Lebalelo Water User Association

Clapham Dam upgrades and associated infrastructure

Draft Basic Assessment Report

DFFE Reference Number: 14/12/16/3/3/1/2446

November 2021

Alta van Dyk Environmental Consultants cc
Postnet Suite # 745
Private Bag X 1007
Lyttelton
0140
Tel: +27 12 940 9457
suzanne@avde.co.za

Alta van Dyk Environmental

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November 2021

Project Ref: 131-002

Prepared by: Suzanne van Rooy

VERSION CONTROL

Alta van Dyk Environmental cc

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Approved by: Alta van Dyk

Signed:

Position: Environmental Specialist

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Abbreviations

AVDE	Alta van Dyk Environmental Consultants
BAR	Basic Assessment Report
BIL	Background Information Letter
DFFE	Department of Forestry, Fisheries and Environment
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
IDP	Integrated Development Plan
LEDET	Limpopo Department of Economic Development, Environment and Tourism
LWUA	Lebalelo Water User Association
MMP	Maintenance Management Plan
NEM:BA	National Environmental Management: Biodiversity Act
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act
NWA	National Water Act
ORWRDP	Olifants River Water Resource Development Project
S&EIR	Scoping and Environmental Impact Reporting
S&EIR	Scoping and Environmental Impact Reporting
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SPLUMA	Spatial Planning and Land Use Management Act

1 INTRODUCTION AND BACKGROUND

1.1 Background

Lebalelo Water User Association (LWUA) is proposing upgrades at its Clapham Dam located near Burgersfort, Limpopo Province. The proposed upgrades at LWUA's Clapham Storage Dam is required as several developments have taken place around the dam and LWUA wishes to take precautionary measures should the dam overflow. The purpose of the upgrades will ensure that if the dam overflows, water is handled in a controlled and safe manner to prevent damage to private property and ensure the safety of human lives.

Alta van Dyk Environmental Consultants cc (AVDE) has been appointed as the independent Environmental Assessment Practitioner to undertake the required environmental related applications and associated public participation process.

1.2 Purpose of the Report

The Draft Basic Assessment Report (BAR) has been compiled in support of the environmental authorisation process required before the proposed project may commence. The Draft BAR documents the steps undertaken during the basic assessment process to assess the significance of impacts and determine measures to mitigate the negative impacts and enhance the benefits (or positive impacts) of the proposed project. The report presents the findings of the impact assessment and a description of the proposed public participation that forms part of the process. More specifically, the objectives of this BAR are to:

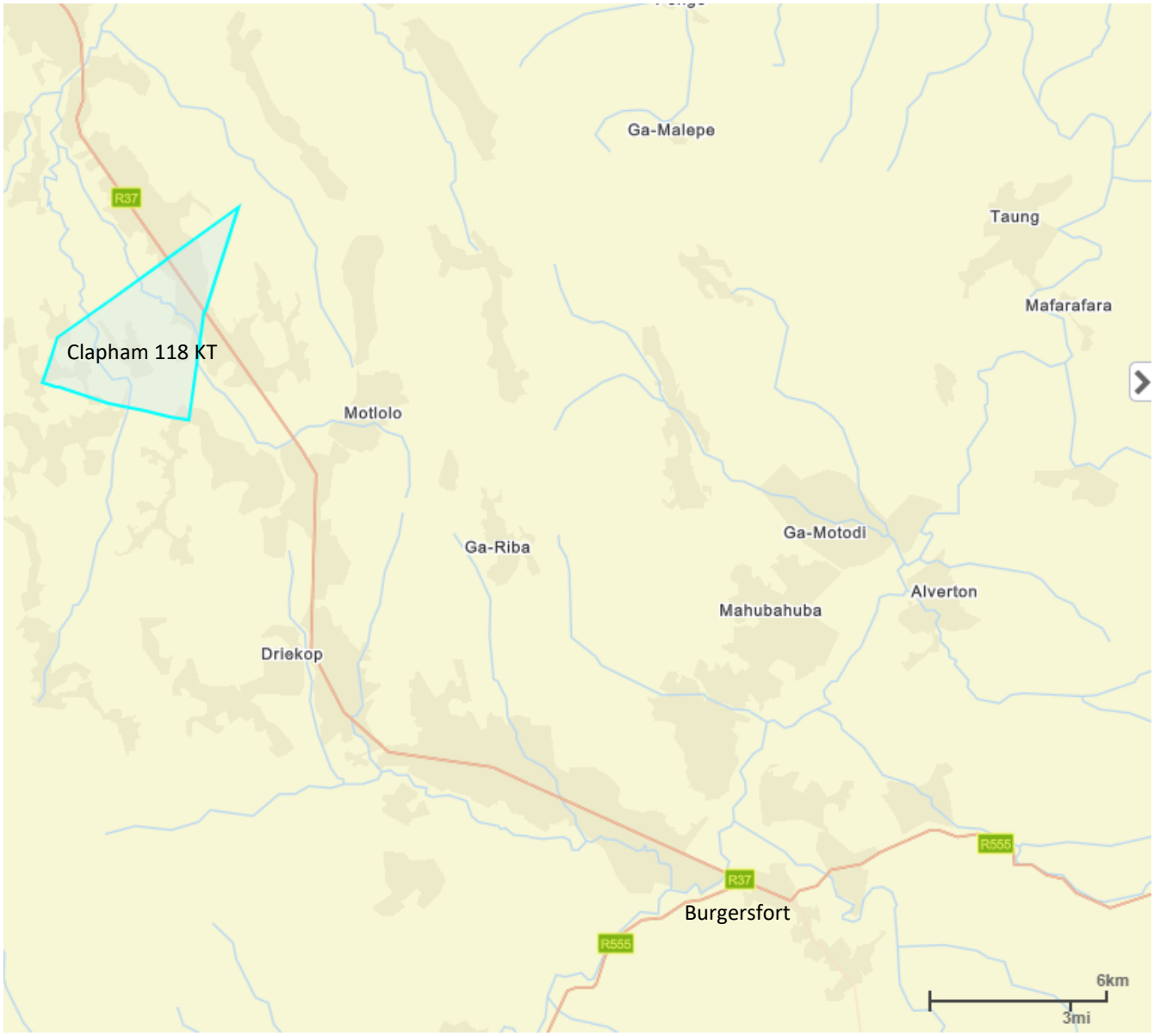
- Inform the stakeholders about the proposed project and the basic assessment process followed;
- Obtain contributions from stakeholders (including the applicant, consultants, relevant authorities and the public) and ensure that all issues, concerns and queries raised are fully documented and addressed;
- Assess in detail the potential environmental and socio-economic impacts of the project;
- Identify environmental and social mitigation measures to address the impacts assessed; and
- Produce a BAR that will assist the competent authority, the Department of Forestry, Fisheries and Environment (DFFE), to decide whether (and under what conditions) to authorise the proposed project.

1.3 Locality

The proposed project is located on portion 0 of the farm Clapham 118 KT approximately 30 km north-west of Burgersfort in the Limpopo Province. Table 1:1 outlines the details relating to the location of the proposed project. Refer to Figure 1:1 for the regional locality map.

Table 1:1 Project location details

Site specific details	**Description**	
Location of site	Clapham 118 KT Portion 0	
Municipal jurisdiction	Fetakgomo Tubatse Local Municipality Sekhukhune District Municipality	
Ward number	Ward 17	
SG code	T0KT00000000011800000	
Nearest town	~30 km north-west of Burgersfort,	
Site coordinates	**Latitude**	**Longitude**
	24°29'5.24"S	30° 6'49.74"E



Alta van Dyk Environmental	CLAPHAM DAM UPGRADES AND ASSOCIATED INFRASTRUCTURE REGIONAL LOCATION	Figure 1.1

Figure 1:1 Regional location of the Clapham dam upgrades and associated infrastructure project

1.4 Applicant

The applicant for the project is Lebalelo Water User Association (LWUA). LWUA has an existing environmental authorisation for the raw water pipeline, issued by the then Northern Province Department of Agriculture and Environment (Reference Number: 16/1/3/2-23). The details of the applicant are shown in Table 1:2.

Table 1:2 Details of the applicant

Applicant	Lebalelo Water User Association
Postal Address	PO Box 2075 Polokwane 0700

Telephone number:	013 216 8000
Fax number:	086 634 3967
Email address	info@lebalelo.co.za

1.5 Details of the Environmental Assessment Practitioner

Table 1:3 provides the details of the Environmental Assessment Practitioner (EAP) for the project.

Table 1:3: Details of the EAP

Environmental Assessment Practitioner	Suzanne van Rooy
Company	Alta van Dyk Environmental Consultants cc
Qualifications	MPhil Environmental Management (University of Stellenbosch)
Professional Registrations	Pr.Sci.Nat (Reg nr.400378/11)
Postal Address	Postnet Suite # 745 Private Bag X 1007 Lyttelton 0140
Telephone number:	012 940 9457
Fax number:	086 634 3967
Email address	suzanne@avde.co.za

Suzanne is a senior environmental scientist and has 13 years' experience as an environmental assessment practitioner, having worked largely in South Africa's mining sector. She is a professionally registered environmental scientist with the South African Council of Natural Scientific Professionals (registration number 400378/11). Her field of expertise includes the compilation of environmental impact assessments and environmental management programmes, environmental auditing and stakeholder engagement.

Refer to Appendix A for the Curriculum Vitae of the EAP.

1.6 Specialists

Table 1:4 details the specialist studies undertaken for the proposed Clapham Dam upgrades and associated infrastructure project.

Table 1:4 Specialist studies undertaken for the proposed Clapham Dam upgrades and associated infrastructure project

Specialist study	Specialist	Expertise of specialist
Heritage	Jaco van der Walt *Beyond Heritage*	MA Archaeology

1.7 Assumptions, qualifications and limitation

The assumptions and limitations pertaining to this BAR are presented in Table 1:5 below.

Table 1:5: Qualifications, assumptions and limitations

Aspect	Qualifications, assumptions and limitation
General	It is assumed that AVDE has been provided with all relevant project information and that it was correct and valid at the time it was provided.

Aspect	Qualifications, assumptions and limitation
	There will be no significant changes to the project description or surrounding environment between the completion of the Basic Assessment process and implementation of the proposed project that could substantially influence findings and recommendations with respect to mitigation and management. The assessment of the mitigated scenario assumes that the design controls and recommended mitigation would be implemented adequately. Specialist information was obtained from previous specialist studies undertaken for the LWUA pipeline and the Maintenance Management Plan. Specialist studies were undertaken for the project were a heritage impact assessment, the floodline delineation and geotechnical assessment.
Cumulative assessment	All identified impacts are considered in a cumulative manner such that the impacts of the current activities on and surrounding the site and those potentially associated with the proposed project are discussed and assessed together. The baseline conditions reflect the effects of these current activities.
Heritage	The authors of the Heritage Impact Assessment (HIA) acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the nature of heritage resources and pedestrian surveys, the possibility exists that some features or artefacts may not have been discovered/recorded and the possible occurrence of graves and other cultural material cannot be excluded. Similarly, the depth of cultural deposits and the extent of heritage sites cannot be accurately determined due its subsurface nature. The HIA report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. The HIA did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process if relevant. It is possible that new information could come to light in future, which might change the results of this Impact Assessment. Due to the subsurface nature of heritage resources, the possibility of discovery of heritage resources during the construction phase cannot be excluded. This limitation is successfully mitigated with the implementation of a chance find procedure.

1.8 Content of the Draft Basic Assessment Report

The Draft BAR has been compiled in accordance with the requirements of Government Notice R982 dated 45 December 2014 (as updated), Section 3 of Appendix I. These requirements and the sections of this Draft BAR in which they are addressed, are summarised in Table 1:6.

Table 1:6: Requirements of the BAR

No	Description	Reference
3 (1)	A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include-	
a)	details of:	
	(i) the EAP who prepared the report; and	Section 1.5
	(ii) the expertise of the EAP, including a Curriculum Vitae;	Appendix A
b)	The location of the activity, including:	Section 1.3
	(i) the 21-digit Surveyor General code of each cadastral land parcel	Table 1.1
	(ii) where available, the physical address and farm name;	Table 1.1

No	Description	Reference
	(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.	N/A
c)	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale	Figure 1.1 Figure 4.1
d)	A description of the scope of the proposed activity, including:	
	(i) All listed and specified activities triggered and being applied for	Table 5:1
	(ii) A description of the associated structures and infrastructure related to the development	Section 4
e)	A description of the policy and legislative context within which the development is proposed including	
	(i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report;	Section 5.1 Section 5.2
	(ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Section 5.1 Section 5.2
f)	A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred location	Section 2
g)	A motivation for the preferred site, activity and technology alternative	Section 3
h)	A full description of the process followed to reach the proposed development footprint within the approved site, including:	
	(i) Details of all the alternatives considered;	Section 3
	(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 6
	(iii) A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them	Appendix D1
	(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 7
	(v) The impacts and risks identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources, and can be avoided, managed or mitigated	Table 8.1 Table 8.2
	(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	Section 8.1
	(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	Table 8.1 Table 8.2
	(viii) The possible mitigation measures that could be applied and level of residual risk;	Table 8.1 Table 8.2
	(ix) The outcome of the site selection matrix	N/A
	(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Section 3
	(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity	N/A
i)	A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including:	

No	Description	Reference
	(i) A description of all environmental issues and risks that were identified during the environmental impact assessment process	Section 8.2 Table 8.1 Table 8.2
	(ii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	Section 8.2 Table 8.1 Table 8.2
j)	An assessment of each identified potentially significant impact and risk, including:	
	(i) Cumulative impacts	Section 8.3
	(ii) The nature, significance and consequences of the impact and risk	Section 8.2 Table 8.1 Table 8.2
	(iii) The extent and duration of the impact and risk	
	(iv) The probability of the impact and risk occurring	
	(v) The degree to which the impact and risk can be reversed	
	(vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and	
	(vii) The degree to which the impact and risk can be avoided, managed or mitigated	
k)	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section 9.2
l)	An environmental impact statement which contains-	
	(i) A summary of the key findings of the environmental impact assessment	Section 9
	(ii) A map at an appropriate scale which superimposes the proposed activity and its associated structures and the infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers	Figure 9:1
	(iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives	Table 9:1
m)	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	Appendix E
n)	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	Section 9.2
o)	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 1.7
p)	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section 9.3
q)	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded, and the post construction monitoring requirements finalised	N/A
r)	An undertaking under oath or affirmation by the EAP in relation to (i) The correctness of the information provided in the reports (ii) The inclusion of comments and inputs from stakeholders and I&APs (iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Section 10 Appendix F

No	Description	Reference
s)	Where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
t)	Where applicable, any specific information required by the competent authority; and	None to date
u)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

2 PROJECT MOTIVATION

2.1 Background to LWUA

The LWUA is a water management institution established in terms of Section 92 of the National Water Act (Act 36 of 1998) (NWA) and its area of operation and constitution were approved by the Minister of Water Affairs and Forestry (as it was known then) in terms of Section 92 (1) (a) of the NWA as confirmed in Government Gazette Notice No. 89 of 1 February 2002. The area of operation of the LWUA was extended in terms of Section 92 (1) (b) of the NWA by Government Gazette Notice Number 1110 of 18 November 2005 and the amended LWUA Constitution was approved by the then Minister of Water Affairs and Forestry on 4 October 2005.

The LWUA was established with the following mandate:

- To operate and maintain a pipeline scheme to supply bulk raw water from the Olifants River to satisfy the water requirements of its members on the Eastern Limb of the Bushveld Igneous Complex within its licensed conditions;
- To supply bulk raw water from the pipeline and any extension thereof from the Olifants River to satisfy the requirements of other users within its licence conditions;
- As a Corporate Social Responsibility undertaking to continue with its support to the Department of Water and Sanitation (DWS) and the Sekhukhune District Municipality in the operation and maintenance of their potable water schemes, provided that the schemes are situated within the area of operation of the LWUA; and
- To protect the LWUA infrastructure.

The LWUA was established to supply raw water to mines along the Eastern Limb of the Bushveld Igneous Complex. The main aim of the project was to supply water to a number of existing and planned new mines in the area, and as a spin-off, to provide additional capacity in the water supply scheme to meet the requirements of the rural population in the area. Only raw water is provided by LWUA, and the responsibility of treatment to drinking water standards lies with the distribution authority. The water is abstracted from the Olifants River via the Flag Boshielo Dam and abstracted at the Havercroft weir. The users receiving the water from the pipeline make up the LWUA. The Lebalelo water supply forms part of the Olifants River Water Resource Development Project (ORWRDP). The water is currently sourced from the Olifants River via the Flag Boshielo Dam, with abstraction at the Havercroft weir, and in future will be from the Steelpoort River via De Hoop Dam.

The current pipeline runs from the Havercroft weir to the R37, and along the R37 to Clapham Dam where raw water is stored. From Clapham Dam, the pipeline runs to Marula Platinum Mine.

2.2 Motivation for upgrades at Clapham Dam and additional infrastructure

Several developments have taken place around LWUA's Clapham Dam since its construction in 2002. LWUA wishes to take precautionary measures, should the Clapham Dam overflow due to failure of inflow control measures or where all of the pumps are out of order and the gravity feed to Marula Mine is not functional. Precautionary measures will ensure that water is handled in a controlled and safe manner to prevent damage to surrounding public and private property, and in the worst case, loss of life.

3 ALTERNATIVES

3.1 Alternatives considered

Due to the fact that there is a pipeline servitude for the existing raw water pipeline from the Clapham Storage Dam to Marula Platinum Mine, the proposed emergency overflow pipeline follows the same servitude along the existing raw water pipeline. Alternative pipeline routes were therefore not considered as it will create new impacts on the environment and residents between Clapham Dam and the Matadi River.

The installation of a pipeline to accommodate a potential overflow from Clapham Dam in case of an emergency is the only safe manner to convey the water through the village to the Matadi River and therefore no other alternatives have been considered for this project.

3.2 No-go option

The no-go option entails not constructing the emergency overflow pipeline, outlet structure, channel from the outlet structure or the erosion protection of the riverbank. Should this be the case, and the Clapham Dam overflows due to pump malfunction or inflow control failure, water will flow from the outlet structure at Clapham Dam, into the surrounding environment and potentially flood private property, the nearby school and graveyard. This could potentially result in property and infrastructure damage, and as a worse case, loss of lives.

4 PROJECT DESCRIPTION

4.1 Proposed upgrades

The upgrades at the existing Clapham Dam involves the following:

- New overflow structure (at Clapham Storage Dam);
- Inlet Structure (at Clapham Storage Dam);
- Repair of the damaged Clapham Storage Dam embankment undermined by rodents;
- Extension of scour outlet pipes along the bulk raw water pipelines in the vicinity of the Clapham Storage Dam to prevent damage to private properties when pipelines have to be scoured for maintenance purposes;
- Overflow pipeline to be constructed along the existing LWUA pipeline (~700m);
- Manholes located along the overflow pipeline route (7 manholes);
- Outlet structure in close vicinity of the Matadi River;
- Channel from the outlet structure to the Matadi River;
- Erosion protection of the riverbank at proposed outlet (approximately 70m long);
- Extension of concrete encasing around the existing LWUA pipeline and repair of damaged corrosion protection of the pipeline crossing the Matadi River; and
- Erosion protection of the pipeline crossing the Matadi River.

The construction phase for the project is expected to last 5 months. The project layout is shown in Figure 4:1. Refer to Appendix B for photographs of the site area and Appendix C for the site layout plans.

4.2 Emergency overflow pipeline

The envisaged pipeline route will follow the existing bulk raw water pipeline that provides water to Marula Mine and the work will consist of pipe trench excavation to line and level, bedding preparation, laying of pipes to line and level between manholes, backfilling and compaction. The pipeline route remains within the existing servitude of the bulk raw water pipeline to Marula Mine.

Excavations of the pipeline trench will be carried out using an excavator and the material stockpiled along the trench for later use for backfilling after the pipe has been laid.

Once the trench has been backfilled the pipe bedding will be trimmed and prepared to receive the pipes. Pipes will be laid using mechanical equipment to lift it and place it in position. After laying of the pipes the pipe blanket will be constructed using selected material from the excavated material and compacted by hand and making use of walk behind self-propelled compaction equipment.

After completion of the fill blanket around the pipe the bulk backfilling will be done using the excavated material and compacted with walk behind self-propelled compaction equipment. The total length of the pipeline is approximately 642m.

Alta van Dyk Environmental	**CLAPHAM DAM UPGRADES AND ASSOCIATED INFRASTRUCTURE** **PROJECT LAYOUT**	**Figure 4.1**

Figure 4:1 Project layout

4.3 Outlet structure

The outlet structure will consist of a combination of reinforced concrete and gabions and will entail the following work:

- Excavation for the reinforced concrete headwall at the end of the pipeline.
- Casting of a blinding layer to provide a clean and solid work area for the fixing of reinforcement.
- Fixing of reinforcement in the headwall of the outlet structure and erection of
- shuttering.
- Casting of concrete
- Backfilling around the outlet structure and shaping of the area to receive the gabion baskets for the erosion protection.

At the end of the pipeline, in close vicinity of the river, the excavations for the outlet structure will be carried out and the material stockpile at the site of the outlet structure. The floor area of the outlet will again be prepared and compacted using hand tools after which the 50mm thick blinding layer will be constructed.

Following the above the steel reinforcement for the outlet structure will be fixed and once approved the shuttering will be erected. After inspection and approval, the concrete will be cast making use of concrete from a ready-mix plant in the area.

After the concrete has reached sufficient strength, the shutters will be stripped off and the concrete finished off. Backfilling around the structure will then be done using hand tools and compaction equipment with any excess material spread and finished off neatly over the area around the structure.

4.4 Erosion protection of the Matadi River Embankment

Due to the erodibility of the material and to protect the river embankment where the water will be discharged into the river, it is proposed that gabions be used to protect the embankment of the river and to prevent erosion at the pipe outlet. The gabions will also help to dissipate energy and to slow down the water after being discharged. The pipeline route will be chosen such that the outlet of the overflow is downstream of the bulk raw water pipeline crossing through the river to prevent erosion damage to the bulk raw water pipeline in case of an overflow.

Erosion protection will be provided from the outlet structure up to the river by constructing a channel using gabion mattresses and boxes. Stone for the gabions will be obtained from the mines in the vicinity.

The bulk excavations for the gabions will be done using mechanical equipment after which it will be levelled and trimmed to line and level followed by compaction of the top layer before the gabions structure can be constructed.

4.5 Maintenance activities

Once the overflow pipeline and associated infrastructure is operational, several activities will be undertaken in order to main the pipeline and other infrastructure in a working condition. Table 4:1 outlines the general maintenance activities that are planned for the overflow pipeline and other infrastructure.

Table 4:1 General maintenance activities for the emergency overflow pipeline, outlet structure and gabion embankment

Maintenance activity	Actions
Site inspections of the pipeline	Undertake regular inspections to ensure that: • The pipeline structure remains structurally intact;

Maintenance activity	Actions
	• No erosion is occurring along outlet channel • No new alien vegetation is encroaching • Erosion structures (gabion and reno mattresses) remain intact
Removal of alien vegetation and establishment of indigenous vegetation at the outlet channel and gabion embankment	• Remove alien vegetation encroaching around pipeline • Establish indigenous vegetation on areas cleared of alien vegetation
Maintenance and repair to gabion embankment on Matadi River	• The gabion embankment must be inspected and repaired in a timeously manner to prevent erosion from occurring on the bank of the Matadi River.

5 LEGAL FRAMEWORK

5.1 Legal Requirements

There are several regulatory requirements at local, provincial and national level with which the proposed project need comply to.

The key legal requirements include the following:

- National Environmental Management Act (Act No. 107 of 1998) (NEMA);
- National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA);
- National Water Act (Act No. 36 of 1998) (NWA);
- National Heritage Resources Act (Act No. 25 of 1998) (NHRA)

A brief summary of each of these legal requirements are provided in the following sections.

5.1.1 National Environmental Management Act

NEMA is the environmental framework legislation promulgated to ensure that the environmental rights contemplated in Section 24 of the Constitution of South Africa (Act 108 of 1996) are realized. NEMA sets out:

- The fundamental principles that need to be incorporated in the environmental decision making process;
- The principles that is necessary to achieve sustainable development;
- Provides for duty of care to prevent, control and rehabilitate the effect of significant pollution and environmental degradation; and
- It allows for the prosecution of environmental crimes.

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an Environmental Authorisation issued by the competent authority (in this case the DEFF). In this context, the Environmental Impact Assessment (EIA) Regulations, 2014, promulgated in terms of NEMA, govern the process, methodologies and requirements for the undertaking of EIAs in support of EA applications. Listing Notices 1-3 in terms of NEMA list activities that require EA (NEMA listed activities). The EIA Regulations, 2014, lay out two alternative authorisation processes. Depending on the type of activity that is proposed, either a BA process or a Scoping and Environmental Impact Reporting (S&EIR) process is required to obtain EA. Listing Notice 11 lists activities that require a BA process, while Listing Notice 22 lists activities that require S&EIR. Listing Notice 33 lists activities in certain sensitive geographic areas that also require a BA process.

The following listed activities are being triggered by the proposed development of the accommodation facility.

Table 5:1: Triggered listed activities for the Clapham Dam upgrades and associated activities

List and activity number	Listed activity	Description of activity
Listing 1, Activity 19	The infilling or depositing of any material of more than 10m^3 into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10m^3 from a watercourse;	Construction of the outlet structure, associated channel and erosion protection on the riverbed in the Matadi River will require the moving of more than 10m^3 of soil.
Listing 3, Activity 12	The clearance of an area of 300m^2 or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance	Natural riparian vegetation will be cleared during the construction of the outlet structure, associated channel and

List and activity number	Listed activity	Description of activity
	purposes undertaken in accordance with a maintenance managements plan.	erosion protection on the riverbed of the Matadi River.
Listing 3, Activity 14	The development of- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres; or (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs- (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse.	The outlet structure, associated channel and erosion protection on the riverbed in the Matadi River is greater than 10m^2.

5.1.2 National Environmental Management: Biodiversity Act

The National Environmental Management: Biodiversity Act (NEM:BA) serves to provide a framework for the management and conservation of South African biodiversity, under the auspices of the NEMA. This legislation promotes the sustainable use of natural biological resources, ensuring equitable access and sharing of benefits arising from the use of biological resources. In terms of Section 56(1) of NEM:BA a person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 7. These threatened and protected species have been listed in terms of GNR.151 of 2007: Publication of lists of critically endangered, endangered, vulnerable and protected species. A restricted activity in relation to a specimen of a listed threatened or protected species means:

- hunting, catching, capturing or killing any living specimen of a listed threatened or protected species by any means, method or device whatsoever, including searching, pursuing, driving, lying in wait, luring, alluring, discharging a missile or injuring with intent to hunt, catch, capture or kill any such specimen;
- gathering, collecting or plucking any specimen of a listed threatened or protected species;
- picking parts of, or cutting, chopping off, uprooting, damaging or destroying, any specimen of a listed threatened or protected species;
- importing into the Republic, including introducing from the sea, any specimen of a listed threatened or protected species;
- exporting from the Republic, including re-exporting from the Republic, any specimen of a listed threatened or protected species;
- having in possession or exercising physical control over any specimen of a listed threatened or protected species;
- growing, breeding or in any other way propagating any specimen of a listed threatened or protected species, or causing it to multiply;
- conveying, moving or otherwise translocating any specimen of a listed threatened or protected species;
- selling or otherwise trading in, buying, receiving, giving, donating or accepting as a gift, or in any way acquiring or disposing of any specimen of a listed threatened or protected species; or

- any other prescribed activity which involves a specimen of a listed threatened or protected species.

Should a project result in the loss of biodiversity identified in terms of GN 151 of 2010, a permit application will need to be submitted to the Provincial Department of Environment and Nature Conservation for approval, before proceeding with the activity.

5.1.3 National Water Act

The purpose of the NWA is to ensure that the South Africa's water resources are protected, used, developed, conserved, managed and controlled. Use of water for mining and related activities is also regulated through regulations that were updated after the promulgation of the NWA (Government Notice No. GN704 dated 4 June 1999). Sections 40 and 42 of NWA provides for the responsible authority to request public participation and an assessment of the likely effect of the proposed license the protection, use, development, conservation, management and control of the water resource.

Water uses that are not permissible in terms of Schedule 1 of the NWA need to be authorised under a tiered authorisation system as a General Authorisation in terms of the General Authorisations as published under section 39 of the NWA or as a water use licence, as provided for in terms of Section 21 of the NWA.

Table 5:2 list the water uses that require authorisation in terms of Section 21 of the National Water Act for the proposed development:

Table 5:2 List of Section 21 Water Uses to be applied for

Section 21 Water Use	Activities which require the Water Use Licence
(c) – impeding or diverting the flow of water in a watercourse (i) – altering the bed, banks, course or characteristics of a watercourse	• All infrastructure within a horizontal distance of 100m from the edge of the watercourse • Construction of the gabion embankment, outlet channel and a section of the overflow pipeline

5.1.4 National Heritage Resources Act

The National Heritage Resources Act (NHRA) controls the protection and management of South Africa's heritage resources.

Section 38 of the NHRA requires that heritage assessments are required for certain kinds of development such as the construction of a pipeline exceeding 300m in length, the construction of a bridge or similar structure exceeding 50 in length, rezoning of land greater than 10,000 m² in extent or exceeding three or more sub-divisions, or for any activity that will alter the character of a site greater than 5,000 m². The South African Heritage Resources Agency (SAHRA) administers heritage in the province particularly where archaeology and palaeontology are the dominant concerns.

The responsible heritage resources authority must, within 14 days of receipt of such a notification if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report or notify the person concerned that this section does not apply.

5.2 Planning policy framework

This section discusses a number of key formal planning policies relevant to the project. The policies and plans briefly discussed below include regional and local development and spatial plans, including the:

- Spatial Planning and Land Use Management Act (Act No. 16 of 2013) (SPLUMA);
- Fetakgomo Tubatse Local Municipality Integrated Development Plan (2021)

5.2.1 Spatial Planning and Land Use Management Act

SPLUMA provides broad principles for provincial laws that regulate planning. SPLUMA also provides clarity on how planning law interacts with other laws and policies. SPLUMA delegates the responsibility for land use and zoning applications to the municipality. The land use, zoning and spatial planning is therefore driven by the municipal level IDP and SDF which, according to SPLUMA, must be aligned with the provincial IDP and SDF.

5.2.2 Fetakgomo Tubatse Local Municipality Integrated Development Plan (2021)

Integrated Development Planning is a process through which municipalities prepare a strategic development plan which extends over a five –year period. The Integrated Development Plan (IDP) is a product of this planning process. The Fetakgomo Tubatse Local Municipality IDP is the principal strategic planning instrument which gives guides and informs all planning, budgeting, management, and decision making processes in the municipality.

Although the development of the overflow pipeline and associated infrastructure does not fall directly into the IDP of Fetakgomo Tubatse Local Municipality, the development will contribute to community safety and the protection of properties, houses and the nearby school and graveyard. Community safety is a priority for the municipality.

6 SUMMARY OF PUBLIC PARTICIPATION PROCESS

Stakeholder engagement forms a key component of the Basic Assessment process. The following sections details the public participation process followed during each phase of the environmental authorisation process, in compliance with Chapter 6 of the EIA Regulations, 2014.

6.1 Pre application consultation

Pre application meetings were held with the following authorities:

- Limpopo Department of Economic Development, Environment and Tourism (LEDET) (provincial department) (3 May 2021);
- Department of Fisheries, Forestry and Environment (DFFE) (competent authority) (25 May 2021); and
- Department of Water and Sanitation (DWS) (15 July 2021).

During these meeting the proposed project was introduced, and attendees were given the opportunity to raise any comments or concerns about the proposed project. Comments made and concerns raised during these meetings were minuted and is included in the Comment and Response Report (Appendix D1). The minutes of the meetings are available in Appendix D2.

In addition, meetings were held with the Ga-Manyaka traditional authorities on 22 June 2021. During these meetings, a Background Information Letter (BIL) was distributed in English and Sepedi. Please refer to Appendix D3 for copies of the BILs. Comment and concerns raised at these meetings are captured in the Comment and Response Report (Appendix D1).

6.2 Project announcement

The proposed project was announced as follows:

- Distribution of Background Information Letters (BIL) to residents (English and Sepedi) along the proposed overflow pipeline (22 June 2021). Refer to Appendix D3 for a copy of the BILs.
- Emailing the BIL to the local and district municipalities (English and Sepedi). Refer to Appendix D4 for proof.
- Placing site notices along the proposed overflow pipeline route on 22 June 2021 (English and Sepedi). Refer to Appendix D5 for proof of site notices; and
- Advertisement in the Steelburger on 4 November 2021. Refer to Appendix D6 for a copy of the advertisement.

6.3 Availability of the Draft Basic Assessment Report

The Draft Basic Assessment Report (BAR) is currently available for public comment for a period of 30 days from 5 November to 6 December 2021. The availability of the report for comment was advertised in the Steelburger on 4 November and notification letters of its availability were sent to stakeholders. Please refer to Appendix D7 for the letters, and Appendix D8 for emails sent. The report is available at the following public places:

- Mokwadibe Secondary School;
- Ga-Manyaka Traditional Authority offices; and
- Alta van Dyk Environmental Consultants Office.

The Draft BAR is also available electronically on the AVDE website:

https://www.altavandykenvironmental.co.za/public-documents/

Comments received during the comment period of the Draft BAR will be included in the Comment and Response Report, to be submitted with the Final BAR to DFFE.

6.4 Final Basic Assessment Report

All comments obtained from stakeholders during the pre-application, announcement and Draft BAR comment phases, will be captured and addressed in the Comment and Response Report. This report will be submitted as an Appendix to the Final Basic Assessment Report, to be submitted to the competent authority for review.

6.5 Decision

Once a decision regarding the environmental authorisation has been received from DFFE, all registered stakeholders will be informed via email.

6.6 Summary of comments received

All comments received from stakeholders during the pre-application phase of the project has been documented in the CRR (Appendix D1). Table 6:1 provides of summary of the comments received from stakeholders to date.

Table 6:1 Summary of comments received from stakeholders

Comment	Organisation
How will the affected communities benefit from the Lebalelo Dam, and is it possible for Lebalelo to supply the villages with water? Who else is benefitting from the dam?	Ga-Manyaka 1 TA
Was a lease agreement signed with the Municipality?	
Community members need to be employed by Lebalelo.	
Will Lebalelo provide employment opportunities?	Ga-Manyaka 2 TA
Will Lebalelo provide water to the communities, and its livestock?	

6.7 Legal requirements for public participation

Table 6:2 provides a review of the legal requirements for public participation in terms of the NEMA EIA Regulations.

Table 6:2: Legal requirements for public participation

NEMA Regulation	Public Participation Regulation	Process followed
39 (1)	If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.	The landowner is the Republic of South Africa. It was confirmed by the Limpopo Cooperative Governance, Human Settlements and Traditional Affairs (COGHSTA) that Clapham 118 KT is managed by Bakone Ba Manyaka Traditional Authority, under the leadership of Dineo Daphney Manyaka as the regent, effective from 7 March 2018. Written consent was obtained from Bakone Ba Manyaka Traditional Authority and submitted to the DFFE with the environmental authorisation application form.

NEMA Regulation	Public Participation Regulation	Process followed
41 (2) (a)	Fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of— (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and (ii) any alternative site;	A2 notice boards were placed at the following locations around the proposed project site: • Mokwadibe Secondary School; • Graveyard; • Closest house to Matadi River; • Ga-Manyaka 1; and • Ga-Manyaka 2. Refer to Appendix D5.
41 (2) (b)	Giving writing notice to	
(i)	The occupiers of the site	Notification letters were sent to the Ga-Manyaka traditional authorities. Refer to Appendix D8. BILs were distributed by hand to persons living along the proposed pipeline route.
(ii)	Owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken	
(iii)	The municipal councillor of the ward	A BIL was emailed to Mrs M. Mphethi who is the Councillor for Ward 17. Refer to Appendix D4.
(iv)	The municipality which has jurisdiction in the area	A BIL was emailed to Ms Q Moeng who is head of planning and development at Fetakgomo Tubatse Local Municipality. Refer to Appendix D4.
(v)	Organ of state having jurisdiction in respect of any aspect of the activity	Pre-application meetings were held with the following authorities: • LEDET; • DFFE; and • DWS. The Draft BAR will be uploaded onto the South African Heritage Resources Information System (SAHRIS) website for comment from the South African Heritage Resources Agency (SAHRA).
(vi)	Any other party as required by the competent authority	None required to date.
41 (2) (c)	Placing an advertisement in one local newspaper	An advertisement was placed in the Steelburger Newspaper on 4 November 2021. Refer to Appendix D6.
41 (2) (d)	Placing an advertisement in at least one provincial or national newspaper, if the activity may have an impact that extends beyond the boundaries of the metropolitan or district municipality.	Not applicable. The activity does not have an impact that extends beyond the boundaries of the metropolitan.
41 (2) (e)	Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to- (i) illiteracy; (ii) disability; or	None required to date.

NEMA Regulation	Public Participation Regulation	Process followed
	(iii) any other disadvantage	
41 (3)	A notice, notice board or advertisement must: (a) give details of the application or proposed application which is subjected to public participation; and (b) state: (i) whether a basic assessment or S&EIR procedures are being applied to the application (ii) the nature and location of the activity to which the application relates (iii) where further information on the application can be obtained (iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made	A2 notice boards were placed around the proposed project site (Clapham Dam and along the proposed pipeline route). Refer to Appendix D5.
4	A notice board referred to in Subregulation (2) must (a) be of a size of at least 60cm by 42cm (b) display the required information in lettering and in a format as may be determined by the competent authority	

7 ENVIRONMENTAL STATUS QUO

The following chapter presents an overview of the biophysical and socio-economic environment in which the proposed project is located. The area has previously been studied to some extent and is recorded in various sources, particularly during the environmental authorisation process for the existing LWUA pipeline (2000) and during the compilation of the Maintenance Management Plan (MMP) (2019). Consequently, aspects of the baseline have been generated based on literature review.

Refer to Appendix B for colour photographs from the centre of the site taken in at least eight major compass directions with a description of each photograph.

7.1 Climate

The climate of the region has typically hot summers and cold dry winters. The climate of the site is affected by topographical complexities causing microclimatic effects in the form of a hotter drier climate than typical for the sub-region. This effect is further accentuated by the rain shadow effect caused by the Leola Mountains on the western fringe of the area. The mean daily temperature is 23.7°C in January and 11.9°C in July. A summary of mean climatic statistics for the sub region is provided in Table 7:1 (SRK, 2019). The rainfall record is from station 0635862 W (Paschaskraal), which has rainfall data for the period 1903-2000; and station 0635873 A (Wolkberg), located approximately 40 km away for the period 2000 to 2015 (the closest station with more recent data).

Table 7:1 Summary of mean climatic statistics for the sub-region

Mean monthly temperature	19°C
Mean monthly maximum temperature	25°C
Mean monthly minimum temperature	13°C
Mean annual evaporation	1650mm
Mean annual precipitation	523mm
Rainy season	November – March
Mean annual number of rain days	45
Mean number of rain days per month	3.8
Mean annual wind direction	WNW

7.2 Geology

There is considerable alluvial cover over much of the topographically flatter areas and erosion has resulted in significant erosion gullies that are 10 m high and 30 m wide in places. There are a number of dolerite dykes, faults and other lineaments in the area.

7.3 Soils

According the Scoping and Preliminary Assessment (SRK, 2000), the soils occurring in the area are derived from the rocks of the area and consist of residual soils, transported (colluvial and alluvial) soils and paedogenic materials. Residual soils have developed from the weathering and decomposition of the underlying bedrock, grading into the bedrock with depth. Some reworking of these soils may have occurred, especially near surface. The transported soils encountered are alluvium deposited in rivers or river flood plains and colluvium or hillwash and talus deposited by gravity.

The alluvium encountered on site is mainly sandy. A thin mantle of sandy hillwash is commonly present at the surface on the mountainous slopes. The sandy soils in the area are highly erodible (SRK, 2019).

The paedogenic material present is calcrete, having developed from soils that have been cemented or replaced by carbonates. Recent alluvium (brown silty clay) is found alongside the Moopetsi River and these soils are highly calcretised.

As a result of the climate and topography, combined with the complex geomorphology in the area, a diverse range of soil groups can be found regionally, including Hutton, Acardia, Mispah, Glenrosa and Shortlands. Within the pipeline area, three main groupings of soils, namely calcic, melanic and orthic groups are dominant. These soils can be classified as moderate to poor quality due to their moderate natural fertility, soil structure, soil chemical properties and rockiness in places. Based on the soil characteristics, land capability can be defined as low dry land arable potential, grazing and wilderness.

7.4 Surface and groundwater

The project area is situated directly within and adjunct to the Matadi River within the B71E quaternary catchment of the Olifants Water Management Area. The Matadi River is a non-perennial, ephemeral system, characterized by stream bank incision particularly in areas which are heavily utilized by domestic livestock The Matadi River is a tributary of the non-perennial Motse River, the catchment of which contributes to the Olifants River (SRK, 2019). These drainage lines are considered to not receive and retain sufficient water to support wetland or riparian characteristics. Ephemeral drainage lines cannot be classified as riparian resources in the traditional sense, but they do still function as a waterway, through episodic conveying of water. There are no wetlands or freshwater ecosystem priority areas within or around the pipeline area.

Due to the topography and extent of the catchment, during times of high precipitation, the rivers receive a large volume of water with a high velocity over a relatively short period of time. The high flood peaks are also related to the low surface roughness of the marginal and non-marginal zones due to vegetation removal (contributed by development in the area and livestock grazing). The steep flood peaks combined with the high erodibility of the soils have resulted in the river systems being characterized by large scale erosion contributing to scouring of river beds and stream bank incision particularly in areas which are heavily utilised by domestic livestock. Refer to photographs of the Matadi River where the infrastructure is proposed (Figure 7:1).

Matadi River bed, showing the northern southern bank (left) and northern bank (right). The existing LWUA pipeline with concrete encasing is visible in the front.

Northern bank of the Matadi River, where the overflow pipeline outlet channel and gabion embankment will be located. The concrete encasing around the existing LWUA pipeline is also shown.

Figure 7:1 Photographs of the proposed project area on the banks of the Matadi River

According to the NFEPA database, the Motse River is considered to be in a Class D ecological condition, indicating that it is largely modified. The majority of the pipeline area falls in the Eastern Bankenveld Aquatic eco-regions, with low to moderate Ecological Importance and Sensitivity (EIS) and moderately sensitive to resilient systems.

Whilst the smaller, isolated drainage lines are not considered to be particularly ecologically important or sensitive, within the context of the larger drainage network within which many of these resources occur, they do still play a role in the hydrological regime of the large river systems. Most of these drainage lines are located within the Middle Olifants subWMA which considered to be an upstream management area by the National Freshwater Ecosystem Priority Areas (NFEPA) database (SRK, 2019).

During periods of rainfall, the ephemeral tributaries to the Motse River, and the ephemeral part of the Motse River upstream of the mining area is assumed to provide a certain amount of recharge to the unconfined shallow groundwater system, especially the alluvium along the rivers from where the groundwater is thought to infiltrate the deeper lying weathered and fractured hydro stratigraphic units (saturated zone).

7.5 Vegetation

On a regional scale the pipeline falls within the Savanna Biome. The dominant primary vegetation type is mixed bushveld, with the riparian vegetation having a distinct increase in density as well as shrub size near drainage lines (SRK, 2019). The Scoping and Preliminary Assessment (SRK, 2000) identified the area as characterised mainly by an open, short, tree savannah with the following plant species common to the area:

- On shallow clay soils *Combretum apiculatum* (Red Bushwillow) dominates the vegetation. Other trees and shrubs include *Acacia caffra* (Common Hook-thorn), *Dichrostachys cinerea* (Sickle Bush), *Kirkia wilmsii* (Mountain Seringa), *Sclerocarya birrea* (Marula) and *Grewia flava* (Velvet Raisin). The herbaceous

layer is dominated by grasses such as *Oigitaria eriantha* (Common Finger Grass), *Panicum natalense* (Natal Panicum), *Heteropogon contortus* (Spear Grass) and *Themeda triandra* (Red Grass);

- On deeper clay soils *Boscia foetida* (Stink-bush), *B. albitrunca* (Shepherd's Tree), *Schotia brachypetala* (Weeping Bean), *Acacia nilotica* (Scented Thorn) and *A. tortilis* (Umbrella Thorn) are often prominent woody species, while *Cynodon dactylon* (Couch Grass), *Aristida congesta* (Spreading Three-awn), *Eragrostis curvula* (Weeping Love Grass) and *Botriochloa insculpta* (Pinhole Grass) are characteristic of the grass layer; and
- *Cynodon dactylon*, is identified as a suitable species for revegetation as this indigenous, perennial grass species forms thick mats by means of stolons and rhizomes to keep the soil intact and limit erosion (SRK, 2019).

The current status (SRK, 2019) indicates the area is largely modified with the loss of natural habitat, biota and ecosystem functions in the area being considered large due to historical commercial and current small-scale agricultural activities, overgrazing of cattle, utilisation of the river for domestic purposes by local communities, and the presence of mining activities within the surrounding area as well as the greater catchment area. These factors, in conjunction with severely eroded soils of the area, have resulted in loss of vegetation cover within the riparian zone, and where vegetation cover remains, the species composition consists primarily of alien vegetation or indigenous pioneer species.

7.6 Heritage

A Heritage Impact Assessment was undertaken by Beyond Heritage (Pty) Ltd during September 2021. Information for this section was obtained from their report (Beyond Heritage, 2021). Refer to Appendix E1 for the full report.

7.6.1 Cultural Landscape

The cultural landscape of the region is characterised by a rural area that is extensively disturbed by mining activities and in the past by agricultural activities. From the archaeological database of the general area archaeological settlements show different land use patterns. Many agriculturally orientated societies (making Eiland, Leolo and Marateng pottery) built their villages in the valleys near cultivatable alluvium. Others (probably Ndebele) built terraced settlements on basal slopes of the valley edge, while farm labourers usually lived in the valleys as well. During the 19th Century, farmers lived around the edge of high meadows as a measure of protection. A few Middle Iron Age Eiland sites were also cited in this plateau environment.

7.6.2 Findings of the survey

The study area is disturbed from a heritage perspective by existing developments and finds were limited to an existing, fenced municipal cemetery located adjacent to the outlet pipeline to be constructed along the existing LWUA pipeline (Figure 7:2). The graves within the cemetery seem to be mostly modern graves with large granite headstones and covers although some graves are marked by stone grave dressings (Figure 7:3). It is estimated that there are more than a 100 graves in the cemetery over an area measuring approximately 100x100 meters and it is fenced.

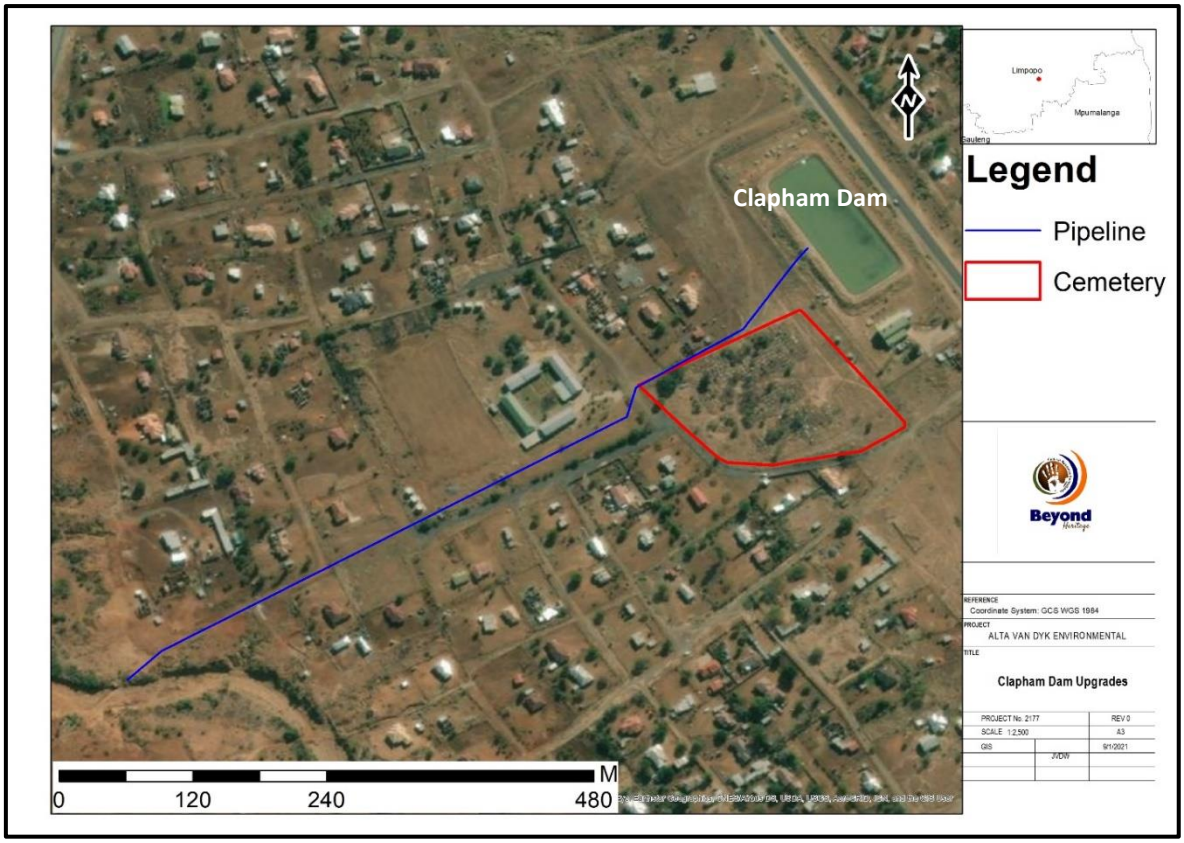
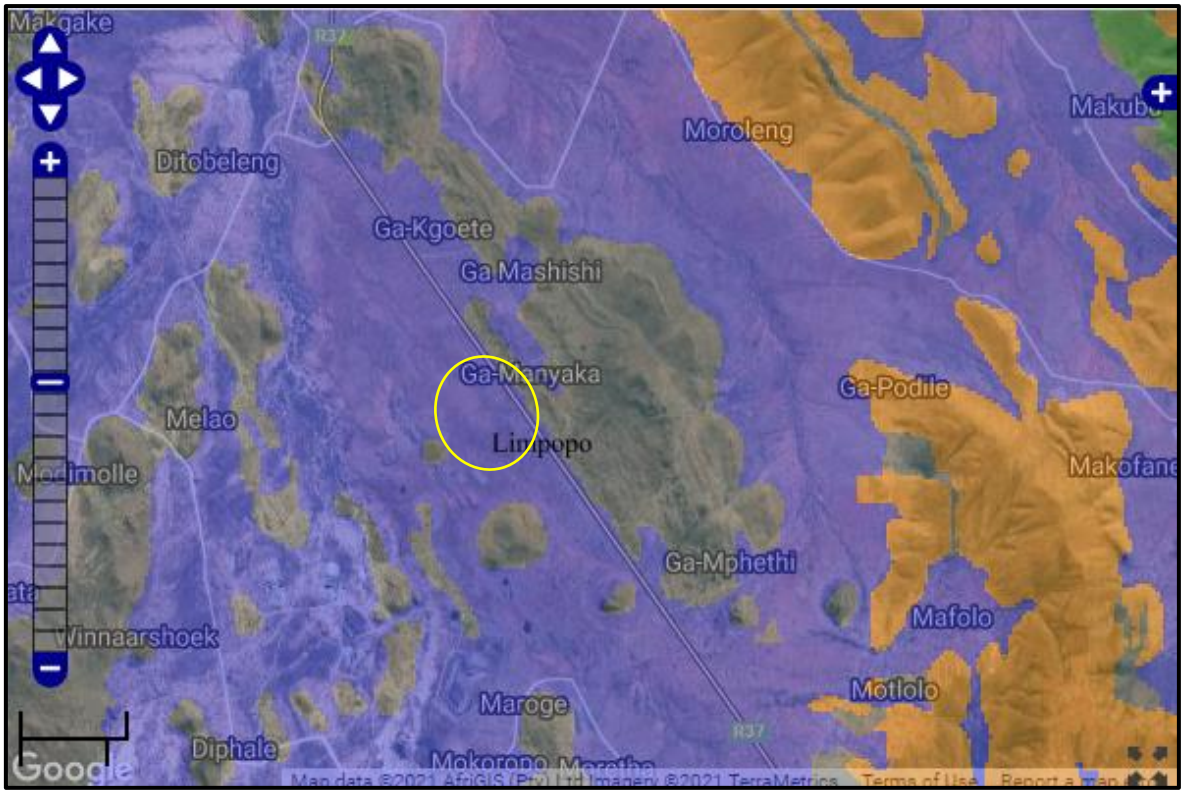


Figure 7:2 Locality of the cemetery in relation to the pipeline route and Clapham Dam (Beyond Heritage, 2021)

Figure 7:3 Photograph of the cemetery located south-west of Clapham Dam

7.7 Paleontological Heritage

Based on the SAHRA Paleontological map the study area is of insignificant and low sensitivity and no further studies are required in this regard (Figure 7:4).



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required

Figure 7:4 Paleontological sensitivity of the study area as indicated on the SAHRA Palaeontological sensitivity map (Beyond Heritage, 2021)

7.8 Social

As stated previously, the proposed project is located in the Fetakgomo Tubatse Local Municipality which is located north of N4 highway, Middleburg, Belfast and Mbombela; and east of the N1 highway; Groblersdal and Polokwane. The municipal area of jurisdiction covers approximately 4550 km^2. The area is known as the middelveld as it is located between the Highveld and Lowveld regions. It is located within the Sekhukhune District Municipality of the Limpopo Province (FTLM, 2021).

The municipality comprises approximately 342 villages. The municipality is largely dominated by rural landscape with only 6 (six) proclaimed townships. Like most rural municipalities in the Republic of South Africa, Fetakgomo Tubatse Local Municipality is characterised by weak economic base, inadequate infrastructure, major service backlogs, dispersed human settlements and high poverty levels. This lead to description of various municipal categorisation, for example, in its 'State of Local Government in South Africa: Overview Report, the Department of Cooperative Governance (CoG) (2009:22) describes category B4 municipalities as those municipalities which are mainly rural, located in economically depressed areas, consequently having difficulties in attracting and retaining skilled managers/professionals and are struggling from a revenue generation perspective. As earlier alluded to, the portions the rural heritage of the

municipality in terms of which settlements are far apart makes the provision and maintenance of services very costly and/or exorbitant. Some of these areas are too small to attain the economic threshold required to provide social facilities in a cost-effective manner (FTLM, 2021).

7.8.1 Demographic parameters

According to the 2011 Stats SA information; the total population of the Fetakgomo Tubatse Local Municipality is approximately 429 471 with 106 050 households; these make Fetakgomo Tubatse Local Municipality a municipality with highest population in the District. 2016 Community Survey as compared to the 2011 Stats SA results that the Fetakgomo Tubatse Local Municipality records population increase of 489 902 (12%) with household increase of 125 454 . As per the current community survey 2016 the Fetakgomo Tubatse Local Municipality households increased with 19 404 (15%) (FTLM, 2021).

7.8.2 Free basic water

Fetakgomo Tubatse Municipality is neither a Water Services Authority nor a Water Service Provider. These functions were assigned to the Sekhukhune District Municipality. The district municipality is responsible for provision of Free Basic Water to the 39 wards of the municipality. Fetakgomo Tubatse Municipality is a water stressed municipality. According to community survey 2016 records that 58 255 have access to piped water and at 67 208 have no access to piped water. Water shortage is the main challenge in all the villages or 39 wards. The main causes of water shortage or deficit is the insufficient sources of water (FTLM, 2021).

7.8.3 Sanitation

Sanitation services is a function of the Sekhukhune District Municipality. Fetakgomo Tubatse Municipality has a huge backlog in sanitation provision. Generally, sanitation facilities in some villages are in a poor state hence the Sekhukhune District Municipality is currently constructing VIP toilets in most villages of the municipality (FTLM, 2021).

7.8.4 Electricity

Fetakgomo Tubatse Local Municipality is not the electricity Authority nor Provider and this is the sole competency of ESKOM. The municipality is only responsible for the coordination of the service by making sure that communities are consulted and by compiling a priority list. The only provider of electricity in the region is ESKOM; which has installed basic infrastructure to provide electricity to the communities. For most part, the rural population has no electricity. Lack of access to electricity to some villages poses a problem to the municipality as it impacts negatively on local economic development and community projects. Plans are underway for the municipality to start positioning itself and applying for electricity authority during the financial year under review (FTLM, 2021).

8 ENVIRONMENTAL IMPACT ASSESSMENT

8.1 Methodology to be used

The significance of the identified impacts will be determined using an accepted methodology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998. As with all impact methodologies, the impact is defined in a semi-quantitative way and will be assessed according to methodology prescribed in the following section.

Table 8:1 Scale utilised for the evaluation of the Environmental Risk Ratings

Evaluation Component	Rating Scale and Description/criteria
MAGNITUDE of negative impact (at the indicated spatial scale)	**10 - Very high**: Bio-physical and/or social functions and/or processes might be *severely* altered. **8 - High**: Bio-physical and/or social functions and/or processes might be *considerably* altered. **6 - Medium**: Bio-physical and/or social functions and/or processes might be *notably* altered. **4 - Low** : Bio-physical and/or social functions and/or processes might be *slightly* altered. **2 - Very Low**: Bio-physical and/or social functions and/or processes might be *negligibly* altered. **0 - Zero**: Bio-physical and/or social functions and/or processes will remain *unaltered.*
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	**10 - Very high (positive)**: Bio-physical and/or social functions and/or processes might be *substantially* enhanced. **8 - High (positive)**: Bio-physical and/or social functions and/or processes might be *considerably* enhanced. **6 - Medium (positive)**: Bio-physical and/or social functions and/or processes might be *notably* enhanced. **4 - Low (positive)**: Bio-physical and/or social functions and/or processes might be *slightly* enhanced. **2 - Very Low (positive)**: Bio-physical and/or social functions and/or processes might be *negligibly* enhanced. **0 - Zero (positive)**: Bio-physical and/or social functions and/or processes will remain *unaltered.*
DURATION	**5 - Permanent** **4 - Long term**: Impact ceases after operational phase/life of the activity > 60 years. **3 - Medium term**: Impact might occur during the operational phase/life of the activity – 60 years. **2 - Short term**: Impact might occur during the construction phase - < 3 years. **1 - Immediate**
EXTENT (or spatial scale/influence of impact)	**5 - International**: Beyond National boundaries. **4 - National**: Beyond Provincial boundaries and within National boundaries. **3 - Regional**: Beyond 5 km of the proposed development and within Provincial boundaries. **2 - Local**: Within 5 km of the proposed development. **1 - Site-specific**: On site or within 100 m of the site boundary. **0 -** None

Evaluation Component	Rating Scale and Description/criteria
IRREPLACEABLE loss of resources	**5 – Definite** loss of irreplaceable resources. **4 – High** potential for loss of irreplaceable resources. **3 – Moderate** potential for loss of irreplaceable resources. **2 – Low** potential for loss of irreplaceable resources. **1 – Very low** potential for loss of irreplaceable resources. **0 - None**
REVERSIBILITY of impact	**5 –** Impact **cannot** be reversed. **4 – Low** potential that impact might be reversed. **3 – Moderate** potential that impact might be reversed. **2 – High** potential that impact might be reversed. **1 –** Impact **will be** reversible. **0 –** No impact.
PROBABILITY (of occurrence)	**5 - Definite:** >95% chance of the potential impact occurring. **4 - High probability:** 75% - 95% chance of the potential impact occurring. **3 - Medium probability:** 25% - 75% chance of the potential impact occurring **2 - Low probability:** 5% - 25% chance of the potential impact occurring. **1 - Improbable:** <5% chance of the potential impact occurring.
Evaluation Component	**Rating Scale and Description/criteria**
CUMULATIVE impacts	**High**: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern. ***Medium****:* The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern. ***Low****:* The activity is localised and might have a negligible cumulative impact. ***None****:* No cumulative impact on the environment.

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

- **SS (Significance Score) = (magnitude + duration + extent + irreplaceable + reversibility) x probability.**

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 8:2 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after implementation of the recommended mitigation measures.

Table 8:2 Scale used for the evaluation of the Environmental Significance Ratings

Significance Score	Environmental Significance	Description/criteria
125 – 150	**Very high (VH)**	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	**High (H)**	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.

Significance Score	Environmental Significance	Description/criteria
75 – 99	**Medium-high (MH)**	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked
40 – 74	**Medium (M)**	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	**Low (L)**	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	**Positive impact (+)**	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project

8.2 Identified impacts

The identified impacts in this assessment relates mainly to the listed activities triggered for this project, and therefore the impacts associated with the infrastructure on the banks of the Matadi River have been assessed.

Most of the potential impacts identified for this project will take place during the construction phase of the project. The construction phase is expected to last approximately 5 months and therefore most of the impacts associated with this project is temporary in nature. As the proposed infrastructure will be permanent features, impacts during closure have not been assessed as part of the basic assessment process, and closure cost have not been calculated for this project.

Several potential impacts are associated with the construction activities for this project. These impacts can be categorised as general construction related impacts as well as construction impacts specifically related to this site. General best practice rules to construction should be followed at all times. In addition to this, specific mitigation measures and recommendations are included to avoid or minimise the potential impacts identified. Potential impacts identified during the construction phase of the project is assessed in Table 8:3.

During the operational phase, only a few potential impacts have been identified, most of which will have a positive impact on either the physical or social environment. As the motivation for this project is to protect properties and potentially human lives in case of the Clapham Dam overflow, the maintenance of the proposed infrastructure to be constructed is of utmost importance. Potential impacts identified during the operational phase of the project is assessed in Table 8:4.

Table 8:3 Identified impacts during the construction phase of the Clapham Dam upgrades and associated infrastructure

Identified impacts during the construction phase of the Clapham Dam upgrades and associated infrastructure project																				
POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Soils																				
Loss of soils due to erosion from cleared surfaces	Clearance of vegetation for construction of outlet channel and gabion embankment	6	4	2	4	4	3	60	M	Low	Negative	Topsoil should be stripped and stockpiled for use during rehabilitation of the site after construction is completed. Where possible, construction activities should take place during the dry months in order to minimise erosion from rainwater run-off. Install erosion control measures (e.g. berms, soil traps, stormwater management measures, temporary diversion of upstream run-off from the construction and laydown are) to divert stormwater away from areas that are susceptible to erosion. A rehabilitation strategy focused on revegetation must be initiated after the construction phase.	2	2	1	1	1	2	14	L
Contamination of soils resources due to construction activities	Establishment of contractor laydown areas Construction of outlet channel and gabion embankment	4	2	1	4	4	3	45	M	Low	Negative	Prevent any spills from occurring. Machines must be parked within hard park areas or dedicated storage areas and must be checked daily for fluid leaks. Develop leak/spill procedure to clean up/remedy hydrocarbon spills. Construction vehicles must not parked within 100m from Matadi river. Spills to be cleared ad remediated immediately as per the leak/spill procedure. Spill kits to be available on site at all times.	2	2	1	1	1	2	14	L
Biodiversity																				
Loss of natural riparian vegetation	Vegetation clearing for laydown area and construction of outlet channel and gabion embankment	4	4	2	2	2	4	56	M	Low	Negative	Clearing of vegetation should be limited to the footprint of the laydown area, outlet channel and gabion embankment area. No additional areas are allowed to be cleared beyond this footprint. Construction vehicles must make use of existing gravel roads, no new roads are to be constructed. Cleared areas must be revegetated with indigenous vegetation.	2	2	1	2	1	2	16	L
Spread and/or establishment of alien and/or invasive species	Vegetation clearing for laydown area and construction of outlet channel and gabion embankment	4	3	2	2	3	3	42	M	Low	Negative	Alien/invasive vegetation must be cleared and destroyed immediately. Cleared areas must be rehabilitated with indigenous vegetation.	2	2	1	1	1	2	14	L
Introduction of nuisance vectors (pests) such as flies and rodents	Construction of outlet channel and gabion embankment	6	2	1	2	2	3	39	L	Low	Negative	Ensure the correct handling, storage and operation of general waste generated on the construction site. General waste bins to be provided and cleaned when required and removed to a permitted waste disposal facility. Remove general waste generated frequently as to prevent the development of a breeding habitat for nuisance pests such as flies and attracting rodents.	2	2	1	1	1	2	14	L
Surface water																				
Impacts on surface water quality due to seepage from a potential pollution source area	Establishment of contractor laydown area Construction of outlet channel and gabion embankment	8	2	2	2	1	4	60	M	Medium	Negative	Locate laydown area at least 100m from the Matadi River. Fence off laydown area and restrict all activities to fenced area. Implement a stormwater management plan for the laydown area. Rehabilitate and re-vegetate all disturbed areas outside the laydown area as soon as possible. Provide portable sanitation facilities for construction workers, which will not be located within 100m of the Matadi River.	2	2	1	1	1	2	14	L

Identified impacts during the construction phase of the Clapham Dam upgrades and associated infrastructure project																				
POTENTIAL ENVIRONMENTAL IMPACT	**ACTIVITY**	**ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION**								**Cumulative**	**Status**	**RECOMMENDED MITIGATION MEASURES/ REMARKS**	**ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION**							
		Magnitude	**Duration**	**Extent**	**Irreplaceability**	**Reversibility**	**Probability**	**TOTAL**	**Significance**				**Magnitude**	**Duration**	**Extent**	**Irreplaceability**	**Reversibility**	**Probability**	**TOTAL**	**Significance**
Increased sedimentation into river bed due to run-off and erosion from exposed surfaces	Establishment of contractor laydown area Construction of outlet channel and gabion embankment	6	2	2	4	4	4	72	M	Medium	Negative	Soil erosion must be prevented at all times and the contractor shall control soil erosion until an acceptable vegetation cover has been achieved or suitable alternative is implemented. The contractor must ensure that adequate erosion control measures are implemented in the affected areas and other high-risk areas, including at existing structures or activities with particular attention to erosion control at steep slopes and drainage lines.	4	2	1	2	2	2	22	L
Heritage																				
Impact on the graves and cemeteries	Construction activities	4	5	3	5	5	1	22	L	Low	Negative	The recorded cemetery should be indicated on development plans. Graveyard to be remain fenced off and clearly demarcated. All construction activities should be well outside of the fenced area. The graveyard must be accessible to descendants at all times. Dust control around the graveyard must be implemented.	4	5	3	1	1	1	14	L
Impact on Archaeological Resources	Construction activities	As the activities will take place mostly within the servitude of the existing LWUA pipeline, there are no impacts expected on heritage sites. However, should any heritage features be uncovered or excavated during the construction phase, the heritage chance find procedure will be implemented.										Implementation of a chance find procedure for the project (archaeology and palaeontology), should any heritage features be uncovered or excavated during the construction phase.	N/A							
Noise																				
General rise in ambient noise levels	Construction of outlet channel and gabion embankment	4	2	2	1	1	4	40	M	Low	Negative	Ensure high level of equipment maintenance, especially intake and exhaust mufflers. Replace pure tone (beeping) with broadband (hissing) reversing alarms. Construction activities will only take place during daylight hours.	2	2	2	1	1	2	16	L
Air Quality																				
Increased dust fallout	Construction of outlet channel and gabion embankment	4	2	1	1	1	4	36	L	Low	Negative	Apply dust suppressants to gravel roads used. Set speed limits to 30km/h on gravel roads to minimise the creation of fugitive dust within the project boundary.	2	2	1	1	1	2	14	L
Social																				
Benefits resulting from employment and income opportunities created by the construction of the outlet channel and gabion structures	Construction of outlet channel and gabion embankment	4	2	2	2	1	3	33	L	Low	Positive	Develop a clear and concise employment policy prioritising local employment. Employ local works if qualified applicants with the appropriate skills are available. Purchase goods and services at a local level if available.	6	2	2	2	1	4	52	M

Table 8:4 Identified impacts during the operational phase of the Clapham Dam upgrades and associated infrastructure

Identified impacts during the operational phase of the Clapham Dam upgrades and associated infrastructure																				
POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Soils																				
Protection of soil resources	Maintenance of gabion embankment on banks of Matadi River	4	2	1	3	3	2	26	L	Low	Positive	Ensure that the gabion embankment is properly maintained in order to minimise soil erosion.	6	4	2	2	1	4	60	M
Biodiversity																				
Spread of alien and/or invasive species	Maintenance of gabion embankment and outlet channel	4	4	2	2	3	3	45	M	Low	Negative	Alien/invasive vegetation must be cleared and destroyed immediately. Ensure that re-vegetation of cleared areas is established and free of alien/invasive species.	2	2	1	1	1	2	14	L
Surface water																				
Increased sedimentation into river bed due to run-off and erosion from exposed surfaces	Maintenance of gabion embankment and outlet channel	4	2	1	3	3	2	26	L	Low	Negative	Ensure that the gabion embankment is properly maintained in order to minimise soil erosion.	2	2	1	1	1	2	14	L
Heritage																				
No additional impacts are expected during the operational phase.																				
Noise																				
No additional impacts are expected during the operational phase.																				
Air Quality																				
No additional impacts are expected during the operational phase.																				
Social																				
Protection of properties and infrastructure	Maintenance of Clapham Dam overflow infrastructure	2	2	1	2	1	2	16	L	Medium	Positive	Ensure that the overflow infrastructure and flood protection measures is well-maintained in working order.	6	4	2	4	3	3	57	M

8.3 Cumulative impacts

According to the NEMA EIA Regulations, 2014, cumulative impact in relation to an activity means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Construction and operational activities from the proposed project can result in several effects on the natural and social environment. Although many of these are direct, the environmental effects of individual activities can combine and interact with other activities in time and space which results in cumulative impacts. Effects from different activities could potentially accumulate to cause additional effects that may not be apparent when assessing the individual activities .

Table 8:5 provides a summary of the potential cumulative impacts of the proposed project.

Table 8:5 Cumulative impacts

Environmental/Social aspect	Cumulative impact	Significance
Soils	The current loss of soils due to erosion on the banks of the Matadi River will be reduced by the construction of the gabion embankment on the banks of the Matadi River. This will improve the potential for erosion, however, it is limited to the embankment area and the positive cumulative impact is therefore low.	Low (+)
Vegetation	Loss of vegetation would result from clearing of vegetation for the construction of the gabion embankment. The footprint area is not deemed significant in extent and will not substantially add to the cumulative effect of loss of any endangered vegetation types.	Low (-)
Air quality	Cumulative dust generation in the area will increase due to construction activities, but will be limited to the construction phase only and is therefore considered a temporary impact. By implementing the proposed management measures, this impact will be well managed and will not have a lasting impact on the surrounding community.	Low (-)
Noise	Noise generated by the construction activities will add to the cumulative noise level. Construction activities, mainly earthmoving activities and movement of construction vehicles will add to the cumulative noise levels in the area. There are relatively few other noise sources in the area.	Low (-)
Socio-economic	The construction of the outlet pipeline and channel will ensure that should the Clapham Dam overflow due to pump failure or any other events, the surrounding properties will be protected from flooding.	Low (+)

9 CONCLUSION AND RECOMMENDATIONS

This chapter summarises the key findings of the Basic Assessment study and presents the EAP's conclusion and recommendations.

9.1 Summary of the potential impacts

A summary of the assessment of potential environmental impacts associated with the proposed project is provided in Table 9:1. The mitigated assessment assumes that technical design controls, as included in the project description, together with mitigation measures included would be implemented when the proposed project is constructed and operated. Most impacts identified had a significance rating of Medium without implementing mitigation measures, and could be reduced to a Low significance rating after implementing the proposed mitigation measures.

Table 9:1 Summary of significance of the potential impacts of the proposed project

Potential impact	Without mitigation	With mitigation	+/-
Construction phase			
Loss of soils due to erosion from cleared surfaces	Medium	Low	-
Contamination of soils resources due to construction activities	Medium	Low	-
Loss of natural riparian vegetation	Medium	Low	-
Spread and/or establishment of alien and/or invasive species	Medium	Low	-
Introduction of nuisance vectors (pests) such as flies, rodents and baboons	Low	Low	-
Impacts on surface water quality due to seepage from a potential pollution source area	Medium	Low	-
Increased sedimentation into river bed due to run-off and erosion from exposed surfaces	Medium	Low	-
Impact on the graves and cemeteries	Low	Low	-
General rise in ambient noise levels	Medium	Low	-
Increased dust fallout	Low	Low	-
Benefits resulting from employment and income opportunities created by the construction of the outlet channel and gabion structures	Low	Medium	+
Operational phase			
Protection of soil resources	Low	Medium	+
Spread of alien and/or invasive species	Medium	Low	-
Protection of properties and infrastructure	Low	Medium	+

9.2 Summary of specialist findings

A summary of the findings of the heritage specialist is provided below:

The impact of the proposed upgrades at Clapham Dam and associated infrastructure is limited to existing infrastructure (i.e., Clapham Storage Dam, scour outlet pipes and outlet pipeline). The latter being a new

proposed pipeline linking the Clapham Dam with the Matadi River following the existing bulk water pipeline and an informal gravel road. The adjacent area is a mostly built-up consisting of yards, stands, roads, houses and a school. These developments altered the study area and finds were limited to an existing, fenced municipal cemetery located adjacent to the outlet pipeline to be constructed along the existing LWUA pipeline. There is no alternative to re-route the pipeline because of the built-up nature of the area, furthermore the proposed pipeline will follow the existing bulk water pipeline that have already impacted on possible subsurface features. The cemetery is fenced and construction activities relating to the pipeline cannot encroach into the cemetery limiting impacts to the cemetery.

The impact of the proposed project on heritage resources can be mitigated to an acceptable level and it is recommended that the proposed project can commence on the condition that the following recommendations are implemented as part of the EMPr, based on approval from SAHRA:

- Implementation of a chance find procedure for the project in the EMPr;
- The existing fenced in municipal cemetery adjacent to the outlet pipeline must be indicated on development plans and avoided. Care must be taken to ensure that access to the cemetery is not restricted for family members during the construction phase.

9.3 Environmental impact statement

The proposed Clapham Dam upgrade and associated infrastructure project is not fatally flawed in any way. The construction and operational impacts, if effectively managed as per the mitigation measures recommended in this report and the EMPr, will have a predominately low residual significance rating.

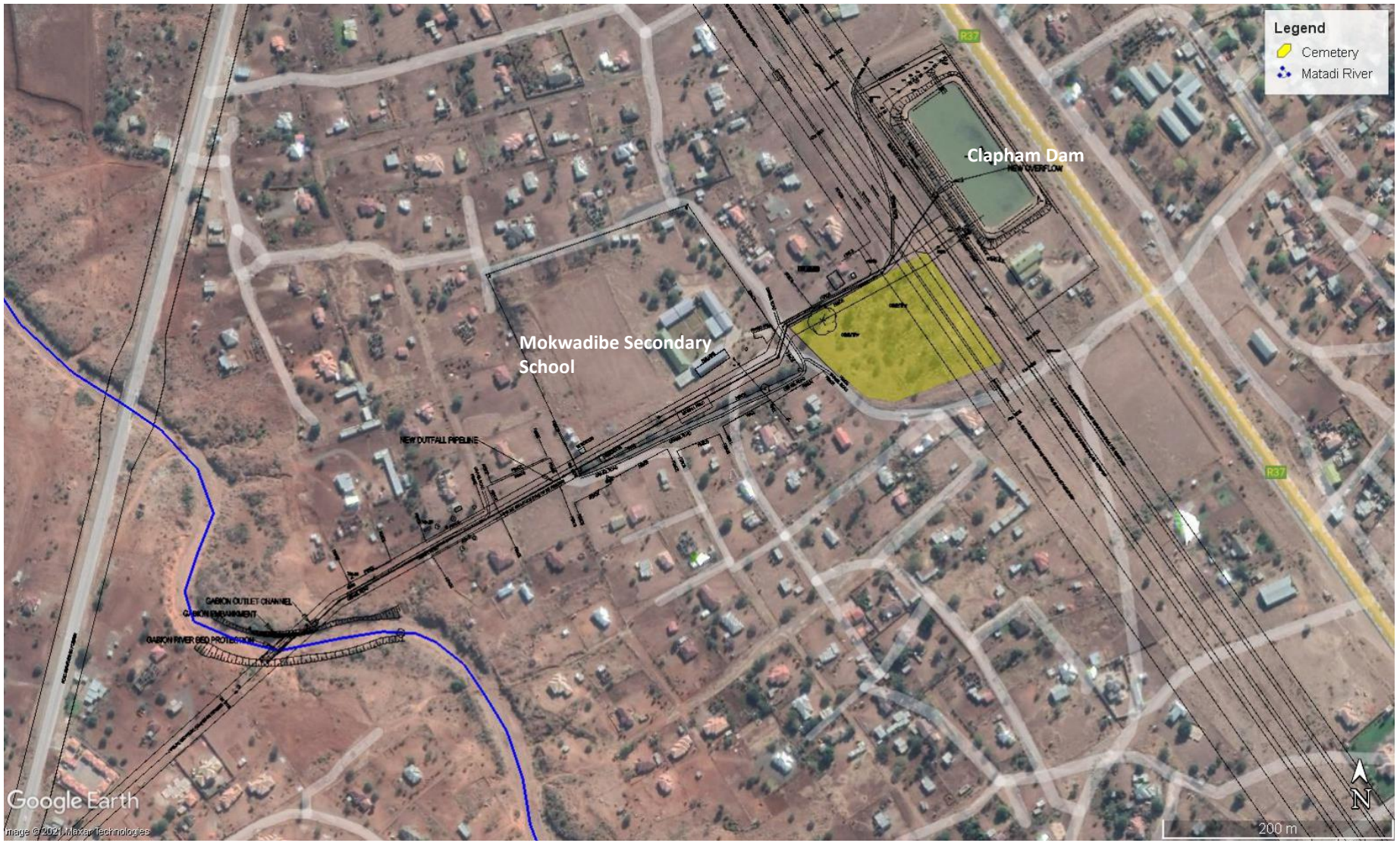
Positive impacts due to the upgrades of the Clapham Dam and associated infrastructure include potential employment opportunities during the construction phase and protection of soil resources, properties and infrastructure during the operational phase.

Most of the potential impacts identified for this project will take place during the construction phase of the project. The construction phase is expected to last approximately 5 months and therefore most of the impacts associated with this project are temporary in nature. As the proposed infrastructure will be permanent features, impacts during closure have not been assessed as part of the basic assessment process, and closure cost have not been calculated for this project.

Sensitive areas identified around the proposed Clapham Dam upgrades and associated infrastructure project include the cemetery and Matadi River. Please refer to Figure 9:1.

The no-go alternative is the option of not undertaking the proposed activity. Should the proposed upgrades and associated infrastructure at Clapham Dam not take place, any potential environmental and social impacts associated with construction and operation of the project will not take place. However, if the upgrades at Clapham Dam and associated instruct is not constructed, it could result in damage to private property, and in the worst case, loss of lives. Considering the above, the fact that potential negative impacts during construction will be temporary and can be adequately mitigated and managed, it is not recommended that the No-go Alternative be supported.

It is therefore recommended that the proposed Clapham Dam upgrades and associated infrastructure project be supported on the condition that all mitigation measures listed in this Basic Assessment Report, and the EMPr are implemented and adhered to throughout the project life.



Alta van Dyk Environmental	**CLAPHAM DAM UPGRADES AND ASSOCIATED INFRASTRUCTURE** **SENSITIVE AREAS IDENTIFIED**	**Figure 9.1**

Figure 9:1 Sensitive areas identified around the proposed Clapham Dam upgrades and associated infrastructure project

10 AFFIRMATION BY THE EAP

Appendix 1 Section 3 (1) (r) of the Environmental Impact Assessment (EIA) Regulations, 2014 require an undertaking under oath or affirmation by the EAP in relation to:

- The correctness of the information provided in the report;
- The inclusion of comments and inputs from stakeholders and interested and affected parties;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.

AVDE and the EAP managing this project hereby affirm that:

- To the best of our knowledge the information provided in the report is correct, and no attempt has been made to manipulate information to achieve a particular outcome. Some information, especially pertaining to the project description, was provided by the applicant and/or their sub-contractors.
- To the best of our knowledge, all comments and inputs from stakeholders and interested and affected parties have been captured in the report and no attempt has been made to manipulate such comment or input to achieve a particular outcome. Written submissions are appended to the report while other comments are recorded within the report. For the sake of brevity, not all comments are recorded verbatim and are mostly captured as issues, and in instances where many stakeholders have similar issues, they are grouped together, with a clear listing of who raised which issue(s).
- Information and responses provided by the EAP to interested and affected parties are clearly presented in the report. Where responses are provided by the applicant (not the EAP), these are clearly indicated.

11 REFRENCES

Beyond Heritage, 2021. Heritage Impact Assessment for the proposed Clapham Dam upgrades and associated infrastructure near Burgersfort, Limpopo Province. Report Number 2176. October 2021.

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SRK Consulting (SRK), 2019. Maintenance Management Plan for Lebalelo Water Users Association Pipeline. Reference Number: 538058/MMP Phase 2. April 2019.

12 APPENDICES

APPENDIX A: CURRICULUM VITAE OF THE EAP

APPENDIX B: PHOTOGRAPHS

APPENDIX C: SITE LAYOUT PLANS

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APPENDIX E: SPECIALIST STUDIES

APPENDIX E1: HERITAGE IMPACT ASSESSMENT

APPENDIX E2: SPECIALIST DECLARATION FORM

APPENDIX F: ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX G: EAP DECLARATION FORM