
Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention) 2001 (and amendments)
Convention on the Protection of the Underwater Cultural Heritage 2001
Convention for the Safeguarding of the Intangible Cultural Heritage 2003
International Convention for the Control and Management of Ships' Ballast Water and Sediments (BMW) 2004 (not yet binding)
Convention on the Protection and Promotion of the Diversity of Cultural Expressions 2005
Revised African Maritime Transport Charter 2010 (not yet binding)
United Nations Guiding Principles on Business and Human Rights 2011
Benguela Current Convention (BCC) 2013
International Best Practice
International Finance Corporation (IFC) Environmental Health and Safety (EHS) Guidelines 2007 and the EHS Guidelines for Mining 2007

3 Environmental Management Plan: Implementation and Compliance

3.1 Introduction

As part of the EMP Performance Review / Update, the following actions were carried out:

Rapid review of the following (eight) documents made available to LM Environmental Consulting (28 November 2023, and 11 and 12 December 2023) (comments provided by LM Environmental Consulting are indicated in a green font):

1. Diamond Fields Namibia: Environmental Management Programme Report Revised April 2008. **4. Consultation with Interested and Affected Parties** (Anon., 2008):
    - The (original) Environmental Management Programme Report Revised April 2008 was not made available to LM Environmental Consulting, only Section (4) dealing with Consultation with Interested and Affected Parties;
    - Section (4) contains a list of the main issues raised by Interested and Affected Parties (I&APs) concerning mining and sampling activities (and includes the issues raised during the development of the EMP for Advanced Sampling (1998) and those raised during the compilation of the Environmental Management Programme Report Revised April 2008);
    - It is concluded that ''*Effective implementation of the EMP (section 7) will address the concerns defined above. In Appendix 4, each of these issues is cross-referenced to the relevant part of the EMP (contained in section 7) that stipulates the management actions required to address them*.'' The latter/original was not made available to LM Environmental Consulting.
    - The (revised) Environmental Management Programme Report for Lüderitz Concession ML139 for Diamond Fields Namibia Ltd (Lane *et al*., 2000; Revised April 2008 by J. Midgley and Revised August 2020 by H. Hückstedt) was made available to LM Environmental Consulting; this report contains an Appendix 4 (see above).

2. Diamond Fields (Namibia) (PTY) LTD **Final Updated Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) Report to Support the Application for Environmental Clearance Certificate (ECC) for Marine Diamond Mining and Exploration in the Mining License (ML) No. 139, Lüderitz Area, Southern Namibia** (Risk-Based Solutions (RBS), 2017):
    - RBS (2017) indicated (see Section 2.2) that all key documents and processes in the last 15 years have been reviewed and updated as part of the preparation of this updated EIA and EMP report; these included: (i) *Compliance of the environmental assessment process adopted as described in the methodology these reports with respect to the prevailing environmental assessment process in Namibia at the time when the reports were prepared*; (ii) *Specialist studies undertaken* (i.e. Annex 2 – Combined Marine Specialist Study on Fisheries, Marine Life for the Mining Licences (MLs) 111, 139 and 32 (assumed to be Rau, 2016) & Annex 3 – Diamond Fields (Namibia) (PTY) LTD EMPR Report 2008 (not made available to LM Environmental Consulting)); (iii) *Public consultation process previously undertaken* - reference is made to *the original compilation of the EIA and EMP report* (no reference is provided?), as well as *the previous revision process* (Annex 3) (assumed to be the Diamond Fields (Namibia) (PTY) LTD EMPR Report 2008); it is noted: *Since this report has been prepared to support the application for the renewal of the Environmental Clearance Certificate that will expire in April 2016 and no new fundamental changes to Diamond Fields (Namibia) (PTY) LTD operations (exploration and mining activities) have occurred since the previous revision to the EIA and EMP reporting 2008* (no reference is provided?), *this updated EIA And EMP report has not been made available to the registered stakeholders.*; (iv) *Environmental Management Plan (EMP)* (*In all the previous environmental assessment reports* (no references are provided?), *all the environmental aspects have been identified for both the exploration and mining operations. However, environmental management plans have only been developed to ameliorate aspects / risks of medium to high significance identified through the impact assessment. Management plans are divided into two categories: (i) Strategic management plans which form part of the EIA and EMP report and range from 2 years up to the end of the life of the mine and; (ii) Short term plans concerned with day-to-day operations, which include areas such as codes of practice, specific responsibilities and monitoring which are integrated separately into the Environmental Management System.*); (v) *Diamond Fields (Namibia) (PTY) LTD Environmental Management System (EMS)* (Diamond Fields (Namibia) (Pty) Ltd does

not have an Environmental Management System (EMS) (e.g. ISO 14001) in place (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.)); (vi) *Risk assessment and gap analysis*; and (vii) *Terms of Reference for this report* (i.e. the updated EIA and EMP report);

- The following impacts of high significance were identified (see RBS, 2017): i) **Mining in gullies and disposal of tailings back into the sea**; ii) **Grounding / sinking of vessel (marine pollution from spills)**; and iii) **Mine Closure**. The following management intervention measures were proposed: i) *Targeted monitoring/ research needs to be conducted to assess the biological significance and/or ecological sensitivity of benthic habitat and communities across the different types of rocky outcrops, especially in mining*; ii) *Strict enforcement of vessel safety measures and stringent oil spill management systems are essential during all operations*; and iii) *It is essential that Diamond Fields (Namibia) (PTY) LTD embark upon the development of a Mine Closure Plan, which includes social and labour issues, to manage the risks associated with the closure of operations*.
- Impacts of medium significance include (see RBS, 2017) (management intervention measures are included in brackets): i) **Sediment removal during seabed sampling**; ii) **Benthic community impacts of mining**; iii) **Tailings disposal (smothering of benthic communities)**; iv) **Benthic community and higher order impacts through tailings disposal** (*No direct intervention possible other than the no-project alternative. Optional measures to reduce the risk include setting aside an appropriate (i.e. size and seabed composition) portion of the Mining Licence Area that will not be directly or indirectly impacted by mining operations in the foreseeable future. Such areas could also serve as unmined reference sites in long-term monitoring studies assessing mining impacts.*); v) **Habitat alteration** (*The alternative of no mining operations, and the option of not disposing tailings overboard while mining.*); vi) **Release of H_2S from muds** (*For safety reasons it is essential that on-board air quality is monitored during the exploration and mining operations in the ML Area, if operating in muds. Prior to operations in areas of thick mud overburden it essential that a coring survey to determine the presence of H_2S pockets is conducted.*); vii) **Repeat mining** (*Optional measures include no re-mining of areas.*); viii) **Archaeological, paleontological and historical aspects** (*It is essential that the relevant managers and specialists be informed on finding of historical material that artefacts are retained and mining ceases within 500 m from the centre of the site until the area has been surveyed and clearance has been received from the relevant authorities.*); and ix) **Radioactive sources** (*Strict implementation of Radiation Management Plan (RMP)*).
- RBS (2017) noted that: *The proponent, Diamond Fields (Namibia) (PTY) LTD must undertake research and monitoring of short and long-term impacts and including cumulative impacts of both exploration and mining activities on the receiving environment, such as disturbance of seabed habitats and communities* and indicated that the following environmental performance monitoring activities must be implemented: i) *Implementation of the EMP monitoring plan*; ii) *EMP Auditing*; and iii) *EMS Auditing*.

3. Application for Renewal of Environmental Clearance Certificate (ECC) for Marine Diamond Exploration and Mining in Mining Licence No. 139, Lüderitz Area. **Sep 2017 to Sep 2020 Performance Monitoring Report**. September 2020 (Diamond Fields (Namibia) (Pty) Ltd (DFN), 2020; see Annexure B to this report);
    - It is assumed that the report was prepared by Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd;
    - The report consists of abstracts/information prepared by RBS (2017; and possibly other reports by RBS); the report does not contain a list of references;
    - Changes were made with regards to the potential negative impacts that may occur (vs that listed by RBS, 2017);
    - Sections 4.7.2, 4.7.3 and 4.7.4 deals with ''Risk assessment of medium and high significance'' (the rock lobster resource and potential conflict with the rock lobster boats are mentioned), ''Socio-economic risk assessment'', and ''Cumulative risk assessment'', respectively. The impacts of high and medium significance identified by RBS (2017; see above) were omitted in this (DFN, 2020) report;
    - Details with regards to the ''Environmental monitoring plan'' (DFN, 2020) differs from that provided by RBS (2017) (see Table 10, this Report).

4. **Environmental Management Programme Report for Lüderitz Concession ML139 for Diamond Fields Namibia Ltd** (Lane *et al*., 2000; Revised April 2008 by J. Midgley and Revised August 2020 by H. Hückstedt) (Annexure 1):
    - Noted is that: *EPL 1607, was converted into ML 111 & EPL, 1607a and 1607b in 31/01/2001. An Environmental Contract was established against the approved Mining EMPR* (Environmental Management Programme Report) *for ML 111 on 05/06/2001. Thereafter (30/10/2007), EPL 1607a and 1607b have been converted to Mining Licence ML 138 and ML 139. Against the issues of these mining licences, Diamond Fields Namibia has updated the approved EMPR for ML 111 and amended the EMPR to include licence ML 138 and ML 139. Each of ML 111, ML 138 and ML 139 formed part of EMPL 1607 for which the original Mining EMPR of July 2000 was prepared. Nonetheless since November 2019, ML 138 is no longer owned by Diamond Fields (Namibia)*.
    - According to the report, and since 1995, Diamond Fields has commissioned several environmental studies relating to its diamond sampling and/or mining activities, as well as monitoring of their sampling activities. These include:
        - Environmental Impact Assessment for the Proposed Mining of Concession Area M46/3/1607 off Lüderitz Bay, Namibia – CSIR November 1995;
        - Review of the CSIR EIA – Sue Lane & Associates, March 1998;
        - Environmental Management Programme Report for Lüderitz Concession EPL 1607 – De Beers Marine and Sue Lane & Associates, November 1998;
        - Environmental Performance Reports for Advanced Sampling Phases – De Beers Marine February 1999; September 1999 & March 2000;
        - Benthic Biological Survey of Marshall Fork and Elephant Basin – De Beers Marine, January 2000;
        - Lüderitz Bay (Feasibility & Technical Aspects of Mining) Scoping Report - AGRA-Simons June 2000;
        - Environmental Performance Assessment Report ML 111: July 05 to June 2007;
        - Environmental Performance Assessment Report ML 111:July 2007 to December 2007;
        - Combined marine specialist study on fisheries, marine life for ML32, 111, 139, March 2016;
        - Desk top study of social and economic environment, February 2016 (a brief description of each of the studies are provided; only the latter two reports were made available to LM Environmental Consulting).

5. Diamond Fields Namibia Annexure to Environmental Clearance Certificate Renewal application - **Combined Marine Specialist Study on Fisheries, Marine Life for the Mining Licences (MLs) 111, 139 and 32** *(*Rau, 2016; Revised August 2020 by H. Hückstedt) (Annexure 2);

6. **Environmental Monitoring Daily Log** (Template) (Anon., n.d.) (Annexure 3):
    - Template for use by personnel of the MV YA TOIVO / MV THE EXPLORER;

7. **Desk Study of the Social and Economic Environment for Marine Mining Activities Within the ML 111 and ML 139 of Diamond Fields Namibia (Pty) Ltd and ML 32 of Namibia Diamond Corporation (Pty) Ltd, Situated Offshore, Lüderitz, Namibia** (Anon., 2016) (Annexure 4):
    - The study is comprised of a literature review that was conducted between 10 February and 29 February 2016; the information is outdated; and

8. Diamond Fields (Namibia) (Pty) Ltd **Legal Register Applicable for the Updated EMP** (Anon., 2019) (Annexure 5):
    - The information was updated; see Section 2 (this Report).

Rapid review of the following (six) letters made available to LM Environmental Consulting (12 February 2024):

1. Letter from Diamond Fields Namibia (Pty) Ltd to the Permanent Secretary, Ministry of Environment, Forestry and Tourism, Reporting Period October 2020 to March 2021 (ML 139 NIL RETURN), dated 16 April 2021;
2. Letter from Diamond Fields Namibia (Pty) Ltd to the Executive Director's Office, Ministry of Environment, Forestry and Tourism, Reporting Period April 2021 to September 2021 (ML 139 NIL RETURN), dated 29 September 2021;

3. Letter from Diamond Fields Namibia (Pty) Ltd to the Executive Director's Office, Ministry of Environment, Forestry and Tourism, Reporting Period October 2021 to March 2022 (ML 139 NIL RETURN), dated 22 March 2022;
4. Letter from Diamond Fields Namibia (Pty) Ltd to the Executive Director's Office, Ministry of Environment, Forestry and Tourism, Reporting Period April 2022 to September 2022 (ML 139 NIL RETURN), dated 18 October 2022;
5. Letter from Diamond Fields Namibia (Pty) Ltd to the Executive Director's Office, Ministry of Environment, Forestry and Tourism, Reporting Period October 2022 to March 2023 (ML 139 NIL RETURN), dated 29 March 2023; and
6. Letter from Diamond Fields Namibia (Pty) Ltd to the Executive Director's Office, Ministry of Environment, Forestry and Tourism, Reporting Period April 2023 to September 2023 (ML 139 NIL RETURN), dated 02 October 2023.

3.2 Compliance: Environmental Management Plan

In order to illustrate compliance with the EMPs for: i) environmental performance monitoring and procedures; ii) environmental and safety management systems; iii) exploration and mining; iv) vessels at sea (including contracted vessels); v) waste management and pollution control; vi) ecosystem services / values, biological diversity conservation and resource use; vii) socio-economic issues; and viii) mine closure (see Tables 2 to 9), the following colour codes were applied:

	Compliance/Completed
	In Progress/Ongoing
	Non-compliance
	Not (Currently) Applicable
	Changes made to existing EMP
	Unknown
	Not audited

Please note the following: a prospective area (within ML139) was identified based on geophysical surveys carried out pre-2000. Sampling, comprising of 468 drill samples, was carried out between 1995 and 1999. Planned for the near future is to expand on geophysical surveys, identify new target areas for drill sampling, complete the previous drill programme, as well as an additional drill programme, in order to delineate areas of positive samples and mine resources. The sampling programme will be carried out using the MV Explorer. The estimation of the resource will then be added to that of ML111. Future mining will be carried out with the MV Ya Toivo (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

The Company currently only employs two persons on a permanent basis (two Namibians in the Windhoek and Swakop Offices) and two non-Namibians (on consultancy basis); additional people will be employed as/when required (a contractor will be appointed to carry out the exploration and/or mining) (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Mr Hans Hückstedt, Chief Geologist, joined Diamond Fields (Namibia) (Pty) Ltd in September/October 2018.

Table 2: Compliance with the environmental performance monitoring and procedures (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ The EMP process is employed, so that operations are conducted in an environmentally responsible manner ❖ All action plans outlined in this EMP are achieved, including continued consultation with all stakeholders and compilation of Performance Monitoring ❖ Understanding about potential impacts of mining operations and environmental management is increased ❖ An ethic of environmental responsibility is instilled in all staff and contract workers ❖ Ensure that exploration, mining and processing operations does not impact significantly on existing water quality. Maintain the integrity and ecological functions of the seabed, the bay, islands and coast. ❖ Maintenance of ecosystem integrity – the Bay and Islands within and near the ML area ❖ Sound environmental integrity for the Bay and Islands maintained. ❖ Maintain the seawater and marine sediment quality standards to its natural state in order to minimize direct loss of abalone and rock lobster by smothering effects due to sediment resuspension.							
1	Implementation of the environmental management policy and procedure	Improved Environmental Management and Awareness	High	❖ Define the roles and authorities of staff members (and any specialist consultants) responsible for implementation of the various facets of this EMP. ❖ Address training needs of staff required to implement specialised aspects of the EMP. ❖ Maintain records of plans, decisions, data collected, communications made, emergency responses, etc., which document the implementation of the EMP.	Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
2	Internal communication about the EMP	Improved Environmental Management and Awareness	High	❖ All personnel will be made aware of the contents Environmental Policy Statement, EMP and EMS requirements. ❖ All personnel who are in a position to make decisions or take actions that will influence environmental protection and management will be made aware of the contents, and their respective responsibilities for implementation, of the Environmental Policy Statement, EMP and EMS requirements.	Environmental Manager	Ongoing	Diamond Fields (Namibia) (Pty) Ltd does not have an Environmental Management System (EMS) (e.g. ISO 14001) in place (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
3	Instructions to all staff, including contractors	Improved Environmental Management and Awareness	High	❖ Provide instructions and appropriate training to all staff about aspects of the EMP that affect their specific work, including hydrocarbon pollution prevention and clean-up, general	Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist,

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				waste management, protection of natural resources, and rehabilitation. ❖ Conduct an environmental awareness programme for the marine and terrestrial environments. ❖ Prior to working in the ML area all contractors must undergo an environmental and safety awareness induction and such awareness must form part of the debriefing before workers take-up their respective work stations. ❖ Incorporate environmental aspects and management interventions applicable to particular outsourced tasks into contracts and performance appraisals to improve environmental awareness and performance, and specify penalties for non-compliance. ❖ Report all environmental incidents as specified in the Company Procedures.			Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
4	EMP Monitoring and Performance Assessments	Improved Environmental Management and Awareness	High	❖ Undertake a detailed currents circulation modelling followed by a continuous (on the monthly basis) ❖ Analyses of the water quality realised at source before discharge to the marine environment and around the mining area using the Benguela Current Large Marine Ecosystem (BCLME) guideline values for concentration of metals in seawater ❖ Analyses of the sediment quality realised at source before discharge to the marine environment and around the mining area using the Benguela Current Large Marine Ecosystem (BCLME) guideline values for concentration of metals in	Environmental Manager	First due 12 months after EMP approval date	See Lane *et al.* (2000; Revised April 2008 by J. Midgley and Revised August 2020 by H. Hückstedt) re the data collected up to 2008. No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				marine sediments ❖ The EMP monitoring process will carefully examine all monitoring results and combine them with current circulation models to mitigate any harmful impact to the Mariculture industry around Lüderitz. ❖ Undertake formal EMP performance assessments every 12 months to check progress in meeting the objectives and targets of this EMP ❖ Compile and submit EMP Performance Assessment Reports to the Environmental Commissioner containing as a minimum the following information: ▪ Information regarding the period applicable to the assessment ▪ Scope of the assessment ▪ Procedure used for the assessment ▪ Interpreted information gained from monitoring ▪ Evaluation criteria used ▪ Results of the assessment ▪ Recommendations on how and when non- compliances or deficiencies will be rectified.			It is advised that Diamond Fields (Namibia) (Pty) Ltd (and their employees and contractors) implement and observe the Environmental Management Plan on an ongoing basis. Bi-Annual Environmental Reports (in the form of letters informing the Permanent Secretary/Executive Director's Office of ML 139 NIL RETURN) have been submitted to the MEFT (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
5	EMP Amendments	Improved Environmental Management and Awareness	High	❖ On an ongoing basis, assess the applicability of actions and activities required by the EMP, identify and address all new environmental issues arising from changed operations and/or communications with interested parties, through amendments to the EMP if/where necessary. ❖ Communicate and consult with I&APs through appropriate fora to inform them of proposed changes and address any concerns. ❖ Amend and revise this EMP, if required and submit to the Environmental Commissioner for approval.	Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). It is advised that the I&AP Register (see Lane *et al.*, 2000 revised by Midgley, 2008 and Hückstedt, 2020: Appendix 3) be updated and maintained. This report.

6	Communications with stakeholders	Improved stakeholder relationships	High	❖ Maintain an up-to-date I&AP database. ❖ Maintain open communication with the relevant stakeholders listed in Diamond Fields (Namibia) (Pty) Ltd database by sharing the results of the monitoring and informing them of proposed changes to the EMP, addressing any issues of concerns that may arise, maintain records of communications, and where relevant, address their needs. ❖ Participate actively in appropriate fora to share information and co-operate with other stakeholders and resource managers in the marine environment.	Environmental Manager	Ongoing	It is advised that the I&AP Register (see Lane *et al*., 2000 revised by Midgley, 2008 and Hückstedt, 2020: Appendix 3) be updated and maintained. No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
7	Pecuniary provision/ Allocation of environmental Management Funding	Improved Environmental Management	High	❖ Allocate operational costs to maintain the EMP objectives, including all associated requirements, such as. funding of research and monitoring to understand, and where possible, mitigate impacts.	Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
				❖ Maintain Protection and Indemnity (P&I) Insurance Cover of US$ 100 million to allow for clean-ups in the event of oil spills, and unlimited (P&I) Insurance Cover for other eventualities.	Mine Secretary	Ongoing	The amount to be linked to size (vessel size, capacity, etc.) and duration of the operation. Insurers do not provide cover of higher than the vessel hull value (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm., 2022).

Table 3: Compliance with the environmental and safety management systems (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ In order to build-up an accurate database of discharge characteristics / composition, levels and distribution of potential toxic elements that could be associated / mobilised / released through the exploration, mining and processing operations around the ML area ❖ Maintain compliance with the standards in the Labour Act, Environmental regulations and mining regulations ❖ Maintain compliance with operational and national and international occupational standards ❖ Internally and externally audited Environmental Management System (EMS) for exploration, mining and processing are maintained for all certified areas of activities and all identified vessels and shore-based areas have NOSA grading							
1	Maintain Environmental Management System (EMS)	Improved Environmental Management	High	❖ Ensure that all requirements of Environmental Management System are met, including compliance with the national legislation, environmental awareness training, environmental monitoring, waste management and pollution control including the following requirements: ▪ employ “good housekeeping” onboard; ▪ awareness for waste	Environmental Manager	Ongoing	Diamond Fields (Namibia) (Pty) Ltd does not have an Environmental Management System (EMS) (e.g. ISO 14001) in place (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				reduction through re-use and recycling maintained; ▪ only water containing <15 ppm oil discharged overboard (MARPOL standard); ▪ no overboard disposal of waste (MARPOL standard); ▪ food waste overboard only after maceration through a 25 mm screen (MARPOL standard); ▪ No discharge allowed in the ML area. Sewage processed in approved treatment plants before discharge beyond 4 nautical miles offshore (MARPOL standard); ▪ all scrap metal, cans, paper and cardboard, laser and ink cartridges separated and sent for recycling ashore; ▪ all vessels fitted with desalination units to purify seawater for use onboard; ▪ all vessels painted with TBT-free anti-fouling hull paint; ▪ other waste incinerated in IMO-approved shipboard incinerators, and remainder sent by sea to waste sites meeting legal requirements; ▪ use of gas oil containing less than 0.55% sulphur; ▪ regular service and repair of all equipment to reduce			

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				consumption of fuels and other petrochemical materials, and to minimise the release of greenhouse gases; ▪ used oil returned to supplier for recycling / disposal; ▪ no CFC-based fire-fighting equipment used; ▪ phasing out of ozone-depleting products and equipment (refrigerators, engines etc.) with alternatives (Montreal Protocol on Ozone Depleting Substances as well as United Nations (UN) Framework Convention on Climate Change 1992 and Kyoto Protocol to the UN Framework Convention on Climate Change 1997); ▪ monitoring and recording of the following from the vessels: – wind speed and direction (4-hourly in vessel's bridge log) – Official Garbage Record Book for all discharges of waste / incinerations – electronic logging and data-basing of separated waste forms with quantities, storage type etc ❖ Ensure that the EMP is annually internally and externally audited and			

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				submit copies of audit reports with Environmental Performance Reports			
2	Integration of Environmental Management	Improved Environmental Management	High	❖ Quantify natural variability in the ecosystem by integrating data-collection requirements with other research and monitoring initiatives (to be addressed through the long term monitoring programme). ❖ Incorporate sediment plume modelling with ongoing overall monitoring for exploration and mining ❖ ~~Modelling of potential oil spill scenarios and development of appropriate contingency plans~~. ❖ Integration of future mine plans with existing mariculture, lobsters operations and sanctuary areas, other user's interests and overall Marine Protected Areas as well as proposed MPA's in the future.	Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Diamond Fields (Namibia) (Pty) Ltd to develop, implement and maintain an **Oil Spill Contingency Plan** (according to protocols outlined in the Namibian National Marine Pollution Contingency Plan (NMPCP), 2017). Diamond Fields (Namibia) (Pty) Ltd to support the NIMPA+ Project.
3	Establishment and review of Environmental Risks and Improved Environmental Performance	Improved Environmental Management	High	❖ Update and develop new sets of environmental risks based on the results of the ongoing monitoring. ❖ Adopt a monitoring results-based approach in managing environmental impacts by focusing on the potentially medium and high risk impacts. ❖ Improve on performance reporting by determining key indicator species by which recovery rates of impacted areas can be determined more effectively.	Environmental Manager Environmental Scientist	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
4	Maintain Safety Management System (SMS)	Improved Health and Safety	High	❖ Maintain high safety standards onboard each vessel and arrange annual	Loss Control Coordinator	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				audits by the National Occupational Safety Association (NOSA) to ensure ratings are maintained.			Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
5	International Safety Management (ISM) Code Prevention	Improved Health and Safety	High	❖ Ensure compliance with the International Maritime Organisation's International Safety Management (ISM) Code developed and implemented. ❖ Ensure that the required external assessments of compliance to the ISM Code are conducted. ❖ Submit certificates of compliance with Environmental Performance Reports to the Environmental Commissioner.	Operations Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

Table 4: Compliance with regards to exploration and mining (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ Improved understanding and develop appropriate mitigation measures with respect to the direct impacts of prospecting/mining on the environment ❖ Exploration and mining-related impacts on the marine environment are managed, to avoid compromising current and future utilisation of renewable marine resources ❖ The information base that will provide improved insight into the cumulative impacts of exploration and mining on marine environment ❖ Recovery rates of marine habitats impacted or destroyed during prospecting/mining are established, recolonisation of areas within a reasonable period of time is allowed ❖ Key habitats of high ecological sensitivity and importance (e.g. mariculture, lobster sanctuary and kelp beds) are protected ❖ Conflict between the fishing industry and diamond mining is minimised by maintaining open and frequent communications ❖ Archaeological and historic sites are protected, thereby preventing the loss of information and research material ❖ Information exchange with all relevant stakeholders is promoted							
1	Bathymetric and seismic surveying (~~airgun, towfish~~)	Vibration or noise disturbance of marine fish	Medium	❖ Maintain the Marine Life Sightings Programme (including turtles and jellyfish etc.) from vessels, to record	Environmental Manager and onboard	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
		and mammals		the presence, proximity to and behaviour patterns of marine mammals and seabirds near the exploration vessel. ❖ Consider providing specialised marine mammals observer training for the relevant monitors. ❖ Depending on the results of the bridge log, further studies on the impact of sonar on marine mammals	Environmental Monitors		Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Note that the risk rating (medium) is unlikely / minor (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm., 2022).
2	Sampling programme	Disturbance of benthic communities and habitat	High	❖ Undertake to develop a programme whereby data-collection requirements to quantify natural variability in the ecosystem and facilitate habitat/sensitivity mapping are integrated with ongoing exploration and mining. ❖ Conduct high resolution geophysical surveys (~~SSS,~~ bathymetry and seismic profiling) prior to mining, and of the target areas ~2-3 years post-mining to determine the depth, wall steepness and infilling rates of mining excavations. ❖ Conduct benthic macrofaunal surveys ~~to record seabed topography~~ and types of marine life present to gain an understanding of the marine environment, using a suitable sampling device:	Environment Manager / Environmental Scientist Environmental Manager / Environmental Scientist Environmental Manager / Environmental Scientist Geological Manager / Environmental Manager Environmental Manager	Ongoing Prior to mining (ongoing) Ongoing Ongoing Annually	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No SSS, box coring, ROV, AUV, or surveys using a submersible will be carried out (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
3	Mining excavations	Destruction of geological record, and reorganisation of sediment structures	Medium	• Grab sampling ~~or box-coring surveys~~. • ~~Video footage collected from a Remotely Operated Vehicle.~~ • ~~Geophysical (e.g. high resolution AUV) surveys.~~ • ~~Submersible video footage (when submersible is available).~~	Geological Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
4	Exploration and Mining ~~in the mudbelt~~	Hydrogen sulphide ~~eruptions~~	Medium	❖ ~~Consider conducting a coring survey to determine the presence of H2S pockets before mining is conducted in thick mud overburden areas~~. ❖ Monitor on-board air quality during exploration and mining operations in the ML No. 139 Area. ❖ Consider training of Health and Safety personnel in handling of personal safety issues in the event of H2S occurrences ~~eruptions~~ during exploration and mining	Onboard Environmental Monitors Geological Manager	Ongoing ~~When targeting of mudbelt planned~~	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No exploration/mining will take place in the mudbelt (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
					Environmental Scientist	Prior to mining	
5	Disposal of all tailings overboard during mining	Suspended sediment plumes	Low	❖ If the levels recorded in the sacrificial mixing zone exceed set water quality criteria, conduct an ecological hazard assessment on the suspended sediment plumes and report the results to the ~~DEA~~ DEAF and ~~MAWF~~ MAWLR who should decide on further action.	Environmental Scientist	Prior to mining During mining	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Directorate of Environmental Affairs and Forestry (DEAF); Ministry of Agriculture, Water and Land Reform (MAWLR) Comply with the Water Resources Management Regulations (2023): Water Resources Management Act, 2013.
					Environmental Scientist	Prior to mining	
				❖ Ensure that the water sample analyses are carried out by a laboratory certified to conduct the analyses. ❖ Have the monitoring results scientifically evaluated by an appropriate expert.	Environmental Scientist	Ongoing	

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				❖ Submit the monitoring results together with the evaluation to the Environmental Commissioner			
				During mining operations: ❖ Record wind speed and direction in vessel's bridge log. ❖ Conduct visual observations of the plumes. ❖ Monitor the proportion of clay (<63 µm) in the overspill.	Onboard Environmental Monitors Environmental Manager	During mining	
6	Disposal of mine tailings overboard	Smothering of benthic invertebrates	High	❖ Through modelling, asses the effects of the tailings plume on the marine and coastal environments. ❖ ~~Based on results of bottom-oxygen levels, consider undertaking further field/laboratory studies regarding the physiological oxygen tolerance for some large benthic species, considered characteristic of mined and unmined areas~~.	Environmental Manager Environmental Scientist	Ongoing Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). For a study of this nature and detail, a dedicated research project would be required; such a study is not relevant to a commercial mining venture (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Diamond Fields (Namibia) (Pty) Ltd to support the NIMPA+ Project.
7	Archaeological Sites	Destruction of wrecks	Medium	❖ While no wrecks have been identified from surveys in ML No. 139, the following actions will be undertaken if shipwreck material is encountered in the course of sampling/mining: ▪ Immediately inform the Marine Superintendent or Environment Manager who will inform the ~~National Monuments Council~~; ▪ Retain artefacts recovered and, where possible, maintain a photographic record. Note the date, time, location and	Vessel Master / Marine Superintendent / Environmental Manager	If shipwreck material is found	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). National Heritage Council of Namibia (NHC). See Maitland (2023) for more information re mitigation against the loss of Maritime and Underwater Cultural Heritage (MUCH) sites/resources.

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				types of artefacts found in the logbook; ▪ Contract a marine archaeologist in consultation with Government to survey the site; ▪ Avoid mining or prospecting within 500 m from the centre of the site once the area has been surveyed to obtain baseline data (approximately 2-3 years baseline required			
8	Use of ferrosilicon in onboard treatment process	Increased primary productivity	Low	❖ Monitor use of ferrosilicon on an ongoing basis. ❖ Continue initiatives to use shell crushing equipment to maximise retrieval of ferrosilicon where operating in shelly substrates as this compound accumulates in shells.	Plant Superintendent	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

Table 5: Compliance with regards to vessels at sea (including contracted vessels) (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ Disruption to other legitimate users of the sea is minimised by respecting their rights ❖ Conflict between the fishing industry and diamond mining is minimised by maintaining open and frequent communications ❖ Pollution of marine and coastal habitats and resources is prevented ❖ Manage waste streams to reduce wastage and promote reuse/recycling of resources are in an effective manner ❖ Natural resources are used conservatively							
1	Presence of vessels	Potential exclusion of alternative resource use (e.g. aquaculture, fishing, tourism /	High	At least 14 days in advance of commencement of mining activities: ❖ Notify the ~~Permanent Secretary~~ Executive Director: MME in writing providing particulars regarding the location, nature and extent of such	Vessel Manager	Prior to commencement of activities	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
		recreational, shipping and township development along the coast bordering the ML area)		operations. ❖ Notify other potential user groups (maritime authorities, fishing / aquaculture industry, NamPort and Lüderitz Town Council) in the area in writing, providing particulars regarding the location, nature and extent of such operations. ❖ Notify Walvis Bay Radio of intended vessel activities, light buoys and exclusion zones.			
				❖ On cessation of activities inform Walvis Bay radio on completion of operations.	Vessel Masters	On cessation of activities	
				❖ In the vessel logbook, record sightings of and interactions with other vessels to note potential conflicts over rights of passage and access to resources.	Vessel Masters	Ongoing	
2	Presence of vessels	Vibration or noise disturbance of marine mammals and seabirds	Low	❖ Maintain the Marine Life Sightings Programme (including turtles, jellyfish, rock lobsters and anything else of interest) from vessels, to record the presence, proximity to and behaviour patterns of marine mammals and seabirds near the mining vessels, particularly during mining operations. ❖ Consider providing specialised marine mammals observer training for the relevant monitors. ❖ To avoid disturbance of whales, vessels should not approach within 300 m of a whale whilst underway ❖ If a whale surfaces within this distance of the vessel when at anchor, or during discharging of tailings sediments, the vessel	Environmental Manager and onboard Environmental Monitors	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				should remain stationary until the whale has moved to a distance 300 m away.			
3	Oil-spill Contingency Plans	Pollution of the sea by diesel and heavy fuel	Medium	❖ Obtain specific exemption from the Namibian Directorate of Maritime Affairs before refuelling within 200 nautical miles of the coast. ❖ In the event of an oil spill: ▪ Follow the Shipboard Oil Spill Emergency Response Manual procedure. This Manual must be approved by the Namibian Directorate of Maritime Affairs. ▪ In terms of the Emergency Plan the Superintendent will inform the following Namibian authorities (as deemed applicable): Marine Division of the Ministry of Works and Transport; MFMR; MME, ~~MET~~ MEFT and the Lüderitz and Walvis Bay Harbour Masters	Marine Manager	Prior to refuelling at sea	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Diamond Fields (Namibia) (Pty) Ltd to develop, implement and maintain an **Oil Spill Contingency Plan** (according to protocols outlined in the Namibian National Marine Pollution Contingency Plan (NMPCP), 2017).
4	Release of ballast water	Marine pollution and introduction of alien species	Low	❖ Ballast water may only be released when the vessel is more than 12 miles from land and in water depths greater than 25 m.	Vessel Master	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
5	Acoustic positioning for seabed crawlers	Seabed hazards	Medium	❖ ~~Maintain the Hazards Database of the locations of concrete blocks used in the acoustic positioning systems for the crawlers~~. ❖ If requested, report these data to the relevant authority	Marine Manager	Ongoing	Note that acoustic positioning is by remote sonar communication between the mine support vessel and the crawler. There is no placement of positioning equipment onto seafloor (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
							Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
6	Incidental loss of equipment	Seabed hazards	Low	❖ Maintain hazards database listing the type of gear left on the seabed and/or in the mine/prospecting area with the dates of loss and locations and where applicable, the dates of retrieval.	Vessel Masters / Surveyor	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
7	Waste Management	Marine Pollution	Low	❖ Ensure that waste management practices in place and enforced	Vessel Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Identify all the waste streams and prepare an **Integrated Waste Management Plan**. The generation of waste should be **avoided** as far as practicable; where it cannot be avoided, waste should be **reduced**, **re-used** and **recovered** (including recycling and composting); where waste cannot be reduced, re-used and/or recovered, it should be **disposed** of in an environmentally sound manner.
8	Final Recovery (X-Ray generator units)	Occupational and Community Health and Safety		Ensure that contractors have a **Radiation Management Plan** in place (the content of the Radiation Management Plan to be based on the requirements and stipulations of the Atomic Energy and Radiation Protection Act 5 of 2005, as well as the relevant stipulations in the Radiation Protection and Waste Disposal Regulations of 2011; the structure of the Radiation Management Plan to follow the guidelines for Radiation Management Plans as issued by the National Radiation Protection Authority) (see https://nrpa.gov.na/guides).			

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				Ensure that contractors have the necessary authorisations and permits in place			

Table 6: Compliance with regards to waste management and pollution control (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ Pollution of terrestrial, marine and fresh water habitats and resources is prevented ❖ Waste streams are effectively managed to minimise pollution using a cradle-to-grave philosophy ❖ Reuse / recycling and being conservative in use of natural resources is promoted							
1	Waste generation – general	Pollution of terrestrial, aquatic and marine habitats	Low	❖ Comply with all legal requirements for waste management and pollution control, and employ "good housekeeping" and monitoring practices. ❖ Follow stringent 'cradle to grave' waste management practices. ❖ Conduct environmental awareness programmes for waste management. ❖ Ensure safe ~~inshore~~ onshore waste disposal practices ❖ Maintain records on the types and amounts of waste disposed.	Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Identify all the waste streams and prepare an **Integrated Waste Management Plan**. The generation of waste should be **avoided** as far as practicable; where it cannot be avoided, waste should be **reduced**, **re-used** and **recovered** (including recycling and composting); where waste cannot be reduced, re-used and/or recovered, it should be **disposed** of in an environmentally sound manner.
2	Waste management – radioactive sources	Occupational and Community Health and Safety		Dispose of inoperative X-Ray generator unit(s) as per the **Radiation Management Plan** (at a specialised electronic equipment disposal facility, or return the X-Ray generator unit(s) to the manufacturer in South Africa).			

Table 7: Compliance with regards to ecosystem services / values, biological diversity conservation and resource use (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ Promote the integration of coastal and marine ecosystem function, services, value and non-use in the EMP and EMS ❖ Disturbance of wildlife is minimised ❖ Key habitats important for wildlife are protected, thereby conserving biological diversity ❖ Wastage is reduced and fuel use is minimised							
1	Ecosystem services / values	Impact on the coastal and marine ecosystem function, services, value and non-use	Medium	❖ ~~Maintain~~ Respect and do not disturb the coastal and marine ecosystem function (What the Ecosystem Does): Wildlife habitat, carbon cycling or the trapping of nutrients and characterized by the physical, chemical, and biological processes or attributes that contribute to the self- maintenance of an ecosystem in this zone; ❖ ~~Maintain~~ Respect and do not disturb the coastal and marine ecosystem services: Food chain, harvesting of animals or plants, and the provision of clean water or scenic views; ❖ ~~Maintain~~ Respect and do not disturb the coastal and marine ecosystem services use values: Direct use for fishing and indirect include watching a television show about the area and its wildlife, food chain linkages that sustains the complex life within this zone and bequest value for future generations to enjoy; ❖ ~~Maintain~~ Respect and do not disturb the coastal and marine ecosystem non-use, or passive use: Preserve what exists (Existence Value) with no consideration for direct use / benefits.	Environmental Manager	At all times Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, requested that the word ‘’maintain’’ be replaced by ‘’respect and do not disturb’’.
2	Illegal ~~hunting~~, fishing ~~and plant collection~~	Destruction and loss of flora and fauna (note	Low	❖ Diamond Fields (Namibia) (Pty) Ltd personnel and contractors will not:			No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
		that mining is only limited to the marine ~~and coastal~~ environment)		▪ Disturb, catch, remove, injure, kill or feed, any wild animal or bird which occurs in the area without a permit. ▪ Intentionally remove, injure or kill any sea-life. ▪ ~~Pick, uproot, fell or damage any plant growing in the coastal area without a permit - other than according to the approved EMP which will provide necessary mitigation measures~~. ❖ Conduct environmental awareness program for wildlife ethics. ❖ Disciplinary action will be undertaken, and strict penalties imposed in case of transgressions.			Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
3	Freshwater Consumption	Sustainability of water supply and depletion of natural resources	Low	❖ Ensure relevant water permits are in place. ❖ Minimise the use and wastage of clean purified water. ❖ Keep records of quantities of fresh water used. ❖ Conduct water conservation awareness programmes and water saving campaigns.	Environmental Manager	Ongoing Monthly Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Comply with the Water Resources Management Regulations (2023): Water Resources Management Act, 2013.
4	Recourses usage during Diamond Fields (Namibia) (Pty) Ltd staff and contractors during periods of crew change	Use of natural resources	Low	❖ Keep records of fuel consumption, set targets and put action plans in place when targets are exceeded.	Environmental Manager	Monthly	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

Table 8: Compliance with regards to socio-economic issues (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ Economic benefits to people of Namibia optimised, where feasible ❖ A balance between economic, social and environmental responsibilities is struck ❖ Opportunities provided for local business, industrial relations promoted, and contribution to socio-economic stability ❖ Training and development opportunities provided for all staff ❖ Relevant stakeholders consulted on a regular basis ❖ Good working and living conditions all employees promoted and maintained							
1	Environmental Communication	Improved Environmental Awareness	High	❖ During compilation of the EIA and EMP consult with the following to identify their rights and/or other legitimate interests: i) Government departments with jurisdiction over resources or activities in the Mining Licence Area and/or in adjoining areas (~~MET~~ MEFT, MFMR and Lüderitz Town Council); ii) Representatives of any other interest group (e.g. fishing / Aquaculture industry).	Environmental Manager(s) and Contracted Consultants	Done as part of Public Scoping	Not audited.
				❖ Improve stakeholder relationships by maintaining open communication with relevant I&APs on issues that may arise, and where relevant, address their needs. ❖ Keep a record of all communications with I&APs, the points raised, and how these points have been addressed.	Environmental Manager(s)	Ongoing	Not audited.
				❖ Report to the relevant stakeholder on new activities with potential environmental impacts.	Environmental Manager(s)	Ongoing	Not audited.
				❖ Publicise and make available information on environmental monitoring programmes and	Environmental Manager(s)	Ongoing	Not audited.

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				environmental performance.			
2	Employment	Boosts Namibian economy and development of skills	High	❖ Continue to increase number of Namibians employed and to provide them with training to develop skills. ❖ Outsource services to Namibian where possible. ❖ Include local Small and Micro enterprise service providers in the tendering process for supplies and services	Human Resources Manager	Ongoing	Not audited.
3	Local, regional and national and support / social responsible	Contribution to Lüderitz communities and //Karas region and overall Namibian citizen support	Medium to High	❖ Minimise net loss of employment opportunities ❖ Give hiring priority to suitably qualified or experienced local Namibian citizens	Human Resources Manager	Ongoing	Not audited.
				❖ Within the resources available, support appropriate initiatives to improve community welfare, particularly in Lüderitz and //Karas Region. ❖ Ensure that wellness programme covers all workers ❖ Consider expanding some wellness programme interventions to sub-contractors.	Financial Manager Human Resources Manager	Ongoing	
4	Taxes / royalties	Contribution to national economy	High	❖ Pay all applicable taxes and royalties to the government as required. ❖ Pursue operational targets as set out in the Business Plan by maintaining and continual increasing of the current level of production. ❖ Internally track the efficiency to ensure maintenance of profits.	Financial Manager	Ongoing	Not audited.
5	Use of harbours	Financial contribution to harbours	Medium	❖ Pay all applicable fees at harbours. ❖ Use Lüderitz/Walvis Bay harbour	Materials Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				infrastructure and services where possible.			Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
6	Training and Skills Transfer	Contribution to Namibian training, education and research	High	❖ Continue to provide employees with training to develop skills by: ▪ Addressing training needs of the work force. ▪ Continuously, conduct environmental awareness and health and safety awareness programmes. ❖ Incorporate environmental aspects and management interventions applicable to particular outsourced tasks into contracts and performance appraisals to improve environmental awareness and performance. ❖ Emergency preparedness and response teams/contractors are to train employees and contractors on appropriate skills.	Human Resources Manager Environmental Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Diamond Fields (Namibia) (Pty) Ltd to take cognisance of the NIMPA+ Project and to assist where feasible.
7	Research and development	Technological advancements in mining systems	High	❖ Continue conducting research and development in prospecting, mining and metallurgical technologies for marine diamond mining as well as management associated likely environmental impacts and monitoring	Technical Manager	Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
8	Sponsorships of research, education and community projects	Contribute to Namibia's knowledge-base in building a knowledge based economy	High	❖ Where possible supply research/exploration data to the marine science and fisheries communities ❖ Where possible, sponsor Namibian research and education to contribute to public understanding of relevant environmental issues and		Ongoing	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). Diamond Fields (Namibia) (Pty) Ltd to take cognisance of the NIMPA+ Project and to assist where feasible.

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				environmental management practices e.g. invite scientists to participate in environmental surveys and share knowledge on findings including contributions to biodiversity conservation and ecosystem value and functions. ❖ Continue with identification of important social corporate responsibility initiatives / programme at local (Lüderitz), regional (//Karas Region) and national (Namibia) levels ❖ Provide social contributions at local (Lüderitz), regional (//Karas Region) and national (Namibia) levels	Environmental Scientists Environmental Manager		

Table 9: Compliance with regards to mine closure (*after Risk-Based Solutions, 2017*).

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
Management Objectives: ❖ Address a range of issues from the very first stages of mine development. ❖ Prioritise key financial, social, health, safety, as well as traditional environmental and economic considerations in the development and implementation of mine closure and reclamation plans. ❖ Ensure that regulatory requirements in terms of financial provision for mine Closure, Rehabilitation and Aftercare are met							
1	Closure Plan	Termination of all contributions to the economy including taxes, employment, support to secondary industries	High	❖ As an interdisciplinary initiative for all involved undertake to develop Closure Plan, which gives attention to: ▪ approximate dates of progressive or partial closure applications, ▪ objectives of closure planning, ▪ relevant decommissioning and ~~rehabilitation monitoring programmes~~, ▪ financial provisioning for mine	Environmental Manager	Ongoing	Diamond Fields (Namibia) (Pty) Ltd does not have a Mine Closure Plan in place (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). A **Mine Closure Plan** to be drawn up, submitted to the MME and MEFT,

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				closure, ▪ provisioning for the development of a social and labour plan for closure, ▪ rehabilitation actions required to obtain closure, ▪ human resources and community plan of action, ▪ communication strategy, and ▪ actions required for sustainability.			implemented, and maintained.
2	Closure Planning	Improved management of closure and rehabilitation	High	❖ Ensure that closure planning continues throughout the life of the operation. ❖ Gather relevant information throughout the life of mine to ensure that environmental risks are quantified and managed proactively. ❖ Make provision as part of ongoing environmental management for post-mining surveys of selected areas to demonstrate recovery (3-5 year intervals). ❖ Ensure that Safety and Health requirements are complied with.	Environmental Manager	Ongoing	Diamond Fields (Namibia) (Pty) Ltd does not have a Mine Closure Plan in place (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). A **Mine Closure Plan** to be drawn up, submitted to the MME and MEFT, implemented, and maintained.
3	Closure Certificate	Improved management of closure and rehabilitation	High	❖ A final EMP performance assessment should be conducted to ensure that: ▪ the requirements of the relevant legislation have been complied with; ▪ the research and monitoring that has been conducted (including the total area disturbed) is summarised; ▪ the closure objectives as described in the Closure Plan have been met; and ▪ all residual and latent environmental impacts and	Environmental Manager	On Closure	Not currently applicable (N/A)

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				the risks thereof occurring have been identified, quantified and arrangements for the management thereof have been finalised. ❖ When applying for closure, submit the following documentation to both the Mining and Environmental Commissioners: ▪ The Closure Plan ▪ The Final Performance Assessment Report ❖ An application form to transfer environmental responsibilities and liabilities beyond mine closure into the aftercare stage and for the as the Environmental Commissioner may prescribe			
4	Financial Provisioning for Mine Closure, Rehabilitation and Aftercare	Improved management of Closure, Rehabilitation and Aftercare stages	High	❖ Allocate operational costs to maintain to meet the EMP objectives, ensuring that potential environmental impacts are integrally managed or monitored in such a way as to prevent or minimise them. ❖ Maintain adequate Protection and Indemnity (P&I) Insurance Cover to allow for Closure, Rehabilitation and Aftercare liabilities. ❖ Allocate operational costs to monitor and demonstrate natural recovery of the seabed through pre- and post-mining benthic faunal and seabed surveys. ❖ Provide sufficient funds for a post-closure environmental survey (seabed and/or benthic faunal survey) in the event that on closure or premature closure, the benthic monitoring programme has not been completed or has not been able to demonstrate sufficiently that	Financial Manager	Ongoing	Diamond Fields (Namibia) (Pty) Ltd does not have a Mine Closure Plan in place (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). A **Mine Closure Plan** to be drawn up, submitted to the MME and MEFT, implemented, and maintained.

No.	Aspect	Impact Description	Risk / Gain ranking	Action Plans and Control Measures	Responsible Person(s)	Timing	Compliance / Comments (January 2024)
				natural recovery processes are occurring.			

3.3 Compliance: Environmental Monitoring

In order to illustrate compliance with the environmental monitoring programme (see Table 10), the following colour codes were applied:

	Compliance/Completed
	In Progress/Ongoing
	Non-compliance
	Not (Currently) Applicable
	Changes made to existing EMP
	Unknown
	Not audited

Table 10: Compliance with the summary of scheduling of proposed environmental monitoring and scheduling with respect to exploration and mining operations (*after Risk-Based Solutions, 2017*).

Aspect	Variables	Timing and Frequency	Compliance / Comments (January 2024)
Impact on the coastal and marine ecosystem function, services, value and non-use	❖ Establish the quality baseline for all the key components of the coastal and marine ecosystem function, services, value and non-use ❖ Undertake modelling (currents, circulations etc)	**Timing**: Prior to implementation of the exploration and / or mining operations; **Frequency:** As per specific components and as provided in this EMP or recommended by the specialist consultant (monthly, biannual and annually).	See Lane *et al.* (2000; Revised April 2008 by J. Midgley and Revised August 2020 by H. Hückstedt) re the data collected up to 2008.
Suspended sediment plumes during mining	❖ Water sampling of tailings plume. ❖ Aerial photographs of plumes. ❖ Monitoring H_2S, dissolved O_2 concentrations, organic content of sediments, turbidity and currents. ❖ Record wind speed and direction in vessel's bridge log. ❖ Conduct visual observations of the plumes.	**Timing**: Prior to implementation of the exploration and / or mining operations; **Frequency:** As per specific components and as provided in this EMP or recommended by the specialist consultant (continuous, monthly, biannual and annually).	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Release of contaminants from discharged sediments	❖ Water and sediment sampling	**Timing**: Before and after discharge; **Frequency:** Continuous, monthly, biannual and annually depending on the short or long term objectives of the intended outcomes / results	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Release of hydrogen sulphide from ~~mudbelt~~ sediments	❖ On-board air quality monitoring. ❖ Conduct a coring survey to determine the presence of H_2S pockets.	**Timing:** Before mining is conducted in thick mud overburden areas. **Frequency:** Continuously during operations.	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

Aspect	Variables	Timing and Frequency	Compliance / Comments (January 2024)
			No exploration/mining will take place in the mudbelt (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Smothering of seabed communities by depositing plume sediments	❖ Pre-mining geophysical ~~and video~~ surveys ~~(e.g. SSS and AUV).~~ ❖ Post-mining geophysical ~~and video~~ surveys ~~(e.g. SSS and AUV).~~	**Timing:** Before commencement of operations and directly after mining has occurred ~2-3 years post-mining **Frequency:** Once per event	Pre-mining geophysical surveys are conducted (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No SSS, box coring, ROV, AUV, or surveys using a submersible will be carried out (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Overburden stripping and dumping	❖ Conduct a pre-dumping benthic macrofaunal survey of the dumpsite to record seabed topography and types of marine life present, using a suitable sampling device: ▪ Grab sampling surveys. ▪ ~~Video footage collected from a Remotely Operated Vehicle (ROV)~~. ▪ Geophysical ~~(e.g. high resolution AUV and SSS)~~ surveys. ❖ Monitor the affected area using geophysical and/or benthic sampling techniques to assess the ecological recovery rate and redistribution of sediments in, and around, the sacrificial dump sites.	**Timing:** Before commencement of overburden dumping and commencing 2-3 years after disposal. **Frequency:** Once per event	See Lane *et al.* (2000; Revised April 2008 by J. Midgley and Revised August 2020 by H. Hückstedt) re the data collected up to 2008. No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.). No SSS, box coring, ROV, AUV, or surveys using a submersible will be carried out (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Rock lobsters and other marine life	❖ Keep a record of the numbers of rock lobsters/fish appearing ~~in the grabber~~ on the screens during the exploration and ~~on the screens during the~~ mining operations.	**Timing**: During the sampling and mining operations **Frequency:** Continuously during the operations.	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty)

Aspect	Variables	Timing and Frequency	Compliance / Comments (January 2024)
			Ltd, pers. comm.).
Marine mammals and seabirds	❖ Record the number of large mammals sighted, together with their proximity to the vessel and behaviour patterns. ❖ Record the numbers and species of birds sighted during all activities associated with the operations.	**Timing**: During the sampling and mining operations **Frequency:** Daily during the operations.	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Presence of other vessels / users in the area	❖ In the vessel logbook, record sightings of and interactions with other vessels / users to note potential conflicts over rites of passage and access to resources.	**Timing**: During the sampling and mining operations **Frequency:** When it occurs	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Noise	❖ Monitor noise levels.	**Timing**: During the sampling and mining operations **Frequency:** Monthly during the operations. Monthly during operations.	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Water use	❖ Keep records of quantities of fresh water used, purposes of use, and sources of supply.		No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
FeSi	❖ Monitor FeSi consumption, set targets and put action plans in place should targets be exceeded.		No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Energy use	❖ Oil and fuel consumption. ❖ Emissions (CO_2 per ton) from oil and fuel consumption. ❖ Visual inspection for oil spills and leaks.		No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Hazardous substances	❖ Keep records of quantities of hazardous substances used and disposed of.		No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Wastes and scrap	❖ Maintain an Official Garbage Record Book onboard vessels for all discharges of waste/incinerations.		No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief

Aspect	Variables	Timing and Frequency	Compliance / Comments (January 2024)
	❖ Maintain records of the types and amounts of waste disposed of. ❖ Keep records of any waste or scrap recycled.		Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
X-Ray Units at Final Recovery	As per the **Radiation Management Plan**		
Incidental loss of equipment at sea	❖ Maintain a hazards database listing the type of gear left on the seabed with the dates of loss and locations and, where applicable, the dates of retrieval.	**Timing**: During the sampling and mining operations **Frequency:** Continuously during the operations.	No exploration or mining work have been carried out within ML139 since 2008 (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Employment and expenditure	❖ Keep records of employees and sub-contractors involved in operations.	**Timing**: During the sampling and mining operations **Frequency:** Annually during the operations.	Ongoing (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).
Economic benefits	❖ Keep a record of total expenditure.	**Timing**: During the sampling and mining operations **Frequency:** Annually during the operations.	Ongoing (Mr Hans Hückstedt, Chief Geologist, Diamond Fields (Namibia) (Pty) Ltd, pers. comm.).

4 Conclusions and Recommendations

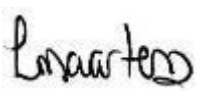
Diamond Fields (Namibia) (Pty) Ltd has not undertaken any exploration or mining activities within Mining License 139 since 2008.

Planned for the near future is to expand on geophysical surveys, identify new target areas for drill sampling, complete the previous drill programme, as well as an additional drill programme, in order to delineate areas of positive samples and mine resources. The sampling programme will be carried out using the MV Explorer. The estimation of the resource will then be added to that of ML111. Future mining will be carried out with the MV Ya Toivo.

It is advised that Diamond Fields (Namibia) (Pty) Ltd (and their employees and contractors) should implement and observe the Environmental Management Plan(s) (see Risk-Based Solutions (RBS) CC, 2017) on an ongoing basis. Environmental performance should be regularly monitored (so that the lessons learnt can be incorporated into the improvement of the Environmental Management (and Monitoring) Plans over time) and corrective measures taken as or when required.

Specific recommendations include (that Diamond Fields (Namibia) (Pty) Ltd appoint qualified person(s) to):

- Carry out **environmental monitoring** as per the recommendations made by Risk-Based Solutions (RBS) CC (2017);
- Update the **socio-economic** baseline/data/requirements once the results from the 2023 Population Census are available;
- Update and maintain the **Interested and Affected Party (I&AP) Register** (see Lane *et al*., 2000 revised by Midgley, 2008 and Hückstedt, 2020);
- Take cognisance of the NIMPA+ Project and assist where feasible;
- Maintain **open and frequent communication** with existing and other users in the area (see RBS, 2017);
- **Cooperate** / **integrate future mine plans** with existing and other users in the area (see RBS, 2017);
- **Share** research/exploration data with the marine science and fisheries communities (where feasible; see RBS, 2017);
- **Be mindful of the cumulative effects** negatively impacting the environment (within the NIMPA);
- Implement the mitigation measures (see Maitland, 2023) against loss of **Maritime and Underwater Cultural Heritage**;
- Identify all the waste streams and prepare an **Integrated Waste Management Plan**;
- Develop, implement and maintain an **Oil Spill Contingency Plan** (according to protocols outlined in the Namibian National Marine Pollution Contingency Plan (NMPCP) (Government of the Republic of Namibia, 2017);
- Comply with the Water Resources Management Regulations (2023): Water Resources Management Act, 2013;
- Develop, implement and maintain a **Mine Closure Plan**;
- Ensure that contractors have a **Radiation Management Plan** in place (the content of the Radiation Management Plan to be based on the requirements and stipulations of the Atomic Energy and Radiation Protection Act 5 of 2005, as well as the relevant stipulations in the Radiation Protection and Waste Disposal Regulations of 2011; the structure of the Radiation Management Plan to follow the guidelines for Radiation Management Plans as issued by the National Radiation Protection Authority); ensure that contractors have the necessary authorisations and permits in place; and
- Conduct a critical review of the **aspects and potential impacts** that their exploration/mining operations have/may have on the environment and update that **Environmental Management Plan(s)** accordingly; the work carried out by Risk-Based Solutions (RBS) CC (2017) to be used as the basis.



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Annexure A

ECC – 01152

Serial: 7GRUDP1152

REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

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

TO

Diamond Fields (Namibia) (Pty) Ltd
P O Box 9600, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Marine Diamond Exploration and Mining in the Mining License (ML) No. 139, Lüderitz Area, //Karas Region

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM
Private Bag 13306
WINDHOEK, NAMIBIA
12 JAN 2021
ENVIRONMENTAL COMMISSIONER
REPUBLIC OF NAMIBIA

ENVIRONMENTAL COMMISSIONER

Issued on the date: **2021-01-05**

Expires on this date: **2024-01-05**

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ECC –

CONDITIONS OF APPROVAL

1. This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office
2. This certificate does not in any way hold the Ministry of Environment and Tourism accountable for misleading information, nor any adverse effects that may arise from these activities. Instead, full accountability rests with the proponent and its consultants
3. This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project
4. All applicable and required permits are obtained and mitigation measures stipulated in the EMP are applied particularly with respect to management of ecological impacts.
5. Strict compliance with national heritage guidelines and regulations is expected throughout the life-span of the proposed activity, therefore any new archaeological finds must be reported to the National Heritage Council for appropriate handling of such.
6. A six monthly report on project progress and environmental management profile, starting from date of commencement of operations, must be submitted by the Proponent to Office of Environmental Commissioner.

---------- Forwarded message ---------
From: **Ministry of Environment and Tourism** <noreply@meft.gov.na>
Date: Thu, 18 Jan 2024 at 09:38
Subject: Your application is verified
To: Hans Huckstedt <llnp.hans@gmail.com>

REPUBLIC OF NAMIBIA
Ministry of Environment, Forestry & Tourism

2024-01-18

Dear Hans Huckstedt,

This email serves to inform you that your application **APP-002677** has been verified

Taking the following into considerations:

- Location of the project
- Polution potential
- Scale of operation of the project

Please upload the following documments:

- Updated EMP to effect amendment
- Confirmation of screening notice received (through email) in terms of assessment procedures (Section 35 (1)(a)(b) of the Environmental Management Act, No 7 of 2007)
- Preliminary Site Map with coordinates (decimal degrees) and a Legend

- Copy of the previous Environmental Clearance Certificate issued in terms of Section 37(1)(a) of EMA
- CV of Environmental Assessment Practitioner (EAP)

Please login onto our portal to upload required documents, if any
https://eia.met.gov.na

NB- for the purpose of Section 38 of the Environmental Management Act, 2007 read with Regulation 4(d), kindly forward copies of all relevent documents i.e (application forms, EIA, Scoping reports, EMP etc) to the office of the Environmental Commissioner

Thank you

Phillip Troskie Bulding
P/Bag 13306, Windhoek | Tel: +264 61 284 2111 | DEA: +264 61 284 2701

---------- Forwarded message ---------
From: **Ministry of Environment and Tourism** <noreply@meft.gov.na>
Date: Wed, 17 Jan 2024 at 15:15
Subject: New application for an Environmental Clearance Certifcate
To: Hans Huckstedt <llnp.hans@gmail.com>

REPUBLIC OF NAMIBIA
Ministry of Environment, Forestry & Tourism

2024-01-17

Dear Hans Huckstedt,

Thank you for applying for an Environmental Clearance Certificate.

Your application has been registered with application number **240117002677**

Thank you

Phillip Troskie Bulding
P/Bag 13306, Windhoek | Tel: +264 61 284 2111 | DEA: +264 61 284 2701

Annexure B

Diamond Fields (Namibia) (Pty) Ltd

Application for Renewal
of
Environmental Clearance Certificate (ECC)
for
Marine Diamond Exploration and Mining in
Mining Licence No. 139, Lüderitz Area

Sep 2017 to Sep 2020
Performance Monitoring Report

Report date: September 2020





Proponent and Mining licence details

Company name:	Diamond Fields (Namibia) (Pty) Ltd
Company Registration number:	86/039
Company street address:	14 Strauss Street, Windhoek, Namibia
Company postal address:	P.O. Box 9600, Windhoek, Namibia
Company telephone number:	+264 61 226672
Company fax number:	+1 604 6083453
Licence type and name:	Mining licence No. 139 (ML139)
Mining licence:	Granted 5 Nov 2007 and Expires 4 Nov 2029
Environmental clearance certificate:	Granted 20 Sep 2017 and Expires 20 Sep 2020
ML139 Geographical location:	Lüderitz Area, //Karas, Southern Namibia
Type of activities:	Marine diamond exploration and mining

Contents

1. Introduction

1.1 Outline

This report has been prepared to comply with the environmental monitoring and reporting requirements and provisions of the Environmental Clearance Certificate (ECC), Environmental Management Plan (EMP), Environmental Management Act, 2007, Environmental Impact Assessment (EIA) Regulations 2012, the Minerals (Prospecting and Mining) Act, 1992, (Act No. 33 of 1992), Diamond Fields (Namibia) (Pty) Ltd Environmental and Sustainability Policies as well as other related operational and contractual obligations.

The proponent, Diamond Fields (Namibia) (Pty) Ltd (DFN) holds the mineral right for precious stones under ML139. This ML139 was granted 5 November 2007 and will expire 4 November 2029.

The current ECC was granted 20 September 2017 and will expire 20 September 2020, see figure 1.1.

1.2 This report's purpose

This report summarises the environmental work that has been completed over the previous three years by DFN in accordance with the conditions of the ECC. This Environmental Compliance Performance Monitoring Report covers the period September 2017 to September 2020 under review.

This report is based on the Environmental Monitoring Programme Report, revised 2020 (Annexure 1) as well as the Marine Specialist study Report (Annexure 2) conducted to support the application for the renewal of the ECC for Diamond Fields (Namibia) (Pty) Ltd, which is expiring 17 September 2020.

1.3 Operational compliances - Environmental regulations

Environmental Assessment (EA) process in Namibia is governed by the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazetted under the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007).

The current exploration and mining activities falls within the categories of listed activities, that can only be undertaken with a valid Environmental Clearance Certificate.

Diamond Fields (Namibia) (Pty) Ltd has an Environmental Clearance Certificate for the exploration and mining operation that will expire 20 September 2020 and this report has been prepared in order to support the renewal application.

1.4 The proponent - Diamond Fields (Namibia) (Pty) Ltd (DFN)

DFN is a local subsidiary of Diamond Fields Resources Inc. (DFR) based in Vancouver, Canada. DFN and DFR are sister companies sharing the technical and financial expertise in diamond mining and exploration operations in ML139. The two companies are technically and financially supported by a group of international companies and investors actively involved in offshore diamond exploration and mining operations.

1.5 Diamond Fields (Namibia) - Environmental policy statement

Diamond Fields International
Environmental Policy

The Diamond Fields International's policy is to achieve a high standard of environmental care in conducting its business as a diamond resource company. The Diamond Fields International approach to environmental management seeks continuous improvement in performance by taking account of evolving scientific knowledge and community expectations.

Specifically it is Diamond Fields International's policy to:

- Ensure that management systems to identify, control and monitor environmental risks from it operations are in place;
- Comply with all applicable laws, regulations and standards and where laws do not adequately protect the environment, apply standards that minimise any adverse environmental impacts resulting from its operations;
- Communicate openly with government and the communities on environmental matters and contribute to the development of policies, legislation and regulations that may affect the company; and
- Ensure that its employees, contractors and suppliers are informed about this policy and are aware of their environmental responsibilities in relation to Diamond Fields International operations and activities.

1.6 Summary of activities over the three year ECC Period 2017 to 2020

DFN did not conduct exploration or mining activities within ML139 during the period September 2017 to August 2020 for reason of exploration and mining activities being focused on their other two mining licences ML111 and ML32. Furthermore the challenging conditions in the global diamond market resulted in difficulties to raise capital for exploration and mining operations, apart from those activities they conducted in ML111 and ML32.

DFN has managed to secure the technical and financial support of the International Mining and Dredging Holdings Group (IMDH) that will undertake future exploration and mining operations in ML139.

Once mining and exploration resumes, environmental monitoring will be undertaken and environmental data will be collected daily as outlined in the Daily Log shown in Annexure 3.

REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

Tel: (00 26461) 284 2111
Fax: (00 26461) 229 936

Cnr Robert Mugabe &
Dr Kenneth Kaunda Street
Private Bag 13306
Windhoek
Namibia

Enquiries: Mr. Josafat K Hiwana
E-mail: josafat.hiwana@met.gov.na

18 September 2017

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

The Managing Director
Diamond Fields Namibia (Pty) Ltd
P. O. Box 9600
Eros
Windhoek
Namibia

Dear Sir/Madam

SUBJECT: ENVIRONMENTAL CLEARANCE CERTIFICATE FOR THE MARINE DIAMOND MINING AND EXPLORATION IN MINING LICENSE (ML) 139 SITUATED IN LUDERITZ AREA, //KARAS REGION

The Environmental Impacts Assessment and Environmental Management Plan submitted are sufficient as it made provisions of the environmental management concerning the proposed activities. From this perspective, regular environmental monitoring and evaluations on environmental performance should be conducted. Targets for improvements should be established and monitored throughout this process.

This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project.

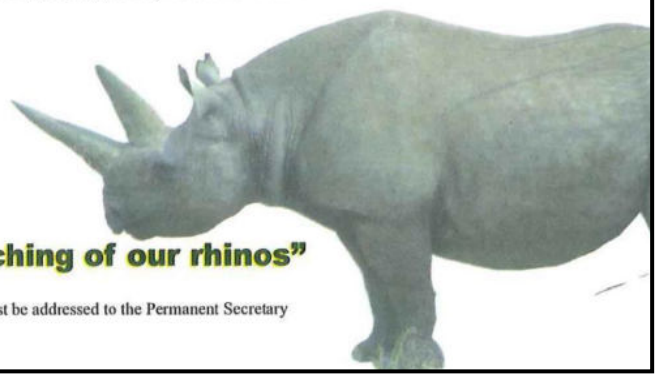
On the basis of the above, this letter serves as an environmental clearance certificate for the project to continue. However, this clearance letter does not in any way hold the Ministry of Environment and Tourism accountable for any misleading information, nor any adverse effects that may arise from this project's activities. Instead, full accountability rests with Diamond Fields Namibia (PTY) Ltd.

This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office.

Yours sincerely,

MINISTRY OF ENVIRONMENT AND TOURISM P/Bag 13306 Windhoek, Namibia 2017 -09- 20 Office of the Environmental Commissioner

Teofilus Nghitila
ENVIRONMENTAL COMMISSIONER



"Stop the poaching of our rhinos"

All official correspondence must be addressed to the Permanent Secretary

Figure 1.1: Valid ML139 ECC granted 20 September 2017 and expires 20 September 2020.

1.7 History of ML139

From 2001 and 2004 mining operations on DFN's marine diamond concessions were conducted on an irregular basis under various joint venture and contracting arrangements. During late 2004 DFN acquired its own twin airlift mining vessel, mv DF Discoverer, which began mining on the licence area in mid-2005. However as result of the global economic downturn in 2008, all operations were suspended. With conclusion of the Joint Venture Agreement with IMDH, DFN will be starting marine diamond mining with ongoing exploration operations in the ML139.

1.8 Location of ML139

ML139 falls within the mid-shallow Namibian marine environment (inner shelf region) north of Lüderitz area, //Karas Region, Southern Namibia. The ML lies 47 km north of Lüderitz, 2.5 km offshore in water depths of 20 to 120 m. The entire ML falls within the 30 km offshore demarcation of the Namibian Islands' Marine Protected Area (NIMPA).

See figure 1.2 for the regional location map.

To the east, ML139 borders onto ML32 belonging to the sister company Namibia Diamond Company (Pty) Ltd. The total licence area is 13,600 Ha. The ML boarders onto EPL3857 to the west and ML36H to the south east.

See figure 1.3 for the detailed locality map.

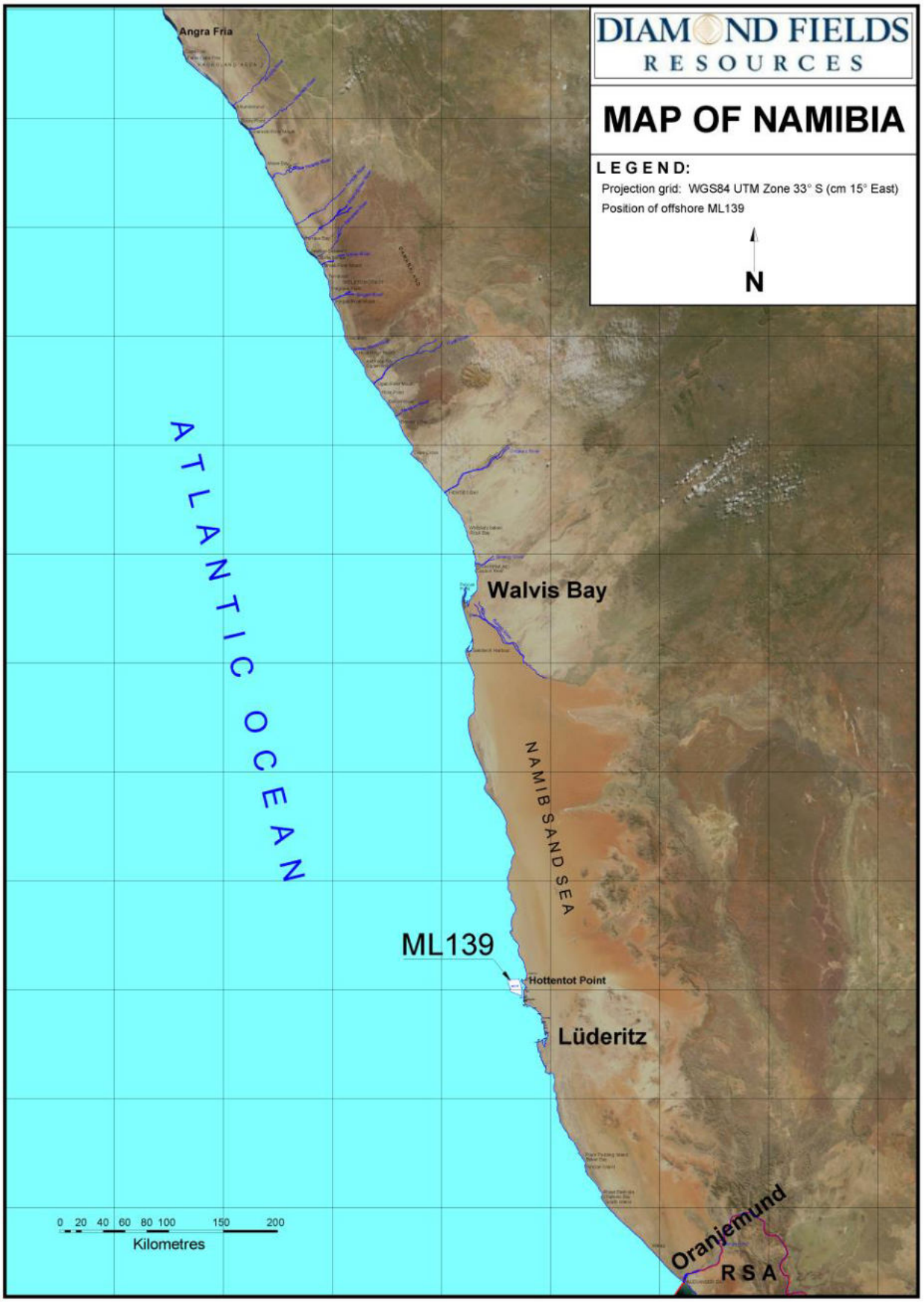


Figure 1.2: Regional location of ML139.

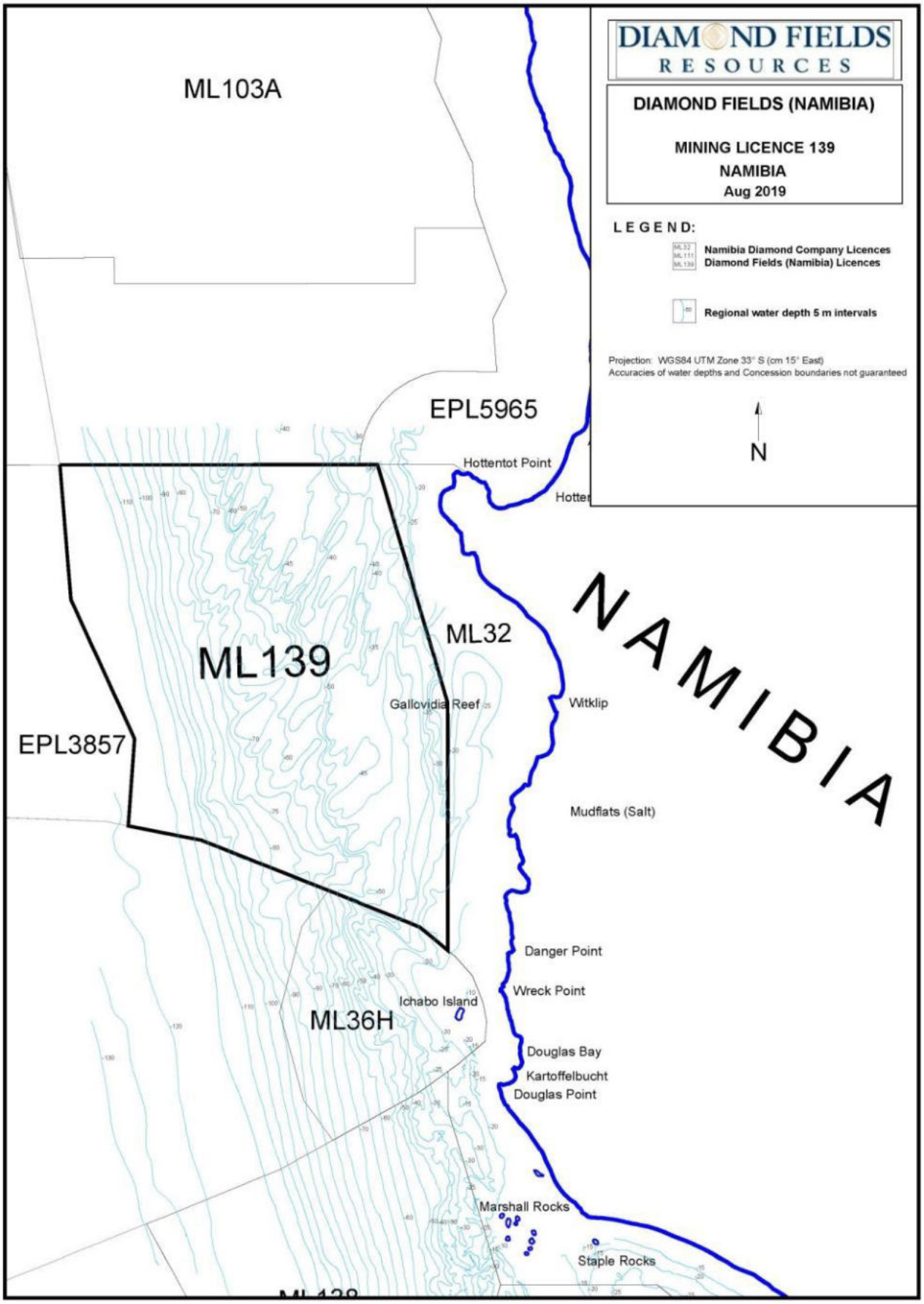


Figure 1.3: Detailed locality map of ML139 with bathymetric contours.

2. Methodology of assessment

The methodologies followed during the review of the assessments consist of the following sections relating to certain documents and processes.

2.1 Public consultation process

Public consultation has been emphasised during both the original compilation of the EIA and EMP report, as well as during the previous revision process (Annexure 1).

Do note that since this EMP report has been prepared to support the application for the renewal of the Environmental Clearance Certificate that will expire in September 2020 and no new changes to DFN's exploration and mining operations have occurred since the previous revision to the EIA and EMP 2008 reporting, this updated EIA And EMP report has not been made available to the registered stakeholders.

2.2 Specialist studies

For over twenty five years Diamond Fields (Namibia) has commissioned several specialists to conduct environmental studies and monitoring of the exploration and mining activities, as part of the EIA and EMP reports.

Some of the research and monitoring activities, as well as project-specific studies that have been undertaken are:

- EMP report (Annexure 1)
    - Short term management concerned with every day operations
    - Strategic management that ranges from two years up to end of life of mine

- Specialist report on fisheries and marine fauna (Annexure 2)

- Social and economic study (Annexure 4)

2.3 Environmental Management System of Diamond Fields (Namibia)

DFN is committed to responsible marine diamond exploration and mining linked to sound environmental management of all activities as reflected in the Environmental Policy.

The implementation of Environmental Management System (EMS) is guided by the following policies:

- Environmental Policy;
- The Namibian Environmental Assessment Policy;
- Existing and anticipated environmental legislation.

This revised report will be integrated within DFN's Environmental Management Systems.

2.4 Risk assessment and gap analysis

One of the aims has been to review the assessment of the potential risks associated with the current mining and exploration operations, including any new activities since the last updated EMP, as well as reviewing potential cumulative and synergistic impacts.

However since no exploration or mining was conducted over the ECC three year reporting period, information available from previous reports were used. These include specialist and research studies on mining impacts over the past fifteen years and an update of the previous risk assessment.

Furthermore a gap analysis was previously conducted to identify shortfalls in the state of knowledge of marine mining impacts, particularly those of potentially high risk to the environment. These results were then used to identify activities of high significance and/or medium to high risk that require management plans, and those environments for which monitoring is necessary. Accordingly the EMP was previously revised, which forms part of this document.

3. Equipment and methods of exploration and mining

3.1 Vessels for geophysical survey, exploration sampling and mining

Marine diamond exploration and mining operations requires use of specially designed vessels. DFN through its international technical partner, IMDH owns exploration and mining vessels, the mv DP Star (Figure 3.1 - Geophysical surveying), mv Explorer (Figure 3.2 - Wirth Drill sampling) and mv Ya Toivo (Figure 3.4 - Crawler mining technology). All vessels are capable of operating in a range of sea conditions and in water depths of between 30 and 200 m and are suitable to work in the rough seas experienced off Namibia's west coast.

Compliance to health, safety and environmental legislation and company policies and procedures are a pre-requisite, during operation, mobilisation and de-mobilisation of the exploration and mining operations. The vessels are operating in accordance with all regulations as defined by the Directorate of Maritime Affairs (DMA Namibia) which includes MARPOL, ISM and SOLAS guidelines.

3.2 Geophysical surveying

Various non-destructive geophysical survey techniques are used for the initial reconnaissance phase of exploration, applied initially over a regional area to delineate potential areas. Once the potential areas are identified, a second phase detail geophysical survey will follow at closer spaced survey lines. This phase is focused on identifying trap-sites with high potential to contain diamond bearing unconsolidated sediment. Once these trap-sites have been delineated, they are used to design a sampling exploration programme that will be undertaken by the exploration sampling vessel. A third phase of survey work involves mining support work, which are closely spaced lines (est. 20 m) which runs over small mine block areas. This data will allow further detail planning ahead of the mining campaign.

It is important to note that the geophysical survey techniques do not utilise explosives as an energy source and therefore is a non-destructive method. Geophysical data are typically collected over a grid of regularly spaced lines at intervals according to the regional (200 to 500 m spaced) or detailed phase (50 to 100 m spaced) survey of the potential area required.

Figure 3.1: Dedicated geophysical survey vessel, mv DP Star, length overall 45 m.

3.2.1 Types of geophysical survey equipment and methods

- For mapping the top of the sea floor, water depths are measured using hull mounted multi-beam echo-sounder equipment. The transducers emit an acoustic signal in the form of a swathe. A variable frequency of 40 to 100 kHz is used to collect high resolution water depth data at 100% coverage. Recorded data are processed and mapped together to produce a high resolution digital terrain model of the sea floor.

- To map out the sediment thickness above bedrock we use a hull mounted Parametric Topas seismic system (3.5 kHz) generating a focused signal beam. This system provides a seismic profile with very high vertical resolution (<10 cm) and medium penetration (15 to 30 m) of the sea floor sediment. This high-frequency, low energy seismic data are used to map the uppermost 10 - 15 m of unconsolidated sediment in order to identify rubble and gravel in the trap-sites.

- A second seismic system to map out sediment thickness, is a towed Sparker seismic system (0.8 kHz) which provides a seismic profile of medium vertical resolution (<40 cm) and medium to deep penetration (30 to 150 m). This data is typically used to define under laying bedrock where the high resolution system could not penetrate the upper unconsolidated sediment.

After processing and combining the geophysical data in a GIS format, we can easily eliminate areas not showing potential for further exploration and identify areas which warrants follow up exploration (either more detailed geophysical surveying or sampling). In order to achieve accurate interpretations and accurate target identification, high quality densely spaced, seismic and swath bathymetry data is of the essence.

3.3 Exploration sampling

The mv Explorer (length overall 114 m) is a dedicated sampling vessel, see figure 3.2 and 3.3. This vessel's drilling tool and plant is designed specifically for Namibian west coast diamond sampling with a central moonpool to maximise the weather window. The vessel has also been used to perform contract sampling for Namdeb, DeBeers Marine, Afri-CAN,

Samicor, Alexkor and other west coast diamond mining companies. It has been in operation for many years and has an established track record for being able to provide representative sampling results. The sampling tool has a 5 m2 footprint and utilises Wirth Drill technology.

3.3.1 Processing of sampled material

For processing of the sampled material, the vessel uses a Dense Media Separation (DMS) plant to sort the diamonds from the sediments using the high specific gravity of diamonds as the distinguishing parameter. X-ray fluorescence is used to sort the diamonds from the concentrate while super-concentrate is hand-sorted in glove boxes. The plant is sterilised between each sample and diamonds from each sample counted weighed and sealed in separate bags before they are deposited in a drop safe beneath the glove-box. Part of the sampling tool's ability is geotechnical assessment to determine geotechnical properties of the sediments and its suitability for mining with respect to the existing mining technique and technology.

Figure 3.2: The mv Explorer exploration sampling vessel.

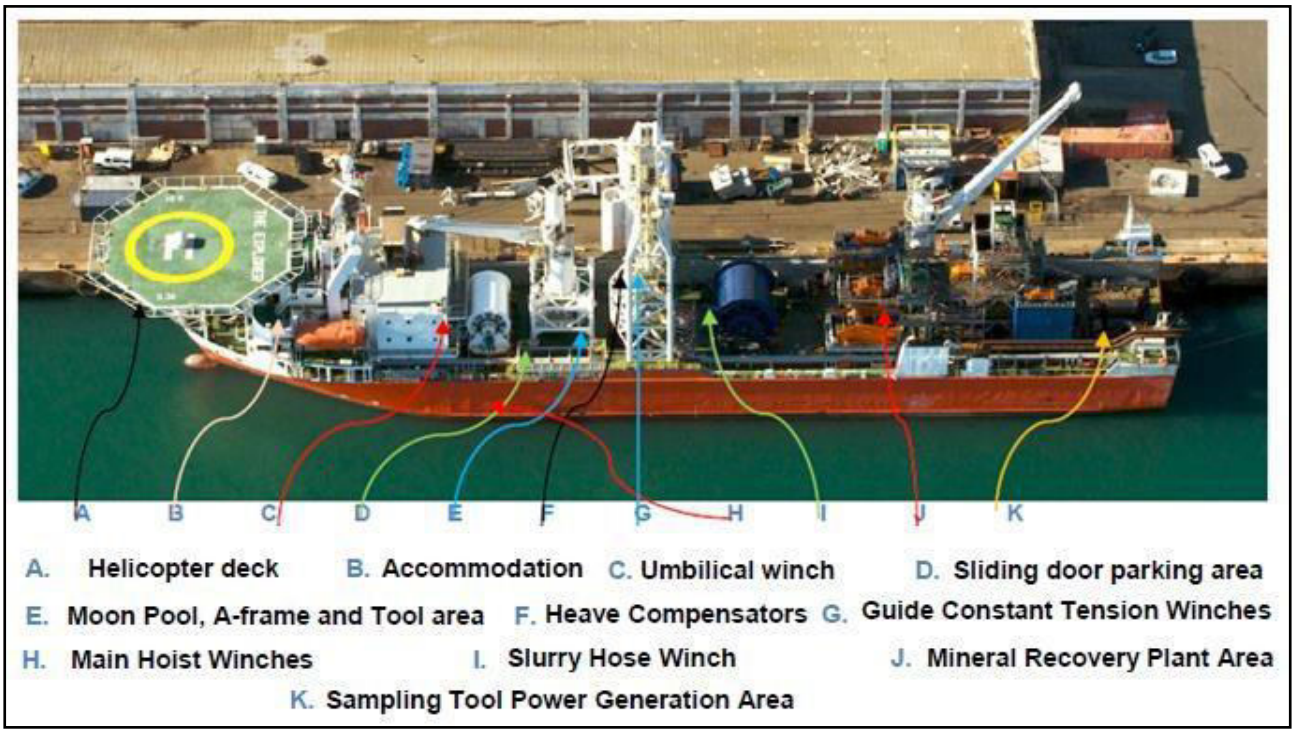


Figure 3.3: Layout of operations and equipment of the mv Explorer.

3.4 Mining equipment, mining method and processing of material

3.4.1 Mining equipment and method

The mining vessel mv Ya Toivo (length overall 149.50 m) is equipped with a 4 point-mooring-system, integrated anchor-assist and a DP 2 dynamic positioning system which combine to safeguard the vessel in remaining on station in all weather conditions (Figure 3.4).

Figure 3.4: Mv Ya Toivo with subsea tractor mining technology on-board

The vessel is further equipped with a Remotely Operated Subsea Tractor (ROST) launch and recovery system for subsea mining tool handling consisting of a large, fixed A-frame over the stern of the vessel and as well as a hoist winch and heave compensator. The mined material is slurry pumped from the seabed through a special riser system into the fully integrated 150 ton/hour diamond DMS processing plant.

The ROST has been developed in line with requirements for the west coast marine diamond industry of Southern Africa since 1997 and modified over time to maximise time utilisation and optimise extraction. This generation Tractor technology has itself seen modification to improve penetration of hard intermediate and footwall layers, see figure 3.5 for the illustration of this technology in operation.

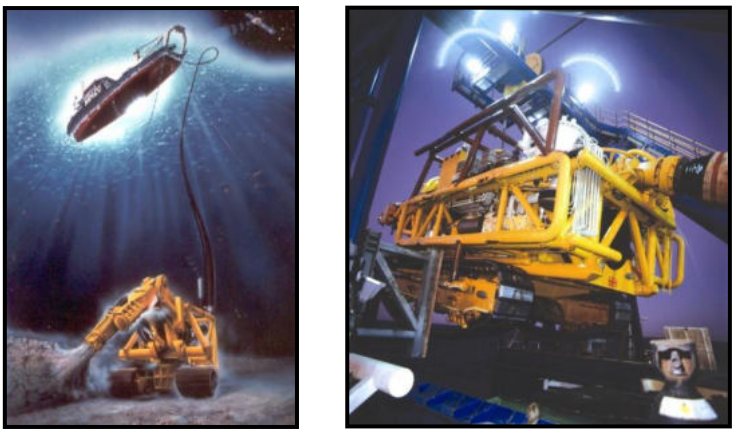


Figure 3.5: Mv Ya Toivo with subsea tractor mining technology in operation.

Operations are managed from the control room (two pilots per 12 hour shift) and the bridge (by the surveyor, ship's Captain, Offshore Manager and Senior Geologist) where all systems are connected via a modern network of communications, transponders, transducers, differential GPS, USBL and computers. Digital displays of tractor position and mining activity is live through the programming system supported by mounted probes on the tractor, and sonar (vertical & horizontal) tractor mounted scanners which allow real-time monitoring of the mining face.

Mining involves the removal of unconsolidated sediments that lie above hard bedrock. Mining is done according to a mine plan with the focus to mine resource features that were identified through a sampling campaign. Once the mining vessel is in position the subsea tractor is deployed through the moon pool and lowered onto the sea floor. Sea floor material is agitated with the physical mine head and water jetting at the front of the mining arm. Loosen material is pumped through the riser up the water column to the processing plant on board the vessel.

3.4.2 Processing plant for mined material

For processing of the mined material which reaches the vessel as a slurry, the vessel uses the on-board diamond processing plant specifically designed to treat this type of diamondiferous sea floor sediment to extract diamonds as the final product. This plant is typically includes 1) primary screening, removal of oversize and undersize and dewatering; 2) secondary screening for fines removal; 3) attrition milling, shell reduction and DMS concentration; and 4) X-ray recovery and glove box sorting of the concentrate to produce the final diamond product. See figure 3.6 for the flowchart of the processing plant.

This process is not using any chemicals, the only added component to the process is ferrosilicon (FeSi, an inert silica powder), used as a density modifying agent. Furthermore the bulk of the FeSi is recycled after use and very little ends up overboard.

The process and steps of material treatment, discarding and final diamond recovery is where 99.9% of the material is discarded back to sea and specific information required. The mined sea floor sediment is discharged over the primary sizing screen to separate the oversize and undersize material from the economically important middling fraction. The coarse oversize and fine undersize fractions will immediately be discarded overboard. Firstly, the coarse oversize material falls directly through the water column to the sea floor beneath the outfall pipe of the vessel. Secondly, the fine material discarded overboard, forms a turbid plume within the top of the water column and is carried away along current away from the vessel, where the sediment gradually disperses through dilution and settling to the sea floor.

The mine plan design and order of execution is very specific and carefully planned to ensure that discard material (99.9% of mined sediment) falls back into previously mined areas to prevent tailings to be re-mined, but also to assist in the rehabilitation process of the mined areas. The rehabilitation of marine mining environments occur naturally, unlike the rehabilitation of land-based mines, which takes place once the mining has been completed in a particular area. DFN's environmental research focuses on greater knowledge of the natural variability of the environment and understanding the consequences of marine mining.

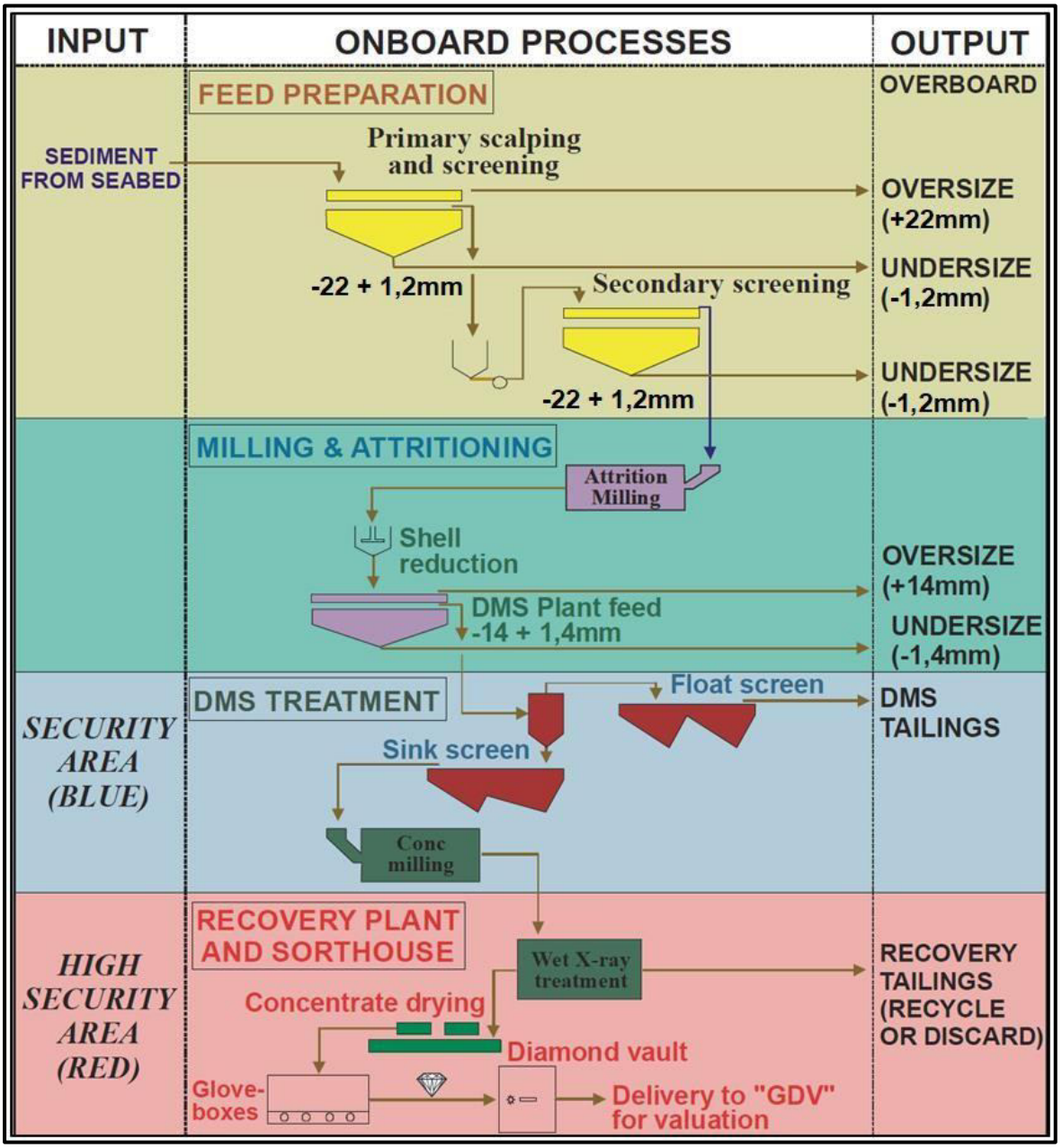


Figure 3.6: Mining vessel diamond processing plant flowchart.

3.5 Pollution control and operational support

Various types of waste (primarily packaging) is generated on-board, related to exploration and mining vessel activity. All waste products are sorted safely and separately in such a manner as to prevent fluid from contaminating the environment and/or sea. Waste management at sea is governed by the International Convention for the Prevention of Pollution from Ships (MARPOL) and this standard is maintained by the vessels.

The vessel's potentially pollution-causing waste and handling thereof are listed below.

3.5.1 Domestic waste

Combustible domestic waste (packaging, papers, etc.) is incinerated on-board, as this serves to reduce the quantity of waste accumulating in onshore landfills.

Non-combustible domestic waste (tins, bottles etc.) is accumulated in garbage bags and periodically removed whilst in port and disposed of by Namport's garbage disposal service.

3.5.2 Organic waste

All organic waste (food waste) is dumped at sea, but is macerated prior to discharge. All garbage discharge to the sea water is done in compliance to MARPOL standards. Effectively, this relates only to biodegradable food products and ash from the incinerator that has been sieved for any non-combusted items. Human waste is fully processed through the sewage treatment plant aboard the vessels when operational.

3.5.3 Vessel fuel

The fuel used by the vessels is Marine Gas Oil (MGO), a rapidly evaporating light diesel engine fuel. The fuel is also used for the on-board generators which supply electricity for operating all mining equipment.

Refuelling or "taking of bunkers" occurs from an offshore tanker at statutory 50 nautical mile limit from the coast, or in port, approximately once, every six to eight weeks when the vessels are operational. All fuel transfers are in accordance with the bunkering regulations of the Ministry of Mines and Energy (MME) and the Ministry of Works and Transport (MWT), within Namibian and international legal requirements. Fuel usage over the 3 year ECC period is logged when on station.

The fuel remains the risk of the supplier until the vessels are connected to transfer fuel. While the vessels are connected, however, liability for oil pollution falls to the receiving vessel.

3.5.4 Hydraulic and other oils

All used oil is drummed and sent ashore at Lüderitz or Cape Town for recycling / reprocessing by certified waste service providers. The Lubricating Oil (LO) or Heavy Oil (HO) usage over the 3 year ECC period is logged when on station.

3.5.5 Ferrosilicon

Ferrosilicon (FeSi) used in the diamond extraction process, may lead to an increase of iron in the tailings where it may affect primary productivity and may lead to changes in the structure of the phytoplankton community. Loss/increase usage of ferrosilicon increases with the occurrence of shelly substrates (it accumulates within the shells) all vessels are fitted with crusher equipment to break up the shells and therefore maximize its retrieval. FeSi is one of the highest operating costs and therefore its consumption is reduced by recycling wherever possible. FeSi usage over the three year ECC period is logged when on station.

3.5.6 Other waste

Other than domestic cleaning products found in most households, no hazardous chemicals are used on-board, with the exception of paints used on the vessels. These are kept in a closed store in compliance with the vessel SHE and ISM management system. All chemicals on-board and the safe disposal of the used containers are controlled by the vessel SHE and ISM system.

3.5.7 Water supply and usage

All vessels carry stocks of potable water, which are occasionally topped up by the supply from Lüderitz Port. Additional water is purified using evaporative desalination (flash evaporation) units on-board each vessel and using waste heat generated from the engines to cause the evaporative process, thereby not requiring specific energy usage.

3.5.8 Training, communication and security

DFN recognises that the continual achievement of high environmental standards requires the involvement and commitment of all personnel associated with the company's operations. To this end, DFN is committed to the provision of necessary training and information to all company employees in relation to environmental matters.

All persons entering and embarking the vessels require a Restricted Area Permit (RAP) in terms of the Diamond Act 13 of 1999 (and the Regulations) from the Ministry of Mines and Energy. Before employment, all prospective employees, temporary staff and contractors are screened by the Police Services of their country of origin. A Police Clearance certificate is required to verify the individual's identity and risk profile. Short listed prospective employees undergo a polygraph test, performed by DFN. Once employed, the new employees are given a security induction course. Furthermore all employees and visitors to the vessels are searched before boarding the vessel.

Although the key impacts of marine mining are seabed related, this is not the sole focus of DFN's environmental management. Therefore all aspects of operations are carefully considered and managed through the implementation of a well formulated Environmental Management System, in pursuance of the highest levels of environmental management. The philosophy of the company, as embodied in the company's Environmental Policy, is to continuously improve its environmental management practices through monitoring of the key characteristics of operations and thereby reducing any negative impacts resulting from operations. Should contractors operate within DFN's licence areas they must adhere to all environmental specifications and standards set for ourselves.

3.5.9 Waste and discharges management

Waste and discharge management are substantial aspects of offshore operations. Although it does not contribute directly to the target production of mining, it does contribute to the long term sustainability of the operational environment.

See below in figure 3.7 the comprehensive day-to-day management as an illustration of the on-board procedures.

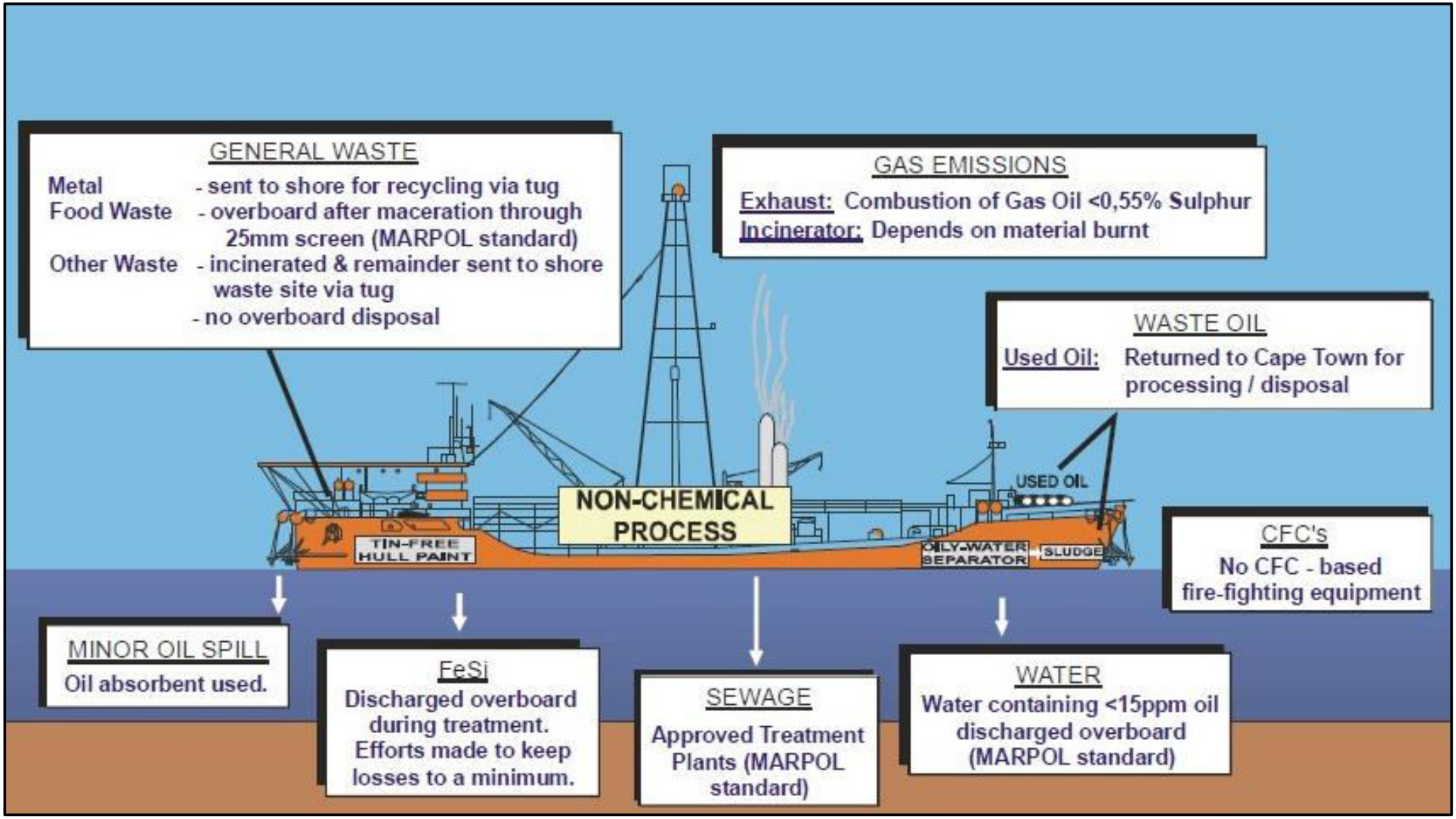


Figure 3.7: Schematic illustration of the comprehensive waste and discharge management procedures on-board the mining vessel.

3.6 Summary of the receiving environment

3.6.1 Overview

The following is summary of the receiving environment with respect to the exploration and mining operations:

- **Climate:** The southern Namibian coastline is characterised by the frequent occurrence of fog, which occurs on average 127 days per year at Lüderitz, with an average annual precipitation of between 16.4 mm at Lüderitz. The coastal temperatures average around 16°C with the prevailing south- easterly winds. At Diaz Point the winds average highest velocity occurs during the summer period of November and December (5 to 12.2 km/h), whereas the lowest average wind speeds occur during June (5 to 7 km/h). However the maximum wind speeds recorded during (November and December) is about 44 km/h.

- **Oceanographic setting:** Due to the vigorous winds, large waves and the upwelling process the water column on the inner continental shelf adjacent to Lüderitz is generally well mixed and thermocline development is weak. Deep mixing limits the development of large/dense phytoplankton populations and therefore, compared to conditions downstream from the upwelling cell, there are no large pelagic fish stocks and little organic supply to the sediments.

  Long-term mean sea surface temperatures off Lüderitz fall in the range of 14°C - 16°C. Vertical changes in sea water temperature are ranging from 11°C near the seabed (~100m = inner continental shelf) to 13 - 15°C at the surface.

  Sea surface salinity ranges between 34.9 and 35.2 psu. Temperature-salinity distribution analysis shows that the upwelling water is derived from ~300 m depth on the edge of the continental shelf and is comprised of Atlantic Central Water.

  Oceanographically the Benguela Current dominates this region. Surface flow on the continental shelf is mainly wind driven and equatorward (NW) at velocities that may reach 20 – 25 cm/sec. Subsurface flow compensates this and is mainly poleward (S-SE). Subsurface current velocities on the inner shelf are low at ~5 cm/sec, but increase with depth reaching greatest magnitudes at and immediately offshore of the shelf break (>300 m water depth).

- **Bathymetry and surficial geology:** The continental shelf extends as much as 230 km offshore and reaches water depths of up to 500 m. Three morphological regions are distinguished on the continental shelf; an inner shelf, a middle shelf and an outer shelf. ML139 lies on the inner shelf and is defined as the region along the coast underlain by pre-Mesozoic basement. It is characterised by a lack of unconsolidated sediment except for some isolated localities.

  Within ML139, Gallovidia Reef forms the inshore broad rocky platform that extends from 20 m depth to 90 m offshore, where it disappears under on-lapping sediments up to 120 m water depth along the ML western boundary. Deformation of the bedrock and wave action contributed to create a series of southwest facing embayments, which host thin veneer of coarse sediment.

- **Habitats and Biological Communities:** Marine habitats are sandy beaches, rocky intertidal shores, rocky subtidal habitats and kelp beds, mixed shores, marine benthos that comprises all organisms that live on, or in the top 20 cm, of unconsolidated

sediments on the seabed, and marine fish communities that consist of pelagic and demersal species.

Historically, the area off the Orange River Mouth supported a viable fishery for West Coast sole *Austroglossus microlepis,* but by the early 1970s no more sole trawlers operated out of Port Nolloth. Marine mammals off the southern Namibian coastline include 35 species of whales and dolphins.

The Sperrgebiet coastline forms an important habitat for breeding and migrant seabirds as well as for wetland birds, which occur along the coastline and near shore areas adjacent to the ML 139. A number of these bird species are listed as Endangered and Near Threatened by the International Union for Conservation of Nature (IUCN).

- **Namibian Islands' Marine Protected Area (NIMPA):** NIMPA was proclaimed in 2009 and covers almost one million hectares (9 497 km^2) of marine and sea area where 16 small islands and islets or rocks outcrops provide sanctuary to a large variety of life. This area stretches over 400 km from Meob Bay, north of Lüderitz, to Chameis Bay south of the harbour town and 30 km into the Atlantic Ocean. It maintains essential ecological and life support systems, ensuring the sustainable utilization of species and ecosystems and preserving biotic diversity. Seabirds and seals dominate the islands' flora and fauna. Of the 14 seabird species breeding in Namibia, 11 species breed on the islands and inshore rocks, including Namibia's endangered African penguins Cape and Bank Cormorants amongst others.

- **Principal Fisheries:** A major feature of the dynamic and variable Benguela system is upwelling, and the consequent high nutrient supply to surface waters leads to high biological production and large pelagic and demersal fish resources. Although 40% of Namibian demersal catches are from the southern region, the fishing grounds off ML139 are seldom visited by the commercial fleets due to the extended distances from the major fishing harbours of Lüderitz and Walvis Bay. The commercial rock lobster fishery in Namibia is centred on Lüderitz and forms an important part of the coastal economy of southern Namibia.

- **Socioeconomic setting of Lüderitz:** Lüderitz is a centre for diamond mining and fishing, including crayfish, white fish and pilchards. The Port of Lüderitz is an important fishing, mining/energy service supply and minor import/export port. The local economy is centred on the utilization of the clean sheltered waters for aquaculture purposes and tourism development such as sailing, kiting, fishing and whale watching. In strengthening tourism potential of the town, angling areas around Lüderitz, tour boat operation, whale watching, rock lobster catching and other recreational activities are being developed.

  Despite the mining, fisheries and tourism industries, the local economy is struggling and therefore it is imperative that the local economy diversifies and expand the already existing industries to provide more employment opportunities to relieve the ever growing unemployment situation (Annexure 4). Lüderitz is a harbour town with an urban population of 12 537 people (2014).

  The estimated labour requirements for exploration and mining operations are about 68 employees which are needed to operate the vessels. DFN is committed to maximum employment of suitably qualified Namibian nationals. With the onset of exploration and mining activities, educational and training programmes will be instituted for Namibians by DFN and its contractors. Furthermore, preference will be given to Namibian suppliers and service providers.

3.6.2 Key environmental resources

Despite the fact that no exploration or mining have been taking place since 2008, the environmental performance monitoring and research undertaken for the period 2008 to 2020 provides a great source of valuable resources on the state of environmental around the ML139 area.

Previous environmental assessments as well as ongoing environmental monitoring programmes have been reviewed in this report. In accordance with the thematic maps prepared for the updated EIA and EMP, the key mineral (diamonds) economic areas within ML139 area with great potential for exploration and mining with the current technology, falls within Zone 3 as shown in figure 3.8 and 3.9. This zone is characterised by its transitional position on the continental shelf and water column and plays a major role in supporting the economic activities such as fisheries, tourism, conservation, potential minerals exploration and mining and other socioeconomic activities.

Furthermore, Zone 3 has the following ecosystem services / values which have also been considered in the environmental assessment process:

- **Ecosystem function** (what the ecosystem does)**:** Wildlife habitat, carbon cycling or the trapping of nutrients and characterized by the physical, chemical, and biological processes or attributes that contribute to the self-maintenance of an ecosystem in this zone;

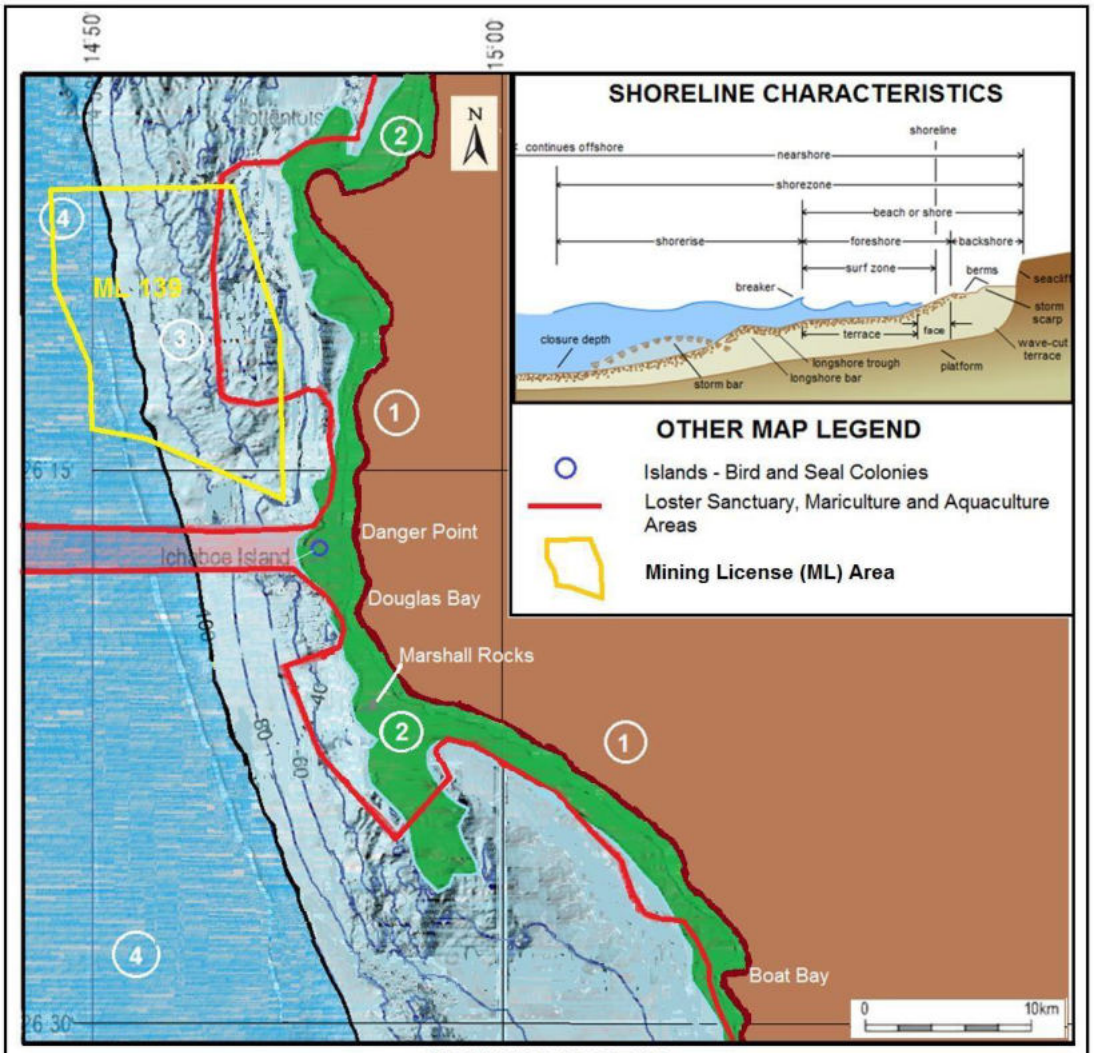
- **Ecosystem services:** Food chain, harvesting of animals or plants, and the provision of clean water or scenic views;

- **Use values:** Direct use for fishing and indirect uses include educational media programmes about the area and its wildlife, food chain linkages that sustains the complex life within this zone and bequest value for future generations to enjoy, and;

- **Non-use or passive use:** Preserve what exists (existence value) with no consideration for direct use / benefits.

However, the very high national socioeconomic benefits being derived from the ongoing diamonds exploration and mining operations in Namibia provide a positive balance of this zone with respect to its ecosystem services / value.

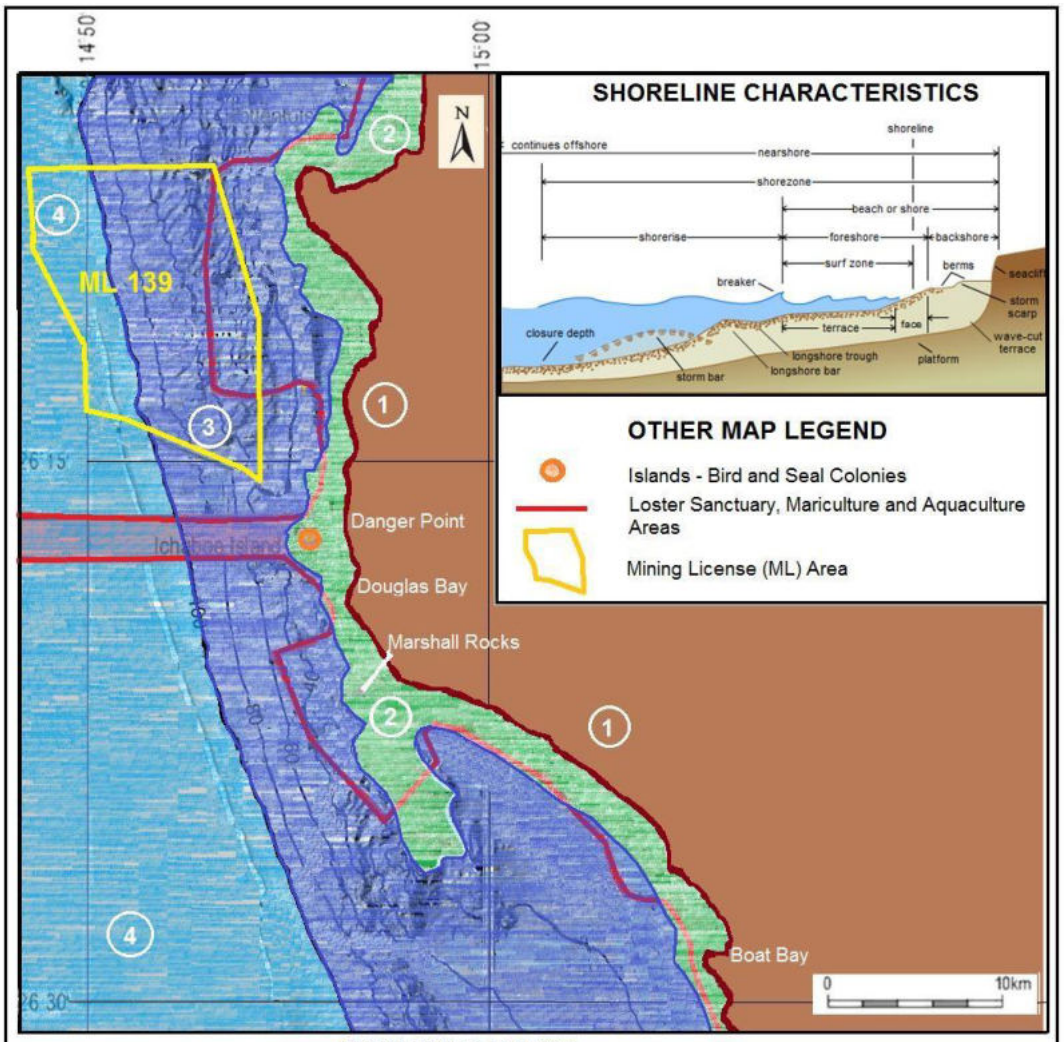
The management plan detailing how the DFN intends to continue managing all its exploration and mining activities within the ML area that will significantly impact on the environment has been provided in this report. The implementation of the EMP as provided in this report will minimise the negative effects and maximise the positive effects thereby enhance the overall ecosystem services / value of the area being explored or mined within the ML139 Area.



MAIN MAP LEGEND

ZONE	DESCRIPTION	CHARACTERISTICS / ENVIRONMENTAL RESOURCES	ECOSYSTEM SERVICES / VALUE
1	Land-Based coastal area (backshore / beach zone) is classified as highly sensitive zone with respect to minerals exploration and mining operations. Diamond Fields (Namibia) (PTY) LTD does not undertake exploration or mining operations in this Zone and the area is not covered by the ML area. This coastal zone opposite to the ML area covers the Namib Desert (UNESCO World Heritage Site), and extends south to include the proclaimed Lüderitz Townlands, Lüderitz Port Area and the National Diamond Coast Recreational Area of which no mining is allowed.	(i) Namib Desert (UNESCO World Heritage Site) (opposite the ML area) (ii) Proclaimed Lüderitz Townlands (iii) Wetland, conservation (Coastal ecosystem) areas; (iv) National Diamond Coast Recreational Area; (v) Angling; (vi) Sand and Rocky Beach Zone; (vii) Recreational Support zone; (viii) Tourism Support zone; (ix) Renewable Energy Zone (Wind and Wave) (x) Other socioeconomic support system along the Coastline.	❖ Namib Desert (UNESCO World Heritage Site) (opposite the ML area) ❖ **Ecosystem Function (What the Ecosystem Does):** Wildlife habitat, carbon cycling or the trapping of nutrients and characterized by the physical, chemical, and biological processes or attributes that contribute to the self-maintenance of an ecosystem in this zone. ❖ **Ecosystem Services:** Food chain, harvesting of animals or plants, and the provision of clean water or scenic views. ❖ **Use Values**: Direct use for Fishing, Birdwatching, Hiking and indirect include watching a television show about the area and its wildlife, food chain linkages that sustains the complex life within this zone and bequest value for future generations to enjoy. ❖ **Non-Use, or Passive Use**: Preserve what exists (Existence Value) with no consideration for direct use / benefits. ❖ Townlands and all supporting services and recreational activities
2	Marine coastal waters stretching from 0 m – 20 m deep (Surf Zone) and classified as highly sensitive zone with respect to minerals exploration and mining operations. Diamond Fields (Namibia) (PTY) LTD DOES NOT undertake exploration or mining operations in this Zone and the area is not covered by the ML area. This coastal zone covers the Namibian Islands Marine Protected Area (NIMPA), Lüderitz Port Area, mariculture, lobster sanctuary and key recreational and tourism support area.	This zone is characterised by multiple economic activities such as aquaculture, mariculture, fisheries, tourism, conservation (marine ecosystem), potential hydrocarbon, minerals exploration and mining and other socioeconomic activities supporting the economic activities of the Town of Lüderitz, the //Karas Region and Namibia. The zone is characterised by Namibian Islands Marine Protected Area (NIMPA), Lüderitz Port Area, mariculture, lobster sanctuary and key recreational and tourism support area	❖ **Ecosystem Function (What the Ecosystem Does):** Wildlife habitat, carbon cycling or the trapping of nutrients and characterized by the physical, chemical, and biological processes or attributes that contribute to the self-maintenance of an ecosystem in this zone. ❖ **Ecosystem Services:** Food chain, harvesting of animals or plants, and the provision of clean water or scenic views. ❖ **Use Values**: Direct use for fishing and indirect include watching a television show about the area and its wildlife, food chain linkages that sustains the complex life within this zone and bequest value for future generations to enjoy. ❖ **Non-Use, or Passive Use**: Preserve what exists (Existence Value) with no consideration for direct use / benefits.
3	Transitional Zone stretching from 20 m – 100 m deep (Shorerise Zone) and classified as highly sensitive zone with respect to minerals exploration and mining operations. This coastal zone covers the Namibian Islands Marine Protected Area (NIMPA), Lüderitz Port Area, mariculture, lobster sanctuary and key recreational and tourism support area. This zone is a key minerals resources zone for Diamond Fields (Namibia) (PTY) LTD mining and exploration operations.	This zone is characterised by its transitional position on the continental shelf and water column and plays a major role in supporting the economic activities such as fisheries, tourism, conservation, minerals exploration and mining and other socioeconomic activities of the Town of Lüderitz, the //Karas Region and Namibia. The zone is characterised by Namibian Islands Marine Protected Area (NIMPA)	
4	Beyond 100 m into the Deepwater offshore environment classified as low sensitive zone with respect to the minerals exploration and mining operations. DFN DOES undertakes exploration and mining operations in this Zone but the scale of the operation will be dependent of the available technologies and extent and continuity of the diamond resources.	Characterised as a key recruitment and support balance of the marine ecosystem systems, international transport route and potential deepwater petroleum resources. The zone is characterised by Namibian Islands Marine Protected Area (NIMPA).	

Figure 3.8: Environmental and constraint map layer with respect to exploration and mining in ML139.



MAIN MAP LEGEND

ZONE	DESCRIPTION	ENVIRONMENTAL RESOURCES	DEVELOPMENT OPPORTUNITY (MINING AND EXPLORATION)
1	Land-Based coastal area (backshore / beach zone) is classified as highly sensitive zone with respect to minerals exploration and mining operations. **Diamond Fields (Namibia) (PTY) LTD DOES NOT** undertake exploration or mining operations in this Zone and the area is not covered by the ML area. This coastal zone opposite to the ML area covers the Namib Desert (UNESCO World Heritage Site), and extends south to include the proclaimed Lüderitz Townlands, Lüderitz Port Area and the National Diamond Coast Recreational Area of which no mining is allowed.	(i) Namib Desert (UNESCO World Heritage Site) (opposite the ML area) (ii) Proclaimed Lüderitz Townlands (iii) Wetland, conservation (Coastal ecosystem) areas; (iv) National Diamond Coast Recreational Area; (v) Angling; (vi) Sand and Rocky Beach Zone; (vii) Recreational Support zone; (viii) Tourism Support zone; (ix) Renewable Energy Zone (Wind and Wave) (x) Other socioeconomic support system along the Coastline.	No mining operation allowed in proclaimed areas / towns, settlement or villages and UNESCO World Heritage Site
2	Marine coastal waters stretching from 0 m – 20 m deep (Surf Zone) and classified as highly sensitive zone with respect to minerals exploration and mining operations. Diamond Fields (Namibia) (PTY) LTD DOES NOT undertake exploration or mining operations in this Zone and the area is not covered by the ML area. This coastal zone covers the Namibian Islands Marine Protected Area (NIMPA), Lüderitz Port Area, mariculture, lobster sanctuary and key recreational and tourism support area.	This zone is characterised by multiple economic activities such as aquaculture, mariculture, fisheries, tourism, conservation (marine ecosystem), potential hydrocarbon, minerals exploration and mining and other socioeconomic activities supporting the economic activities of the Town of Lüderitz, the //Karas Region and Namibia. The zone is characterised by Namibian Islands Marine Protected Area (NIMPA), Lüderitz Port Area, mariculture, lobster sanctuary and key recreational and tourism support area	Possible to implement exploration and mining in selected area survey but NOT covered by the ML Area and likely to be constrained by environmental resources, high ecosystem services and value with associated activities resulting in a tightly controlled activities scheduling and expensive environmental management, monitoring requirements and rehabilitation costs. Current technology may be limiting the opportunity for exploration and mining in the shallow waters with potential mud belt.
3	Transitional Zone stretching from 20 m – 100 m deep (Shorerise Zone) and classified as highly sensitive zone with respect to minerals exploration and mining operations. This coastal zone covers the Namibian Islands Marine Protected Area (NIMPA), Lüderitz Port Area, mariculture, lobster sanctuary and key recreational and tourism support area. **This zone is a key minerals resources zone for Diamond Fields (Namibia) (PTY) LTD mining and exploration operations.**	This zone is characterised by its transitional position on the continental shelf and water column and plays a major role in supporting the economic activities such as fisheries, tourism, conservation, minerals exploration and mining and other socioeconomic activities of the Town of Lüderitz, the //Karas Region and Namibia. The zone is characterised by Namibian Islands Marine Protected Area (NIMPA)	Proven technology to undertake economic feasibility exploration and mining operations with less likely constraint by the environmental resources with high value diamond mining contributing to the balancing of the ecosystem services / value and associated activities resulting in a lesser tightly controlled activities scheduling and low environmental rehabilitation costs.
4	Beyond 100 m into the deep-water offshore environment classified as low sensitive zone with respect to the minerals exploration and mining operations. The Zone is covered by Diamond Fields (Namibia) (PTY) LTD ML Area and the company does undertake mining and exploration operations in this Zone but the scale of the operations will be dependent of the available technologies and extent and continuity of the diamond resources.	Characterised as a key recruitment and support balance of the marine ecosystem systems, international transport route and potential deep-water petroleum resources. The zone is characterised by Namibian Islands Marine Protected Area (NIMPA).	Scale of the mining and exploration operations will be dependent of the available more advanced technologies for deep-water and feasibility of the diamond resources

Figure 3.9: Opportunity map layer with respect to exploration and mining in the ML139 Area.

4. Impact and the risk assessment

The terminologies used in this chapter are defined as follows:

- **The environment:** is the surroundings in which an organisation operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.
- **An environmental aspect:** is an element/part of an organisation's activities, products or services that can interact with the environment.
- **An environmental impact:** is any change to the environment whether adverse or beneficial wholly or partially resulting from an organisation's environmental aspect.
- **An environmental objective:** is an overall environmental goal, consistent with the environmental policy that an organisation sets to achieve.
- **Environmental performance:** are the measurable results of an organisation's management of its environmental aspects.
  Results can be measured against the organisation's environmental policy, environmental objectives, environmental targets and other environmental performance requirements.

4.1 The sources of positive impacts

For reason of no exploration or mining being conducted in ML139 since 2008, see below the summary of the positive socioeconomic impacts identified during the original 2008 EIA and EMP (Annexure 4):

- The contribution of taxes: Royalties and dividends contributing to the national economy.
- Employment: Provision of work provides an income, with boosting the quality of life for employees and their families.
- Secondary employment and economic enhancement: The use of local services providers and support services that will aid in sustaining secondary industries.
- Transfer of knowledge, skills and technology.
- Investments in community development.

4.2 The sources of negative impacts

Below a summary of the likely negative impacts associated with the exploration (geophysical survey and sampling) and mining operations:

(i) Exploration and mining equipment and their operations with respect to the following:

- Seabed excavations and tailings disposal resulting in reorganisation of sediment structures;
- Associated creation of fine-tailings plumes on the seabed and around the vessel;
- Issues relating to water quality (including light reduction, increased suspended sediment and nutrient concentrations, reduction in dissolved oxygen levels, and possible re-suspension of heavy metals and pesticides sequestrated in seabed muds);
- Acoustic effects of seismic surveys;
- Disturbance of archaeological shipwreck sites;
- Seabed excavations using drill and crawler technologies resulting in destruction and loss of soft-bottom benthos in and adjacent to the mining target areas;
- Loss of soft-bottom benthos in and adjacent to the target areas due to smothering by depositing sediments and/or discharged tailings.

(ii) Mining vessels operational at sea for extended periods resulting in the following likely impacts components:

- Creation of exclusion zones around mining vessels and interaction with other users of the marine environment;
- Wastes produced on-board mining vessels (including gases, hazardous and non-hazardous substances);
- Noise of moored vessels and crawler positioning equipment;
- Loss of equipment on the seabed;
- Visual effects of the mining vessels and tailings plumes;
- Emission of X-rays during the plant-feed treatment process;
- Use of water and electricity and hydrocarbon products;
- Use of other hazardous and non-hazardous substances.

(iii) Support and supply services for the exploration and mining vessels at sea with respect to the following activities:

- Possible fuel spillage during re-fuelling at sea;
- Disturbance of seabirds and seals; and
- Disposal of wastes removed from vessels at sea.

(iv) Pollution resulting from possible accidents or emergencies at sea with respect to the following:

- During refuelling possible collision or shipwreck, or helicopter ditching.

(v) Possible cumulative impacts as a result of the following:

- Similar ongoing or proposed activities by other operators holding minerals and petroleum rights around the ML139 area. Some operators may be planning to acquire seismic survey or mining or drilling on selected localised areas or their licences.

(vi) Socioeconomic impacts resulting in the following likely negative impacts:

- Stress for workers due to prolonged time away from the family and friends. Separations may mean added stress because one member is away for extended periods;
- Stress for the remaining family and friends. Those family members, dependents and friends left at home may also find that their ability to participate in community affairs is reduced either because of lack of support resources (e.g. care for a family member, child) or social obligations that may discourage participation of the temporarily single spouse or partner. This may mean less participation in volunteer, sports or other political, cultural and social activities.
- Increased incidences of anti-social behaviour due to workers stress and frustrations at the workplace.

4.3 The evaluation of the environmental impacts

In line with DFN's objective of focusing attention specifically on exploration and mining related impacts of potentially significant risk and how best to mitigate for these, the following approach is taken regarding the concept of whether issues in the EIA table need to be actively addressed in the EMP:

- If aspects are of "Low" significance, they do not require specific management plans and need not be addressed in the EMP;
- An impact of "Medium" significance ranking will require consideration of other relevant factors, such as the nature of the impact, risks associated with possible cumulative

aspects and the degree of concern of stakeholders;
- An impact of "High" significance ranking must be addressed by means of active management, mitigation or rehabilitation measures.

For each negative impact of high or medium significance, mitigation objectives are set and attainable management actions are subsequently addressed in the amended EMP for mining and prospecting in the ML139.

4.4 Environmental impact assessment rankings

To ensure consistency in the evaluation of environmental impacts associated with DFN's activities, the rating criteria for the impact assessment have been standardised to include set definitions applied in the risk assessment. To the extent possible, allocation to rank categories is based on quantifiable criteria which can be measured as detailed in table 4.1.

Table 4.1: Criteria used in evaluation of environmental impacts.

Rating	Definition of Rating
Status of the Impact – in terms of meeting the objective of maintaining a healthy environment.	
Positive	The impact benefits the environment
Negative	The impact results in a cost to the environment
Neutral	The impact has no effect
Probability – the likelihood of the impact occurring	
Negligible	Possibility negligible
Improbable	Possibility very low
Probable	Distinct possibility
Highly Probable	Most likely
Definite	Impact will occur regardless of preventive measures
Degree of confidence in predictions – in terms of basing the assessment on available information	
Low	Assessment based on extrapolated data
Medium	Information base available but lacking
High	Information base comparatively reliable
Extent – the area over which the impact will be experienced	
Site specific	Confined to within < 1 km of the project
Local	Confined to the study area or within 5 km of the project
Regional	Confined to the region, i.e. > 5 km but < National
National	Nationally
International	Beyond the borders of Namibia
Duration – the time frame for which the impact will be experienced	
Very short	Less than 2 years
Short-term	2 to 5 years
Medium-term	6 to 15 years
Long-term	More than 15 years
Permanent	Generations
Intensity – the magnitude of the impact in relation to the sensitivity of the receiving environment	
Negligible	Natural functions and processes are negligibly altered due to adaptation by the receptor(s) to high natural environmental variability
Mild	Natural functions and processes continue albeit in a modified way that **does not** appear to have a significant disruptive effect (i.e. changes are temporary)
Moderate	Natural functions and processes continue albeit in a modified way that **does** appear to have a noticeable disruptive effect (i.e. changes are permanent)
Severe	Natural functions or processes are altered to the extent that they temporarily cease resulting in severe deterioration of the impacted environment
Very Severe	Natural functions or processes permanently cease or are completely disrupted

Likewise, when evaluating impacts, the allocated ranks refer to the resultant impact (e.g. area m2, or duration that the result of the impact will last), and not of the cause thereof (e.g. area m2 of seabed mined, or duration of active impact). The criteria used to determine the significance rating of the impact(s) is detailed in table 4.2.

Table 4.2: Criteria used to determine the significance rating of the impact(s).

Low:	Where the impact will have a negligible influence on the environment and no modifications or mitigations are necessary for the given project description. This would be allocated to impacts of any severity/ magnitude, if at a local scale/ extent and of temporary duration/time.
Medium:	Where the impact could have an influence on the environment, which will require modification of the project design and/or alternative mitigation. This would be allocated to impacts of moderate severity, locally to regionally, and in the short term.
High:	Where the impact could have a significant influence on the environment and, in the event of a negative impact, the activity(ies) causing it should not be permitted without substantial mitigation and management, and pro-active rehabilitation commitments (i.e. there could be a 'no-go' implication for the project). This would be allocated to impacts of severe magnitude, locally over the medium-term, and/or of severe magnitude regionally and beyond.

4.5 Results of environmental impact assessment

DFN did not conduct any exploration or mining since 2008 within ML139 and therefore there is no reporting on results of environmental impact assessments on the below standard criteria:

- Exploration activities
- Mining activities
- Vessel operations
- Waste and materials management
- Onshore logistical support
- Accidents and emergencies
- Socio-economic aspects

4.6 Impacts of management intervention

Management interventions are not applicable because DFN did not conduct any exploration or mining since 2008 within ML139.

4.7 Risk assessment of potential impacts

4.7.1 Risk assessment criteria

Even though DFN did not conduct any exploration or mining since 2008 within ML139, a risk assessment was conducted in 2017 (ECC renewal application) to identify medium- and high-risk aspects associated with operations in ML139 that may result in environmentally unacceptable impacts. These environmental aspects and their associated impacts were included as part of the EIA of all potential impacts associated with prospecting and mining operations in ML139.

The qualitative risk rating of impacts in terms of the likelihood and intensity, and the risk matrix to determine level of risk are shown in tables 4.3 and 4.4.

Table 4.3: Qualitative risk rating of impacts, the likelihood and intensity.

A. Likelihood		
Rare	Incident my occur only in exceptional circumstances and may never happen	E
Unlikely	Incident could occur at some time during the life of the project	D
Moderate	Incident should occur at some time	C
Likely	Incident will probably occur in most circumstances	B
Almost Certain	Incident is expected to occur most of the time	A
B. Intensity		
Insignificant	No detectable impact to the existing environment	1
Minor	Short-term of localized impacts	2
Moderate	Prolonged but recoverable impact on the environment and commercial industries	3
Major	Prolonged impacts on the environment which may not be recoverable, and threatens an ecological community, the conservation of species or the sustained viability of commercial industries	4
Catastrophic	Non-recoverable change to existing environment leading to loss of endangered species or creation of human health risks	5

Table 4.4: Risk Matrix to determine level of risk.

		Consequences				
		1	**2**	**3**	**4**	**5**
Likelihood		**Insignificant**	**Minor**	**Moderate**	**Major**	**Catastrophic**
A	**Almost Certain**	S	S	H	H	H
B	**Likely**	M	S	S	H	H
C	**Moderate**	L	M	S	H	H
D	**Likely**	L	L	M	S	H
E	**Rare**	L	L	M	M	S

Intensity:

L	Low impact	Manage by routine procedures.
M	Moderate impact	Management responsibility must be specified.
S	Significant impact	Senior management attention needed and careful planning and implementation.
H	High impact	Senior management involvement and planning needed; Ministry of Environment and Tourism must be consulted.

4.7.2 Risk assessment of medium and high significance

ML139 lies directly west and offshore of the important rock lobster fishing grounds. Although lobsters do migrate into deeper water during periods when near bottom oxygen concentrations are suitable, they are generally associated with rocky seafloor outcrops and tend to avoid unconsolidated sediments. Prospecting and mining operations are focussed on areas with unconsolidated sediments and therefore areas without rock lobster.

Exploration drilling and crawler mining in ML139 are therefore is seen as a small potential risk to rock lobster resources.

There is potential for conflict between the crews of inshore mining vessels and rock lobster boats due to the fact that inshore within ML139 they might be operating within close proximity. While the lobster fishermen seek reefs and rocky outcrops, the miners aim for sediment filled gullies and linear basins adjacent to exposed bedrock.

4.7.3 Socio-economic risk assessment

The overall economic gain associated with the DFN's operations, including employment creation, improved social services and payment of Government taxes has been rated "High".

A significant number of Namibians benefit from the salaries they earn, the skills transferred, training, awareness raising in various subjects, and other benefits they receive. The employees are from across the country, therefore the gains are widespread and for an extended period, benefiting whole families and various generations.

4.7.4 Cumulative risk assessment

Exploration and mining operations will be adding strain on the receiving environment. The likely resultant cumulative risk will be high particularly with respect to impacts of high and medium significant impact. DFN will strive to combine efforts with other users of the receiving local marine and coastal environment such as fishing vessels and other marine diamond mining operators.

ML139 lies within the proclaimed Marine Protected Area (MPA) and the exploration and mining operations will need to be cognisant of the inshore rock lobster fishing grounds, the MPA and this will be addressed strictly in the EMP.

The central Namibian coastline between Lüderitz and Walvis Bay comprises predominantly sandy beaches backed by the dunes of the Namib Desert. Predators such as Black-backed Jackals and Brown Hyaenas roam the strandline in search of food, making the mainland largely unsuitable for the establishment of breeding colonies. Important seabird colonies are thus found on the offshore islands. The southern-most section of ML139 lies 2 km from Ichaboe Island and which is breeding sites for Cape cormorants, Crowned cormorants, Bank cormorants, White-breasted cormorants, Hartlaub's gulls, Kelp gulls, and African black oystercatchers. Swift terns are known to breed and roost on these islands, and they were historically seal colonies but now there are very few, as seals were known to disturb bird nests and their nestling.

5. The Environmental Management Plan (EMP)

The objectives of the EMP presented in this section demonstrates how DFN intends to manage all the exploration, mining and processing operations within ML139 that will significantly impact on the receiving environment, or that may potentially be of high risk in the long-term. By implementing this management programme, DFN will minimise the likely negative effects and maximise the positive effects of its operations in ML139.

The updated EMP discussed in this section of this report will be integrated in the overall Environmental Management Systems (EMS) of the company in line with the international best practices in marine diamond exploration and mining. Once exploration and mining operations resume within ML139, will the EMP and EMS be audited on an annual basis.

5.1 The Diamond Fields (Namibia) EMP

In accordance with the results of the impact and risk assessment for the revaluated exploration and mining activities as detailed in Chapter 4, a detailed EMP have been prepared covering the following components:

(i) **Environmental performance monitoring and procedures:** Implementation of management policy and procedure, monitoring, amendments and communication with stakeholders;

(ii) **Environmental and safety management systems:** A certified environmental management system is maintained for all areas of the DFN's activities, and all vessels have a NOSA grading;

(iii) **Exploration and mining:** Research and monitoring is undertaken of the direct impacts of prospecting and mining on the environment, such as disturbance of the seabed habitats and communities, and potential impacts on water quality;

(iv) **Vessels at sea:** Disruption to other legitimate users of the marine environment is minimised by respecting their rights, waste streams are managed effectively in order to minimise marine and air pollution are effectively managed by using a cradle-to-grave philosophy, promoting reuse/recycling, and being conservative in the use of natural resources;

(v) **Onshore logistical support:** Waste streams are managed in order to minimise pollution by using a cradle-to-grave philosophy, promoting reuse/recycling, and being conservative in the use of natural resources;

(vi) **Ecosystem:** Ecosystem services, ecosystem values, biological diversity conservation and resource use.

(vii) **Socioeconomic issues:** A contribution is made to the Namibian economy.

(viii) **Mine closure:** The closure plan, final EMP toward closure certificate.

Each of the above eight EMP frameworks consist of a detailed table listing the following sections:

- Aspect
- Impact description
- Risk / gain ranking
- Action plans and control measures
- Management objectives and applicable regulations
- Responsible person(s)
- Timing

DFN did not conduct any exploration or mining since 2008 within ML139, therefore there is no update to the 2017 EMP and for the sake of duplication, the above tables have been omitted from this report.

All the relevant EMP applicable legislations, regulations and policies are detailed in the Diamond Fields (Namibia) (Pty) Ltd Legal Register in Annexure 5.

6. Environmental performance monitoring

6.1 Overview

In accordance with the impact and risk assessment for the zero exploration and mining activities undertaken for the period under review, the detailed Environmental Management Plan (EMP) previously prepared by Risk-Based Solutions (RBS) on behalf of DFN, will be utilised. This report reviews the implementation of all the key EMPs and monitoring measures taken with key objectives of determining the effectiveness of the implemented mitigation measures.

The following is summary of the environmental performance monitoring covered in this report for the period under review:

- **Monitoring Plan:** Environmental monitoring is partly in-house (data collection during exploration and mining processes) and outsource (employ a consultant) to undertake the assessment and recommend measures to be implemented. Key aspects that are monitored include: Water quality, marine fauna and benthic compositions and variability. The monitoring programme is supported by an external laboratory and technical facilities on water quality monitoring and benthic communities with respect to the ongoing exploration and mining processes;

- **Implementation of the EMP**: The implementation of the EMP monitoring plan by DFN, is focused on collecting and analysing the required datasets and propose recommendations on what needs to be done for both the long- term and short (day to day) monitoring operations. The EMP implementation is undertaken as an in-house activity;

- **EMP Auditing**: Compliance auditing of the EMP implementation and monitoring thereof is a key component of the environmental performance monitoring. The EMP auditing is an internal activity that is often supported by an external consultants and linked to the EMS monitoring and auditing requirements, and;

- **EMS Auditing**: Personnel within DFN are responsible for the management of these impacts through regular internal environmental audits to evaluate compliance with statutory requirements. This includes both internal audits and external surveillance audits as maybe required.

The Environmental Performance Monitoring activities are undertaken for both exploration and mining operations. The monitoring activities are undertaken in accordance with the provisions of the Environmental Clearance Certificate (ECC) that was issued by the Environmental Commissioner in the Ministry of Environment and Tourism, the Environmental Management Pan (EMP) and Diamond Fields (Namibia) (Pty) Ltd Environmental Policy.

6.2 Environmental monitoring plan

6.2.1 Objectives of the monitoring plan

The main objectives of the monitoring plan are the following:

- Verify of the correct application of the monitoring measures as presented in the Environmental Management Plan (EMP);
- Establish a monitoring program for the most relevant environmental parameters, identifying the monitoring activities and frequencies;
- Identify the impacts foreseen by the project and any unforeseen deviations, allowing for the implementation of corrective measures as needed;
- Provide assurance to stakeholders requirements with respect to environmental and social performance;
- Check the overall effectiveness of the operational procedures in protecting the receiving environment;
- Comply with regulations, standards and ML and ECC licences conditions;
- Compare actual impacts with those predicted in the EIA and EMP Report and thereby aim to improve the assessment and monitoring processes;
- To determine the impacts of mining and the consequent recovery rate of mined sites, and;
- To determine the natural variability within the mining license.

6.2.2 Reviews of the monitoring plan

A summary of the core elements and additional data to be collected as part of the new long term monitoring programme is provided below:

- High resolution multibeam bathymetric data must be available for each of the designated impact stations prior to the station being mined. Multibeam surveys should be repeated at the impact stations as soon as possible after mining is complete (maximum 12 months after mining) and should be repeated approximately 24 months later and again approximately 60 months (5 years) and 120 months (10 years) later;
- A programme for continuous monitoring of water quality (temperature, pH, salinity, dissolved oxygen and turbidity) should be initiated at a designated position within each of the three monitoring regions as soon as possible to provide long term information on natural variations in these key water quality parameters. These designated water quality monitoring stations should be located as far as possible from any mining activities (at least 2,000 m away), and;
- A separate dedicated water quality monitoring programme is required to assess the operational impacts of mining activities on water quality in the area surrounding the mining tool. Such monitoring surveys should be undertaken in conjunction with tailings plume dispersion modelling studies and should be used to validate the outputs from the dispersion models. Assessing the impacts of mining on water quality should take the form of relatively short-term experiments undertaken at the time of mining, and will not necessarily require prolonged post-mining monitoring.

All the environmental monitoring programmes that were assessed in the review which have been provided, or are in future likely to provide, provided some useful insights into the impacts of mining on the receiving environment. A programme for continuous monitoring of a range of water quality variables such as temperature, pH, conductivity, dissolved oxygen, and turbidity at strategic locations in ML139 is highly recommended.

7. Results of the environmental monitoring

7.1 Overview of the EMP framework

The Environmental Management Plan (EMP) provides a detailed plan of action required in the implementation of the mitigation measures for minimising and maximising the identified negative and positive impacts respectively.

The EMP also provides the management actions with roles and responsibilities requirements for implementation of environmental management strategies by the proponent.

The EMP gives commitments including financial and human resources provisions for effective management of the likely environmental liabilities during and after the implementation of the proposed / ongoing exploration and mining operations.

7.2 Overall EMP implementation results 2017 to 2020

DFN did not conduct any exploration or mining since 2008 within ML139, therefore there is no update to the 2017 EMP and for the sake of duplication, those results have been omitted.

8. Conclusions and recommendations

8.1 Conclusions

Diamond Fields (Namibia) did not conduct exploration or mining activities within ML139 since 2008 and therefore environmental performance / compliance monitoring activities were not implemented during the 2017 to 2020 reporting period. Moreover during this review period, DFN focused on their other two mining licences of the mid-water ML111 and shallow-water ML32.

Challenging conditions in the global diamond market resulted in difficulties to raise capital for exploration and mining operations, apart from those activities DFN conducted in ML111 and ML32.

8.2 Recommendations for implementation

The following is the summary of the key recommendations that may be considered for implementation once continuous exploration and mining operation starts in ML139 in order to further improve the quality of the baseline and monitoring data sets collected and interpreted:

1. Review and undertake a detailed updated baseline mapping of key coastal and shallow marine environmental resources / receptors and delineate key sensitive areas or targets that must be protected within the NIMPA;

2. Undertake Marine Diesel Oil (MDO) or Marine Gas Oil (MGO) spill modelling study. The fuel oil spill modelling study shall be supported by the updated coastal and shallow marine mapping exercise under (1) above, for emergency preparedness / development of appropriate contingency plans in an event of a major accidental MDG spill with respect to key receptor as mapped under (1) above;

3. Implement a continuous on-board seawater quality sampling and testing programme for each vessel. Monitoring data sets may be collected by either an environmental officer or through an automated system;

4. Implement a benthic monitoring programme within the ML area in order to contribute the understanding of the natural, exploration and / or mining induced variabilities;

5. Undertake water column modelling in order to understand the short and long-term effects of fine sediments discharges and resultant plumes on the seawater column;

6. Undertake seabed modelling of sediments discharges (oversize) in order to understand the short and long-term effects of sediments discharges on the seafloor natural and mining variabilities.

8.3 Recommendations for Environmental Clearance Certificate

Based on the results of this updated Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) report, it's hereby recommended that Diamond Fields (Namibia) (Pty) Ltd be issued with the new Environmental Clearance Certificate (ECC) for the proposed marine diamond exploration and mining operations for ML139, situated to the north of the Port of Lüderitz in the //Karas Region, Southern Namibia.