Submitted to: B2Gold Namibia Property (Pty) Ltd
Attention: Mr Andre Rousseau
P O Box 80363,
Olympia
Namibia

REPORT:

OTJIKOTO AGRICULTURE PROJECT – COMPLIANCE REPORT

PROJECT NUMBER: ECC-132-515-REP-02-D

REPORT VERSION: REV 01

DATE: 29 JULY 2024

TITLE AND APPROVAL PAGE

Project Name:	Otjikoto Agriculture Project – compliance report
Client Company Name:	B2Gold Namibia Property (Pty) Ltd
Client Name:	Mr Andre Rousseau
Ministry Reference:	APP-003765
Status of Report:	Final for Government Submission
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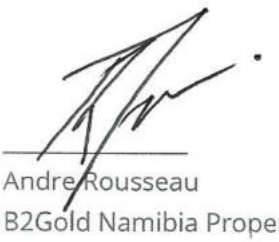

Andre Rousseau
B2Gold Namibia Property (Pty) Ltd

DISCLAIMER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the Project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the Project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABBREVIATIONS

Abbreviations	Description
DEA	Directorate of Environmental Affairs
ECC	Environmental Compliance Consultancy
EIA	environmental impact assessment
EMP	environmental management plan
ha	hectares
I&APs	interested and affected parties
km	kilometre
kV	kilovolt
Ltd	limited
m	metre
MEFT	Ministry of Environment, Forestry and Tourism
B2Gold Namibia	B2Gold Namibia Property (Pty) Ltd
Pty	propriety

1 INTRODUCTION

1.1 BACKGROUND INFORMATION

B2Gold Namibia Property (Pty) Ltd (herein referred to as the Proponent) developed the Otjikoto Agricultural Project – an irrigation project in line with the Otjikoto gold mine closure plan. The Project is located on Farm Erhardshof 575, which is approximately 3 522 hectares (ha) in size located east of the B1 road, approximately 55 km from Otavi. An environmental clearance certificate for the Project was granted by the Ministry of Environment, Forestry and Tourism (MEFT) on 30 November 2020 (Appendix A).

Environmental Compliance Consultancy (Pty) Ltd (ECC) has been appointed by B2Gold Namibia Property (Pty) Ltd to prepare the application to renew the environmental clearance certificate according to the requirements of the Environmental Management Act, No. 7 of 2007. As part of the renewal application, an environmental compliance audit has been undertaken to determine the status of compliance with the Proponents environmental management plan (EMP). The environmental management plan has also been updated to include potential additions to the project and associated environmental management mitigation measures (Appendix B).

The current Project includes the installation of 6 pivots, each covering 15 ha (making the total area 90 ha) and 6 fertigation tanks for mixing fertilisers and/or pesticides. Agricultural activities involve planting 75 ha annually, with a rotation of corn and wheat crops, with a focus mainly on corn. The remaining 15 ha will rest, and the Proponent will plant sunn hemp (legume) to replenish nitrates in the soil.

Figure 1 shows the locality map of the project.

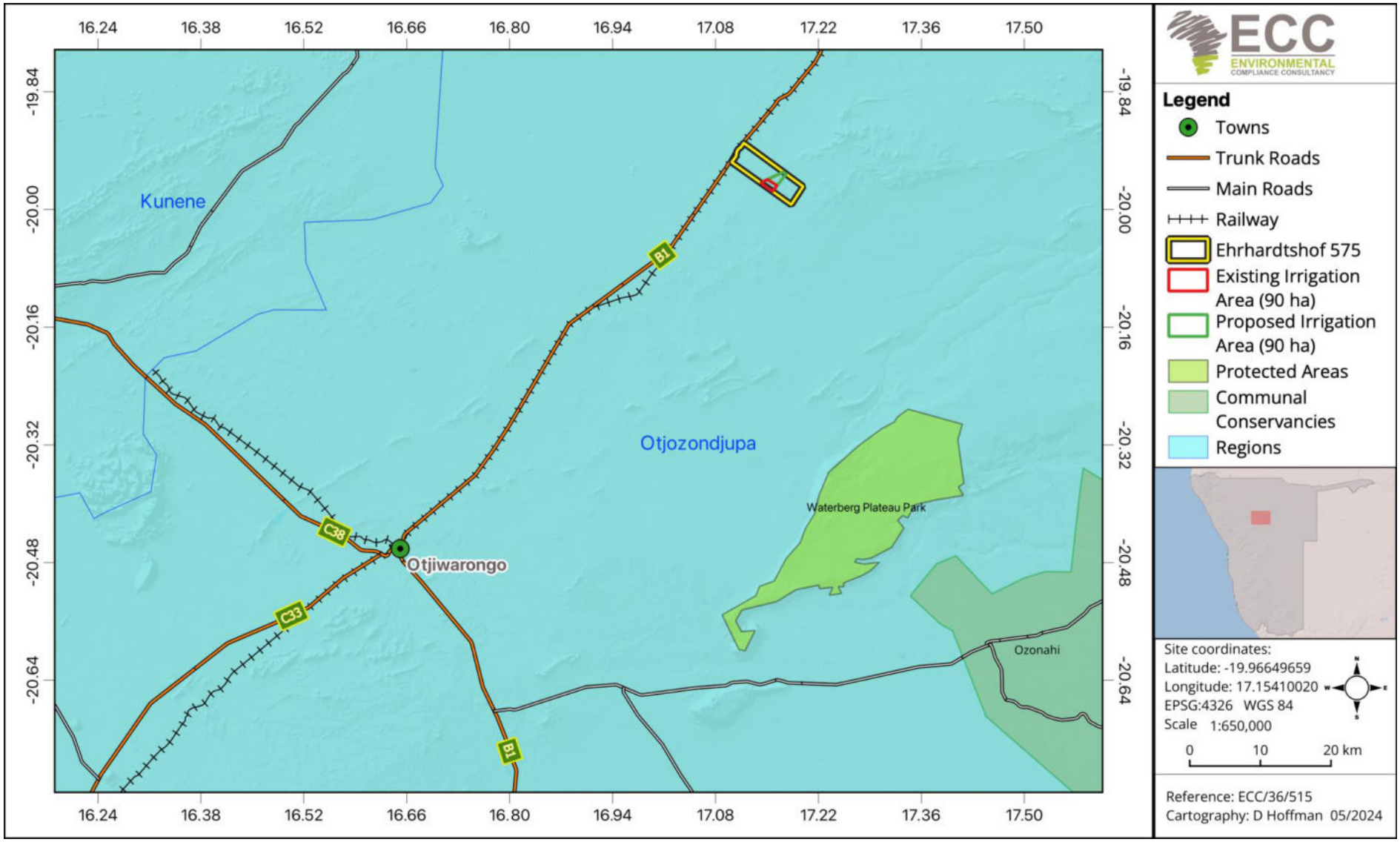

Figure 1 – Location of the Project

1.2 PURPOSE OF REPORT

Environmental Compliance Consultancy (ECC) has been engaged by the B2Gold Namibia Property (Pty) Ltd to renew the environmental clearance certificate for the Otjikoto Agricultural Project. As part of this application, an environmental compliance desktop audit and physical audit (site visit) has been undertaken to determine the status of compliance with the EMP from January 2021 to November 2023. The site visit by the environmental practitioner was conducted on 02 May 2024.

1.3 THE PROPONENT OF THE PROPOSED PROJECT

The Proponents' details are provided in Table 1.

Table 1 – Proponents details

Company **r**epresentative:	Contact **d**etails:
Mr André Rousseau Mr Jeremy Ford B2Gold Namibia Property (Pty) Ltd	P O Box 80363, Olympia Windhoek +264 (67) 306 517/18

1.4 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Compliance Consultancy (ECC) (Reg. No. CRN 2022/0593) has prepared this renewal report on behalf of the Proponent.

This report has been authored by employees of ECC, who have no material interest in the outcome of this report, nor do any of the ECC team have any interest that could be reasonably regarded as being capable of affecting their independence in the preparation of this report. ECC is independent from the proponent and has no vested or financial interest in the project, except for fair remuneration for professional fees rendered based upon agreed commercial rates. Payment of these fees is in no way contingent on the results of this report or the assessment, or a record of decision issued by Government. No member or employee of ECC is, or is intending to be, a director, officer, or any other direct employee of B2Gold Namibia Property (Pty) Ltd. No member or employee of ECC has, or has had, any shareholding in B2Gold Namibia Property (Pty) Ltd.

All compliance and regulatory requirements regarding this report should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

2 RENEWAL ACTIVITIES

The Project is located on Farm Erhardshof 575, which is approximately 3 522 hectares in size. The Project currently covers 90 ha. The Proponent proposes to expand the Project with an additional 90 ha, which will include three (3) 30 ha irrigated areas each, with its own pivot system and fertigation tank.

There are currently 8 boreholes supplying water to the site. The Proponent is in the process of applying for an additional 8 boreholes. There are also 2 x 2000-liter diesel tanks installed on-site. The Proponent intends to install an additional 10 000-liter of diesel storage on the farm.

The site layout is shown in Figure 2.

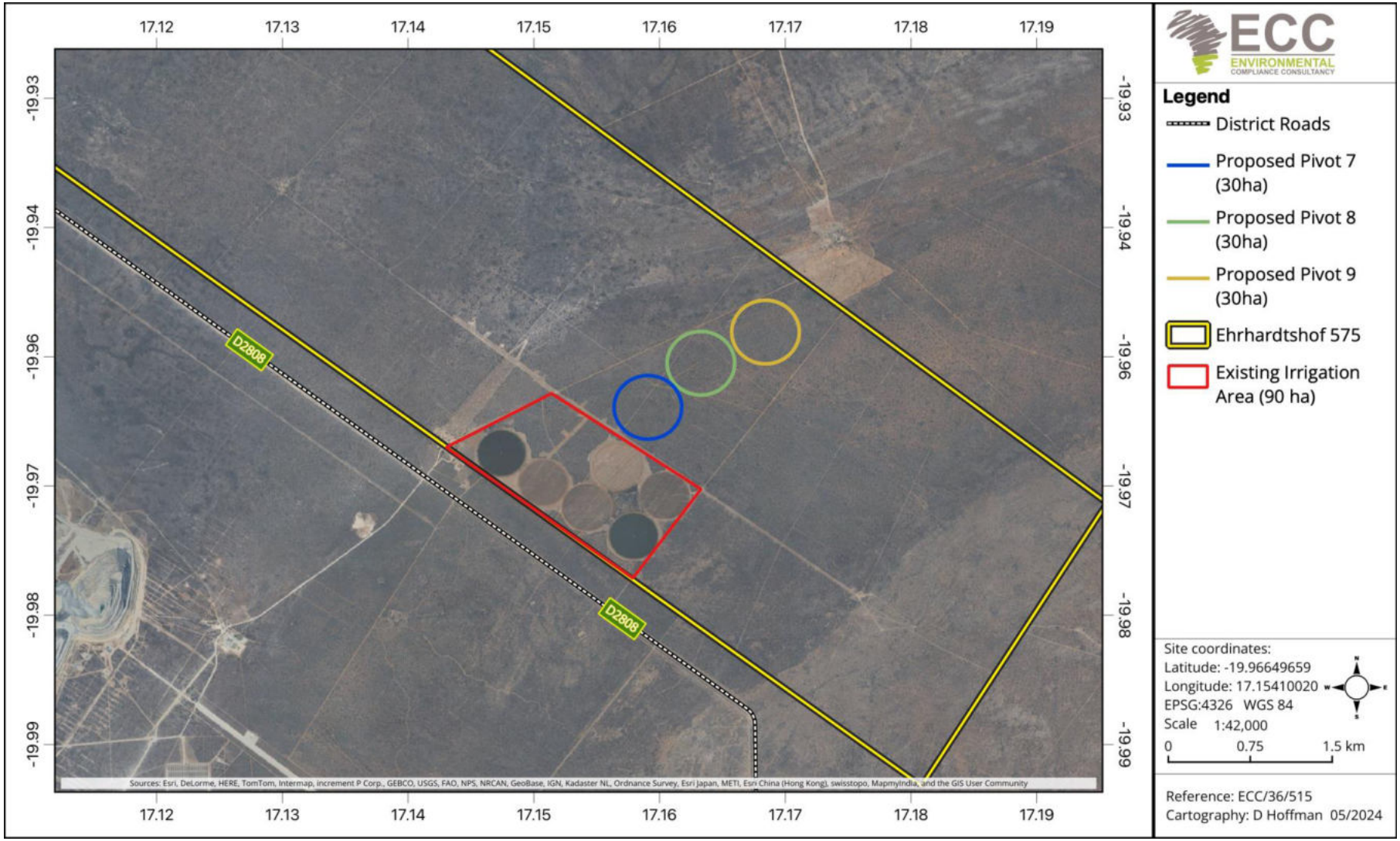

Figure 2 - Project site layout

3 ENVIRONMENTAL COMPLIANCE AUDIT

3.1 ACTIVITIES FOR THE MONITORING PERIOD

Work carried out in the first period of tenure (January 2021 to April 2024) included the following activities:

- During the initial phases of the Project, approximately 90 ha of land has been cleared for the agriculture Project;
- 6 pivots were installed each covering 15 ha;
- 6 fertigation tanks were installed for mixing fertilisers and/or pesticides;
- Agricultural activities during this period includes planting 75 ha annually, with a rotation of corn and wheat crops, with focus mainly on corn;
- The remaining 15 ha will rest and the Proponents plans on planting sunn hemp (legume) to replenish nitrates in the soil;
- There are currently 8 boreholes supplying water to the site;
- Water levels were reported on a monthly and annual basis; and
- 2 x 2000-liter diesel tanks were installed on-site.

3.2 ANNUAL COMPLIANCE AUDIT

Furthermore, the approved EMP covers adverse environmental impacts, including any additional potential impacts that may result from the Project activities. The EMP provides the technical details for each mitigation, monitoring and institutional measure, including the impact(s) to which it relates.

3.3 COMPLIANCE AUDIT FINDINGS

This section outlines the findings of the environmental audit conducted for the Project. It addresses obligations in terms of the key Namibian legislation that govern the activities on site, the commitments made in the EMP, and presents the findings and recommended corrective actions where applicable (Table 2).

The EMP:

- Identifies all Project activities that could cause environmental damage (risks and potential impacts) and provides a summary of actions required;
- Identifies institutions responsible for ensuring compliance with the EMP and provides their contact information;
- Provides standard procedures to avoid, minimise and mitigate the identified negative environmental impacts and to enhance the positive impact of the proposed activities on the environment;
- Provides for site and exploration rules and actions required;
- Forms a written record of procedures, responsibilities, requirements and rules for contractor/s, their staff and any other person who must comply with the EMP;

- Ensure zero pollution incidents; minimal vegetation clearing, protection of local flora, fauna and water resources; and use water and other natural resources effectively and efficiently;
- Provides a monitoring and auditing programme to track and record compliance and identify and respond to any potential or actual negative environmental impacts;
- Provides a monitoring programme to record any mitigation measures that are implemented;
- Ensure that regular independent third-party environmental audits are carried out on a regular basis; and
- Once project has ceased, any impacts shall be rehabilitated.

3.4 ISSUES OF NON-COMPLIANCE

During the site visit conducted on 02 March 2024, it was noted that there were no records of bird fatalities on site and no visible markings on the powerlines to prevent bird collisions. It is recommended that visible markings or other bird deterrent methods are used such as plastic bird spikes and bird-flight diverters. Additionally, tilling activities were used to prepare the soil for planting, which is not advised.

It was also reported that spillage clean-up kits were not available, however the fertilisers are mixed and contained on a concrete slab, with no seepage into the soil.

4 EMP COMPLIANCE AUDIT

Table 2 below provides an overview of the compliance with EMP requirements as depicted in the approved EMP (Appendix C) issued under the ECC (Appendix A) for the Otjikoto Agriculture Project.

Table 2 - EMP compliance audit

Aspect	Potential impacts	Management/mitigation measures	Compliance	Comments
Clearing of vegetation	– Clearing of vegetation through the process of expanding land for irrigation agriculture can cause loss of habitat is likely to lead to loss of biodiversity.	– Where possible, the clearing of vegetation, particularly of indigenous trees needs to be avoided during the development phase – Avoid sensitive ecological areas where possible – Where possible, buffer the special, sensitive and ecologically important habitats	– Compliant	– All sensitive areas were avoided during clearing of the area for irrigation.
Construction of the 11 kV powerline	– Physical disturbance of birds and habitat destruction/modification – Potential bird fatalities	– Before construction starts (or burying of the power line), the proposed power line route should be inspected for any signs of bird nesting activity – The unnecessary destruction of habitat (including large trees) or degradation of the environment, including sensitive habitats such as water points and ephemeral pan areas,	– Compliant	– The Proponent has been compliant with this component of the EMP however, it is recommended that bird fatalities

Aspect	Potential impacts	Management/mitigation measures	Compliance	Comments
		should be avoided – Ongoing awareness should be promoted about the value of biodiversity and the negative impacts of disturbance, especially to breeding birds, and of poaching and road mortalities. At the same time, the need for reporting power line incidents should be stressed, and reporting procedures clarified – Anti-poaching measures should be strictly enforced, with zero tolerance, and this should be emphasised during induction to contractors; offenders should be prosecuted		are recorded.
	– Collision of birds on power line structures	– Proactive marking of the entire length of the power line is recommended to increase visibility to birds – At least the top conductor should be marked, along the full length of each span. Should monitoring indicate sections of power line that remain problematic in terms of repeated incidents, further mitigation should be investigated – The marking distance between devices should be 5-10 m, with offset designs/colours – At this stage no nocturnally visible marking is recommended, but it should become mandatory should monitoring results indicate the necessity (e.g. repeat collisions of nocturnal	– Non-compliant	– There are no visible proactive markings on the powerlines as a preventative measure for bird collisions. Visible markings or other bird deterrent methods should be used such as plastic bird spikes and bird-flight diverters.

Aspect	Potential impacts	Management/mitigation measures	Compliance	Comments
		fliers such as flamingos or grebes). The need for fitting additional mitigation for collisions on stay wires (e.g. with vibration dampers) or on any other structures should likewise be based on monitoring results		
Abstraction of groundwater	– Drawdown of groundwater level could impact neighbouring groundwater users	– Start the Project on smaller scale and increase step-by-step with good monitoring – Improve water use efficiency by producing high value crops for volumes of water abstracted and using water efficient irrigation systems – Supply neighbouring farmers with alternative water supply if impacts reduce their water availability develop specific action plans for trigger values indicated by monitoring (groundwater level dropping by more than 5m with no recovery after the rainy season) – Drill needed monitoring boreholes to the north east and monitor monthly – Update the existing hydrocensus to ensure correct farms have monitoring boreholes – Update the groundwater model to a transient model with new monitoring data	– Compliant	– There are efficient sprinkler systems used on-site. – The Proponent will continue to ensure mitigation measures are in place as per the EMP.
Increased disturbance of soil	– The increased run-off water erosion and subsequently gully formation	– Construction of contour bunds to reduce erosion where needed – Implementation of zero till agricultural practices	– Non-compliant	– There are currently tilling activities occurring to prepare the soil for planting.

Aspect	Potential impacts	Management/mitigation measures	Compliance	Comments
				Alternative sustainable methods should be explored such as strip cropping and mulch farming.
Waste generation	– Value addition of agricultural produce will result in generation of both solid waste and wastewater which may have negative impacts unless effectively managed	– Put in place appropriate waste management mechanisms for both solid waste and wastewater – Ensure wastewater produced from agricultural activities is properly managed – Waste storage sites should be established on site were paper, plastic and wire should be kept – The collected solid waste should be disposed at an approved waste site for the mine, after being collected by an agreed contractor – Ensure maximum re-use of the excavated materials and biomass	– Compliant	– The Proponent will continue to ensure mitigation measures are in place as per the EMP.
Agricultural activity can cause pollution of groundwater and surface water	– The use of fertilizers and pesticides due to the nature of the crops and the quality of the soil could lead to contamination	– Proper design of the irrigation scheduling considering the nature of the soil – Increase organic material in the soil to improve the infiltration rate and water holding capacity – Availability of spillage clean-up kits for chemical spills – Ensure proper storage of fertiliser and	– Compliant	– The Proponent has been compliant with this component of the EMP. However, spillage clean up kits for

Aspect	Potential impacts	Management/mitigation measures	Compliance	Comments
		pesticides – Education of staff on dangers of pesticides and proper handling of chemicals – Monitor irrigation water quality – Monitor groundwater quality		potential chemical spills should be more readily accessible.
Fertigation with liquid fertilizers	– Spillage or breakage of fertilizer containers	– Routine inspection and maintenance of fertiliser holding facility – Availability of spillage clean-up kits for chemical spills	– Compliant	– Although spillage clean-up kits are not available, fertilisers are mixed and contained on a concrete slab. – The proponent will continue to ensure mitigation measures are in place as per the EMP.
Agricultural production	– The proposed project will create employment opportunities	– Inform the communities about employment opportunities and required skills – Prioritise job opportunity to Namibian citizens – Maximise local employment and local business opportunities – Enhance the use of local labour and local skills as far as reasonably possible – Ensure that goods and services are sourced	– Compliant	– The Proponent has been compliant with this component of the EMP.

Aspect	Potential impacts	Management/mitigation measures	Compliance	Comments
		from the local and regional suppliers		
Procurement of goods and services	– Sourcing of goods and services from local or regional business could increase economic benefits	– Provide opportunities to local and regional enterprise to participate in tender processes – Where possible, procurement of goods and services should be from the local or regional businesses	– Compliant	– Goods and services are being sourced from local and regional businesses. – The Proponent will continue to ensure mitigation measures are in place as per the EMP.

5 CONCLUSION

During the compliance audit, minor non-compliances were identified. It is recommended that these activities are rectified as per the updated environmental management plan which was drafted in July 2024 (Appendix B).

New activities involve the expansion of the Project with an additional 90 ha, which will include three (3) 30 ha irrigated areas each with its own pivot system and fertigation tank. All the proposed activities shall be carried out in compliance with the relevant requirements and conditions of the granted certificate in accordance with the updated EMP. It is recommended that the Proponent continues to adhere to all environmental legislation and company standards to ensure that best practical environmental protection continues as the Project progresses.

The Proponent continually ensures that all impacts caused by them during the Otjikoto Agriculture Project will be rehabilitated, should no further use of the land be required.

APPENDIX A – ENVIRONMENTAL CLEARANCE CERTIFICATE

ECC – 01106

Serial: 95wJFw1106

REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

ENVIRONMENTAL CLEARANCE CERTIFICATE

ISSUED

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

TO

B2Gold Namibia Properties (Pty) Ltd
P O Box 80363, Windhoek

TO UNDERTAKE THE FOLLOWING LISTED ACTIVITY

Proposed Otjikoto Agricultural Project on Farm Erhardshof 575, Otjozondjupa Region

Private Bag 13306
WINDHOEK, NAMIBIA
02 DEC 2020

ENVIRONMENTAL COMMISSIONER

REPUBLIC OF NAMIBIA

Issued on the date: 2020-11-30

Expires on this date: 2023-11-30

(See conditions printed over leaf)

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Reuse
Recycle

NAMIBIA TRASH BIN

This certificate is printed without erasures or alterations

ECC –

CONDITIONS OF APPROVAL

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

APPENDIX B – UPDATED ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX C – PREVIOUS ENVIRONMENTAL MANAGEMENT PLAN

Submitted to: B2Gold Namibia Property (Pty) Ltd
Attention: Mr Andre Rousseau
P O Box 80363
Olympia
Windhoek
Namibia

REPORT:

UPDATED EMP FOR THE AGRICULTURE PROJECT FOR FARM ERHARDSHOF 575, OTJOZONDJUPA REGION, NAMIBIA

PROJECT NUMBER: ECC-36-515-REP-03-D

REPORT VERSION: REV 01

DATE: 29 JULY 2024

TITLE AND APPROVAL PAGE

Project Name:	Updated EMP for the Agriculture Project for Farm Erhardshof 575, Otjozondjupa Region, Namibia
Client Company Name:	B2Gold Namibia Property (Pty) Ltd
Authors:	Environmental Compliance Consultancy
Status of Report:	Final for Government Submission
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

Abbreviation	Description
%	Percentage
B2Gold	B2Gold Namibia Property (Pty) Ltd
ECC	Environmental Compliance Consultancy
ECO	Environmental Control Officer
e.g.	example
EIA	environmental impact assessment
EMP	environmental management plan
hectares	ha
km	kilometre
km/h	kilometre per hour
kV	kilovolt
Ltd.	Limited
m	metre
MEFT	Ministry of Environment, Forestry and Tourism
No	Number
PPE	personnel protective equipment
Pty	proprietary
Reg	registration

1 INTRODUCTION

1.1 PROJECT BACKGROUND

B2Gold Namibia Property (Pty) Ltd (herein referred to as the proponent) developed the Otjikoto Agricultural Project – an irrigation project in line with the Otjikoto gold Mine closure plan. The project is located on Farm Erhardshof 575, which is approximately 3 522 hectares in size, of which the initial phase 2 came to 30 ha. The farm is located east of the B1 road approximately 55 km from Otavi. The intention is to develop the irrigated area in a phased process, step-by-step as more information becomes available, initially fodder was planted for cattle and high value game species in the form of Katambora Rhodes grass, as well as planting rotational grain crops in the form of maize and wheat. The first phase was only two fields of 15 ha each, under center pivot irrigation, to test the project concept. One 15 ha pivot was commissioned in October 2020 with the second one commissioned later that season. Further expansion phases may be implemented.

The proposed project will develop in four phases as described below:
- The first phase, year 1: 15 ha starting October 2020, then expanding later that season to
- The second phase, year 1: is 30 ha in total (adding 15 ha) and if feasible expand to
- The third phase, year 2: 75 ha (extra 45 ha added, and
- The fourth phase, year 3: 135 ha (another 60 ha added).

The agricultural project implemented a center pivot irrigation system, using three water supply boreholes connected to a pipeline for water supply. No water storage dam was planned. A 11 kV overhead powerline was constructed over approximately 8.1 km from the B2Gold solar plant on the farm Wolfshag to Erhardshof for the operation of the pivots. Initial power supply was from Cenored, however there are plans to use solar energy for the project starting in 2025.

The location of the proposed site is shown in Figure 1.

1.2 ADDITIONS TO THE UPDATED EMP

Upon the current environmental clearance certificate renewal, the EMP is updated to include potential additions to the project and associated environmental management mitigation measures.

The proposed project renewal will be expanded with an additional 150 ha, making the total irrigation area 180 ha. The current project includes the installation of 6 pivots, each covering 15 ha (making the total area 90 ha) and 6 fertigation tanks for mixing fertilisers and/or pesticides. Agricultural activities involve planting 75 ha annually with a rotation of corn and wheat crops with focus mainly on corn. The remaining 15 ha will rest and planting sunn hemp (legume) to replenish nitrates in the soil.

There are currently 8 boreholes supplying water to the site. The proponent is in the process of applying for an additional 8 boreholes. There are also 2 x 2000-liter diesel tanks installed on-site. The proponent intends to install an additional 10 000-liter of diesel storage on the farm.

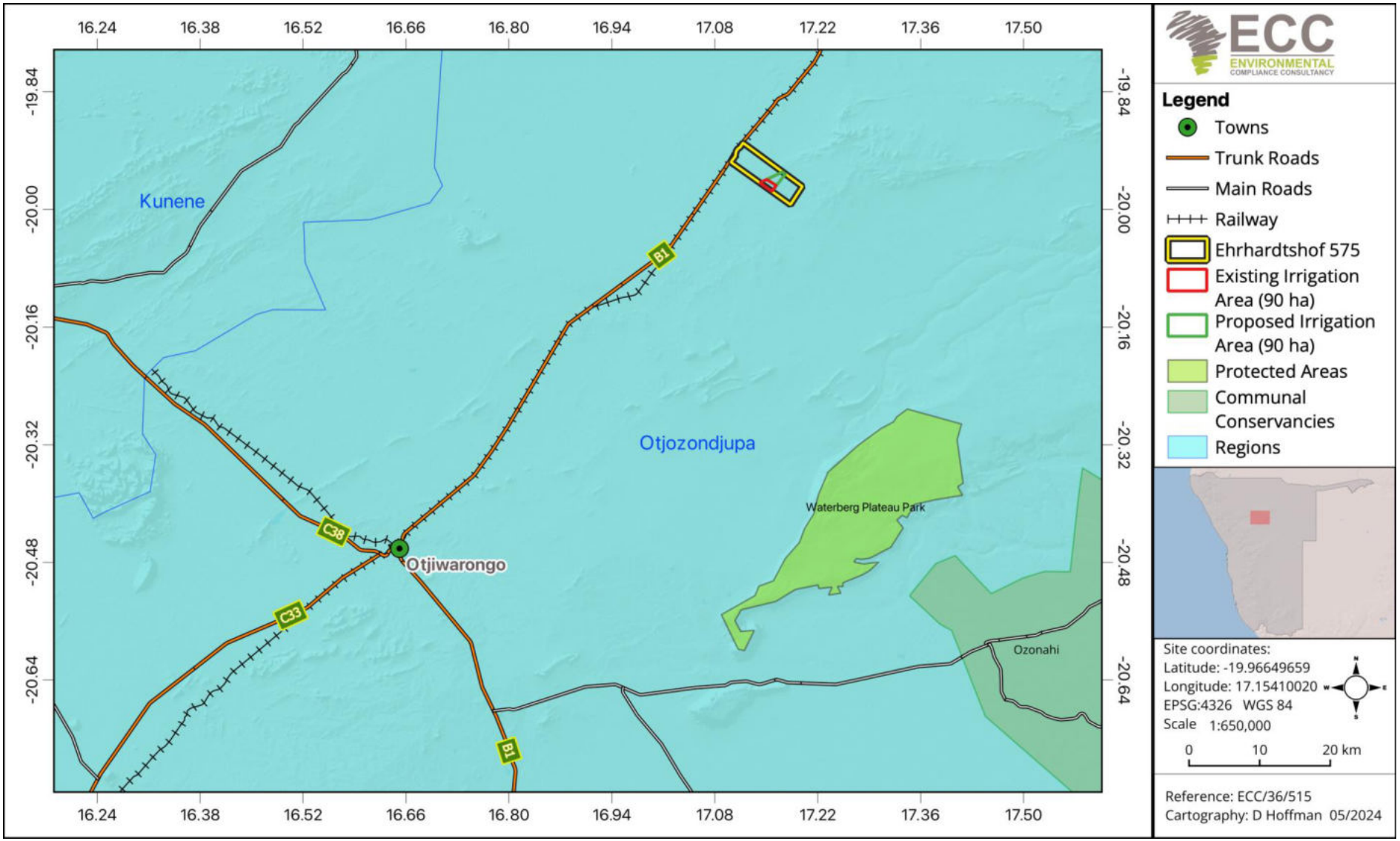

Figure 1: Locality map of the proposed project

1.3 ENVIRONMENTAL REGULATORY REQUIREMENTS

The proposed project triggers listed activities as stipulated in the Environmental Management Act, No. 7 of 2007 and its Regulations, promulgated in 2012. An environmental compliance report and an updated environmental management plan (EMP) are required to be submitted as part of the renewal application to support the decision-making process for issuing an environmental clearance certificate.

This report presents the EMP and has been undertaken in terms of the requirements of the Environmental Management Act, 2007 and its Regulations.

1.4 PURPOSE AND SCOPE OF THIS REPORT

The environmental management plan (EMP) provides a logical framework, mitigation measures and management strategies for the activities associated with the proposed project. In this way ensuring that the potential environmental impacts are curbed and minimised as far as practically possible and that statutory and other legal obligations are adhered to and fulfilled. Outlined in the EMP are the protocols, procedures and roles and responsibilities to ensure the management arrangements are effectively and appropriately implemented.

The EMP forms an appendix to the environmental compliance report and is based on the findings of the broader assessment.

This EMP is a live document and shall be reviewed at predetermined intervals, and or updated during the EIA process when or if the scope of work alters, or when further data or information is added. All personnel working on the project will be legally required to comply with the requirements set out in the final EMP that is approved by the Ministry of Environment, Forestry and Tourism (MEFT).

1.5 MANAGEMENT OF THIS EMP

B2Gold Namibia Property (Pty) Ltd, the proponent, will hold the environmental clearance certificate for the proposed project and will be responsible for the implementation and management of this EMP. The implementation and management of this EMP, and thus the monitoring of compliance, will be undertaken through daily duties and activities, as well as monthly inspections.

1.6 LIMITATIONS, UNCERTAINTIES, AND ASSUMPTIONS RELATED TO THIS EMP

This EMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the Proponent.

Where there is any conflict between the provisions of this EMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines, and relevant laws), the contract should be amended, and statutory requirements are to take precedence.

The information contained in this EMP is based on the project description as provided in the environmental scoping report. Where the design or operation method is different, this EMP may require updating and potential further assessment may be undertaken.

1.7 ENVIRONMENTAL ASSESSMENT PRACTITIONER

The report has been prepared by Environmental Compliance Consultancy (Pty) Ltd (ECC) (Reg. No. 2022/0593) on behalf of the Proponent. Authored by ECC employees with no material interest in the report's outcome, ECC maintains independence from the Proponent and has no financial interest in the project apart from fair remuneration for professional fees. Payment of fees is not contingent on the report's results or any government decision. ECC members or employees are not, and do not intend to be, employed by the Proponent, nor do they hold any shareholding in the project. Personal views expressed by the writer may not reflect ECC or its client's views. The environmental report's information is based on the best available data and professional judgment at the time of writing. However, please note that environmental conditions can change rapidly, and the accuracy, completeness, or currency of the information cannot be guaranteed.

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2 ENVIRONMENTAL MANAGEMENT FRAMEWORK

This EMP provides measures, guidelines, and procedures for managing and mitigating potential environmental impacts. The EMP also indicates monitoring and reporting guidelines and sets responsibilities for those carrying out management and mitigation measures.

2.1 OBJECTIVES AND TARGETS

Environmental objectives and targets have been developed so that construction activities can minimise potential impacts on the environment, as far as reasonably practicable.

Environmental objectives for the project are as follows:

- Zero pollution incidents.
- Zero poaching incidents.
- Minimal waste generation.
- Minimal interruption to water supply of neighbouring farmers.
- Protect indigenous flora outside of the fields.

2.2 wORGANISATIONAL STRUCTURE, ROLES, AND RESPONSIBILITIES

The Proponent shall be responsible for:

- Ensuring all members of the project team, including contractors, comply with the procedures set out in this EMP
- Ensuring that all persons are provided with sufficient training, supervision, and instruction to fulfil this requirement
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood
- Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above.

Table 1 lists the roles and responsibilities allocated to different management levels in the company and specific personnel.

Table 1 – Roles and responsibilities

Role	Responsibilities and duties
Proponent	– Responsible for the overall management and implementation of the EMP. – Ensure environmental policies are drafted/updated and communicated to all personnel throughout the company. – Responsible for providing the resources required to effectively run operations and comply with the EMP. – Appoint all managers needed to ensure effective running of operations; and – Ensure systems for proper induction and training of personnel and contractors are in place.
Project manager	– Responsible for ensuring compliance with this EMP including overseeing the construction work, day to day activities during operations, and routine and non-routine maintenance work during operations, as well as the decommissioning of the transformer platforms. – Ensure all personnel are aware of the commitments made in the EMP and any other relevant regulatory requirements applicable to the project – Responsible for the management, maintenance and revision of the EMP – Ensure adequate resources are made available for implementation of this EMP – Maintain the community issues and concern register, and keep records of complaints – Ensure all employees and contractors participate in a site induction process before commencing work on the project and maintain an up-to-date register – Provisioning of environmental awareness/management training and inductions for all employees – Ensure that the best environmental practice is undertaken throughout the project, and – Report any non-compliance or accidents to the regulatory authority.
Site manager	– Appointed to manage the performance of the construction and operational maintenance activities, – Responsible for implementation and compliance of this EMP – Managing the preparation and implementation of method statements for certain activities, and ensuring the environmental manager reviews all method statements and the relevant environmental protocols are incorporated

Role	Responsibilities and duties
	– Reporting any non-compliance or accidents to the project manager and environmental manager/officer – Ensuring that all staff have attended a site induction session before the commencement of any work on-site and that they are adequately informed of the requirements of this management plan – Ensuring that all contract workers, sub-contractors and visitors to the site are conversant with the requirements of this EMP, relevant to their roles on site and adhere to this EMP at all times, and – Receiving, responding to and recording complaints.
Employees/contractor employees	– Responsible for being compliant with this EMP throughout the construction work and operations, in addition to: – Ensuring they have undertaken a site induction and are conversant with the requirements of this EMP, – Ensuring appropriate briefings for certain activities have been provided and fully understood – Adherence to this EMP at all times, and – Reporting of any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the environment manager and site manager/contractor.
Environmental Control Officer	– An Environmental Control Officer (ECO) will be appointed or nominated responsible for the project. The ECO will be available, as required, throughout the construction and operation of the project. The ECO will be responsible for the following roles: o Ensuring that the site and project manager are aware of the environmental management plan procedures o For monitoring of site and enforcing health and hygiene measures o Investigate when there is an environmental incident, and o Conserving the environment and the resources.

2.3 CONTRACTORS

Any contractors hired during the construction work or maintenance activities in the operational phase shall be compliant with this EMP and shall be responsible for the following:

- Undertaking activities in accordance with this EMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements.
- Implementing appropriate environmental and safety management measures.
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the site manager and/or project manager.

- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

2.4 EMPLOYMENT

The Proponent and all contractors shall comply with the requirements of the Republic of Namibia's regulations for Labour, Health and Safety, and any amendments to these regulations. The following shall be complied with:

- In liaison with local government and community authorities, the Proponent shall ensure that local people have access to information about job opportunities and, where they have the prerequisite skills and experience, are considered first for construction/maintenance contract employment positions.
- The number of job opportunities shall be made known together with the associated skills and qualifications.
- The maximum length of time the job is likely to last for shall be indicated.
- Should foreign workers be hired, the proponent shall ensure that they have a valid work permit at all times.
- Every effort shall be made to recruit from the group of unemployed workers living in the surrounding area for positions that entail unskilled work.

2.5 REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

An environmental review of the project has been completed to identify all the commitments and agreements made. A list of environmental commitments and risks has been produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the construction and operational phase.

Table 2 provides a list of environmental risks and issues, as well as associated mitigation (as derived from the previous EIA and updated activities) and monitoring measures, and the roles responsible for compliance. It will be subject to regular review by the project manager and updated when necessary. The project manager and site manager will use this register to undertake monthly inspections (see next section) to ensure the project is compliant with this EMP.

Table 2 – A list of environmental risks and issues, as well as associated mitigation and monitoring measures

Receptors	Potential impacts	Management/mitigation measures	Monitoring requirements	Responsibility
Clearing of vegetation	Clearing of vegetation through the process of expanding land an additional 90 ha of habitat is likely to lead to loss of biodiversity	– Where possible, the clearing of vegetation, particularly of indigenous trees needs to be avoided during the development phase – Avoid sensitive ecological areas where possible – Where possible, buffer the special, sensitive and ecologically important habitats	– Daily – Weekly – Annually	– Project manager – Site manager – Employees
	Accidental and uncontrolled fire	– Equipment to be well maintained and serviced regularly and documented proof kept; – Restrict movements of people to areas of activities only; – Train people and raise awareness about veld fires and firefighting and documented proof kept; – No open fire outside designated areas; – No cigarette buds are discarded but contained and disposed of at an appropriate facility; – Proper fire hazard identification signage to be placed in areas that store flammable material (i.e. hydrocarbons and gas bottles); – Control and reduce the potential risk of fire by segregating and safe storage of materials; – Avoid potential sources of ignition by prohibiting smoking in and around facilities and – Firefighting equipment and fire breaks should always be at designated areas and should be maintained regularly.		

Receptors	Potential impacts	Management/mitigation measures	Monitoring requirements	Responsibility
Construction of the 11Kv powerline	Physical disturbance of birds, habitat destruction/modification and potential bird fatalities	– Before construction starts (or burying of the power line), the proposed power line route should be inspected for any signs of bird nesting activity – The unnecessary destruction of habitat (including large trees) or degradation of the environment, including sensitive habitats such as water points and ephemeral pan areas, should be avoided – Ongoing awareness should be promoted about the value of biodiversity and the negative impacts of disturbance, especially to breeding birds, and of poaching and road mortalities. At the same time, the need for reporting power line incidents should be stressed, and reporting procedures clarified – Anti-poaching measures should be strictly enforced, with zero tolerance, and this should be emphasised during induction to contractors; offenders should be prosecuted	– Daily	– Project manager – Employees
	Collision of birds on power line structures	– Proactive marking of the entire length of the power line is recommended to increase visibility to birds – At least the top conductor should be marked, along the full length of each span. Should monitoring indicate sections of power line that remain problematic in terms of repeated incidents, further mitigation should be investigated – The marking distance between devices should be 5-10 m, with offset designs/colours	– Daily – Weekly monitoring	– Project manager – Employees

Receptors	Potential impacts	Management/mitigation measures	Monitoring requirements	Responsibility
		– At this stage no nocturnally visible marking is recommended, but it should become mandatory should monitoring results indicate the necessity (e.g. repeat collisions of nocturnal fliers such as flamingos or grebes). The need for fitting additional mitigation for collisions on stay wires (e.g. with vibration dampers) or on any other structures should likewise be based on monitoring results		
Abstraction of groundwater	Drawdown of groundwater level could impact neighbouring groundwater users	– Start the project on smaller scale and increase step-by-step with good monitoring – Improve water use efficiency by producing high value crops for volumes of water abstracted and using water efficient irrigation systems – Inform neighbouring farmers, should the volumes of water abstracted increase, with the proof of a valid permit – Supply neighbouring farmers with alternative water supply if impacts reduce their water availability – develop specific action plans for trigger values indicated by monitoring (groundwater level dropping by more than 5 m with no recovery after the rainy season) – Drill needed monitoring boreholes to the north east and monitor monthly – Update the existing hydrocensus to ensure correct farms have monitoring boreholes	– Weekly water volume monitoring – Monthly groundwater level measurement – Quaterly groundwater sampling	– Project manager – Environmental officer

Receptors	Potential impacts	Management/mitigation measures	Monitoring requirements	Responsibility
		– Update the groundwater model to a transient model with new monitoring data – A groundwater assessment study should be conducted to reflect potential increase of abstraction from additional boreholes – An updated groundwater assessment should provide the recommended sustainable yield considering additional water abstracted – The updated groundwater assessment study should be kept on site at all times		
Increased disturbance of soil	The increased run-off water erosion and subsequently gully formation	– Construction of contour bunds to reduce erosion where needed – Implementation of zero till agricultural practices	– Daily	– Project manager – Employees
Waste generation	Value addition of agricultural produce will result in generation of both solid waste and wastewater which may have negative impacts unless effectively managed	– Put in place appropriate waste management mechanisms for both solid waste and wastewater – Ensure wastewater produced from agricultural activities is properly managed – Waste storage sites should be established on site were paper, plastic and wire should be kept – The collected solid waste should be disposed at an approved waste site for the mine, after being collected by an agreed contractor – Ensure maximum re-use of the excavated materials and biomass	– Daily – Monthly	– Project manager – Environmental officer
Hazardous	Storage and handling of	– Hazardous chemicals/hydrocarbons in tanks are to be	– Daily	– Project manager

Receptors	Potential impacts	Management/mitigation measures	Monitoring requirements	Responsibility
substances	hazardous substances such as diesel fuel	stored in bunded areas, that are impermeable and can contain 110% of the largest volume contained therein; – Hydrocarbons (such as fuels) are to be handled over areas provided with impervious surfaces; – Spills of hazardous chemicals/hydrocarbons are to be contained and cleaned-up to ensure protection of the environment; – Spill kits available at storage locations and around the site at suitable locations; – All containers to be suitable for use and not damaged; – All the necessary PPE required for the safe handling and use of petrochemicals, hydrocarbons and chemical materials; and – Relevant permits to be in place for storage of fuel (diesel and petrol)	– Weekly	– Contractor site manager – Employees
Agricultural activity can cause pollution of groundwater and surface water	The use of fertilizers and pesticides due to the nature of the crops and the quality of the soil could lead to contamination	– Proper design of the irrigation scheduling considering the nature of the soil – Increase organic material in the soil to improve the infiltration rate and water holding capacity – Availability of spillage clean-up kits for chemical spills – Ensure proper storage of fertiliser and pesticides – Education of staff on dangers of pesticides and proper handling of chemicals – Monitor irrigation water quality – Monitor groundwater quality	– Daily – Quarterly water sampling	– Project manager – Environmental officer – Employees
Fertigation	Spillage or breakage of	– Routine inspection and maintenance of fertiliser	– Daily	– Project manager

Receptors	Potential impacts	Management/mitigation measures	Monitoring requirements	Responsibility
with liquid fertilizers	fertiliser containers	holding facility – Availability of spillage clean-up kits for chemical spills	– Preventative maintenance – Incident reporting	– Environmental officer – Employees
Agricultural production	The proposed project will create employment opportunities	– Inform the communities about employment opportunities and required skills – Prioritise job opportunity to Namibian citizens – Maximise local employment and local business opportunities – Enhance the use of local labour and local skills as far as reasonably possible – Ensure that goods and services are sourced from the local and regional suppliers	– Proactive communication with communities – Employment policy	– Project manager – Human capital manager – Financial manager
Procurement of goods and services	Sourcing of goods and services from local or regional business could increase economic benefits	– Provide opportunities to local and regional enterprise to participate in tender processes – Where possible, procurement of goods and services should be from the local or regional businesses	– Procurement policy	– Project manager – Financial manager

3 COMMUNICATION AND TRAINING

To ensure potential risks and impacts are minimised it is vital that personnel are appropriately informed and trained on how to properly implement the EMP. It is also important that regular communications are maintained with stakeholders (if applicable) and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

3.1 COMMUNICATIONS

During construction, the project manager and site manager shall communicate site-wide environmental issues to the project team through the following means (as and when required):

- Site induction
- Audits and site inspections
- Toolbox talks, including instruction on incident response procedure, and
- Briefings on key project-specific environmental issues, like feedback on complaints.

This EMP shall be distributed to the construction team including any contractors and to ensure that the environmental requirements are adequately communicated. Key activities and environmentally sensitive operations will be highlighted to workers and contractors.

During the construction phase, communications between the management team shall include discussing any complaints received and actions to resolve them, - any inspections, audits, or non-conformance with this EMP, and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

An emergency is any abnormal event, which demands immediate attention. It is any unplanned event, which results in the temporary loss of management control at site, but where functional resources can manage the response. An emergency response plan document will be put in place that manages the response in relation to emergencies including environmental emergencies. Table 3 contains a list of numbers to be contacted in case of an emergency.

Table 3 - Emergency contact details

Town	Ambulance	Police	Fire brigade
Otjiwarongo	+264 67 30 3734	+264 67 30 0600	+264 67 30 444

3.3 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally by any personnel on the project site shall be recorded by the receiver including:

- The name of the complainant
- The contact details of the complainant
- Date and time of the complaint
- The nature of the complaint

The information shall be given to the project manager who is overall responsible for the management of complaints. The project manager shall do the following:

- Inform the site manager of issues, concerns, or complaints.
- Maintain a complaint register that requires details of the complaint.
- Provide a written response to the complainant of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

The workforce shall be informed about the complaints register, its location and the person responsible, to refer residents or the public who wish to lodge a complaint. The complaints register shall be kept for the duration of the Project and will be available for government or public review upon request.

3.4 TRAINING AND AWARENESS

All personnel working on the project shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training, and experience.

3.5 SITE INDUCTION

All personnel involved in the project shall be inducted to the site with specific environmental and social awareness training, and health and safety issues. The environmental and social awareness training shall ensure that personnel are familiar with the principles of this EMP, and the environmental impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures. The project manager shall ensure a register of completed training is maintained.

The site induction should include, but is not limited to the following:

A general site-specific induction that outlines:

- What is meant by “environment” and “social” in the EMP?
- Why the environment needs to be protected and conserved?
- How can construction activities impact the environment?
- What can be done to mitigate against impacts?

The inductee's role and responsibilities concerning implementing the EMP:

- The site’s environmental rules
- Details of how to deal with, and who to contact should any environmental problems occur.
- The potential consequences of non-compliance with this EMP and relevant statutory requirements, and
- The role of responsible people working on the project.

4 REPORTING, COMPLIANCE AND ENFORCEMENT

4.1 ENVIRONMENTAL PERFORMANCE MANAGEMENT

Th current summary of a register of environmental risks and issues identifies mitigation and monitoring measures, as well as the roles responsible for execution. The project manager and site manager will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

4.2 CONSTRUCTION: ENVIRONMENTAL INSPECTION AND COMPLIANCE MONITORING

4.2.1 DAILY COMPLIANCE MONITORING

A copy of this EMP will be on-site throughout the construction work and will be available upon request. It is the responsibility of the project manager and site manager to ensure this EMP is complied with through their daily roles. Daily inspections will be undertaken by the site manager (or nominated site supervisor). Any environmental problems or risks identified will be reported to the project manager and actioned as soon as is reasonably practicable.

4.2.2 MONTHLY COMPLIANCE MONITORING

Monthly inspections will be undertaken by the site manager to check that the standards and procedures set out in this EMP are being complied with and environmental control measures are in place and working correctly. Any non-conformance will be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action taken and any necessary follow up measures required.

4.3 OPERATIONS: ENVIRONMENTAL INSPECTIONS AND COMPLIANCE MONITORING

Annual inspections of the associated infrastructure will be managed and undertaken by the project manager. All infrastructure will be inspected to ensure that the equipment is operating as per specification, no damage has been caused, and no leaks or spills or rust have occurred. Any non-conformance will be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action taken and any necessary follow up measures required.

4.4 REPORTING

There will be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or accident, is reported to the project manager.

4.5 NON-COMPLIANCE

Where it has been identified that works are not compliant with this EMP, the project manager will implement corrective action to the extent that the works return to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice will be produced. The notice will be generated during the inspections and the project manager will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

5 IMPLEMENTATION OF THE EMP

This environmental management plan:

A. Has been prepared according to a contract with the proponent
B. Has been prepared based on information provided to ECC up to May 2024
C. Is for the sole use of the proponent, for the sole purpose of an EMP
D. Must not be used (1) by any person other than the proponent or (2) for any purpose other than an EMP
E. Must not be copied without the prior written permission of ECC.






ECC-36-268-REP-07-A

ENVIRONMENTAL MANAGEMENT PLAN

PROPOSED AGRICULTURE PROJECT FOR FARM ERHARDSHOF 575, OTJOZONDJUPA REGION

PREPARED FOR

JULY 2020

PO BOX 91193 Windhoek Namibia
Environmental Compliance Consultancy CC
CC/2013/11404

TITLE AND APPROVAL PAGE

Project Name:	Environmental Management Plan for the proposed Agriculture Project for farm Erhardshof 575, Otjozondjupa Region
Client Name:	B2Gold Namibia Properties (Pty) Ltd
Ministry Reference:	NA
Status of Report:	Final for submission
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Confidentiality

Please note at ECC we care about lessening our footprint on the environment; therefore, all documents are printed double-sided.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

No table of figures entries found.

DEFINITIONS AND ABBREVIATIONS

ECC	Environmental Compliance Consultancy
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
I&APs	Interested and affected parties

1 INTRODUCTION

1.1 PROJECT BACKGROUND

B2Gold Namibia Properties (Pty) Ltd (herein referred to as the proponent) intends to develop the Otjikoto Agricultural Project – an irrigation project in line with the Otjikoto gold Mine closure plan. The proposed project will be located on Farm Erhardshof 575, which is approximately 3 522 hectares in size, and of which the total irrigated project size, at the end of the final phase will be 135 hectares. The farm is located east of the B1 road approximately 55 km from Otavi. The intention is to develop the irrigated area in a phased process, step-by-step as more information becomes available, initially planting fodder for cattle and high value game species in the form of Katambora Rhodes grass, as well as planting rotational grain crops in the form of maize and wheat. The first phase will be on only two fields of 15ha each, under center pivot irrigation, to test the project concept. One 15ha pivot will be commissioned in October 2020 with the second one commissioned later that season. If the concept proves viable, the further expansion phases will be implemented.

The proposed project will develop in four phases as described below:

- The first phase, year 1: 15ha starting October 2020, then expanding later that season to
- Phase 2 which is 30ha in total (adding 15ha) and if feasible expand to
- The third phase, year 2: 75ha (extra 45ha added, and
- The forth phase, year 3: 135ha (another 60ha added).

The proposed agricultural project will implement a center pivot irrigation system, using three water supply boreholes connected to a pipeline for water supply. No water storage dam is planned. A 11kV overhead powerline will be constructed over a distance of approximately 8.1km from the B2Gold solar plant on the farm Wolfshag to Erhardshof for the operation of the pivots. Initial power supply will be from Cenored for the early phases.

1.2 ENVIRONMENTAL REGULATORY REQUIREMENTS

In terms of the Environmental Impact Assessment (EIA) Regulations and the Environmental Management Act, No. 7 of 2007, the proposed development qualifies as a listed activity. Therefore, an application for an environmental clearance certificate is to be submitted. An Environmental Scoping Report and Environmental Management Plan (EMP) are required to be submitted as part of the application process to support the decision-making of the relevant government departments. This report presents the EMP.

1.3 PURPOSE AND SCOPE OF THIS REPORT

ECC has been contracted by B2Gold Namibia Properties (Pty) Ltd to compile an EMP in terms of the Environmental Management Act, No.7 of 2007.

The purpose of this EMP is to provide a management framework for the planning and implementation of the construction and operation activities for the proposed project so that the potential environmental impacts are avoided, minimised and mitigated as far as reasonably practicable, and that statutory requirements and other legal obligations are fulfilled.

This EMP also presents protocols, procedures, roles and responsibilities to ensure the management arrangements are appropriately and effectively implemented. This EMP forms an appendix to the Environmental Scoping Report and has

been based on the findings of the assessment; therefore, the Environmental Scoping Report should be referred to for further information on the proposed project, assessment methodology, applicable legislation, and assessment findings.

1.4 MANAGEMENT OF THIS EMP

B2Gold Namibia Properties (Pty) Ltd will hold the environmental clearance certificate for the proposed project and will be responsible for the implementation and management of this EMP. Prior to the construction works commencing, this EMP will be reviewed, amended as required and approved ready for implementation. The implementation and management of this EMP, and thus the monitoring of compliance, will be undertaken through daily duties and activities and monthly inspections.

This EMP will be circulated to all contractors and will be made available on ECC's website.

1.5 LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THIS EMP

This EMP does not include measures for compliance with statutory occupational health and safety requirements.

Where there is any conflict between the provisions of this EMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines, and relevant laws), the contract and statutory requirements are to take precedence.

The information contained in this EMP has been based on the project description as provided in the Environmental Scoping Report. Where the design or construction methods alter, this EMP may require updating and potential further assessment to be undertaken.

1.6 ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy with registration number 2013/11401, has prepared this EMP on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa, in the public and private sectors. ECC is independent of the proponent and has no vested or financial interest in the proposed project, except for fair remuneration for professional services rendered.

All compliance and regulatory requirements regarding this document should be forwarded by email or posted to the following address:

Environmental Compliance Consultancy
PO BOX 91193
Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

1.7 STRUCTURE OF THIS EMP

The following structure has been adopted for this Report:

- Chapter 1 – Introduction
- Chapter 2 – Project Management Personnel
- Chapter 3 – Communications and Training
- Chapter 4 – Reporting, Compliance, and Enforcement
- Chapter 5 – Environmental and Social Management, and
- Chapter 6 – Implementation of the EMP.

2 PROJECT MANAGEMENT PERSONNEL

This EMP provides measures, guidelines, and procedures for managing and mitigating potential environmental impacts. The EMP also indicates monitoring and reporting requirements and sets responsibilities for those carrying out management and mitigation measures. B2Gold Namibia will provide a project team to oversee and undertake the preparation and construction works, which will be composed of the proponent's personnel and contractors. A nominated role will be identified to ensure the maintenance of the proposed project is undertaken through the operations phase.

2.1 Organisational Structure, Roles, and Responsibilities

The proponent will be responsible for:

- Ensuring all members of the project team, including contractors, comply with the procedures set out in this EMP
- Ensuring that all persons are provided with sufficient training, supervision, and instruction to fulfil this requirement, and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Contractors will be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above.

The key personnel and environmental responsibilities of each role are presented in Table 1.

TABLE 1 – KEY ROLES AND RESPONSIBILITIES

ROLE	RESPONSIBILITY & DUTIES
Proponent	– Overall responsibility for the implementation and management of this EMP – Ensure environmental policy is communicated to all personnel throughout the proposed project, and – Responsible for providing the required resources (including financial and technical) to complete the required tasks.
Project Manager	– Responsible for ensuring compliance with this EMP including overseeing the construction works, day to day activities during operations, and routine and non-routine maintenance works during operations, as well as the decommissioning of the development – Ensuring all personnel are aware of the commitments made in this EMP and any other relevant regulatory requirements applicable to the project – Responsible for the management, maintenance and revisions of this EMP – Ensuring adequate resources are made available for implementation of this EMP – Maintain the community issues and concern register and keep records of complaints – Ensuring all employees and contractors participate in a site induction process prior to commencing work on the project – Maintain an up to date register of employees who have completed the site induction

ROLE	RESPONSIBILITY & DUTIES
	– Provisioning of environmental awareness/management training and inductions for all employees – Ensuring that best environmental practice is undertaken throughout the duration of the project, and – Report any non-compliance or accidents to the regulatory authority.
Site manager/contractors	– Appointed to manage the performance of the construction and operational maintenance activities. Responsible for the implementation of this EMP and ensuring all activities are compliant with this EMP, as well as: o Managing the preparation and implementation of method statements for certain activities, and ensuring the environmental officer reviews all method statements and the relevant environmental protocols are incorporated o Reporting any non-compliance or accidents to the project manager and environmental officer o Ensuring that all staff have attended a site induction session before the commencement of any work on-site and that they are adequately informed of the requirements of this management plan o Ensuring that all contract workers, sub-contractors and visitors to the site are conversant with the requirements of this EMP, relevant to their roles on site and always adhere to this EMP, and o Receiving, responding to and recording complaints.
Employees/contractor employees	– Responsible for being compliant with this EMP throughout the construction work and operations, in addition to: o Ensuring they have undertaken a site induction and are conversant with the requirements of this EMP o Ensuring appropriate briefings for certain activities have been provided and fully understood o Adherence to this EMP, and o Reporting of any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the environmental officer and Site Manager/Contractor.
Environmental Control Officer	– An Environmental Control Officer (ECO) will be appointed or nominated responsible for the project. The ECO will be available, as required, throughout the construction and operation of the project. The ECO will be responsible for the following roles: o Ensuring that the site and project manager are aware of the environmental management plan procedures o For monitoring of site and enforcing health and hygiene measures o Investigate when there is an environmental incident, and o Conserving the environment and the resources.

2.2 CONTRACTORS

Any contractors hired during the construction works or maintenance activities during the operational phase will be compliant with this EMP, and will be responsible for the following:

- Undertaking activities in accordance with this EMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements
- Implementing appropriate environmental and safety management measures
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the site manager and/or project manager, and
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

2.3 EMPLOYMENT

The proponent and all contractors will comply with the requirements of the Republic of Namibia Regulations for Labour, Health and Safety, and any amendments to these regulations. The following will be complied with:

- In liaison with local government and community authorities, the proponent will ensure that local people have access to information about job opportunities and are considered first for construction and maintenance contract employment positions
- The number of job opportunities will be made known together with the associated skills and qualifications
- The maximum length of time the job is likely to last for will be clearly indicated
- Foreign workers with no proof of permanent legal residence will not be hired, and
- Every effort will be made to recruit from the pool of unemployed workers living in the local area.

2.4 REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

An environmental review of the proposed project has been completed to identify all the commitments and agreements made within the environmental scoping report. A list of environmental commitments and risks has been produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the construction and operational phase.

Table 2 provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as the responsible person. This register will be subject to regular review by the project manager and updated when necessary. The project manager and site manager will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

TABLE 2 – A LIST OF ENVIRONMENTAL RISKS AND ISSUES WITH MITIGATION AND MONITORING MEASURES FOR THE OTJIKOTO AGRICULTURAL PROJECT

ASPECT	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Having screened all potential impacts and having assessed those applicable to the criteria, points relevant to the impacts and corresponding mitigation measures are summarized below.				
Clearing of vegetation	– Clearing of vegetation through the process of expanding land for irrigation agriculture can cause loss of habitat is likely to lead to loss of biodiversity	– Where possible, the clearing of vegetation, particularly of indigenous trees needs to be avoided during the development phase – Avoid sensitive ecological areas where possible – Where possible, buffer the special, sensitive and ecologically important habitats	– Daily observations	– Project manager – Employees
Construction of the 11 kV powerline	– Physical disturbance of birds and habitat destruction/modification – Potential bird fatalities	– Before construction starts (or burying of the power line), the proposed power line route should be inspected for any signs of bird nesting activity – The unnecessary destruction of habitat (including large trees) or degradation of the environment, including sensitive habitats such as water points and ephemeral pan areas, should be avoided – Ongoing awareness should be promoted about the value of biodiversity and the negative impacts of disturbance, especially to breeding birds, and of poaching and road mortalities. At the same time, the need for reporting power line incidents should be stressed, and reporting procedures clarified – Anti-poaching measures should be strictly enforced, with zero tolerance, and this should be emphasised during induction to contractors; offenders should be prosecuted	– Daily observations	– Project manager – Employees
Construction of the 11 kV powerline	– Collision of birds on power line structures	– Proactive marking of the entire length of the power line is recommended to increase visibility to birds – At least the top conductor should be marked, along the full length of each span. Should monitoring indicate sections of power line that remain problematic in terms of repeated incidents, further mitigation should be investigated – The marking distance between devices should be 5-10 m, with offset designs/colours	– Daily observations – Weekly bird monitoring	– Project manager – Employees

ASPECT	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– At this stage no nocturnally visible marking is recommended, but it should become mandatory should monitoring results indicate the necessity (e.g. repeat collisions of nocturnal fliers such as flamingos or grebes). The need for fitting additional mitigation for collisions on stay wires (e.g. with vibration dampers) or on any other structures should likewise be based on monitoring results		
Abstraction of groundwater	– Drawdown of groundwater level could impact neighbouring groundwater users	– Start the project on smaller scale and increase step-by-step with good monitoring – Improve water use efficiency by producing high value crops for volumes of water abstracted and using water efficient irrigation systems – Supply neighbouring farmers with alternative water supply if impacts reduce their water availability – develop specific action plans for trigger values indicated by monitoring (groundwater level dropping by more than 5m with no recovery after the rainy season) – Drill needed monitoring boreholes to the north east and monitor monthly – Update the existing hydrocensus to ensure correct farms have monitoring boreholes – Update the groundwater model to a transient model with new monitoring data	– Weekly water volume monitoring – Monthly groundwater level measurement – Quarterly groundwater sampling	– Project manager – Environmental officer
Increased disturbance of soil	– The increased run-off water erosion and subsequently gully formation	– Construction of contour bunds to reduce erosion where needed – Implementation of zero till agricultural practices	– Daily observations	– Project manager – Employees
Waste generation	– Value addition of agricultural produce will result in generation of both solid waste and wastewater which may have negative impacts unless effectively managed	– Put in place appropriate waste management mechanisms for both solid waste and wastewater – Ensure wastewater produced from agricultural activities is properly managed – Waste storage sites should be established on site were paper, plastic and wire should be kept	– Daily inspection – Monthly monitoring	– Project manager – Environmental officer

ASPECT	POTENTIAL IMPACTS	MANAGEMENT/MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– The collected solid waste should be disposed at an approved waste site for the mine, after being collected by an agreed contractor – Ensure maximum re-use of the excavated materials and biomass		
Agricultural activity can cause pollution of groundwater and surface water	– The use of fertilizers and pesticides due to the nature of the crops and the quality of the soil could lead to contamination	– Proper design of the irrigation scheduling considering the nature of the soil – Increase organic material in the soil to improve the infiltration rate and water holding capacity – Availability of spillage clean-up kits for chemical spills – Ensure proper storage of fertiliser and pesticides – Education of staff on dangers of pesticides and proper handling of chemicals – Monitor irrigation water quality – Monitor groundwater quality	– Daily observations – Quarterly water sampling	– Project manager – Environmental officer – Employees
Fertigation with liquid fertilizers	– Spillage or breakage of fertilizer containers	– Routine inspection and maintenance of fertiliser holding facility – Availability of spillage clean-up kits for chemical spills	– Daily observations – Preventative maintenance – Incident reporting	– Project manager – Environmental officer – Employees
Agricultural production	– The proposed project will create employment opportunities	– Inform the communities about employment opportunities and required skills – Prioritise job opportunity to Namibian citizens – Maximise local employment and local business opportunities – Enhance the use of local labour and local skills as far as reasonably possible – Ensure that goods and services are sourced from the local and regional suppliers	– Proactive communication with communities – Employment policy	– Project manager – Human capital manager – Financial manager
Procurement of goods and services	– Sourcing of goods and services from local or regional business could increase economic benefits	– Provide opportunities to local and regional enterprise to participate in tender processes – Where possible, procurement of goods and services should be from the local or regional businesses	– Procurement policy	– Project manager – Financial manager

3 COMMUNICATION AND TRAINING

In order to ensure potential risks and impacts are minimised, it is vital that personnel are appropriately informed and trained on operational procedures that include the above mitigation measures. It is also important that regular communications are maintained with all the stakeholders, making them aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

3.1 COMMUNICATION

During construction, the project manager and site manager will communicate site-wide environmental issues to the project team through the following means (as and when required):

- Site induction
- Audits and site inspections
- Toolbox talks, including instruction on incident response procedures, and
- Briefings on key project-specific environmental issues

This EMP will be distributed to the construction project team, including contractors, to ensure that the environmental requirements are communicated effectively. Key activities and environmentally sensitive operations will also be briefed to workers and contractors.

During the construction phase, regular communications between the management team will include discussing any complaints received and actions to resolve them; any inspections, audits or non-conformance with this EMP; and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

Table 3 contains a list of numbers to be contacted in case of an emergency. All personnel will be made aware of these numbers.

TABLE 3 – EMERGENCY CONTACT DETAILS

TOWN	AMBULANCE	POLICE	FIRE BRIGADE
Otjiwarongo	+264 (67) 30 3734	+264 (67) 219 048 or 10111	+264 (67) 30 4444

3.3 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally or in writing by any personnel on the project site will be recorded by the receiver, including the name and contact details of the complainant, date and time of the complaint, and the nature of the complaint. The information will be given to the project manager who is overall responsible for the management of complaints and will provide a written response to the complainant. The project manager will inform the site manager of issues, concerns or complaints.

The project manager will maintain a complaint register that will detail the name and contact details of the complainant, date and time of the complaint, nature of the complaint, action taken to resolve issues, and date of complaint handover. The project manager will be responsible for nominating the correct personnel to coordinate and resolve the issue.

The workforce will be informed about the complaints register, its location and the person responsible, in order to refer local residents or the general public who wish to lodge a complaint. The complainant will be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons are to be recorded in the register and the complainant inform thereof.

The complaints register will be kept for the duration of the project and will be available for government or public review upon request.

3.4 Training, Site Induction And Awareness

All personnel working on the project will be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training, and experience.

All personnel involved in the project will be inducted to the site with specific environmental and social awareness training, and health and safety training. The environment and social awareness training will ensure that personnel are familiar with the principles of this EMP; the environment and social aspects and impacts associated with their activities; the procedures in place to control these impacts; and the consequences of departure from these procedures.

The project manager will ensure a register of completed training is maintained.

The site induction should include, but not limited to the following:

- A general site-specific induction that outlines:
    - What is meant by “environment” and “social”
    - Why the environment needs to be protected and conserved
    - How construction activities can impact on the environment, and
    - What can be done to mitigate against such impacts.
- The inductee’s role and responsibility with respect to implementing the EMP
- The site environmental rules
- Details of how to deal with, and who to contact if environmental problems should occur
- Basic vegetation clearing principals and species identification sheets
- The potential consequences of non-compliance with this EMP and relevant statutory requirements, and
- The role of responsible people for the project.

4 REPORTING, COMPLIANCE, AND ENFORCEMENT

4.1 Environmental Performance Management

The summary of a register of environmental risks and issues identifies mitigation and monitoring measures, as well as roles responsible. This register will be subject to regular review by the project manager and updated when necessary. The project manager and site manager will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

4.2 Construction: Environmental Inspections & Compliance Monitoring

4.2.1. Daily Compliance Monitoring

A copy of this EMP will be on-site throughout the construction works and will be available upon request. It is the responsibility of the project manager and site manager to ensure this EMP is complied with through their daily roles. Daily inspections will be undertaken by the site manager (or nominated site supervisor). Any environmental problems or risks identified will be notified to the project manager and actioned as soon as is reasonably practicable.

4.2.2. Monthly Compliance Monitoring

Monthly inspections will be undertaken by the site manager to check that the standards and procedures set out in this EMP are being complied with and pollution control measures are in place and working correctly. Any non-conformance will be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action taken; and any necessary follow up measures required.

4.3 Operations: Environmental Inspections and, Compliance Monitoring

Annual inspections of the power line will be managed and undertaken by the project manager. The overhead power line and its associated infrastructure (access road and servitude) will be inspected and maintained to ensure that the equipment is operating as per specification, no damage has been caused and vegetation is cleared under the power line. Any non-conformance will be recorded, including the following details: a brief description of non-conformance; the reason for the non-conformance; the responsible party; the result (consequence); and the corrective action is taken and any necessary follow up measures required.

4.4 Reporting

There will be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or accident, is reported to the project manager.

4.5 Non-compliance

Where it has been identified that works are not compliant with this EMP, the project manager will employ corrective actions so that the works return to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice will be produced. The notice will be generated

during the inspections and the project manager will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

A non-compliance event/situation, for example, is considered if:

- There is evidence of the contravention of this EMP and associated indicators or objectives
- The site manager and/or contractor have failed to comply with corrective or other instructions issued by the project manager or qualified authority, or
- The site manager and/or contractor fail to respond to complaints from the public.

Work will be stopped in the event of a non-compliance until corrective action(s) has been initiated.

4.6 DISCIPLINARY ACTION

This EMP is a legally binding document and non-compliance with it will result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Fines / penalties
- Legal action
- Monetary penalties imposed by the proponent on the contractor
- Withdrawal of license/s, and
- Suspension of work.

The disciplinary action will be determined according to the nature and extent of the transgression/non-compliance, and penalties are to be weighed against the severity of the incident.

5 ENVIRONMENTAL AND SOCIAL MANAGEMENT

5.1 OBJECTIVES AND TARGETS

Environmental objectives for the project are as follows:

- Zero poaching incidents
- Minimise waste generated
- Minimal interruption to water supply of neighbouring farmers, and
- Protect indigenous flora outside of the fields.

5.2 INCIDENT REPORTING

The Contractor must have an accident and incident (including minor or near miss) reporting system that covers all applicable statutory requirements. For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the Police. This requirement does not preclude immediate first aid being administered and the location being made safe.

The contractor must investigate the cause of all work accidents and significant incidents and must provide the client or the client's nominated representative with the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

6 IMPLEMENTATION OF THE EMP

This EMP:

- Has been prepared pursuant to a contract with the proponent
- Has been prepared based on information provided to ECC up to July 2020
- Is for the sole use of the proponent, for the sole purpose of an EMP
- Must not be used (1) by any person other than the proponent or (2) for a purpose other than an EMP, and
- Must not be copied without the prior written permission of ECC.

ECC has prepared the EMP based on information provided by the proponent and the Environmental Scoping Report.