EIMS | ENVIRONMENTAL IMPACT MANAGEMENT SERVICES

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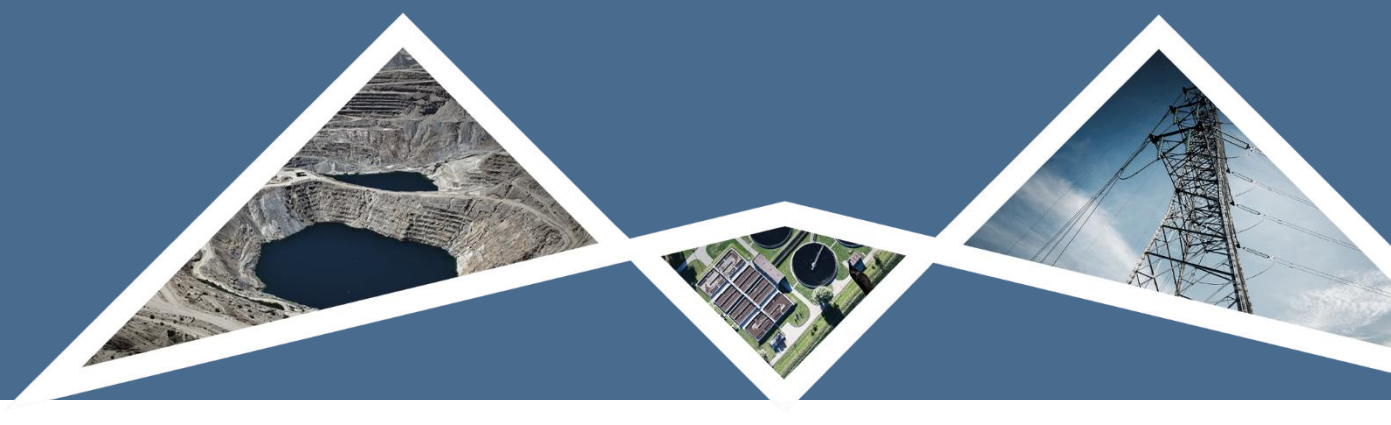
ENVIRONMENTAL MANAGEMENT PROGRAMME

AQUA FARMING: DROOGFONTEIN



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1 INTRODUCTION

Aqua Farming (Ltd) Pty (the applicant), located in the Western Free State, is a diversified agricultural producer of potatoes, onions, and pecans, with an additional cattle division focused on the Simbra breed. Irrigation is sourced from the Vaal River via a pipeline installed in 2004, which has been instrumental to the farm's operations. The area's sandy soils contribute to the production of high-quality potatoes, positioning Aqua Farming as a successful enterprise through the effective use of its environmental and infrastructural assets.

Aqua Farming has appointed Environmental Impact Management Services (Pty) Ltd (EIMS) as the EAP to assist with undertaking the required authorisation processes (including the statutory public participation), and to compile and submit the required documentation in support of application for:

- Environmental Authorisation in accordance with the NEMA- Listed activity/ies:
    - NEMA GN R. 984, Activity 15: "the clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-
        - *i. The undertaking of a linear activity; or*
        - *ii. Maintenance purposed undertaken in accordance with a maintenance management plan."*
    - NEMA GN R. 984, Activity 16: *"The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more."*
    - NEMA GN R. 985, Activity 12: *"The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan;*
        - *ii. Within critical biodiversity areas identified in bioregional plans."*
    - NEMA GN R. 985, Activity 26: *"Phased activities for all activities-*
        - *i. listed in this Notice and as it applies to a specific geographical area, which commenced on or after the effective date of this Notice;"*
- Water Use Licence (WUL) amendment in accordance with the National Water Act – NWA (Act 36 of 1998). Water uses:
    - Section 21(a), *"Taking water from a water resource".*
- Water Use Licence (WUL) in accordance with the NWA:
    - Section 21(b), "Storing water".
    - Section 21(c) & (i), *"(c) Impeding or diverting the flow of water in a watercourse",* and *"(i) Altering the bed, banks, courses or characteristics of a watercourse"*, respectively.
    - A separate application for a Water Use Licence (WUL) has been lodged with the Department of Water and Sanitation (DWS) for the water use activities 21(b), and 21(c) & (i).

The project involves the development of agricultural activities on the farms; portion 16 of Farm Droogfontein 62, portion 2 of Farm Eerste Aanleg 50, the remainder portion of Farm Bulpan 51 and the remainder portion of Farm Witpan 52, by developing approximately 33 new pivots that will require the clearance of approximately 1050 ha of indigenous vegetation in total, primarily for the growing of potatoes. The development of these pivots will occur in phases/seasons over the course

of 7 years. With each phase/season, approximately 175 Ha will be cleared for the pivots. Therefore, after approximately 7 years a total of 1050 Ha will have been cleared. Crop rotation will be done thereafter by planting potatoes, onions, Sorghum Sudan grass or Smuts finger grass, followed by a fallow period where livestock will be allowed to graze on the pivots systematically.

The irrigation water will be sourced from the Vaal River. The current existing water use licence allows for the abstraction of 519 152 m^3/annum from the Vaal River, however, the licence will need to be amended to include the additional farms and farm portions designated irrigation activities. An additional 500 000m^3/annum volume of water is required to irrigate the pivot farms to be developed over the course of 7 years. A buffer dam will also be constructed to store 49 000 m^3 of water.

The proposed project is located along the N12, approximately 20 km north of Kimberley and 3 km southwest of Riverton, in the Sol Plaatje Local Municipality, Frances Baard District Municipality in the Northern Cape. The centre point of the site is: 28°33'33.48"S and 24°45'1.94"E. A locality map of the project area is provided in Figure 1.

An Environmental Management System (EMS) offers a structured framework and methodology to minimize risks and manage environmental aspects and impacts. The International Standards Organization's (ISO) international standard ISO 14001:2015 is a widely accepted standard for developing an EMS. The EMPr is developed as a component of the EMS to ensure alignment with ISO 14001:2015 standards, and as required by the National Environmental Management Act 107 of 1998 (NEMA), Section 24, providing a structured framework for Environmental Management. The EMPr, will include the following:

- Environmental plans prepared for specific areas or management functions;
- Environmental impacts;
- Mitigation measures;
- Roles and responsibilities;
- Monitoring and recording; and
- Reporting methods.

This EMPr has also been compiled, as a guideline, in accordance with the Environmental Impact Assessment (EIA) Regulations (GNR 982 of 2014 as amended) for the requirements of an EMPr (Appendix 4 of GNR 982), to establish the mitigation and management measures that need to be implemented to avoid, reduce, and minimise potential environmental impacts arising out of any of the phases applicable to the project. Table 4, in Section 3 provides a high-level overview of key aspects and impacts of the various phases of the project.

It should be noted, however, that an EMPr is a working document that should be updated on a regular basis, as and when necessary as outlined in Regulation 35 of the GN R 982. The EMPr thus supports an on-going proactive mitigation approach and duty of care to the environment. The EMPr shall allow for risk minimization and will ensure legal compliance. This EMPr will also allow the user to make minor amendments to ensure continual revision and improvement of risk mitigation through the continual re-assessment of risks associated with the activity.

1.1 DOCUMENT STRUCTURE

Table 1 provides an overview of the EMPr, as stipulated in Appendix 4 of the GN R982.

Table 1: EMPr Structure.

Appendix 4 Reference	Description	Section in EMPr
Appendix 4(1)(1)	(1) An EMPr must comply with section 24N of the Act and include-	
Appendix 4(1)(1)(a):	(a) details of- (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae	Section 1.1 (Requirements of the EAP)
Appendix 4(1)(1)(b):	(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description	Section 3 (Description of Proposed Project)
Appendix 4(1)(1)(c):	(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers	
Appendix 4(1)(1)(d):	(d) a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and in the case of a closure activity, closure; and (v) where relevant, operation activities	Section 11 (Impact Management and Mitigation Measures)
Appendix 4(1)(1)(e):	*(e) Para. (e) deleted by GN 326/2017*	*N/A*
Appendix 4(1)(1)(f):	(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to- (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; and (iii) comply with any applicable provisions of the Act regarding closure, in the case of a closure activity. *(iv) Sub-para. (iv) deleted by GN 517/2021*	Section 11 (Impact Management and Mitigation Measures)
Appendix 4(1)(1)(g):	(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f)	

Appendix 4 Reference	Description	Section in EMPr
Appendix 4(1)(1)(h):	(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f)	
Appendix 4(1)(1)(i):	(i) an indication of the persons who will be responsible for the implementation of the impact management actions	Section 0 (Roles and Responsibilities) Section 11 (Impact Management and Mitigation Measures)
Appendix 4(1)(1)(j):	(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented	Section 11 (Impact Management and Mitigation Measures)
Appendix 4(1)(1)(k):	(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	
Appendix 4(1)(1)(l):	(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations	Section 6 (Environmental Management System)
Appendix 4(1)(1)(m):	(m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment	Section 8 (Environmental Awareness and Training)
Appendix 4(1)(1)(n):	(n) any specific information that may be required by the competent authority.	N/A
Appendix 4(1)(2)	Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply	

2 REQUIREMENTS OF AN EAP

In terms of Regulation 13 of the EIA Regulations, 2014, an independent Environmental Assessment Practitioner (EAP), must be appointed by the Applicant to manage the application. EIMS has been appointed by the Applicant as the EAP and is compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that EIMS:

- Is objective and independent;
- Has expertise in conducting BAs, EIAs, WUL Applications and WML Applications;
- Complies with the NEMA, the Regulations and all other applicable legislation;
- Considers all relevant factors relating to the application; and

Provides full disclosure to the Applicant and the relevant environmental authority.

The Curriculum Vitae of independence of the EAPs involved (indicating the experience with relevant application processes) of the consultants that were involved in the compilation of this report are attached as Appendix 1.

2.1 DETAILS OF THE EAP/S

EIMS was appointed by the Applicant to fulfil the role of the Independent EAP to prepare and submit the EMPr, as part of the application process. The contact details of the EAPs are as follows:

- Name of Practitioner: Jessica Jordaan
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- Name of Practitioner: Monica Niehof
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- Fax No: +27 86 571 9047
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2.1.1 EXPERTISE OF THE EAP

Ms. Jordaan is an Environmental Consultant and Candidate Soil/Agriculture Specialist at EIMS and has been involved in numerous environmental audits, prospecting and exploration rights environmental authorisation application projects, and rehabilitation projects regarding Financial Provisions. She holds a BSc degree in Geology and a BSc Honours degree in Environmental Soil and Soil Science. Ms Jordaan's experience includes managing and/or undertaking Environmental Impact Assessments (EIA) and Basic Assessments (BA), Soil and Agriculture Assessments, Financial Provisioning, Environmental Audits, and ISO14001:2015 Audits. Ms Jordaan is a registered Candidate Soil Scientist (#124758) with the South African Council of Natural and Scientific Professions (SACNASP), as well as a registered Candidate Environmental Assessment Practitioner (2023/7087) with the Environmental Assessment Practitioners Association of South Africa (EAPASA). She is a registered ISO 14001:2015 Lead Auditor with the Chartered Quality Institute (CQI) and a member of the International Register of Certified Auditors (IRCA).

Ms Jordaan has been assisted and guided by Ms Monica Niehof. Ms Niehof has 13 years' working experience in the environmental field and 23 years' work experience overall in a variety of fields including the tourism industry. Key experience in the environmental field include Environmental Impact Assessments, Water Use Licence (WUL) Applications, Waste Management Licence (WML) Applications, Atmospheric Emissions Licence (AEL) Applications, Environmental Management Programmes, Public Participation Processes, Environmental Authorisation, AEL and WML Auditing, Environmental Control and Monitoring for a variety of development projects including, residential, retail, mixed-use, commercial, infrastructure, industrial and mining projects. The Curriculum Vitae of the EAPs are included in Appendix 1 of this report.

3 POLICY AND LEGISLATIVE CONTEXT

Table 2 provides an overview of the governing legislation identified which may relate to the proposed project. The primary legal requirement for this project stems from the need for an EA to be granted by the competent authority, the Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL) in accordance with the requirements of the NEMA. In addition, there are numerous other pieces of legislation governed by many acts, regulations, standards, guidelines and treaties on an international, national, provincial and local level, which should be considered in order to assess the potential applicability of these for the proposed project.

Table 2: Summary of legislation and policies relevant to the project.

Legislation, Policies, Guidelines, Standards etc.	Description	Relevance to the proposed project
National Environmental Management Act (Act 107 of 1998 – NEMA); and the EIA Regulations (2014, as amended)	The National Environmental Management Act (NEMA) mandates environmental impact assessments (EIAs) through a structured process of cooperative governance and regulatory frameworks, ensuring environmentally sound decision-making for proposed activities, as evidenced by the current application adhering to the NEMA EIA Regulations, 2014, as amended. The EIA Regulations aim to provide a structured process for assessing and reporting on listed activities, ensuring informed decisions by competent authorities to prevent unlawful environmental impacts and manage authorised activities sustainably.	The activities that trigger the need for an EIA process to be followed is GN R. 984, Listing Notice 2, Activity 15 and 16; and GN R. 985, Listing Notice 3, Activity 12 and 26.
National Water Act (Act 36 of 1998 – NWA)	The National Water Act (NWA) aims to sustainably manage South Africa's water resources to meet present and future needs, ensure equitable access, redress past inequities, promote efficient use, protect ecosystems, prevent pollution, and address international obligations and natural disasters.	The water uses that trigger the need for a WUL include water use 21(a), 21(b) and 21(c) & (i).
National Environmental Management Biodiversity Act (Act No. 10 of 2004 – NEM: BA)	The National Environmental Management Biodiversity Act (Act No. 10 of 2004 – NEM: BA) provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA as well as the protection of species and ecosystems that warrant national protection. Within the framework of this act, various regulations are promulgated which provide specific requirements and management measures relating to protecting threatened ecosystems, threatened or protected species as well as the control of alien and invasive species.	Based on desktop information including the National Web-Based Environmental Screening Tool Report, the study area was assessed to be located within a Critical Biodiversity Area (CBA) 1 and CBA 2, Ecological Support Area (ESA) 1 and ESA 2 as well as within a National Protected Area Expansion Strategy (NPAES) within the *Least Concern* Gauteng Shale Mountain Bushveld vegetation. The biodiversity specialist assessment identified Threatened Ecosystems, Sensitive and Vulnerable Ecosystems, Critical Biodiversity Areas, Ecological Support Areas, Conservation Targets and Ecological Drivers of the ecosystem as well as alien and invasive species. Where sensitive species or ecosystem drivers were identified, relevant mitigation measures have been put forward to prevent or minimise the impacts.

Legislation, Policies, Guidelines, Standards etc.	Description	Relevance to the proposed project
National Environmental Management: Waste Act, no 59 of 2008 (NEM: WA)	The NEM: WA came into effect on the 1st of July 2009. The Waste Act places a general duty on a holder of waste to avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated; reduce, re-use, recycle and recover waste; where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner; manage the waste in such a manner that it does not endanger the health or the environment or cause a nuisance through noise, odour or visual impacts; prevent any employee or any person under his or her supervision from contravening the Act; and prevent the waste from being used for an unauthorised purpose.	These general principles of responsible waste management will be incorporated into the requirements in the EMPr to be implemented for this project.
Constitution of the Republic of South Africa (Act 108 of 1996)	The South African Constitution, as the supreme law, mandates environmental protection and sustainable development through the Bill of Rights, requiring the State to ensure a healthy environment for all and to balance ecological integrity with economic and social progress.	The application for Environmental Authorisation for the proposed project will ensure that the environmental right enshrined in the Constitution contributes to the protection of the biophysical and social environment.
Specific Environmental Management Acts (SEMAs)	The SEMAs refer to specific portions of the environment where additional legislation over and above the NEMA (1998) as amended, is applicable.	SEMAs likely to be relevant to this application include the following: National Environmental Management: Protected Areas Act (NEM: PAA, Act 57 of 2003). National Environmental Management: Biodiversity Act (NEM: BA, Act 10 of 2004); National Environmental Management: Air Quality Act (NEM: AQA, Act 39 of 2004) National Dust Control Regulations (GN R827, 2013) National Water Act (NWA, Act 36 of 1998). National Environmental Management: Waste Act (NEM: WA, Act 59 of 2008)
Integrated Environmental	This series of guidelines was published by the Department of Environmental Affairs	These guidelines will assist in compiling of the EMPr.

Legislation, Policies, Guidelines, Standards etc.	Description	Relevance to the proposed project
Management Information Guidelines Series:	(DEA) and refers to various environmental aspects. Applicable guidelines in the series for the proposed farm expansion activities include: Guideline 5: Companion to NEMA EIA Regulations, 2010; Guideline 7: Public participation; and Guideline 9: Need and desirability. Additional guidelines published in terms of the NEMA EIA Regulations, 2014 (as amended), in particular: Guideline 3: General Guide to EIA Regulations, 2006; Guideline 4: Public Participation in support of the EIA Regulations, 2006; and Guideline 5: Assessment of alternatives and impacts in support of the EIA Regulations, 2006.	
Best Practise Guideline (BPG)	The BPG series refers to publications by the then Department of Water Affairs and Forestry (DWAF), now the Department of Human Settlements, Water and Sanitation (DHSWS), providing best practice principles and guidelines relevant to certain aspects of water management.	Best practice guidelines relevant to the proposed farming expansion activities has been considered during this EIA and applied to the mitigations measures and EMPr.
Conservation of Agricultural Resources Act (Act 43 of 1983- CARA)	The CARA controls the exploitation of natural agricultural resources to promote conservation of soils, water resources and vegetation. In addition, the CARA also provides for the control of invader plant species and weeds.	This EIA is conducted to align with the CARA to promote sustainable utilisation of the natural agricultural resources. Precautionary measures have been included in the EMPr in order to conserve the soils and vegetation and to protect the proposed footprint area against weeds and invader species.
National Heritage Resources Act (Act 25 of 1999- NHRA)	The National Heritage Resources Act aims to promote good management of cultural heritage resources and encourages the nurturing and conservation of cultural legacy so that it may be bestowed to future generations.	Heritage resources and palaeontological features have been identified within the project boundary area and has been assessed.
National Forests Act (Act 84 of 1998- NFA)	The National Forests Act provides for the protection of forests as well as specific tree species.	A permit will be required should a protected tree species be required to be destroyed, transported, or transplanted.

Legislation, Policies, Guidelines, Standards etc.	Description	Relevance to the proposed project
		In order to remove species listed in Schedule 1 & 2 of the NCNCA, during site clearing activities an integrated permit application will have to be made to the DAERL to obtain the required permission to remove and/or translocate these species from site. In order to remove the protected trees a license application will have to be made to the Department of Forestry. The Ecology Specialist has identified a number of protected tree species on-site that will need to be removed as part of the land clearance activities, and will therefore require a permit.
National Development Plan (NDP)	The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.	This project aligns with the aims of the NDP. Local employment will be prioritised as far as possible.
Northern Cape Nature Conservation Act (Act 9 of 2009)	This act provides for, among other, the sustainable utilisation of wild animals and plants and the protection of protected species.	The proposed project area is situated amongst natural indigenous vegetation and cultivated land. The Ecology Specialist has undertaken a site visit and identified a number of protected tree species. The specialist has therefore determined that a permit will be required for site clearing and/ or for the destruction of any nationally or provincially listed protected species.
Northern Cape Provincial Spatial Development Framework (SDF) **Frances Baard District Municipality SDF; and** **Sol Plaatje Local Municipality SDF**	Spatial land-use directive which aims to promote environmental, economic, and social sustainability through sustainable development.	The proposed project aligns with the Northern Cape, Frances Baard District Municipality and Sol Plaatje Municipality SDFs. The project area falls within an area that has been zoned as agricultural zone, as per the Frances Baard district Municipality SDF: *"Prime or unique agricultural land should remain, as far possible, available for production. Land uses for agricultural purposes may only be re-allocated to another use where a real need exists. Agriculture related investment should focus on supporting and maintaining existing commercial farming activities in*

Legislation, Policies, Guidelines, Standards etc.	Description	Relevance to the proposed project
		the district in the areas where extensive commercial farming and large-scale food production currently occurs; as well as enhancing agrarian transformation in the deep rural areas of Northern Cape Province in line with the objectives of the Comprehensive Rural Development Programme (CRDP).”
Sol Plaatje Local Municipality Land Use Management By-law, 2015 (GN 1955)	The Sol Plaatje Local Municipality Land Use Management By-law, 2015 (GN 1955) regulates land use and development within the Sol Plaatje Municipality (Northern Cape, South Africa). It aims for orderly and sustainable development by establishing clear procedures for land use applications (rezoning, subdivision, etc.), defining land use zones with specific regulations, and emphasizing public participation in planning and decision-making. The by-law outlines the evaluation process for applications, conditions of approval, and appeal mechanisms. It also includes enforcement measures and penalties for non-compliance. This legal instrument implements sustainable development principles and the Sol Plaatje Spatial Development Framework, ensuring land is used equitably, efficiently, and with environmental and heritage considerations.	The proposed project is within the Sol Plaatje Local Municipality and is subject to the Land Use Management By-laws.
Spatial Planning and Land Use management Act (Act 16 of 2013-SPLUMA)	SPLUMA aims to develop a new framework to govern planning permissions and approvals, sets parameters for new developments and provides for different lawful land uses in South Africa.	The SPLUMA was considered as part of the EIA process. The project area is currently within an unknown zoning area.
Noise Control Regulations, 1992 (GN R.154) and SANS 10103:2008	The Noise Control Regulations provide a means for regulating noise emissions which may cause harm or nuisance. SANS 10103:2008 is a South African National Standard that provides guidance on the measurement and rating of environmental noise.	These regulations were considered in the activities that will take place as part of the proposed project. Given the distance between activities and any receptors, as well as the limited operating hours of 06:00 to 18:00, the assessment and monitoring of noise levels is not required. However, compliance with all applicable regulations and standards remains mandatory.

Legislation, Policies, Guidelines, Standards etc.	Description	Relevance to the proposed project
The Environment Conservation Act (Act 73 of 1989- ECA)	The Environment Conservation Act (Act 73 of 1989 – ECA) was, prior to the promulgation of the NEMA, the backbone of environmental legislation in South Africa. To date the majority of the ECA has been repealed by various other Acts, however Section 25 of the Act and the Noise Regulations (GN R. 154 of 1992) promulgated under this section are still in effect. These Regulations serve to control noise and general prohibitions relating to noise impact and nuisance.	This EIA and EMPr aligns with the Environmental Conservation Act.
National Veld and Forest Fire Act (Act 101 of 1998)	The purpose of this Act is to prevent and combat veld, forest and mountain fires.	The proposed project area is situated in the amongst natural indigenous vegetation and cultivated land. The necessary precautionary measures are included in EMPr in case of fires.
The National Heritage Resources Act (Act 25 of 1999- NHRA)	The act stipulates that cultural heritage resources may not be disturbed without authorisation from the relevant heritage authority.	Heritage and palaeontological specialist studies were conducted to identify any heritage or palaeontological resources that may be impacted on by the proposed project. Several Heritage resources have been identified by a Heritage Specialist and the relevant impacts and mitigations have been included in this EMPr (Section 11).
Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies (Act 36 of 1947)	This act regulates the use of fertilizers and agricultural remedies, which are commonly used in pivot irrigation. It aims to ensure that these substances are used safely and effectively	The EIA and EMPr aligns with this act, and the impacts and mitigations have been included in the EMPr (Section 11).
Occupational Health and Safety Act (ACT 85 OF 1993- OHSA))	This Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.	This Act is applicable to all phases of the project, since the relevant activities make use of workers and machinery. Therefore, it is imperative to ensure, as far as is reasonably practicable, the health and safety of all employees in the workplace. Measures have been included in the EMPr where required.

4 DESCRIPTION AND SCOPE OF THE PROPOSED PROJECT

The proposed project is located along the N12, approximately 20 km north of Kimberley and 3 km southwest of Riverton, in the Sol Plaatje Local Municipality, Frances Baard District Municipality in the Northern Cape, as shown by the locality map in Figure 1. Table 3 provides the details for the proposed project area.

Table 3: Locality details.

Property/ies	Farm Droogfontein 62, portion 16
	Farm Eerste Aanleg 50, portion 2
	Farm Bulpan 51, the remainder portion
	Farm Witpan 52, the remainder portion
21-digit Surveyor General Code/s (respectively)	C03700000000006200016
	C03700000000005000002
	C03700000000005100000
	C03700000000005200000
Application Area (Ha)	1 050 Ha
District Municipality	Frances Baard District Municipality, Northern Cape
Local Municipality	Sol Plaatje Local Municipality
Distance and direction from nearest towns	~20 km north of Kimberley ~3 km southwest of Riverton

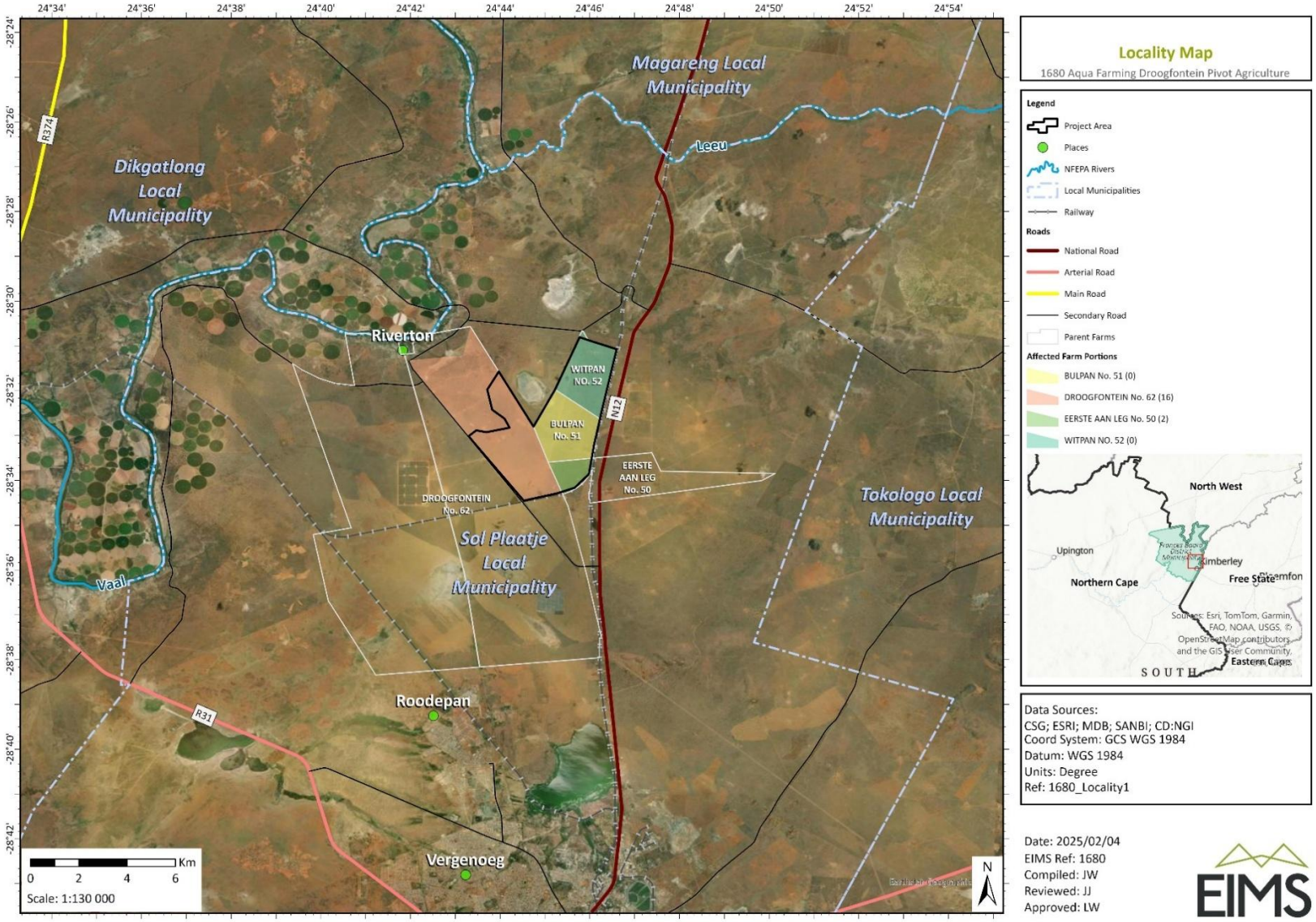

Figure 1: Locality map.

The applicant wishes to develop pivot irrigation systems for the cultivation of seed potatoes, potatoes, onions, and various grass-feed crops. The development of these pivots will occur in phases/seasons over the course of 7 years. With each phase/season, approximately 175 Ha will be cleared for the pivots. Therefore, after approximately 7 years a total of 1050 Ha will have been cleared, Figure 2 provides the layout of the pivots once the development is complete in approximately 7 years. The total area that will need to be assessed in support of the Environmental Authorisation application for the project is 1800 ha, however the application will be for the clearance of 1050 ha. The proposed project is located approximately 20 km North from Kimberley, on the Remainder of the Farm Bulpan 51, the Remainder of the Farm Witpan 52, Portion 2 of the Farm Eerste Aan Leg 50 and a section of Portion 16 of the Farm Droogfontein 62, in the Sol Plaatje Local Municipality, Frances Baard District Municipality, Northern Cape Province.

Figure 2: Pivot Layout.

The applicant will be applying crop rotation, a systematic practice of varying the types of crops cultivated in a specific sequence on the same land. An example of a typical crop rotation is represented in Figure 3. The planned rotation of potatoes, onions, and various grass-feeds offers several key benefits namely:

- Disrupting pest and disease cycles specific to individual crops, reducing the need for chemical interventions;
- optimising nutrient utilisation and replenishment within the soil, since different crops have varying nutrient requirements;
- the inclusion of grass-feeds contributing to soil structure improvement and organic matter enrichment; and
- enhancing overall soil health and long-term productivity, promoting sustainable agricultural practices.

Figure 3: Example of a crop rotation process.

The applicant currently holds an existing Water Use Licence (08/C33C/A/8367) for Farm Droogfontein 62, Portion 13, authorising the abstraction of 519 152 m³/annum from the Vaal River. To facilitate the irrigation of all planned future pivot systems being applied for, an additional water allocation of 578 848 m³/annum is required. Additionally, the applicant wishes to build a buffer dam as a reservoir for irrigation water with a capacity of 49 000 m^3 of water, a typical buffer dam with the pumping station is shown in Figure 4 and Figure 5. The proposed project will source irrigation water from the Vaal River. This will necessitate the construction of dedicated pumping infrastructure along the river. Consequently, applications will also be submitted for water uses as defined under sections 21 (c) and (i) of the NWA. The current existing water use licence will need to be amended to include the additional farms and farm portions designated irrigation activities, the additional 500 000m^3/a volume of water to be taken from the Vaal River as well as the storage of 49 000 m^3 of water within a buffer dam. Figure 4 provides an illustrative example of the proposed pumping station configuration for the irrigation water systems and Figure 5 provides an example of the proposed buffer dam configuration to be built on Farm Bulpan 51.

Figure 4: Water pumping station.

Figure 5: Buffer dam.

The project will consist of the following phases:

- planning and design;
- pre-construction activities;
- construction activities;
- operation activities; and
- rehabilitation of the environment after construction and in the case of a closure activity, closure.

Table 4 below includes a detailed overview of the phases and the activities associated with each phase. The EMPr, as an environmental management tool, is used to ensure that undue or reasonably avoidable adverse impacts of construction, operation and decommissioning of a project are prevented, and that the positive benefits of the projects are enhanced.

Table 4: Key Aspects and Impact.

Phase	Activity	Impacts	NEMA Listed Activity / NWA Water Use
Planning	Site selection.	Environmental: – Increased vehicle traffic to survey location – Temporary disturbance of wildlife Socio-economic: – community concerns employment opportunities	N/A
	Engineering design (pivot layout, water supply infrastructure).		
	Feasibility Studies (soil analysis, water availability, economic viability).		
	Human resource management (recruitment/employment).		
Construction	Site clearance and land preparation.	– Soil erosion, compaction, loss of topsoil, soil contamination from spills; – increased runoff, sedimentation of water bodies, potential groundwater contamination, reduced water quality; – dust generation, vehicle emissions, noise pollution; – alteration of drainage patterns; – littering; – socio economic; – community concerns; – employment opportunities; – visual impact; – habitat fragmentation, loss of natural vegetation and alien invasion in a CBA1 and CBA2;	NEMA GN R. 984, Activity 15; NEMA GN R. 984, Activity 16; NEMA GN R. 985, Activity 12; and NEMA GN R. 985, Activity 26. NWA Water Use 21(b) and 21(c) & (i) – Construction of a Buffer dam and infrastructure along the Vaal River.
	Construction of water supply infrastructure (buffer dam, pipelines).		
	Installation of pivot irrigation systems.		
	Construction of access roads and associated infrastructure.		
	Storage and handling of construction materials.		
	Soil compaction from heavy machinery.		
	Waste disposal (vegetation).		

Phase	Activity	Impacts	NEMA Listed Activity / NWA Water Use
		– loss of species of conservation concern; – sedimentation, contamination and disruption of freshwater ecosystems; – anthropogenic disturbances, intentional and/or accidental killing of fauna; – fire damage; and – impact on heritage resources	
Operation	Irrigation of crops. Application of fertilizers and pesticides. Crop harvesting and transportation. Planting of grasses for pasture before and during fallow / grazing periods. Maintenance of irrigation systems. Water abstraction. Energy Consumption.	– soil salinization, nutrient depletion, soil compaction, pesticide and fertilizer accumulation; – erosion; – pesticide drift, dust generation during harvesting, emissions from farm machinery; – habitat fragmentation, loss of natural vegetation and alien invasion in a CBA1 and CBA2; – sedimentation, contamination and disruption of freshwater ecosystems – anthropogenic disturbances, intentional and/or accidental killing of fauna; – socio-economic: Increased agricultural production, potential for job creation (long-term), changes in land use, potential health risks from pesticide exposure; – increased energy consumption for pumping water;	NEMA GN R. 985, Activity 26. NWA Water Use 21(a), 21(b) and 21(c) & (i)

Phase	Activity	Impacts	NEMA Listed Activity / NWA Water Use
		– visual impact; – fire damage; – noise nuisance; – oil/ fuel spillages causing soil and groundwater contamination; and – littering.	
Decommissioning and closure	Decommissioning of irrigation infrastructure (pivot systems, pipelines).	– Potential for residual contamination, soil compaction; – potential for residual contamination of groundwater or surface water; – visual and noise impact; and – restoration of natural state.	N/A
	Removal of access roads and associated infrastructure.		
	Soil remediation (if necessary).		
	Revegetation and habitat restoration.		
	Monitoring of rehabilitated areas.		
	Removal of any contaminates.		

5 ROLES AND RESPONSIBILITIES

The Applicant is responsible for ensuring full compliance with the stipulations outlined in the EMPr. Successful implementation of the EMPr is paramount. To guarantee the effective implementation of the EMPr and its associated mitigation measures, clear definitions and documentation of roles and responsibilities are essential prior to project commencement. This section provides a general guideline for assigning responsibilities. Specific roles are designated within the specific environmental management and mitigation requirements outlined in this EMPr.

5.1 THE PROJECT APPLICANT/PROPONENT

The Applicant is the principal party (Proponent) of the project. The legal accountability for correct implementation of the relevant requirements of the EA, WUL and EMPr falls primarily upon the Applicant and must therefore be built into all contractor's contractual agreements. The Applicant's role typically includes:

- Provision for all necessary supervision during the execution of the project including appointment of key personnel to act on his/her behalf during the different phases of the project phase (e.g. project manager/Site Manager/Foreman). The key personnel will be tasked with ensuring that the various contractors/developers comply with the necessary provisions of the EA, WUL and EMPr;
- Ensure that the principal appoints a competent Environmental Officer (EO) or site manager/foreman, who will be responsible for among others, ensuring compliance (on a daily basis onsite) with the EMPr, EA and WUL conditions throughout the construction of the relevant project component.
- Notify the relevant competent authority of changes in the development resulting in significant environmental impacts;
- Assess the various contractors' environmental performance during operations;
- Ensure compliance with regulations;
- To implement the projects as per the approved project plan;
- To ensure that implementation is conducted in an environmentally acceptable manner;
- To comply with special conditions as stipulated by surrounding landowners during the negotiation process (if any); and
- To inform and educate all Employees about the environmental risks associated with the different activities that should be avoided during the reclamation process and lessen significant impacts to the environment.

Therefore, ultimately, the Applicant is responsible for the development and implementation of the EMPr and, where relevant, ensuring that the conditions in the EA, WUL and EMPr are satisfied. The Applicant is therefore responsible for liaising directly with the relevant authorities with respect to the preparation and implementation of the EMPr and meeting authorisation conditions.

5.2 THE PROJECT MANAGER / FARM MANAGER

The Project Manager/ Farm Manager would oversee all contractors, if any, from a project management point of view. The roles of the Project Manager/ Farm Manager typically include the following:

- The Project Manager/ Farm Manager acts on behalf of the Applicant regarding the administration of contracts to sub-contractors, if any exist, etc.;
- Provides and/ or approves scheduling, aspects of co-ordination and estimating;
- Provide all necessary supervision during the execution of the project

- Ensures implementation of the project plan within cost, time and quality constraints;
- Ensures that implementation of the EMPr is executed as planned;
- Keeps the asset owner informed of progress made during the life cycle of the project;
- Monitoring construction by maintaining a permanent presence on site;
- Establishing and maintaining an environmental incident register;
- Taking required corrective action within specified time frame in respect of non-conformances and environmental incidents;
- Assist in finding environmentally acceptable solutions to construction problems;
- Attendance at HSE meetings, toolbox talks and induction programmes (where relevant);
- Inspect the site as required to ensure adherence to the management actions of the EMPr on a daily basis;
- Liaise with the construction team on issues related to implementation of, and compliance with the EMPr; and,
- Ensure adequate and compliant waste management.

Due to the low-risk nature of the proposed development, and the regular presence on site, the Project Manager/ Farm Manager (or suitably qualified individual) may be appointed as the Environmental Officer (EO) to oversee daily compliance with this EMPr. The EO shall report to a suitably qualified independent Environmental Control Officer (ECO) who will perform audits at key stages of the project (refer to Section 5.4).

5.3 THE CONTRACTOR

The contractor is usually a third party appointed by the Applicant/ Project Manager to undertake the actual construction of the project, if necessary. For the purposes of this section, any contractor on site (regardless of who appointed them) is referred to as the "Contractor".

The relevant contractors are answerable to the Project Manager/ Farm Manager for all environmental issues associated with the project. Contractor performance will, amongst others, be assessed on health, safety and environmental management criteria. The principal contractor/ s, any other contractors and sub-contractors will be required to comply with the provisions contained herein, and accordingly, the EMPr and its provisions must form part of any contractual arrangements between the Applicant and contractors, and contractors and their sub-contractors, etc. The Contractor must comply with EMPr during construction and ensure that all his Employees and sub-contractors appointed by him/ her are familiar with the EMPr. The legal accountability for correct implementation of the relevant requirements of the EA and EMPr must be contractually bound to the appointed contractor, if any appointments are made.

The Contractors role includes:

- To ensure that implementation is conducted in an environmentally acceptable manner;
- To fulfil all obligations as per the agreed contract;
- To comply with special conditions as stipulated by surrounding Landowners during the negotiation process (if any); and
- Ensure that the Contractors staff and Employees have received the appropriate environmental awareness training prior to commencing construction.

The Contractor may appoint an Environmental Officer (EO), or officers, if more than one is required. Their primary role is to coordinate the environmental management activities of the Contractor on site. The EO may be required to perform the following roles:

- Support the ECO in monitoring by maintaining a permanent presence on site;
- Inspect the site as required to ensure adherence to the management actions of the EMPr;
- Complete Site Inspection Forms on a regular basis (weekly);
- Provide inputs to the environment reports to be prepared by the ECO;
- Liaise with the construction team on issues related to implementation of, and compliance with the EMPr;
- Maintain a record of environmental incidents (spills, impacts, legal transgressions etc) as well as corrective and preventive actions taken, for submission to the Project Proponent; and
- Maintain a public complaints register in which all complaints are recorded, as well as action taken, for submission to the Project Proponent.

5.4 THE ENVIRONMENTAL CONTROL OFFICER

An Environmental Control Officer (ECO) or Site Manager is responsible for the on-site implementation of the EMPr, ensuring that all employees and contractors abide by the requirements of the EMPr. The ECO should have appropriate training and/or experience in the implementation of environmental management specifications. The ECO must preferably have a tertiary qualification in an Environmental Management or appropriate field. The ECO provides feedback to the Project Manager/ Farm Manager regarding all environmental matters. The ECO's key role is auditing the implementation of the EMPr. For the purposes of implementing the conditions contained herein, the Project Proponent should appoint the ECO well before the start of survey activities. The ECO is responsible for the auditing function as well as the clarification of environmental conditions contained in this EMPr to anyone working on the site.

Due to the nature and length of the proposed development phases, it is recommended that the ECO only conduct audits at key stages throughout the project:

- One audit prior to initial construction of the first pivot to:
    - Conduct environmental awareness training to the project team (Proponent, Farm Manager, Contractors, and EOs);
    - Audit compliance with Pre-Construction Phase requirements and required documentation, permits and licenses.
- One audit during the initial construction of each pivot;
- One audit following the initial construction of each pivot.

The EO/Site Manager roles will include:

- Preparing activity based Environmental Method Statements where applicable and where required by the EMPr;
- Establishing and maintaining an environmental incident register;
- Taking required corrective action within specified time frame in respect of non-conformances and environmental incidents;
- Assist in finding environmentally acceptable solutions to problems;

- Attendance at Health, Safety and Environmental (HSE) meetings, toolbox talks and induction programmes (where relevant);
- Inspect the site as required to ensure adherence to the management actions of the EMPr on a daily basis;
- Recommendations for review and update of the EMPr;
- Liaison between the Applicant, Contractors, authorities and other lead stakeholders on high importance environmental concerns;
- Review the site induction training to ensure environmental issues receive adequate attention and important site-specific issues are included;
- Validating the regular site inspection reports, which are to be prepared by the relevant contractor EO's;
- Maintain a record of all non-conformances and incidents to ensure that measures are put in place to remedy such;
- Maintain a public consultation register in which all complaints are recorded, as well as action taken;
- Verification that all environmental monitoring programmes (sampling, measuring, recording etc. when specified) are carried out according to protocols and schedules; and
- Ensure adequate and compliant waste management.

It is important to note that where opportunity for interpretation occurs within the conditions of this EMPr, the interpretation of the EO/Site Manager will take preference.

5.5 THE INDEPENDENT AUDITOR

An independent auditor shall be appointed as per the requirements of the EIA Regulations (GN R 982) Section 34 which states that:

1) The holder of an environmental authorisation must, for the period during which the environmental authorisation, EMPr, and the closure plan in the case of a closure activity, remain valid-

a) ensure that the compliance with the conditions of the environmental authorisation, the EMPr, and the closure plan in the case of a closure activity, is audited; and

b) submit an environmental audit report to the relevant competent authority.

2) The environmental audit report contemplated in sub-regulation (1) must-

a) be prepared by an independent person with the relevant environmental auditing expertise;

b) provide verifiable findings, in a structured and systematic manner, on-

i) the level of performance against and compliance of an organisation or project with the provisions of the requisite environmental authorisation, EMPr and the closure plan in the case of a closure activity; and

ii) the ability of the measures contained in the EMPr and closure plan to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity;

c) contain the information set out in Appendix 7; and

d) be conducted and submitted to the competent authority at intervals as indicated in the environmental authorisation.

With regards to the above legislated requirement, the EAP recommends that an independent audit be undertaken annually during Construction, every 2 years during Operations, and every 5 years during the Rehabilitation phase, or as may be set out in the EA and WUL once granted.

5.6 THE AUTHORITIES

The authorities that should be involved include the NC DAERL, DFFE and DWS. The authorities may be required to perform the following roles:

- Review Monitoring and Audit reports, if required;
- Review whether there is compliance by the Applicant and Contractor with the terms of the EMPr and permit/license conditions. Whenever necessary, the authorities should assist the Applicant in understanding and meeting the specified requirements; and
- The authorities may perform random controls to check compliance. In case of persistent non-compliance, the Applicant will be required to provide an action plan with corrective measures, and have it approved by the authorities

6 ENVIRONMENTAL MANAGEMENT SYSTEM

The purpose of this EMPr is to ensure that the environment is properly considered during the design, construction, operations, and decommissioning phases, and that negative impacts are minimised or prevented, and positive impacts enhanced. At the same time the EMPr should provide a logical extension of the EIA, specialist studies, or any other technical planning and assessment documentation, to ensure that recommendations are implemented, and that the project does not deviate from the environmental profile that formed the basis of the assessment.

6.1 RECORD KEEPING

The Applicant, or the Project manager (if assigned) is responsible for the identification, storage, protection, retrieval, retention, and disposal of records as part of the EMPr. Records must be legible, identifiable, and traceable.

6.2 GRIEVANCE PROCEDURE

This procedure outlines the procedure for stakeholders (e.g., local communities, affected parties, employees) to raise concerns or grievances related to the environmental impacts or performance of the project/operations. The aim is to provide a transparent, accessible, and efficient mechanism for addressing and resolving grievances in a fair and timely manner.

6.2.1 PRINCIPLES OF THE GRIEVANCE PROCEDURE

- Accessibility: The procedure will be clearly communicated and easily accessible to all potential stakeholders.
- Transparency: The process will be open and transparent, with clear communication on the status of grievances.
- Fairness: All grievances will be treated seriously, impartially, and without prejudice.
- Confidentiality: Where requested and appropriate, confidentiality will be maintained.
- Responsiveness: Grievances will be addressed promptly and within defined timelines.
- Non-Retaliation: No person will face discrimination or retaliation for raising a grievance in good faith

6.2.2 GRIEVANCE SUBMISSION AND RECORDING

Grievances can be submitted through various channels, including but not limited to:

- Dedicated email address: neels@aquafarming.co.za
- Dedicated phone number: 071 605 2675
- Direct communication with the Environmental Manager or Community Liaison Officer.
- Suggestion/Grievance boxes at designated accessible locations.

While not mandatory, stakeholders are encouraged to provide the following information to facilitate investigation:

- Name and contact details of the grievant (unless anonymity is preferred).
- Date and time of the incident/concern.
- Clear description of the grievance, including specific details of the environmental impact or concern.
- Location of the incident/concern.
- Any supporting documentation or evidence (e.g., photos, videos, witness statements).
- Desired outcome or resolution (if any).

Upon receipt, all grievances will be formally acknowledged within 2 working days. Each grievance will be logged in a dedicated Grievance Register, assigning a unique reference number. The register will include:

- Date received,
- grievant details (if provided),
- nature of grievance,
- date of acknowledgement,
- assigned responsible person,
- status, and
- resolution date.

6.2.3 GRIEVANCE ASSESSMENT AND INVESTIGATION

The Environmental Manager (or designated responsible person/s) will conduct an initial assessment within 5 working days of receipt to:

- Determine the validity and scope of the grievance.
- Identify the relevant department/personnel responsible for investigation.
- Prioritize the grievance based on its severity and potential impact.

A thorough and impartial investigation will be conducted by the assigned responsible person. This may involve site visits, interviews with relevant parties (including the grievant, if willing), review of records, and consultation with technical experts. The investigation aims to understand the root cause of the grievance and gather all necessary information for informed decision-making.

6.2.4 GRIEVANCE RESOLUTION

Based on the investigation findings, a proposed resolution will be developed. This may include:

- Corrective actions to mitigate the environmental impact.
- Compensatory measures (if applicable and agreed upon).

- Changes to operational procedures.
- Communication and explanation of findings (e.g., if the grievance is unfounded).

The proposed resolution will be communicated to the grievant in a clear and understandable manner within 15 working days of the grievance being logged (or an agreed-upon extended timeframe if the investigation is complex). The grievant will be given an opportunity to provide feedback on the proposed resolution.

If the grievant accepts the proposed resolution, it will be formally documented and implemented. The grievant will be informed once the resolution has been fully implemented.

6.2.5 GRIEVANCE CLOSURE AND REVIEW

A grievance will be formally closed when:

- The grievant confirms satisfaction with the resolution.
- The agreed-upon resolution has been fully implemented and verified.
- The grievance is deemed unfounded after thorough investigation and communication with the grievant.

The effectiveness of implemented resolutions will be monitored to ensure the environmental issue is adequately addressed and does not recur. The Grievance Register will be reviewed regularly by the Environmental Management Team. The review will assess trends in grievances, identify recurring issues, and evaluate the effectiveness of the grievance procedure itself. Lessons learned from grievances will be integrated into the Environmental Management System for continuous improvement of environmental performance and grievance handling processes.

All records pertaining to grievances, including submission forms, investigation reports, communication logs, and resolution documentation, will be securely maintained for a period of 10 years for auditing and review purposes.

6.3 RESPONDING TO NON-COMPLIANCES

Non-compliance will be identified and managed through the following key activities including:

- Inspections of the site and activities across the site;
- Audits of the site and relevant documentation as well as specific activities; and
- Reporting on a Monthly Basis during the Construction Phase, and Annually during the Operational Phase, and every 5 years during the Rehabilitation Phase by the EO/Site Manager.

Non-compliance with the EMPr or any other environmental legislation, specifications or standards shall be recorded by the EO in the non-conformance register. This register shall be maintained by the EO and will be sent to the Applicant on a regular basis, and the Applicant shall ensure that the responsible party takes the necessary corrective actions. Non-conformances may only be closed out in the register by the EO upon confirmation that adequate corrective action has been taken and/or documented proof provided. The register should be utilised to measure overall environmental performance.

6.4 ENVIRONMENTAL INCIDENTS AND NON-CONFORMANCES

A procedure for Incident and Non-Conformance Classification and Reporting should be implemented by the Applicant and will form part of the EMS. The purpose of the procedure is to accelerate the proper reporting and classification of environmental incidents and Non-Conformances (NCs) and thus assign priority to all serious environmental occurrences. The procedure will ensure that the environmental incident and NC assessment criteria and reporting method used are uniform and implemented across all segments and business units at the Aqua Farming operations. Incidents and NCs are classified according to different ratings defined in Table 5 and Table 6, respectively, below.

Table 5: Incident Rating Classification

Rating	Description
Minor incidents	These involve minimal or no environmental impact, such as minor non-conformances or deviations from established procedures.
Moderate incidents	These incidents may result in short-term, limited, and non-ongoing adverse environmental impacts.
Critical incidents	These are potentially the most serious incidents, often involving breaches of environmental legislation, regulations, or permits, and have the potential for significant harm to the environment or human health.

Table 6: Non-Conformance Classification

Rating	Description
Major NC	Major non-conformances have a significant impact on the effectiveness of the EMS, often indicating systemic failures or breakdowns in processes. They may pose risks to the environment or human health and safety and may potentially violate legal or regulatory requirements.
Minor NC	Minor non-conformances exhibit limited impact on the overall effectiveness of the EMS. They are typically isolated incidents that can be easily rectified with minimal effort and resource allocation.
OFI	Opportunity for Improvement (OFI) is a potential area where changes can be made to enhance the environmental performance of the organization's EMS.

7 REVIEW AND REVISION OF THE EMPR

This EMPr is applicable throughout the life cycle of the project. It is important to note that this EMPr is made legally binding on the Applicant through the approval of the EMPr by the decision-making authority. It is important to consider that the EMPr is a dynamic document which may require such alteration and /or amendment as the project evolves. Conditions under which the EMPr would require revision include:

- Changes in legislation;
- Occurrence of unanticipated impacts or impacts of greater intensity, extent and significance than predicted;
- Inadequate mitigation measures (i.e. where environmental performance does not meet the required level despite the implementation of the mitigation measure);
- Secondary impacts occur because of the mitigation measures; and
- Instances where the implementation of the specified management, as a result of changes in circumstances, may become impractical or unreasonable to implement.

The Applicant in consultation with the EO/Site Manager should be responsible for ensuring that the registration and updating of all relevant EMPr documentation is carried out. It shall be the responsibility of the Applicant, in consultation with the EO/Site Manager, to ensure that all personnel are performing according to the requirements of the document control procedure, and to initiate the revision of controlled documents, when required by changes in process or operations.

8 ENVIRONMENTAL AWARENESS PLAN AND TRAINING

Training and environmental awareness is an integral part of a complete EMPr. The overall aim of the training will be to ensure that all site staff are informed of their relevant requirements and obligations pertaining to the relevant authorisations, licences, permits and the approved EMPr and protection of the environment.

The Applicant and contractor must ensure that all relevant employees are trained and capable of carrying out their duties in an environmentally responsible and compliant manner and are capable of complying with the relevant environmental requirements. To obtain buy-in from staff, individual Employees need to be involved in:

- Identifying the relevant risk;
- Understanding the nature of risks;
- Devising risk controls; and
- Given incentive to implement the controls in terms of legal obligations.

The Applicant shall ensure that adequate environmental training takes place. All employees shall have been given an induction on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees.

9 EMERGENCY RESPONSE PLAN

The Applicant must identify potential environmental emergencies and develop procedures for preventing and responding to them. There are several options for dealing with high priority impacts and risks, as the paradigm has two components, probability, and consequence. The design of control measures rests on understanding the cause and effect. Best practice is to intervene with the ultimate factors where feasible, rather than treat the outcomes. Emergency response therefore has the option of reducing probability or reducing the consequence while reducing the probability is the preferred option. Below are some common emergency preparedness approaches:

- **All-Hazards Approach:** This approach involves preparing for a wide range of potential emergencies, regardless of their specific cause.
- **Mitigation:** Implementing measures to reduce the likelihood or severity of an emergency.
- **Preparedness**: Developing and maintaining plans, training personnel, and acquiring resources.
- **Response:** Taking immediate action to protect lives and property during an emergency.
- **Recovery:** Restoring affected areas and returning to normal operations.

A robust emergency response plan should include the elements described in Table 7.

Table 7: Emergency Response Procedure.

Element	Procedure
Risk assessment	- Identify potential hazards and vulnerabilities. - Evaluate the likelihood and severity of each risk. - Prioritize risks based on their potential impact.
Emergency Response Team	- Establish a dedicated team responsible for responding to emergencies. - Assign specific roles and responsibilities to team - members. - Conduct regular training and drills to ensure preparedness.

Element	Procedure
Emergency Procedures	- Develop clear and concise procedures for handling different types of emergencies. - Include steps for evacuation, containment, cleanup, and reporting. - Practice these procedures regularly to ensure familiarity.
Emergency Equipment and Supplies	- Maintain adequate supplies of essential equipment, such as protective gear, spill kits, and firefighting equipment. - Ensure that equipment is regularly inspected and maintained.
Communication Plan	- Establish effective communication channels for alerting employees, emergency responders, and the public. - Develop a system for disseminating information during an emergency. - Notifying the Relevant Government Authorities, including when and how to report emergencies to the relevant authorities.
Reporting	- Develop protocols for emergency reporting, including the specific circumstances under which emergencies should be reported and the appropriate reporting channels.
Emergency Drills and Training	- Conduct regular drills to test emergency procedures and response times. - Provide training to employees on emergency response protocols, first aid, and CPR.
Documented information	- Specify the essential information and documentation to be provided to emergency response teams.

10 MEASURES TO CONTROL OR REMEDY ANY CAUSES OF POLLUTION OR DEGREDATION

The high-level measures to control or remedy any causes of pollution or environmental degradation as a result of the proposed activities taking place on the project are provided below:

- Ensure adequate storm water runoff measures;
- Contain potential pollutants and contaminants (where possible) at source;
- Handling of potential pollutants and contaminants (where possible) must be conducted in bunded areas and on impermeable substrates;
- Ensure the timeous clean-up of any spills;
- Implement a waste management system for all waste streams present on site;
- Investigate any I&AP claims of pollution or contamination as a result of the project activities; and
- Rehabilitate the site in line with the requirements of the rehabilitation / decommissioning plan.

11 IMPACT MANAGEMENT AND MITIGATION MEASURES

This section provides management and mitigation measures that need to be implemented throughout the life cycle of the proposed project to ensure that the identified impacts are properly managed and mitigated to avoid or minimise degradation of the surrounding environment and to positively impact the socio-economic aspects of the area. Table 8 below encapsulates the management and mitigation measures for all identified impacts. This table also includes the party responsible for ensuring compliance with each management or mitigation measure, the party responsible for monitoring (and frequency thereof) compliance and the performance indicators that can be utilized to ensure that the target for each management and mitigation measure is achieved.

Table 8: Impact Management and Mitigation Measures.

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.1 PLANNING AND DESIGN PHASE					
11.1.1	Prioritize communication and coordination between contractors and landowners;	Site Manager	Minimal disruption to landowners and existing farm operations.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.2	conduct thorough site assessments to identify existing survey locations and sensitive areas;	Site Manager	The protection of all identified heritage sites, graves, significant biodiversity features, and other sensitive environmental areas. No accidental damage occurs during vegetation clearance or construction activities.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.3	minimise vehicle traffic and implement access restrictions;	Site Manager	Reduced soil compaction, dust generation, and erosion. The ecological footprint of the project is minimised, and the safety of personnel and the public is ensured through controlled and designated access routes.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.4	training and awareness;	Site Manager	All personnel and contractors demonstrate a high level of environmental awareness and are competent in implementing the mitigation measures outlined in the EMPr, leading to full compliance and a reduction in preventable environmental incidents.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.5	monitoring and reporting;	Site Manager	A system of adaptive management is established where the effectiveness of mitigation measures is continuously evaluated.	Monthly	ECO Monitoring reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
			Non-compliance is identified and rectified promptly, ensuring accountability and the achievement of all environmental objectives.		EA Audit reports WUL Audit Reports
11.1.6	prioritise local employment;	Applicant	Direct economic benefits are injected into the local community through the creation of jobs, leading to improved livelihoods and household incomes for local residents.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.7	utilise community networks;	Site Manager	Project information, opportunities, and grievance procedures are disseminated effectively and transparently throughout the local community, fostering trust and ensuring inclusive stakeholder engagement.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.8	promote equity;	Applicant Site Manager	Project-related benefits, including employment and business opportunities, are distributed fairly and equitably among local community members, with a focus on including vulnerable and historically disadvantaged groups	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.9	invest in workforce development; and	Site Manager	The local workforce acquires new and transferable skills, enhancing their long-term employability beyond the lifespan of the project and contributing to the overall economic resilience of the community.	Monthly	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.1.10	support local food security	Applicant Site Manager	The local community has improved access to food.	Monthly	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
					WUL Audit Reports
11.2 CONSTRUCTION PHASE					
11.2.1	Compaction prevention;	Site Manager / ECO	Soil structure is preserved to allow for healthy root growth and water infiltration.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.2	soil and groundwater contamination prevention;	Site Manager / ECO	The integrity of soil and groundwater resources is preserved by preventing contamination from hazardous substances, chemicals, and waste.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports Groundwater monitoring reports
11.2.3	dust control;	Site Manager / ECO	Air quality is maintained, preventing nuisance and health impacts on personnel and surrounding communities.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.4	maintain access roads;	Site Manager / ECO	Roads remain safe and serviceable while minimizing erosion and further habitat fragmentation.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.5	speed limit of 30 km/h;	Site Manager / ECO / Contractors	The safety of personnel and wildlife is enhanced, and dust generation is reduced.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.6	construction to take place preferably on non-windy days; and	Site Manager / ECO	The generation and dispersal of dust are minimised during land clearance, protecting air	Monthly Refer to Section 5.4	ECO Monitoring reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
			quality and preventing nuisance impacts on adjacent properties and communities.		EA Audit reports
11.2.7	vehicle emissions control.	Site Manager / ECO	Air quality is maintained, preventing nuisance and health impacts on personnel and surrounding communities.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.8	ensure that all vehicles used during construction are serviced and in a good working condition;	Site Manager / ECO	Soil and water resources are protected from hydrocarbon contamination from project machinery.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.9	noise pollution control	Site Manager / ECO	Noise disturbance to surrounding communities and local wildlife is minimised.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.10	habitat protection;	Site Manager / ECO	Key ecological areas are conserved, ensuring the persistence of local flora and fauna.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.11	wildlife protection;	Site Manager / ECO	Harm and disturbance to local wildlife are minimized throughout all project phases.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.12	biodiversity protection;	Site Manager / ECO	The overall ecological integrity and species diversity of the area are safeguarded from project impacts.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.2.13	employ local work force;	Aqua Farming	The project provides direct economic benefits and improved livelihoods for the local community.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.14	utilise existing community structure;	Site Manager / ECO	Communication is effective and respectful, fostering a positive relationship with the community.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.15	opportunities to be given previously disadvantaged individuals;	Site Manager / ECO	The project actively promotes social equity and inclusive economic participation.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.16	training and awareness;	Site Manager / ECO	All personnel are equipped with the knowledge to conduct their duties in an environmentally responsible manner.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.17	support local food security;	Aqua Farming	The project contributes positively to the availability of food within the local community.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.18	drainage management;	Site Manager / ECO	Excess surface water is effectively managed to prevent waterlogging and associated crop damage.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.19	dedicated waste bins to be placed near construction sites;	Site Manager / ECO	The work site is kept free of litter, and wildlife is prevented from accessing waste.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.2.20	preserve natural vegetation between pivots to minimise the impact on the visual aesthetic of the footprint area;	Site Manager / ECO	Key ecological areas are conserved, ensuring the persistence of local flora and fauna. The overall ecological integrity and species diversity of the area are safeguarded from project impacts.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.21	limit vegetation clearance to access roads, pivots and infrastructure;	Site Manager / ECO	Key ecological areas are conserved, ensuring the persistence of local flora and fauna. The overall ecological integrity and species diversity of the area are safeguarded from project impacts.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.22	alien vegetation control measures;	Site Manager / ECO	The spread of invasive species is controlled, protecting the integrity of local ecosystems.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.23	implement a search and rescue procedure;	Site Manager / ECO	Preservation of protected species and minimised impact on the ecosystems and habitats.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.24	ensure vehicles are equipped with firefighting equipment;	Site Manager / ECO	A rapid response to fire incidents is enabled, minimising the potential for veld fires to spread.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.25	firefighting equipment training;	Site Manager / ECO	Personnel are prepared and competent to safely manage and extinguish fires.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.2.26	no open fires;	Site Manager / ECO / Contractor	The risk of accidental veld fires originating from the project site is minimised.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.27	no smoking;	Site Manager / ECO / Contractor	The risk of fire ignition from discarded cigarettes is prevented across the site	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.28	firebreaks around each pivot; and	Site Manager / ECO	A defensible barrier is established to help control the spread of veld fires.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.29	implement a chance find protocol.	Site Manager / ECO	Reduced impacts on heritage sites and other finds.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.30	A management plan must be drawn up for the ecological corridor and other undeveloped portions of the property	Site Manager / ECO	Support of the biodiversity and ecosystem connectivity in the area.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.31	The Alien vegetation that has grown as a result of land clearing must be removed by methods recommended by DWA.	Site Manager / ECO	Control and minimisation of alien vegetation growth	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.2.32	As the killing of herpetofauna is considered a result of ignorance, this can be ameliorated through education. The labour force	Site Manager / ECO	Reduced anthropogenic disturbances, intentional and/or accidental killing of fauna.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
	involved should be educated regarding the conservation importance of herpetofauna.				
11.2.33	Spot treatments of pesticide and herbicides reduce the risk of runoff and contamination of surrounding areas	Site Manager / ECO	Minimising risk of contamination.	Monthly Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.3 OPERATIONAL PHASE					
11.3.1	Implement sustainable irrigation systems;	Applicant Site Manager	Water use is optimised, and wastage is minimised to ensure long-term resource sustainability.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.2	dust control measures;	Site Manager	Air quality is maintained, preventing nuisance and health impacts on personnel and surrounding communities.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.3	implement integrated pest management;	Site Manager	Reliance on chemical pesticides is reduced, minimising the risk of environmental contamination.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.4	training on safe pesticide handling and application;	Site Manager	Personnel are competent in handling chemicals, ensuring human and environmental safety is protected.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.5	establish buffer zones around sprayed areas;	Site Manager	Non-target ecosystems and water resources are protected from chemical drift and runoff.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.6	utilise slow-release fertilizers;	Site Manager	Nutrient runoff into water bodies is minimised, protecting aquatic ecosystem health.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.7	implement irrigation scheduling;	Site Manager	Water is applied efficiently according to crop needs, conserving water and preventing soil waterlogging	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.8	prevent soil salinization;	Site Manager	The long-term productivity and health of the soil are maintained by preventing salt accumulation.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.9	prevent nutrient depletion in soils;	Site Manager	Soil fertility is sustained through balanced agricultural practices, ensuring continued crop yields.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.10	prevent soil compaction;	Site Manager	Soil structure is preserved to allow for healthy root growth and water infiltration.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.11	maintain access roads;	Site Manager	Roads remain safe and serviceable while minimizing erosion and further habitat fragmentation.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.12	implement crop rotation and intercropping;	Site Manager	Soil health is enhanced, and the incidence of pests and diseases is naturally reduced.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.13	avoid clearing natural vegetation outside of the irrigated area;	Site Manager / ECO	The project's footprint is strictly contained, preserving surrounding indigenous biodiversity.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.14	maintain pumps;	Site Manager / ECO	An efficient and reliable water supply is ensured, preventing energy waste and operational downtime.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.15	alien vegetation management;	Site Manager / ECO	The spread of invasive species is controlled, protecting the integrity of local ecosystems.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.16	habitat protection;	Site Manager / ECO	Key ecological areas are conserved, ensuring the persistence of local flora and fauna.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.17	wildlife protection;	Site Manager / ECO	Harm and disturbance to local wildlife are minimized throughout all project phases.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.18	biodiversity protection;	Site Manager / ECO	The overall ecological integrity and species diversity of the area are safeguarded from project impacts.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.19	environmental training and awareness;	Site Manager / ECO	All personnel are equipped with the knowledge to conduct their duties in an environmentally responsible manner.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.20	maintain vehicles, equipment and machinery to prevent leaks;	Site Manager / ECO	Soil and water resources are protected from hydrocarbon contamination from project machinery.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.21	operation of vehicles and machinery on the pivots to be undertaken during the day, from 06:00 until 18:00;	Site Manager / ECO	Disturbance to nocturnal animals and noise impacts on neighbours are minimised.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.22	ensure vehicles are equipped with firefighting equipment;	Site Manager / ECO	A rapid response to fire incidents is enabled, minimising the potential for veld fires to spread.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.23	firefighting equipment training;	Site Manager / ECO	Personnel are prepared and competent to safely manage and extinguish fires.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.24	no open fires;	Site Manager / ECO	The risk of accidental veld fires originating from the project site is minimised.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.25	no smoking on site;	Site Manager / ECO	The risk of fire ignition from discarded cigarettes is prevented across the site	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.26	maintain firebreaks around each pivot area	Site Manager / ECO	A defensible barrier is established to help control the spread of veld fires.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.27	speed limit of 30 km/h;	Site Manager / ECO	The safety of personnel and wildlife is enhanced, and dust generation is reduced.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.28	spill prevention kits to be available;	Site Manager / ECO	Accidental chemical or fuel spills are contained and cleaned up effectively to prevent pollution.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.29	dedicated waste bins to be available with lids secured;	Site Manager / ECO	The work site is kept free of litter, and wildlife is prevented from accessing waste.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.30	employ local work force;	Applicant	The project provides direct economic benefits and improved livelihoods for the local community.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.31	utilise existing community structure;	Applicant	Communication is effective and respectful, fostering a positive relationship with the community.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.32	opportunities to be given to previously disadvantaged individuals;	Applicant	The project actively promotes social equity and inclusive economic participation.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.33	support local food security;	Applicant	The project contributes positively to the availability of food within the local community.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
11.3.34	drainage management; and	Site Manager / ECO	Excess surface water is effectively managed to prevent waterlogging and associated crop damage.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.35	stormwater management.	Site Manager / ECO	Stormwater runoff is controlled to prevent soil erosion and the pollution of local watercourses.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports WUL Audit Reports
11.3.36	groundwater monitoring	Site Manager / ECO	Improved water quality and availability for all stakeholders.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.3.37	A management plan must be drawn up for the ecological corridor and other undeveloped portions of the property	Site Manager / ECO	Support of the biodiversity and ecosystem connectivity in the area.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.3.38	The alien vegetation that has grown as a result of land clearing must be removed by methods recommended by DWA.	Site Manager / ECO	Control and minimisation of alien vegetation growth	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.3.39	As the killing of herpetofauna is considered a result of ignorance, this can be ameliorated through education. The labour force involved should be educated	Site Manager / ECO	Reduced anthropogenic disturbances, intentional and/or accidental killing of fauna.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
	regarding the conservation importance of herpetofauna.				
11.3.40	Spot treatments of pesticide and herbicides reduce the risk of runoff and contamination of surrounding areas	Site Manager / ECO	Minimising risk of contamination.	Annually / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4 DECOMMISSIONING, CLOSURE AND REHABILITATION PHASE					
11.4.1	Residue contamination assessment and monitoring;	Site Manager / ECO	No to minimal contamination, thereby not impacting the soil health and vegetation growth over longer periods.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4.2	dust control;	Site Manager / ECO	Air quality is maintained, preventing nuisance and health impacts on personnel and surrounding communities.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4.3	alien vegetation management; and	Site Manager / ECO	The spread of invasive species is controlled, protecting the integrity of local ecosystems.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4.4	de-compaction of soil;	Site Manager / ECO	Soil structure is improved to allow for healthy root growth and water infiltration.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4.5	pivot footprints to be revegetated with local indigenous species and monitored for proper	Site Manager / ECO	Successful re-establishment of a self-sustaining indigenous plant community, former pivot footprints are rehabilitated to enhance local	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports

Item no.	Impact Management Actions / Mitigation Measures	Responsible Party	Impact Management Outcome	Monitoring Frequency	Performance Indicators (Monitoring Tool)
	rehabilitation and re-establishment.		biodiversity and restore the area's ecological integrity		
11.4.6	water monitoring;	Site Manager / ECO	Improved water quality and availability for all stakeholders.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4.7	remove all surface infrastructure and debris;	Site Manager / ECO	Improvement in landscape aesthetics and sense of place.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports
11.4.8	biodiversity monitoring	Site Manager / ECO	Improvement in biodiversity and ensuring sustainable growth of biodiversity.	Monthly / Refer to Section 5.4	ECO Monitoring reports EA Audit reports

12 ENVIRONMENTAL MONITORING SCHEDULE

Table 9 includes the environmental monitoring activities that are required to be undertaken as stipulated in the EMPr and the EA. This includes the monitoring frequencies, responsible party, and the relevant conditions.

Table 9: Auditing and Monitoring Schedule.

Environmental Monitoring	Relevant Condition	Frequency	Responsible Person	Reports to be submitted to Authority
Monitoring				
Groundwater Monitoring	EA: Condition X.X (to be included, if applicable, once EA is issued) WUL/GA Condition X.X (to be included, if applicable, once WUL is issued)	Annually or as stipulated in the WUL	ECO/Site Manager	DWS
ECO monitoring	EA: Condition X.X (to be included, if applicable, once EA is issued)	One audit prior to initial construction of the first pivot. One audit during the initial construction of each pivot. One audit following the initial construction of each pivot.	ECO/Site Manager	DFFE and NC DAERL
Audit				
Internal EA/EMPr Audit	EA: Condition X.X (to be included, if applicable, once EA is issued)	One audit prior to initial construction of the first pivot. One audit during the initial construction of each pivot.	ECO/Site Manager	DFFE and NC DAERL

		One audit following the initial construction of each pivot.		
External EA/EMPr Audit	EA: Condition X.X (to be included, if applicable, once EA is issued)	One audit prior to initial construction of the first pivot. One audit during the initial construction of each pivot. One audit following the initial construction of each pivot.	Independent ECO	DFFE and NC DAERL
Internal WUL/GA Audit	EA: Condition X.X (to be included, if applicable, once EA is issued) WUL/GA Condition X.X (to be included, if applicable, once WUL is issued)	Annually or as stipulated in the WUL	ECO/Site Manager	DWS
External WUL/GA Audit	EA: Condition X.X (to be included, if applicable, once EA is issued) WUL/GA Condition X.X (to be included, if applicable, once WUL is issued)	Annually or as stipulated in the WUL	Independent ECO	DWS

Appendix 1: EAP/s Curriculum Vitae