



**Lebalelo Water User Association**  
**SE2 pipeline and associated infrastructure**  
**Pre-construction Environmental Audit Report**  
**DFFE Reference Number: 14/12/16/3/3/1/2442**

September 2022

*Alta van Dyk Environmental Consultants cc*  
*Postnet Suite # 745*  
*Private Bag X 1007*  
*Lyttelton*  
*0140*  
*Tel: +2712 940 9457*  
[suzanne@avde.co.za](mailto:suzanne@avde.co.za)



# Lebalelo Water User Association

## SE2 pipeline and associated infrastructure

### Pre-construction Environmental Audit Report

September 2022

Project Ref: 131-001

Prepared by: Tyla Smith/Suzanne van Rooy



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#### VERSION CONTROL

Alta van Dyk Environmental cc

Version: Final

Reviewed by: Kirthi Peramaul

Approved by: Alta van Dyk

Signed:

A handwritten signature in black ink, appearing to read "Alta van Dyk", is written over a horizontal line.

Position: Environmental Specialist

Date: September 2022

## *Executive Summary*

### **Introduction**

Alta van Dyk Environmental Consultants cc (AVDE) was appointed as the independent Environmental Control Officer (ECO) for Lebalelo Water User Association (LWUA) proposed SE2 raw water pipeline and associated infrastructure project. This environmental audit report was undertaken in terms Appendix 7 of the Environmental Impact Assessment (EIA) Regulations (2014) of the National Environmental Management Act (Act No. 107 of 1998) (NEMA). The environmental audit was undertaken in order to comply with LWUA's approved Environmental Management Programme Report (EMPr) as well as the conditions stipulated in the Environmental Authorisation received from the competent authority, the Department of Forestry, Fisheries and the Environment (DFFE). The environmental audit report serves as the pre-construction audit report.

### **Audit findings**

An overall compliance rating of 99% has been achieved for the September 2022 audit, which also serves as the pre-construction compliance audit for the project. Conditions and commitments from three documents were considered, namely the environmental authorisation, approved EMPr and final comments from SAHRA. Refer to the table below.

<b>Document</b>	<b>% Compliance</b>
Environmental authorisation	100%
EMPr	100%
SAHRA	100%
<b>Total % Compliance</b>	<b>100%</b>

As construction of the authorised listed activities had not commenced at the time of the audit, several conditions and/or commitments were considered not applicable.

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## *Abbreviations*

APM	Archaeology, Palaeontology and Meteorites
AVDE	Alta van Dyk Environmental Consultants
BGG	Burial Grounds and Graves
DFFE	Department of Forestry, Fisheries and Environment
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme Report
EA	Environmental Authorisation
LWUA	Lebalelo Water User Association
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
NWA	National Water Act
ORWRDP	Olifants River Water Resource Development Project
SACNASP	South African Council for Natural Science Professions
SAHRA	South African Heritage Resources Association
SAHRIS	South African Heritage Resources Information System

# 1 INTRODUCTION

## 1.1 Scope and purpose of the report

This report presents the findings of the pre-construction environmental audit for Lebalelo Water User Association's (LWUA) proposed SE2 raw water pipeline and associated infrastructure project.

A Basic Assessment environmental process for the proposed project was undertaken in terms of the National Environmental Management Act (Act No. 107 of 198) (NEMA) (as amended), and the Final Environmental Management Programme Report (EMPr) was submitted to the Department of Forestry, Fisheries and the Environment (DFFE) as the competent authority on 3 March 2022. The Environmental Authorisation (EA) for the project was received from the DFFE on 28 April 2022 under reference number 14/12/16/3/3/1/2442.

An Environmental Authorisation amendment application and Final updated EMPr was submitted to the DFFE on 18 July 2022. The amended Environmental Authorisation was received from the DFFE on 16 August 2022.

This environmental audit report has been compiled in compliance with Section 34 of NEMA Environmental Impact Assessment (EIA) Regulations and aims to assess LWUA's level of compliance of the conditions of the Environmental Authorisation, the commitments in the Environmental Management Programme (EMPr) and conditions from South African Heritage Resources Association (SAHRA) for project.

Alta van Dyk Environmental Consultants cc (AVDE) was appointed as the independent Environmental Control Officer (ECO) by Infraburo (Pty) Ltd on behalf of LWUA. Infraburo serves as an implementation agent on the project. AVDE is appointed as the ECO for the construction phase of the project and was responsible for the pre-construction environmental audit.

## 1.2 Details of the holder of the environmental authorisation

The holder of the environmental authorisation is LWUA. The details of the contact person are shown in Table 1:1.

Table 1:1 Details of the applicant

<b>Authorisation holder</b>	Lebalelo Water User Association
<b>Address</b>	8 Charbury Road Lynnwood Manor 0700
<b>Contact person:</b>	Bertus Bierman
<b>Telephone number:</b>	082 462 7379
<b>Email address</b>	<a href="mailto:bierman@lebalelo.co.za">bierman@lebalelo.co.za</a>

## 1.3 Details of the Contractor

Esor Construction (Pty) Ltd was appointed by Infraburo on behalf of LWUA to undertake the construction activities for the SE2 raw water pipeline and associated infrastructure.

Table 1:2 provides the details of the appointed contractor.

Table 1:2 Details of the contractor

<b>Contractor</b>	Esor Construction (Pty) Ltd
<b>Address</b>	10 Flower Street Hermanus

<b>Contact person:</b>	Etienne Clarke
<b>Telephone number:</b>	079 493 6309
<b>Email address</b>	<a href="mailto:etiennec@esor.co.za">etiennec@esor.co.za</a>

## 1.4 Details and expertise of the person who prepared the environmental audit report

Suzanne van Rooy, Kirthi Peramaul and Tyla Smith of AVDE were responsible for the pre-construction environmental audit. The site visit was undertaken on 16 September 2022.

Table 1:3 provides the details of the persons who prepared the environmental audit report

**Table 1:3: Details of the persons who prepared the environmental audit report**

<b>Company</b>	Alta van Dyk Environmental Consultants cc
<b>Postal Address</b>	Postnet Suite # 745 Private Bag X 1007 Lyttelton 0140
<b>Telephone number:</b>	012 940 9457
<b>Fax number:</b>	086 634 3967
<b>Environmental Control Officer</b>	Suzanne van Rooy Pr.Sci.Nat (Reg Nr.400378/11) EAPASA Registered EAP (Ref 2019/1079) MPhil Environmental Management (University of Stellenbosch) <a href="mailto:suzanne@avde.co.za">suzanne@avde.co.za</a>
<b>Environmental Control Officer</b>	Kirthi Peramaul Pr.Sci.Nat (Reg Nr. 400012/18) EAPASA Registered EAP Ref 2020/1537) B.Sc. Hons Environmental Monitoring & Modelling <a href="mailto:kirthi@avde.co.za">kirthi@avde.co.za</a>
<b>Environmental Control Officer</b>	Tyla Smith BSc Geography and Environmental Management (University of Johannesburg) <a href="mailto:tyla@avde.co.za">tyla@avde.co.za</a>

Suzanne van Rooy holds a Master's Degree in Environmental Management from the University of Stellenbosch. In terms of professional affiliation, Suzanne is registered with the South African Council for Natural Science Professions (SACNASP - 400378/11) in Environmental Science field of practice. Suzanne's expertise is in the mining industry sector, focussing on Environmental Impact Assessments, Water Use Licence Applications, environmental performance assessments, water use licence audits, public participation and closure cost assessments. Her involvement in such projects varies from project management and co-ordination to the compilation and review of technical and environmental documents and reports. She has been involved in environmental authorisations for both underground and open cast mining operations, as well as the associated activities such as waste disposal facilities, conveyor routes, access roads, pollution control and other dams, undermining of wetlands and river crossings. She has also conducted various environmental feasibility reporting for potential mining projects.

Kirthi Peramaul (BSc Hons Environmental Monitoring and Modelling, Pr.Sci.Nat, Registered EAP). Kirthi has 13 years' experience in the environmental management field and is currently registered with the South



African Council of Natural Scientific Professions (SACNASP) as a Professional Natural Scientist (Registration No 400012/18: Environmental Science) and is as a Registered Environmental Assessment Practitioner with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Registration No 2020/1537). Kirthi specialises in environmental authorisations, environmental compliance monitoring, environmental management plans, water use authorisation, stakeholder engagement, risk assessments and blue and green drop auditing. She has been involved in ECO projects relating to mixed-use developments and housing development.

Tyla Smith holds a B.Sc. in Geography and Environmental Management from the University of Johannesburg. Tyla has been involved as an environmental consultant in various EIA's in terms of NEMA, Water Use Applications in terms of the National Water Act (NWA) (No 36 of 1998) and external audits. Tyla's responsibilities include the overall management of projects, and the identification and assessment of environmental impacts.

Suzanne van Rooy, Kirthi Peramaul and Tyla Smith meet the requirements for independence as they do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the EIA Regulations, 2017, and has no vested interest in the proposed activity proceeding, and also has no, and will not engage in, conflicting interests in the undertaking of the activity.

## 1.5 Audit report regulatory requirements

According to Appendix 7(2) of the NEMA Environmental Impact Assessment (EIA) Regulations, the content of an environmental audit report should entail:

- Reporting on the level of compliance with the conditions of the environmental authorisation and the EMPr, as well as the extent to which the avoidance, management and mitigation measures provided for in the EMPr achieve the objectives and outcomes of the EMPr;
- Identify and assess any new impacts and risks as a result of undertaking the activity;
- Evaluation the effectiveness of the EMPr;
- Identify shortcomings in the EMPr; and
- Identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr.

The content of the environmental audit report is specified in Appendix 7(3) of the NEMA EIA Regulations and set out in Table 1:4.

**Table 1:4: Content of the environmental audit report**

No	Description	Reference
1	An environmental audit report prepared in terms of these Regulations must contain–	
a)	details of the– (i) independent person who prepared the environmental audit report; and (ii) the expertise of the independent person that compiled the environmental audit report;	Section 1.3
b)	a declaration that the independent auditor is independent in a form as may be specified by the competent authority;	Annexure A
c)	an indication of the scope of, and the purpose of which, the environmental audit report was prepared;	Section 1.1
d)	a description of the methodology adopted in preparing the environmental audit report;	Section 3

No	Description	Reference
e)	an indication of the ability of the EMPr, the closure plan in the case of a closure activity to– (i) sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on and on-going basis; (ii) sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility in the case of a closure activity; and (iii) ensure compliance with the provisions of the environmental authorisation, EMPr and the closure plan in the case of a closure activity;	Section 5
f)	A description of any assumptions made, and any uncertainties or gaps in knowledge;	Section 3.4
g)	A description of any consultation process that was undertaken during the course of carrying out the environmental audit report;	Section 3
h)	A summary and copies of any comments that received during any consultation process; and	None received
i)	Any other information requested by the competent authority.	No additional information has been requested by the competent authority

## **2 PROJECT BACKGROUND AND DESCRIPTION**

### **2.1 Background to LWUA**

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 raw 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 distributing 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.

### **2.2 SE2 pipeline and associated infrastructure project**

LWUA is proposing a new raw water pipeline between the Spitskop Pump Station and Mototolo Mine, near Steelpoort in the Limpopo Province. This project is also referred to as the SE2 pipeline. There is an existing raw water pipeline running from LWUA's Havercroft Pump Station to Borwa Pump Station, referred to as Southern Extension 1 (SE1). The new pipeline (SE2) will be located within the current pipeline's (SE1) servitude. The purpose of the new pipeline (SE2) is to provide raw water to several mines and industries located along the pipeline route. The current pipeline's capacity is not sufficient for the growing water demand from LWUA's members.

The following is proposed for the new pipeline (SE2) project:

#### **Phase 1:**

- New pump station at existing Spitskop Pump Station (within fenced area of existing Spitskop Pump Station);
- New 500mm raw water pipeline 15 km in length from Spitskop Pump Station to Dwarsrivier Pump Station (within the current pipeline servitude); and
- New concrete reservoir to be constructed near the Dwarsrivier Pump Station (10 Mℓ).

#### **Phase 2:**

- Solar panels (75 x 75m) to be constructed within fenced area of existing Spitskop Pump Station. This is for a 0,5MW solar panel generation plant;
- New pump station adjacent to the current Dwarsrivier Pump Station; and
- New 300 or 350 mm raw water pipeline 9 km in length from the new Dwarsrivier Pump Station to Mototolo Mine (within current pipeline servitude).

#### **Currently, only Phase 1 activities will be constructed.**

The proposed SE2 pipeline will provide raw water to the following entities:

- Lion Smelter (Glencore South Africa);
- Dwarsrivier Mine (Assore);
- Two Rivers Mine (African Rainbow Minerals);
- Mototolo Mine (Anglo American Platinum); and
- Steelpoort Industrial Park (Freedom Property Fund) (potentially).

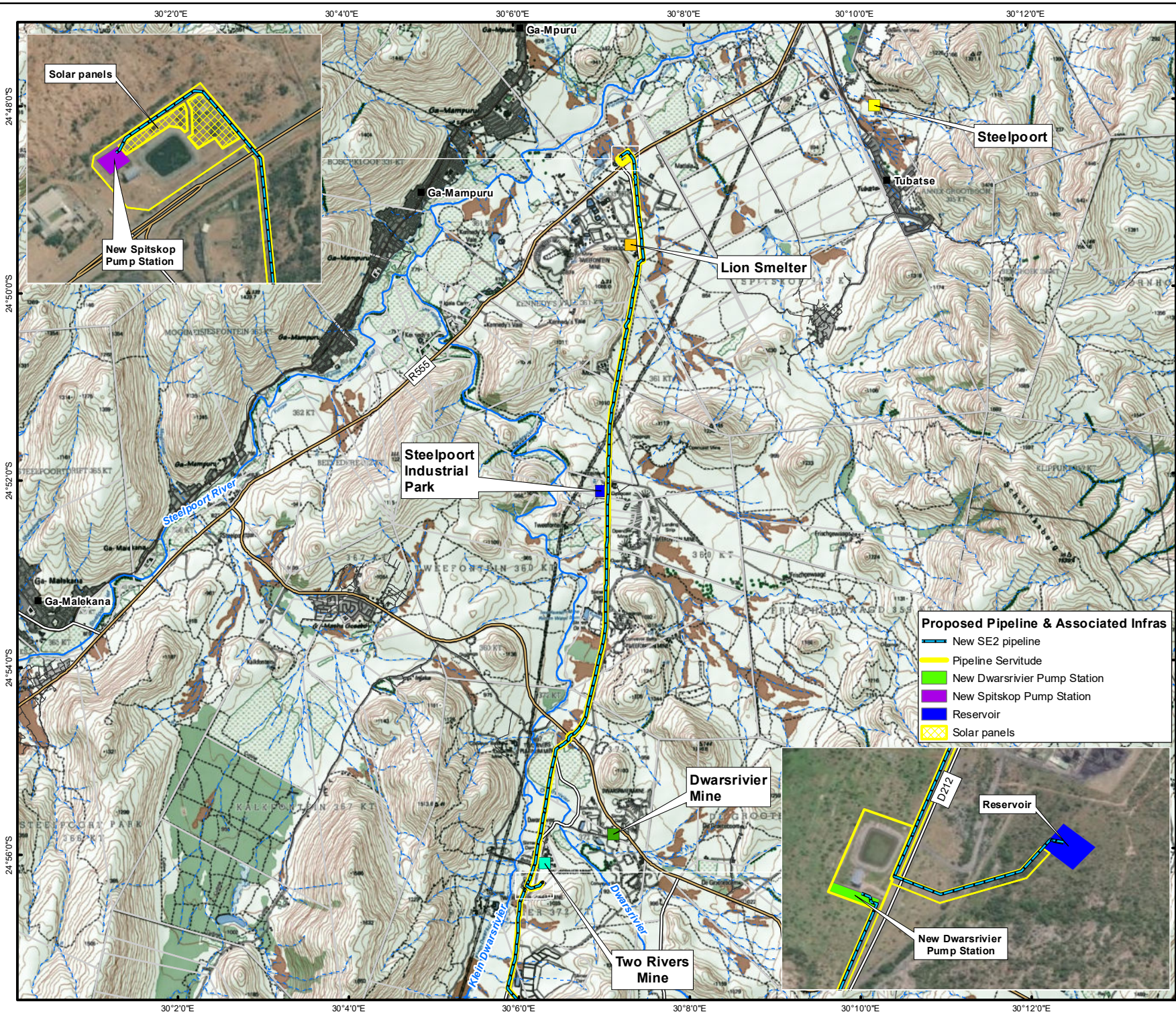
## 2.3 Locality

The proposed project is located near Steelpoort in the Limpopo Province. Table 2:1 outlines the details relating to the location of the proposed project. Refer to Figure 2:1 for the locality map.

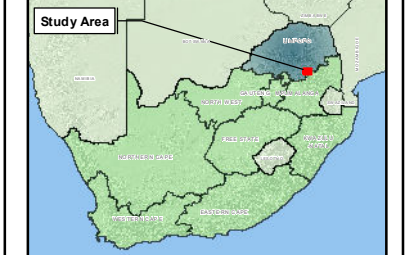
**Table 2:1 Project location details**

Site specific details	Description	
<b>Municipal jurisdiction</b>	Fetakgomo Tubatse Local Municipality Sekhukhune District Municipality	
<b>Ward number</b>	Ward 27	
<b>Nearest town</b>	The proposed SE2 pipeline starts approximately 5 km west from Steelpoort, Limpopo Province, from where it runs in a southerly direction to Mototolo Mine.	
<b>Site coordinates</b>	<b>Latitude</b>	<b>Longitude</b>
<b>New Spitskop Pump Station</b>	24°48'36.25"S	30° 7'14.65"E
<b>Solar panels</b>	24°48'33.73"S	30° 7'20.34"E
<b>SE2 Pipeline – Spitskop Pump Station to Dwarsrivier Pump Station (new reservoir): Start</b>	24°48'37.68"S	30° 7'17.04"E
<b>SE2 Pipeline – Spitskop Pump Station to Dwarsrivier Pump Station (new reservoir): End</b>	24°56'19.63"S	30° 6'17.57"E
<b>New Dwarsrivier Pump Station</b>	24°56'23.18"S	30° 6'2.78"E
<b>Reservoir</b>	24°56'19.26"S	30° 6'18.66"E
<b>SE2 Pipeline: Dwarsrivier Pump Station to Mototolo Mine: Start</b>	24°56'23.19"S	30° 6'3.70"E
<b>SE2 Pipeline: Dwarsrivier Pump Station to Mototolo Mine: End</b>	25° 0'33.07"S	30° 6'46.16"E

The approved project layout is shown in Figure 2:1



- ### Legend
- Dwaarsrivier Mine
  - Two Rivers Mine
  - Lion Smelter
  - Steelport
  - Steelport Industrial Park
  - Farm Portion
  - Village
  - Secondary Road
  - Tertiary Road
  - Street/Road
  - Perennial River Centre line
  - Non-Perennial River Centre line



- ### Proposed Pipeline & Associated Infras
- New SE2 pipeline
  - Pipeline Servitude
  - New Dwaarsrivier Pump Station
  - New Spitskop Pump Station
  - Reservoir
  - Solar panels

TITLE:  
**Figure 2:1 Locality map of the proposed SE2 pipeline and associated infrastructure: Spitskop Pump Station to Dwaarsrivier Pump Station**

CLIENT:  
**Lebalelo Water User Association**

DATE: Dec 2021	PROJECT: SE2_PIPELINE
DRAWN: THURLOW MAPPING	APPROVED: SVR

MAP: SE2_Pipeline_Locality_A3_Fig1.1.mxd	REV: 2
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**Alta van Dyk Environmental Consultants cc** (2011/059764/23)  
 VAT No: 4630259952  
 Tel: 012 940 9457  
 Fax: 086 634 3967  
 Cel: 061 403 2462



Projection: Transverse Mercator CM: 31 Datum: WGS 84  
 Source: OSM Vector 2021 -  
 NGI: TOP\_OSD\_Mosaic\_latest\_Editions\_Jan-2017.ecw  
 Inset: ESRI Data and Maps

SIZE:  
**A3**

Path: C:\GIS\_PROJECTS\_PVT\WVD\_ENVIRO\SE2\_PIPELINE\MAPPING\MXD\SE2\_Pipeline\_Locality\_A3\_Fig1.mxd

## **2.4 Construction of new infrastructure**

### **2.4.1 New pump station at Spitskop Pump Station**

A new pump station will be constructed next to the existing Spitskop Pump Station within the existing Lebalelo servitude. The existing connection point at the pump station will be used to abstract water from the existing Department of Water and Sanitation (DWS) pipeline between the De Hoop Dam and the Steelpoort Pump Station. Excavations will be done by mechanical means and by hand and the excavated material stockpiled on the site and used for backfilling. Any surplus material will be spread and finished off in the area around the pump station in the fenced off servitude.

Once the excavation has been completed a concrete blinding layer, approximately 50mm thick will be constructed. This will be followed by the fixing of steel reinforcement for the structure followed by the erection of shuttering according to the dimensions of the structure as per the relevant drawings.

After approval of shuttering and reinforcement for correctness the concrete will be cast, finished off, and after treatment of the concrete carried out to prevent it from drying out rapidly. Concrete will preferably be obtained from a ready-mix plant within the area.

Once the concrete has reached sufficient strength, the shutters will be stripped off, the concrete finished and the backfilling around the structure done.

The pump station walls will consist of steel columns with filled in brick.

The above work will be carried out by hand making use of people with the required skills under management and supervision of the Contractor.

### **2.4.2 Raw water pipeline (Spitskop Pump Station to Dwarsrivier Pump Station)**

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. Vehicle movement, trench excavation and parallel stockpiling of excavated material will take place within a corridor of approximately 25m (including the 15m servitude), except for where the pipeline crosses wetlands areas, where construction activities will be limited to the servitude, as per the recommendation of the wetland specialist.

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. This work will all be done in accordance with the levels as per the relevant drawings.

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 pipeline crosses the R555 and the road D1261\_010 (adjacent to the Lion Smelter) and the road to Mashishing (D1212\_05). The three pipeline crossings will be done by means of pipe jacking a sleeve underneath the roads and position the steel pipe through the sleeve. The ends of the sleeve will be closed off once the pipe is in position.

The total length of the pipeline is approximately 15 000m.

### 2.4.3 Concrete reservoir

A new 10ML reservoir will be constructed near the existing Dwarsrivier Pump Station. The work entails the following:

Excavations will be done by mechanical means and the excavated material will be spread and finished off in the area around the reservoir in the fenced off servitude.

Once the excavation has been completed a concrete blinding layer, approximately 50mm thick will be constructed. This will be followed by the fixing of steel reinforcement for the structure followed by the erection of shuttering according to the dimensions of the structure as shown on the drawings.

After approval of shuttering and reinforcement for correctness the concrete will be cast, finished off, and after treatment of the concrete carried out to prevent it from drying out rapidly. Concrete for the floor slab will preferably be obtained from a ready-mix plant within the area. The walls and roof of the reservoir utilise pre-fabricated modules to speed up the construction process and to limit construction activities on site.

The above work will be carried out by mechanical means and by hand making use of people with the required skills under management and supervision of the Contractor.

### 2.4.4 Valve chambers

Concrete valve chambers will be constructed at approximately 200m intervals along the pipeline. Such valve chambers are mainly used for maintenance purposes.

At the positions of the valve chambers the trench excavations will be widened to provide working space for the workers. The floor area of the valve chambers will be trimmed and compacted using hand tools after the concrete blinding layer will be constructed to provide a clean working area. This will be followed by the fixing of the steel reinforcement and erection of the shuttering.

Once the reinforcement has been inspected and approved the shuttering will be erected in accordance with the details on the drawings and the concrete cast using concrete from a ready-mix plant within the area.

After the concrete has gained sufficient strength, the shutters will be removed, the concrete finished off and the backfilling around the structures done and compacted and the areas finished off neatly. Any excess material will be spread over the area round the structures and finished off.

LWUA is also considering using pre-cast chambers, should it be a more viable option.

## 2.5 Environmental related permits undertaken

Triggerred listed activities in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations (as amended in 2017) are shown in Table 2:2 below.

**Table 2:2: Listed activities triggered by the SE2 pipeline and associated infrastructure project**

List and activity number	Listed activity	Description of activity
Listing 1 Activity 9	The development of infrastructure exceeding 1 000 meters in length for the bulk transportation of water or storm water – (i) with an internal diameter of 0.36 meters or more; or (ii) with a peak throughput of 120 litres per second or more,	The development of the SE2 raw water pipeline between Spitskop Pump Station and Dwarsrivier Pump Station is 15 km in length with an internal diameter of 500mm (0.5m), and therefore triggers this activity.

List and activity number	Listed activity	Description of activity
		The development of the SE2 raw water pipeline between Dwarsrivier Pump Station and Mototolo Mine is 9 km in length with an internal diameter of 300/350mm (0.3/0.35m), and therefore does not trigger this activity.
Listing 1 Activity 19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;	The proposed SE2 raw water pipeline crosses several watercourses and earthworks will be required within these watercourses to construct the proposed pipeline.
Listing 1 Activity 27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation,	Clearance of indigenous vegetation will take place for the proposed SE2 pipeline, but as it is a linear activity, this listed activity does not apply. However, the following areas will also be cleared: Solar panels (0.5 ha) New Spitskop Pump Station (0.16 ha) New reservoir at Dwarsrivier Pump Station (0.53ha) New Dwarsrivier Pump Station (0.2 ha) The cumulative clearance of indigenous vegetation is more than 1 ha.
Listing 3 Activity 2	The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres. <u>Limpopo:</u> ii. Outside urban areas: (dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;	A concrete reservoir with a capacity of 10Mℓ will be developed outside an urban area, within an Ecological Support Area as per the Limpopo Conservation Plan (LCP).
Listing 3 Activity 12	The clearance of an area of more than 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. <u>Limpopo:</u> i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; or	The proposed SE2 pipeline and associated infrastructure will require the clearing of more than 300m <sup>2</sup> of indigenous vegetation, within in areas listed as Critical Biodiversity areas and Ecological support areas as per the LCPv2. The project area overlaps predominantly within an ecosystem that is listed as Least Concern, with a portion of the northern extent of the SE2 pipeline located in and endangered ecosystem.
Listing 3 Activity 14	The development of-	The proposed SE2 pipeline crosses watercourses outside an urban



List and activity number	Listed activity	Description of activity
	ii. infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs- (a) within a watercourse; (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; <u>Limpopo:</u> i. Outside urban areas: (bb) National Protected Area Expansion Strategy Focus areas; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plan adopted by the competent authority or in bioregional plans;	area, within areas considered as Priority Focus Areas as per the National Protected Area Expansion Strategy and areas listed as Critical Biodiversity areas and Ecological support areas as per the LCPv2.

In addition, a Water Use Licence Application was submitted to the DWS in terms of the National Water Act (Act No. 36 of 1998) (NWA) as Section 21 water uses are triggered by the proposed development.

Table 2:3 list the water uses that required authorisation in terms of Section 21 of the National Water Act for the development.

**Table 2:3 List of Section 21 Water Uses 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	<ul style="list-style-type: none"> <li>Watercourse crossing by SE2 pipeline</li> <li>Activities to be undertaken with a horizontal distance of 100m from the edge of the watercourse and within 500m of a delineated wetland.</li> </ul>

A General Authorisation in terms of the NWA was issued by the DWS on 12 October 2021 for the proposed project.

### 3 METHODOLOGY

#### 3.1 Audit process

The following activities were undertaken as part of the environmental audit:

- Environmental audit preparation, including the compilation of an environmental audit checklist including the commitments contained in the EMPr, Environmental Authorisation and conditions received from SAHRA;
- An on-site assessment undertaken on 16 September 2022, to assess the level of compliance to the EMPr, environmental authorisation and conditions from SAHRA and to document the pre-construction state of the site and document photographic evidence;
- Meeting with the on-site contractor (refer to Annexure B for the attendance register)
- Undertaking environmental awareness training with the contractor (refer to Annexure C for the presentation);
- Taking of photographs of observations made during the on-site assessment (Annexure D);
- Information gathered from the contractor;
- Relevant documentation reviewed on site;
- Compilation of the environmental audit report.

The audit process is illustrated in Figure 3:1.

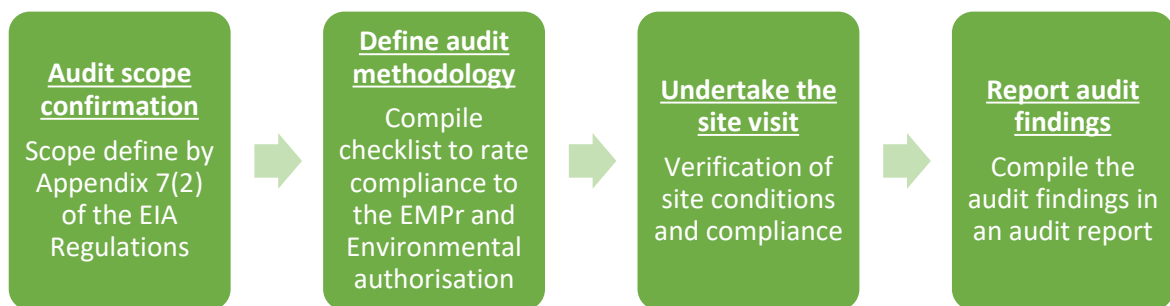


Figure 3:1 Overview of the audit process

#### 3.2 Documents reviewed

The following documents were used to create the audit checklist:

- Environmental Authorisation (28 April 2022) and Amended Environmental Authorisation (16 August 2022) received from the DFFE;
- Final Updated Environmental Management Programme (July 2022);
- Final comment letter from SAHRA.

#### 3.3 Audit scoring system

Table 3:1 provides the scoring system used to assess each of the conditions of the Environmental Authorisation, EMPr commitment and SAHRA conditions. Each section has a percentage of compliance on all the conditions/commitments to be able to provide an overall compliance review.

**Table 3:1 Scoring system**

<b>Legend</b>	<b>Colour Coding</b>
Fully Compliant	2
Partially Compliant	1
Non-Compliant	0
Not Applicable	NA

### **3.4 Assumptions and limitation**

The following assumptions and limitations applies to the this environmental audit report:

- All project information relevant to the audit has been provided by LWUA and Esor Construction (Pty) Ltd;
- Information provided by LWUA is correct and valid at the time of the audit;
- The EMPr, environmental authorisation and final comment letter from SAHRA represents all the documentation that contain mitigation measures and/or commitments/conditions.

## **4 AUDIT FINDINGS**

The results of the audit findings undertaken for the proposed project is shown as follows:

- Table 4:1 Audit findings of the environmental authorisation;
- Table 4:2 Audit findings of the EMP; and
- Table 4:3 Audit findings of SAHRA's conditions.

Table 4:1 Audit findings of the environmental authorisation

Audit findings of the Environmental Authorisation				
NR	ENVIRONMENTAL AUTHORISATION CONDITION	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
<b>SCOPE OF AUTHORISATION</b>				
1	The preferred 15 km pipeline route between the Spitskop Pump Station and Dwarsrivier Pump Station reservoir and the 9 km pipeline route between Dwarsrivier Pump Station and Mototolo Mine for the construction of the new Lebalelo Water User Association Southern Extension 2 (SE2) raw water pipeline, Option 2 for the new concrete Reservoir, and the associated infrastructure between the Spitskop Pump Station and the Mototolo Mine near Steelpoort, within the Fetakgomo Tubatse Local Municipality, Limpopo Province, are approved as per the geographic coordinates cited in the tables above.	2	Construction has not commenced yet, but the project will take place at the geographic co-ordinates sited within the Environmental Authorisation.	The SE2 pipeline and associated infrastructure may only be constructed as per the coordinates included in the environmental authorisation received from the DFFE.
2	Authorisation of the activity is subject to the conditions contained in this Environmental Authorisation, which form part of the Environmental Authorisation and are binding on the holder of the authorisation.	2	LWUA understands that the authorisation for the SE2 Raw Water Pipeline and Associated Infrastructure project is subject to the conditions set out in the Environmental Authorisation.	None
3	The holder of the authorisation is responsible for ensuring compliance with the conditions contained in this Environmental Authorisation. This includes any person acting on the holder's behalf, including but not limited to, an agent, servant, contractor, sub-contractor, employee, consultant or person rendering a service to the holder of the authorisation.	2	LWUA understands that the responsibility to ensure compliance of these conditions lies with them as the applicant and will ensure any person acting on their behalf adhere to the conditions of the approved Environmental Authorisation. LWUA has appointed Infraburo as the implementation agent and Esor Construction as the site contractor and has ensured that the contractor understands the conditions of the authorisation.	All conditions that need to be adhered to be included within a contactor pack to be given to all persons to ensure compliance with the conditions set out by the competent authorities.
4	The activities authorised may only be carried out at the property as described above.	2	Construction activities has not yet commenced, however the Contractor is aware of the approved layout.	None
5	Any changes to, or deviations from, the project description set out in this Environmental Authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further Environmental Authorisation in terms of the regulations.	NA	This condition is not applicable at the time of this audit (September 2022) as no change in project description has taken place.	LWUA to take cognisance that any changes to the project description set out in the Environmental Authorisation must be approved in writing from the Department before the changes may be effected.
6	The holder of an Environmental Authorisation must apply for an amendment of the Environmental Authorisation with the Competent Authority for any alienation, transfer or change of ownership rights in the property on which the activity is to take place.	NA	This condition is not applicable at the time of this audit (September 2022) as no alienation, transfer or change of ownership rights in the property on which the activity is to take place has been undertaken.	LWUA to take cognisance that if the ownership rights change a formal amendment needs to be applied for with the Department.

Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
7	This activity must commence within a period of ten (10) years from the date of issue of this Environmental Authorisation. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for Environmental Authorisation must be made in order for the activity to be undertaken.		NA	This condition is not applicable, as the construction of the proposed SE2 raw water pipeline and associated infrastructure is planned to commence on 27 September 2022, which falls within the authorisation period.	LWUA to take cognisance that if the activity does not commence within 10 years of the Environmental Authorisation (28 April 2032) the authorisation will lapse and a new application will need to be applied for with the Department.
8	Construction must be completed within five (05) years of the commencement of the activity on site.		NA	This condition will only be applicable from the 28 April 2027, five (5) years from the date of approved authorisation.	LWUA to take cognisance that all construction activities must be completed within 5 years of the Environmental Authorisation (28 April 2027)
NOTIFICATION OF AUTHORISATION AND RIGHT TO APPEAL					
9	The holder of the authorisation must notify every registered interested and affected party, in writing and within 14 (fourteen) calendar days of the date of this authorisation, of the decision to authorise the activity.		2	Alta van Dyk Environmental Consultants (AvDE) undertook the environmental authorisation process for this project and notified all I&APs of the environmental authorisation for the SE2 Raw Water Pipeline and associated infrastructure project on 9 May 2022. A notification letter was sent via email to stakeholders. Proof of this can be found within the onsite compliance file. The Environmental Authorisation was granted on 28 April 2022 the date of notification falls within the 14 calendar days. In addition, an amendment to the environmental authorisation was received on 16 August 2022. Stakeholders were notified of the amendment via email on 18 August 2022, which is within 14 days of receiving the environmental authorisation amendment.	Proof of notification of the environmental authorisation and amendment to stakeholders must be kept in the on-site compliance file.
10	The notification referred to must -				
10.1	specify the date on which the authorisation was issued;		2	The date of authorisation was included within the communication sent to all stakeholders when notifying them of the approved Environmental Authorisation and amendment.	None
10.2	inform the interested and affected party of the appeal procedure provided for in the National Appeal Regulations, 2014		2	The appeal procedure was included within the communication sent to all stakeholders when notifying them of the approved Environmental Authorisation and amendment.	None
10.3	advise the interested and affected party that a copy of the authorisation will be furnished on request; and		2	A copy of the approved authorisation and amendment was included within the communication sent to all stakeholders when notifying them of the approved Environmental Authorisation and amendment	None
10.4	give the reasons of the Competent Authority for the decision.		2	Reasons from the competent authority on the decision was included within the communication sent to all stakeholders when notifying them of the approved Environmental Authorisation.	None
COMMENCEMENT OF THE ACTIVITY					

Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
11	The authorised activity shall not commence until the period of the submission of appeals has lapsed as per the National Appeal regulations, 2014, and no appeal has been lodged against the decision. In terms of Section 43(7), an appeal under Section 43 of the National Environmental Management Act, Act No. 107 of 1998, as amended will suspend the Environmental Authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged you may not commence with the activity until such time that the appeal has been finalised.		2	It was confirmed with the DFFE on 9 September 2022 that no appeals were received for the SE2 raw water pipeline and associated infrastructure project.  It was confirmed on the site visit on 16 September 2022 that no activities have commenced.	None
<b>MANAGEMENT OF THE ACTIVITY</b>					
12				This condition was removed as part of the environmental authorisation amendment (14/12/16/3/3/1/2442/AM1) dated 16 August 2022.	None
13.1 - 13.6				This condition was removed as part of the environmental authorisation amendment (14/12/16/3/3/1/2442/AM1) dated 16 August 2022.	None
14				This condition was removed as part of the environmental authorisation amendment (14/12/16/3/3/1/2442/AM1) dated 16 August 2022.	None
15.1 - 15.4				This condition was removed as part of the environmental authorisation amendment (14/12/16/3/3/1/2442/AM1) dated 16 August 2022.	None
16	The EMPr must be implemented and strictly enforced during all phases of the project. It shall be seen as a dynamic document and shall be included in all contract documentation for all phases of the development when approved.		2	The EMPr has been included within the on-site compliance file. LWUA has appointed Infraburo as the implementation agent and Esor Construction as the site contractor and has ensured that the contractor understands the conditions of the EMPr.	It is advised that all conditions that need to be adhered to be included within a contractor pack to be given to all persons to ensure compliance with the conditions set out by the competent authorities.
17	Changes to the approved EMPr must be submitted in accordance with the EIA Regulations applicable at the time.		NA	No changes to the EMPr is currently required.	LWUA to take cognisance that any changes to the EMPr must be submitted in accordance with the EIA Regulations applicable at the time.
18	The Department reserves the right to amend the approved EMPr should any impacts that were not anticipated or covered in the BAR be discovered.		2	LWUA understands that the Department has the right to amend the EMPr if any impact not anticipated is discovered.	None
<b>FREQUENCY AND PROCESS OF UPDATING THE EMPR</b>					
19	The EMPr must be updated where the findings of the environmental audit report, contemplated in Condition 26 below, indicate insufficient mitigation of environmental impacts associated with the undertaking of the activity, or insufficient levels of compliance with the environmental authorisation or EMPr.		NA	This condition is not applicable, at the time if this audit (September 2022) no insufficient mitigation of environmental impacts have been identified.	LWUA to take cognisance that if any insufficient mitigation measures are identified the EMPr must be updated.
20	The updated EMPr must contain recommendations to rectify the shortcomings identified in the environmental audit report.		NA	This condition is not applicable, at the time if this audit September 2022 no update of the EMPr has been undertaken.	LWUA to take cognisance that if the EMPr is updated, the update must contain sufficient recommendations to rectify shortcomings identified.

Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
21	The updated EMPr must be submitted to the Department for approval together with the environmental audit report, as per Regulation 34 of the EIA Regulations, 2014 as amended. The updated EMPr must have been subjected to a public participation process, which process has been agreed to by the Department, prior to submission of the updated EMPr to the Department for approval.		NA	This condition is not applicable, at the time if this audit September 2022 no update of the EMPr has been undertaken.	LWUA to take cognisance that if the EMPr is updated a public participation process needs to be undertaken prior to submission to the Department.
22	In assessing whether to grant approval of an EMPr which has been updated as a result of an audit, the Department will consider the processes prescribed in Regulation 35 of the EIA Regulations, 2014 as amended. Prior to approving an amended EMPr, the Department may request such amendment to the EMPr as it deems appropriate to ensure that the EMPr sufficiently provides for avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.		NA	This condition is not applicable, at the time if this audit September 2022 no update of the EMPr has been undertaken.	None
23	The holder of the authorisation must apply for an amendment of an EMPr, if such amendment is required before an audit is required. The amendment process is prescribed in Regulation 37 of the EIA Regulations, 2014, as amended. The holder of the authorisation must request comments on the proposed amendments to impact management outcomes of the EMPr or amendment to the closure objectives of the closure plan from potentially interested and affected parties, including the competent authority, by using any of the methods provided for in the Act for a period of at least 30 days.		NA	This condition is not applicable, at the time if this audit September 2022 no amendment of the EMPr has been undertaken.	LWUA to take cognisance that if the EMPr is updated a formal amendment process will need to be followed as per the EIA Regulations.
<b>MONITORING</b>					
24	The holder of the authorisation must appoint an experienced Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in this environmental authorisation are implemented and to ensure compliance with the provisions of the approved EMPr.		2	LWUA has appointed Alta van Dyk Environmental Consultants cc (AvDE) as the ECO for this project. AvDE will be doing monthly inspections and environmental auditing to ensure all conditions stipulated by the competent authorities are being adhered to.	None
24.1	The ECO must be appointed before commencement of any authorised activities.		2	AVDE were appointed as the ECO for this project before the commencement of the authorised activities.  Notification of appointed of AvDE as the ECO for this project was communicated with the DEFE on the 13 September 2022, which is prior to the commencement of construction of authorised activities.	It is recommended that a copy of the notification letter to the DFFE on appointment of the ECO be kept on file for record keeping purposes.
24.2	Once appointed, the name and contact details of the ECO must be submitted to the <i>Director: Compliance Monitoring</i> of the Department.		2	A notification letter was sent on 13 September 2022 to the Director: Compliance Monitoring at the Department indicating that AvDE were appointed as the ECO for this project.	None



Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
24.3	The ECO must keep record of all activities on site, problems identified, transgressions noted and a task schedule to tasks undertaken by the ECO.		2	All tasks undertaken by the ECO is explained in Section 3 of the environmental audit report.	None
24.4	The ECO must remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.		2	The ECO will remain employed for the duration of the construction phase until all construction activities have been undertaken and rehabilitation have been completed.	None
RECORDING AND REPORTING TO THE DEPARTMENT					
25	All documentation e.g. audit/monitoring/compliance reports and notifications, required to be submitted to the Department in terms of this environmental authorisation, must be submitted to the <i>Director: Compliance Monitoring</i> of the Department		2	At the time of this audit (September 2022) a notification letter informing the Department and Director: Compliance Monitoring of the appointment of AvDE as the ECO was submitted.  No other documentation at the time of this audit were identified for submission.	It is recommended that a copies of the environmental audit reports and submission thereof to the department be kept in the on-site compliance file.
26	The holder of the environmental authorisation must, for the period during which the environmental authorisation and EMPr remain valid, ensure that project compliance with the conditions of the environmental authorisation and the EMPr are audited, and that the audit reports are submitted to the <i>Director: Compliance Monitoring</i> of the Department.		2	AvDE have been appointed as the ECO on this development. This report serves as the pre-construction environmental audit. Audit reports will be undertaken monthly during construction to ensure compliance with the condition in the environmental authorisation and EMPr. A close out audit will be undertaken once construction is completed to ensure rehabilitation was undertaken as per the conditions stipulated within the environmental authorisation and EMPr.	It is recommended that all audit reports to be kept on site within the on site compliance file.
27	The frequency of auditing and of submission of the environmental audit reports must be as per the frequency indicated in the EMPr, taking into account the processes for such auditing as prescribed in Regulation 34 of the EIA Regulations, 2014 as amended.		2	AvDE have been appointed as the ECO on this development. Audit reports will be undertaken monthly during construction to ensure compliance with this condition and frequency set out within the EMPr.	It is recommended that all audit reports to be kept on site within the on site compliance file.
28	The holder of the authorisation must, in addition, submit environmental audit reports to the Department within 30 days of completion of the construction phase (i.e. within 30 days of site handover) and a final environmental audit report within 30 days of completion of rehabilitation activities.		2	AvDE have been appointed as the ECO on this development. A close out audit will be undertaken once construction is completed to ensure rehabilitation was undertaken as per the conditions stipulated within the environmental authorisation and EMPr.	It is recommended that all audit reports to be kept on site within the on site compliance file.
29	The environmental audit reports must be compiled in accordance with Appendix 7 of the EIA Regulations, 2014 as amended and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the environmental authorisation conditions as well as the requirements of the approved EMPr.		2	AvDE have been appointed as the ECO on this project. This report serves as the pre-construction environmental audit report. All audit reports will be undertaken in line with the Appendix 7 of the EIA Regulations, 2014 as amended. The date, name of auditor and outcome for every condition is included within this audit report.	It is recommended that all audit reports to be kept on site within the on site compliance file.

Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
30		Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.	2	All audit reports will be kept within the on-site compliance file to ensure all audits are available for inspection by a competent authority.	It is recommended that all audit reports to be kept on site within the on site compliance file.
<b>NOTIFICATION TO AUTHORITIES</b>					
31		A written notification of commencement must be given to the Department no later than fourteen (14) days prior to the commencement of the activity. The notice must include a date on which it is anticipated that the activity will commence, as well as a reference number.	2	AvDE were appointed as the ECO for this project. Notification of the commencement of this development was communicated with the DFFE on 13 September 2022, 14 days prior to the commencement of construction of authorised activities. Commencement of construction is planned for 27 September 2022.	It is recommended that the notification letter to the DFFE be kept within the on-site compliance file.
<b>OPERATION OF THE ACTIVITY</b>					
32		A written notification of operation just be given to the Department no later than fourteen (14) days prior to commencement of the activity operational phase.	NA	This condition is not applicable at this stage as the project is currently in pre- construction phase.	LWUA to take cognisance that a notification letter must be sent to the Department no later than fourteen (14) days prior to commencement of operation.
<b>SITE CLOSURE AND DECOMMISSIONING</b>					
33		Should the activity ever cease or become redundant, the holder of the authorisation must undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time.	NA	This condition is not applicable at this stage as the activities have not ceased or become redundant.	LWUA to take cognisance that is activities cease or become redundant that the required legal actions must be followed.
<b>SPECIFIC CONDITIONS</b>					
34		No activities, which require a water use authorisation, must be allowed to encroach into a water resource without a water use authorisation being in place from the Department of Water and Sanitation.	2	LWUA holds a General Authorisation from the Department of Water and Sanitation dated 12 October 2021, this authorisation allows for activities to take place within the watercourses.	It is recommended that the approved General Authorisation be kept within the on-site compliance file.
35		The micro-siting / pegging of the route for the Lebalelo raw water pipeline must be undertaken prior to commencement with construction activities. This final walk through of the pipeline route must be undertaken by a botanical specialists to identify any protected and endangered plants and trees for a search and rescue operations. The findings of this undertaking must inform the final layout plan per condition 12 and 13 above.	2	Micro pegging has not yet taken place as construction activities are yet to commence. At the time of this audit (16 September 2022), it was anticipated that construction will commence on 27 September 2022 and the pegging will take place prior to construction activities.  The Biodiversity Company completed a final botanical walkdown on 1 and 2 June 2022. A letter informing the Department of such was sent on 15 June 2022. A protected trees removal application was lodged in July 2022 but has not yet granted. The contractors are aware that a permit has not yet been granted and as such no protected trees/plants may be damaged or removed until the permit has been granted.	It is recommended that the botanical walkdown report be kept within the on-site compliance file. Once the permit to remove/relocate protected plants and trees are received, a copy must be placed within the on-site compliance file.

Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
36	Where the pipeline is planned to be buried all topsoil must be separated from subsoil and stored separately, when backfilled the soil should be replaced the correct order.		NA	This condition is not applicable at this stage as construction is yet to commence.	LWUA to take cognisance that topsoil and subsoil must be stored within separate stockpiles and replaced in the correct order.
37	High visibility flags must be placed near any threatened / protected plants in order to avoid any damage or destruction of the species		NA	This condition is not applicable at this stage as construction is yet to commence.	LWUA to take cognisance that any threatened or protected plants need to be flagged to avoid damage or destruction to the species.
38	A permit must be obtained from the relevant nature conservation agency for the removal or destruction of indigenous, protected or endangered plant or animal species.		2	A protected trees removal application was lodged in July 2022 but has not yet been granted. The contractor is aware that a permit has not yet been granted and as such no protected trees/plants may be damaged or removed until the permit has been granted.	LWUA to take cognisance that if any additional indigenous, protected or endangered plant or animal is encountered a permit must be applied for the removal or destruction.
39	No exotic plants may be used for rehabilitation purposes. Only indigenous plants of the area may be utilised.		NA	This condition is not applicable at this stage as no rehabilitation activities are taking place.	LWUA to take cognisance that indigenous plants can only be used when rehabilitating the area.
40	If it is not possible to avoid Site LWUA 4, a permit in terms of section 35(4) of the National Heritage Resource Act (NHRA) must be applied from South African Heritage Resource Agency (SAHRA) prior to the commencement of construction activities.		NA	The final section of the pipeline from Dwarsrivier Pump Station to Mototolo will not be constructed as part of Phase 1. The SE2 pipeline will be constructed from Spitskop Pump Station to the reservoir. As the LWUA 4 site is not situated on the current route to be constructed, this condition is not applicable currently.	None
41	Monitoring reports must be submitted to SAHRA once the construction phase has been completed.		NA	This condition is not applicable at this stage as no construction activities have taken place.	LWUA to take cognisance that monitoring reports must be submitted to SAHRA once construction has been completed.
42	Identified Burial sites (LWUA 1, 2, 3) must be cleared of vegetation to establish the boundaries of the sites as the possibility of unmarked graves exists.		NA	This condition is not applicable at this stage as no construction activities have taken place.	None
43	Should any heritage resources, including evidence of graves and human burials, archaeological material and palaeontological material be discovered during the execution of the activities, all works must be stopped immediately, and the SAHRA Burial Grounds and Graves (BGG) Unit must be alerted immediately as per section 36(6) of the NHRA.		2	LWUA understands that if any unmarked burial site is uncovered during construction all work must cease and SAHRA's BGG Unit must be informed.	None
44	Should any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramic's, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, all works must be stopped immediately and the South African Heritage Resources Agency SAHRA must be alerted immediately.		2	LWUA understands that if any heritage site is identified during construction all work must cease and SAHRA's APM Unit must be informed, this site must be evaluated by a heritage professional.	None
45	Construction must include design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and		NA	This condition is not applicable at this stage as construction is yet to commenced.	LWUA to take cognisance that drainage measures must promote the dissipation of storm-water run-off on site.

Audit findings of the Environmental Authorisation					
NR	ENVIRONMENTAL AUTHORISATION CONDITION		COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
		subsurface flows. Drainage measures must promote the dissipation of storm water run-off.			
46		An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate. Any solid waste must be disposed of at a landfill licensed in terms of Section 20 (b) of the National Environmental Management Waste Act, 2008 (Act No. 59 of 2008).	NA	LWUA understands that all waste on site must be minimised as much as possible and any solid waste must be disposed of at a licenced landfill site as per NEM:WA. As no construction activities have taken place this is not applicable at the time if this audit.	General waste bins to be cleaned weekly or as required. Refuse bags to be provided to construction workers working on the pipeline. The bags to be replaced as required.
<b>GENERAL</b>					
47		A copy of this Environmental Authorisation, the audit and compliance monitoring reports, and the approved EMPr, must be made available for inspection and copying -	2	The Environmental Authorisation, EMPr and General Authorisation all form part of the on-site compliance file. All audit and compliance reports will be included within this file once completed and finalized.	None
47.1		at the site of the authorised activity;	2	The Environmental Authorisation, EMPr and General Authorisation all form part of the on-site compliance file. All audit and compliance reports will be included within this file once completed and finalized.	None
47.2		to anyone on request; and	2	The Environmental Authorisation, EMPr and General Authorisation will be provided via email to anyone on request.	None
47.3		where the holder of the Environmental Authorisation has a website, on such publicly accessible website.	2	LWUA have uploaded the approved Environmental Authorisation and EMPr onto their website. ( <a href="https://lebalelo.co.za/">https://lebalelo.co.za/</a> )	None
48		National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation or any other public authority shall not be held responsible for any damages or losses suffered by the holder of the authorisation or his/her successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the holder of the authorisation with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.	2	LWUA understands that they are liable for any damage or losses suffered and that this responsibility is not on the Department or any competent authority.	None
<b>Total Compliance</b>			<b>68</b>		
<b>Total Compliance Percentage</b>			<b>100%</b>		

Table 4:2 Audit findings of the EMPr

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
<b>CONSTRUCTION PHASE</b>						
<b>SOILS</b>						
1	Site clearing and preparation Trench excavation and installation of pipeline Construction of reservoir	Loss of soils to compaction and erosion - Conservation of soils a resource	Stockpile the topsoil and sub-soil separately on either side of the trench and backfill in the correct order.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all topsoil and subsoil must be stockpiled on either side of the trench and backfilled in the correct order.
2			The first 300 mm of soil must be stockpiled separate from the soil excavated deeper than 300 mm	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all topsoil and subsoil must be stockpiled separately on either side of the trench and backfilled in the correct order.
3			The proposed pipeline system must be divided up into 100 m intervals. Each interval's soil must be stockpiled and filled back up (in the correct order) to avoid long periods of stockpiling.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that activities must take place in 100 meter intervals.
4			All removed soil and material stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that stockpiles must be protected from erosion, placed on flat areas and surrounded by bunds
5			The amount of stockpiling of surplus soil material must be limited as far as practically possible, to avoid unnecessary handling of soil resources.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that stockpiling of surplus soil must be limited as far as possible as to avoid unnecessary handling of soil.
6			Ensure soil stockpiles and concrete / building sand are sufficiently safeguarded against rain wash.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that stockpiling needs to be protected from rain wash.
7			These designated stockpile areas must be viewed as temporary and kept for backfill material.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that stockpiles are only temporary and must be used as backfill material.
8			Maintain soil quality and minimise damage to the soil structure during the time the material is stockpiled.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that soil quality must be maintained and measures implemented to minimise damage to the soil structure during the time the material is stockpiled.
9			All construction access must make use of the existing roads that can be found in and around the project area.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that existing roads must be used.
10			Compacted areas are to be ripped to loosen the soil structure where necessary.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that compacted areas must be ripped to loosen the soil.
11			Implement appropriate stormwater management measures, including the temporary diversion of upstream run-off from the construction and laydown areas.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that compacted areas must be ripped to loosen the soil.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
12			Concurrent rehabilitation must be carried out rather than full rehabilitation after construction.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that concurrent rehabilitation must be implemented.
13			Ensure topsoil is spread back over trench area on closure of the trench. It is preferred that the trench is created on a needs basis to avoid an excessive excavation. As pipe is laid, the trench must be backfilled and topsoil replaced.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that upon closure of the section of the trench topsoil must be returned.
14			Landscape and lightly till (no deeper than 30 cm) denuded areas to encourage vegetation establishment as soon as possible.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that upon closure landscaping must be implemented to encourage vegetation growth.
15	Trench excavation and installation of pipeline  Construction of reservoir	Contamination of soils due to spilled concrete or hydrocarbons - Conservation of soils a resource	All machinery and equipment should be inspected regularly for faults and possible leaks, these should be serviced off-site.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all machinery and equipment need to undergo regular inspections.
16			A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all a hydrocarbon spill management plan must be implemented.
17			The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that an emergency hydrocarbon spill must be kept on site.
18			Any fuel, oil or hazardous substance spills must be cleaned-up immediately and discarded correctly.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that an if any hazardous substance is spilt it must be cleaned up immediately.
19			Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use.
BIODIVERSITY: FAUNA AND FLORA						
20	Vegetation clearing and site preparation	Destruction, fragmentation and degradation of habitats - Limit the disturbance and destruction of vegetation, fauna and habitat	Demarcate the footprint area with high visibility plastic fencing.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the footprint area must be demarcate with high visibility plastic fencing.
21			Restrict the disturbance footprint to within the designated pipeline route.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the footprint area must be restricted to within the designated pipeline route.
22			Existing access routes, especially roads must be made use of.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that existing access routes, especially roads must be made use of.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
23			All laydown, chemical toilets etc. should be restricted to low sensitivity areas. Any materials may not be stored for extended periods of time and must be removed from the project area once the construction phase has been concluded. No permanent construction phase structures should be permitted. No storage of vehicles or equipment will be allowed outside of the designated project areas.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the laydown area, chemical toilets etc. should be restricted to low sensitivity areas.
24			Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood and wind events. This will also reduce the likelihood of encroachment by alien invasive plant species. All livestock must always be kept out of the project area, especially areas that have been recently re-planted	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that areas that are denuded during construction need to be re-vegetated with indigenous vegetation.
25			Progressive rehabilitation as the construction of the pipeline continues as well as any cleared areas will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that progressive rehabilitation needs to be implemented on site.
26			A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site. Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers. Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them leaking and entering the environment. Construction activities and vehicles could cause spillages of lubricants, fuels and waste material potentially negatively affecting the functioning of the ecosystem. All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the project area.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a hydrocarbon spill management plan must be implemented. A spill kit must be kept on site for emergencies. Drip trays must be placed under all equipment when not in use and no servicing or re-fuelling to take place in the project areas. Store all diesel or hazardous material within bunded areas.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
27			It should be made an offence for any staff to take/bring any plant species into/out of any portion of the project area. No plant species whether indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that no plant species whether indigenous or exotic should be brought into/taken from the project area.
28			A fire management plan needs to be complied in terms of the National Veld and Forest Fire Act, 101 of 1998, and implemented to restrict the impact fire might have on the surrounding areas. The following preventative measures must be included: <ul style="list-style-type: none"> <li>Adherence to the daily fire danger ratings</li> <li>Must have equipment, protective clothing and trained personnel for extinguishing fires</li> <li>No lighting, using or maintain a fire in the open air unless in the designated place</li> <li>Contractors must do everything in their power to stop the spread of veld fires during the installation of water pipes.</li> </ul>	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a fire management plan needs to be complied in terms of the National Veld and Forest Fire Act, 101 of 1998, and implemented to restrict the impact fire might have on the surrounding areas.
29			Reduce the disturbance footprint and the unnecessary clearing of vegetation on either side of the trench as far as possible.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the disturbance footprint and the unnecessary clearing of vegetation on either side of the trench must be reduced as far as possible.
30			Loss of protected plant and tree species - Limit the disturbance and destruction of vegetation, fauna and habitat	<p>A pre-construction walkdown in the flowering season (October -March) should be conducted as part of a search and rescue operation. A suitable service provider (i.e. botanist) must be responsible for the removal of the threatened plants after which they must be utilised in the rehabilitation process.</p> <ul style="list-style-type: none"> <li>All protected trees identified should be marked and counted, including their seedlings and protected trees in the nearby.</li> <li>Damaging of protected trees during construction must be avoided.</li> <li>Relocation/transplanting of protected trees is highly recommended.</li> <li>Application listing all affected protected tree species and how they are affected by the proposed project, must be made with the Department of Forestry, Fisheries and the Environment (DFFE).</li> <li>An environmental workshop must be conducted to all contractors working in the project (Environmental Awareness Plan).</li> </ul>	2	<p>A pre-construction walkdown was undertaken by The Biodiversity Company during June 2022. A letter informing the Department of such was sent on 15 June 2022.</p> <p>A protected trees removal application was lodged in July 2022 but has not yet granted. The contractors are aware that a permit has not yet been granted and as such no protected trees/plants may be damaged or removed until the permit has been granted.</p> <p>Environmental awareness training was undertaken with the contractors representative. It is the responsibility of the Contractor to provide the training to all site personnel.</p>



Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
31			Any individual of the threatened/protected plants that are present needs a relocation or destruction permit in order for any individual that may be removed or destroyed due to the development. High visibility flags must be placed near any threatened/protected plants in order to avoid any damage or destruction of the species. If left undisturbed the sensitivity and importance of these species needs to be part of the environmental awareness program. Infrastructure, development areas and routes where protected plants cannot be avoided, these plants many being geophytes or small succulents should be removed from the soil and relocated/ re-planted in similar habitats where they should be able to resprout and flourish again. All protected and red-data plants should be relocated, and as many other geophytic species as possible.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a walk down must be implemented prior to any construction activities. No protected trees may be damaged or removed unless a permit has been granted by the DFFE. If any trees are removed they should be re-planted or relocated to an area with a similar habitat to encourage resprouting and flourish again.
32			Any individual of the nationally protected trees or protected plants that were observed needs a relocation or destruction permit that will be required for any individual that may be removed or destroyed due to the development, alternatively the trees/plants can be relocated within the property without a permit or otherwise left unharmed. High visibility flags must be placed near any protected trees/plants.	2	A pre-construction walkdown was undertaken by The Biodiversity Company during June 2022. A letter informing the Department of such was sent on 15 June 2022. A protected trees removal application was lodged in July 2022 but has not yet granted. The contractors are aware that a permit has not yet been granted and as such no protected trees/plants may be damaged or removed until the permit has been granted.	LWUA to take cognisance that any individual of the nationally protected trees or protected plants that were observed needs a relocation or destruction permit in order to be removed or destroyed.
33			Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events. This will also reduce the likelihood of encroachment by alien invasive plant species.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that any area that was denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events.
34	Vegetation clearing and site preparation	Spread and/or establishment of alien and/or invasive species	The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas. Footprint of the roads must be kept to prescribed widths.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the footprint area of the construction site should be kept to a minimum and clearly demarcated.
35	Trench excavation and installation of pipeline	Minimise and prevent the spread of alien and/or invasive species	Waste management must be a priority and all waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must implement a Waste Management Plan. All waste must be collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site
36	Construction of reservoir		Compilation of and implementation of an alien vegetation management plan.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that compilation of and implementation of an alien vegetation management plan.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
37			A pest control plan must be put in place and implemented; it is imperative that poisons not be used. Opt for manual removal.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a pest control plan must be put in place and implemented.
38	Vegetation clearing and site preparation  Trench excavation and installation of pipeline  Construction of reservoir, solar panels, and new pump stations	Displacement of faunal community due to habitat loss, direct mortalities and disturbance (road collisions, noise, dust, vibration and poaching)  - Limit the disturbance and destruction of vegetation, fauna and habitat	A qualified environmental control officer must be on site when construction begins. A site walk through is recommended by a suitably qualified ecologist prior to any construction activities, preferably during the wet season and any SSC should be noted. In situations where the threatened and protected plants must be removed, the proponent may only do so after the required permission/permits have been obtained in accordance with national and provincial legislation. In the above mentioned situation the development of a search, rescue and recovery program is suggested for the protection of these species. Should animals not move out of the area on their own relevant specialists must be contacted to advise on how the species can be relocated.	2	A pre-construction walkdown was undertaken by The Biodiversity Company during June 2022. A letter informing the Department of such was sent on 15 June 2022.  A protected trees removal application was lodged in July 2022 but has not yet granted. The contractors are aware that a permit has not yet been granted and as such no protected trees/plants may be damaged or removed until the permit has been granted.	LWUA to take cognisance that a site walk done must be undertaken prior to construction. No threated or protected trees may be removed or relocated without a protected trees permit granted by the DFFE. Should animals not move out of the area on their own relevant specialists must be contacted to advise on how the species can be relocated.
39			The areas to be developed must be specifically demarcated to prevent movement of staff or any individual into the surrounding environments, · Signs must be put up to enforce this	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that areas to be developed must be specifically demarcated to prevent movement of staff or any individual into the surrounding environments.
40			The duration of the construction should be minimised to as short term as possible, to reduce the period of disturbance on fauna.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the duration of the construction should be minimised to as short term as possible.
41			Noise must be kept to an absolute minimum during the evenings and at night to minimize all possible disturbances to amphibian species and nocturnal mammals	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that noise must be kept to an absolute minimum during the evenings and at night to minimize all possible disturbances to amphibian species and nocturnal mammals.
42			No trapping, killing, or poisoning of any wildlife is to be allowed. · Signs must be put up to enforce this	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that no trapping, killing, or poisoning of any wildlife is to be allowed.
43			Any holes/deep excavations must be dug and planted in a progressive manner and shouldn't be left open overnight; Should the holes overnight they must be covered temporarily to ensure no small fauna species fall in.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that any holes/deep excavations shouldn't be left open overnight should the holes stay overnight they must be covered temporarily to ensure no small fauna species fall in.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
44			All construction and maintenance motor vehicle operators should undergo an environmental induction that includes instruction on the need to comply with speed limits, to respect all forms of wildlife. Speed limits must still be enforced to ensure that road killings and erosion is limited	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all construction and maintenance motor vehicle operators should undergo an environmental induction.
45	Vegetation clearing and site preparation  Trench excavation and installation of pipeline  Construction of reservoir	Introduction of nuisance vectors (pests) such as flies, rodents and baboons  -  Limit the disturbance and destruction of vegetation, fauna and habitat	Ensure the correct handling, storage and operation of general waste generated on the construction site.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the contactor ensures the correct handling, storage and operation of general waste generated on the construction site.
46			A minimum of one toilet must be provided per 10 persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a minimum of one toilet must be provided per 10 persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area.
47			The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility. Waste management must be a priority and all waste must be collected and stored effectively.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a waste management plan must be implemented.
48			Where a registered disposal facility is not available close to the project area, the Contractor shall provide a method statement with regard to waste management. Under no circumstances may domestic waste be burned on site.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that where a registered disposal facility is not available close to the project area, the Contractor shall provide a method statement with regard to waste management.
49			Refuse bins will be emptied and secured. Temporary storage of domestic waste shall be in covered waste skips. Maximum domestic waste storage period will be 10 days.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that refuse bins will be emptied and secured. Temporary storage of domestic waste shall be in covered waste skips. Maximum domestic waste storage on site should not be longer than 10 days.
50			Remove general waste generated frequently as to prevent the development of a breeding habitat for nuisance pests such as flies and attracting rodents and baboons.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that general waste generated must be removed frequently as to prevent the development of a breeding habitat for nuisance pests such as flies and attracting rodents and baboons.
SURFACE WATER AND WETLANDS						
51	Vegetation clearing and site preparation	Direct loss, disturbance and degradation of	Restrict all construction related activities to within the designated pipeline route.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all construction related activities must be restricted to within the designated pipeline route.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
52	Trench excavation and installation of pipeline	wetlands - Minimise the potential for surface water pollution	Use wetland spatial data (shapefiles) to mark out the positions where the pipeline will enter and exit the 15 m buffer on the boundary of a wetland. Indicate delineated wetlands on site layout plans.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must use wetland spatial data (shapefiles) to mark out the positions where the pipeline will enter and exit the 15 m buffer on the boundary of a wetland.
53		Limit the disturbance and destruction of delineated wetlands	Adhere to the prescribed wetland buffers for secondary activities. Restrict all secondary activities (e.g. laydown yards, storage areas, cement mixing and equipment) to outside of wetlands and their prescribed buffers.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must restrict all secondary activities (e.g. laydown yards, storage areas, cement mixing and equipment) to outside of wetlands and their prescribed buffers.
54			Signpost the area beyond the construction footprint where the pipeline traverses the wetlands as an environmentally sensitive area and keep all excavation, soil stockpiling, general access and construction activities out of this area.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a signpost of the area beyond the construction footprint where the pipeline traverses the wetlands as an environmentally sensitive area must be implemented.
55			Demarcate the 15 m buffer zone around wetlands on the ground (e.g. painted wooden poles/high visibility plastic fencing).	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the 15 meter buffer zone of the wetlands must be demarcated on the ground.
56			Reduce the disturbance footprint and the unnecessary clearing of vegetation on either side of the trench as far as possible when traversing wetlands.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must reduce the disturbance footprint and the unnecessary clearing of vegetation on either side of the trench as far as possible when traversing wetlands.
57			Consider above ground crossings over wetland areas. Alternatively, open trench crossings are permissible but backfilling and rehabilitation must be undertaken.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must consider above ground crossings over wetland areas. Alternatively, open trench crossings are permissible but backfilling and rehabilitation must be undertaken.
58			Load wetland spatial data onto a GPS and use it to mark out the positions where the pipeline will enter and exits the prescribed buffer on the boundary of a wetland. Try to reduce the disturbance footprint and the unnecessary clearing of vegetation on either side of the trench as far as possible when traversing wetlands.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the 15 meter buffer zone of the wetlands must be demarcated on the ground.
59			All chemicals and toxicants to be used for the construction must be stored in a bunded area	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all chemicals and toxicants to be used for the construction must be stored in a bunded area.
60			Construct the wetland crossings during winter, if possible, when flow volumes are lowest. This will reduce impacts to wetlands due to soil poaching/sourcing and vegetation trampling under peak saturation levels. Additionally, the risk of vehicles getting stuck and further degrading the vegetation integrity is lowest during this time.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that construction of the pipeline though water resources should be constructed during winter, if possible, when flow volumes are lowest.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
61	Vegetation clearing and site preparation	Increased bare surfaces, runoff and potential for erosion and resulting sedimentation of the wetlands - Minimise the potential for surface water pollution  Limit the disturbance and destruction of delineated wetlands	Keep the trench excavation neat and tidy.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the trench excavation must be kept neat and tidy.
62			Separate sub-soil and topsoil on either side of the trench.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that sub-soil and topsoil must be separated on either side of the trench.
63			Limit construction activities across the wetlands to the dry season, if possible, when storms are least likely to wash concrete and sand into wetlands.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that construction within the wetland must be limited to the dry season.
64			Ensure soil stockpiles and concrete / building sand are sufficiently safeguarded against rain wash.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that stockpile and concrete / building sand must be sufficiently safeguarded against rain wash.
65			Mixing of concrete must under no circumstances take place in any wetland or their buffers. Scrape the area where mixing and storage of sand and concrete occurred to clean once finished.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that mixing of concrete must under no circumstances take place in any wetland or their buffers
66			Do not situate any of the construction material laydown areas within any wetland or buffer areas.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the construction material laydown areas must not be situated within any wetland or buffer areas.
67			No machinery/equipment should be allowed to be parked in any wetlands or buffer zone areas	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that no machinery/equipment should be allowed to be parked in any wetlands or buffer zone areas.
68			Ensure topsoil is spread back over trench area on closure of the trench. It is preferred that the trench is created on a needs basis to avoid an excessive excavation. As pipe is laid, the trench must be backfilled and topsoil replaced.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that topsoil is to be spread back over trench area on closure of the trench. It is preferred that the trench is created on a needs basis to avoid an excessive excavation.
69			Speed limits must be put in place to reduce erosion. · Reducing the dust generated by the listed activities above, especially the earth moving machinery, through wetting the soil surface and putting up signs to enforce speed limit as well as speed bumps built to force slow speeds; · Signs must be put up to enforce this.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that speed limits must be put in place to reduce erosion.
70			Where possible, existing access routes and walking paths must be made use of.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that existing access routes and walking paths must be made use of.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
71			Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events and strong winds.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events and strong winds.
72			A stormwater management plan must be compiled and implemented.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a stormwater management plan must be compiled and implemented.
73			Landscape and lightly till (no deeper than 30 cm) denuded areas to encourage vegetation establishment as soon as possible.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that topsoil must be lightly landscaped to promote vegetation growth.
74	Vegetation clearing and site preparation	Degradation of wetland vegetation and the introduction and spread of alien and invasive vegetation - Minimise the potential for surface water pollution  Limit the disturbance and destruction of delineated wetlands	Promptly remove all alien and invasive plant species that may emerge during construction (i.e. weedy annuals and other alien forbs) must be removed.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all alien and invasive plant species that may emerge during construction must be promptly removed.
75			The use of herbicides is not recommended in or near wetlands (opt for mechanical removal).	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the use of herbicides to remove alien species is not recommended in or near wetlands
76			Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the servitude.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that stockpile topsoil cleared from the project area can be used for rehabilitation of the servitude.
77			Clearly demarcate construction footprint, and limit all activities to within this area.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the construction footprint must be clearly demarcate and limit all activities to within this area.
78			Minimize unnecessary clearing of vegetation.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that vegetation must not be cleared unless absolutely necessary.
79			All contractors and employees should undergo induction which is to include a component of environmental awareness. The induction is to include aspects such as the need to avoid littering, the reporting and cleaning of spills and leaks and general good "housekeeping".	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all contractors and employees should undergo induction which is to include a component of environmental awareness.
80			Adequate sanitary facilities and ablutions on the servitude must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation).	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that adequate sanitary facilities and ablutions on the servitude must be provided for all personnel throughout the project area

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
81			No dumping of construction material on site may take place within the wetland or buffer area. All material must be contained in waste skips and removed to designated (and licensed) facilities.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that no dumping of construction material on site may take place within the wetland or buffer area.
82			All waste generated on site during construction must be adequately managed. Separation and recycling of different waste materials should be supported.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all waste generated on site during construction must be adequately managed.
83			Landscape and re-vegetate all denuded areas as soon as possible.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that landscaping and re-vegetating all denuded areas must be implemented as soon as possible.
84	Vegetation clearing and site preparation  Trench excavation and installation of pipeline	Increased sediment loads to downstream reaches	Implement mitigation for increased bare surfaces, runoff and potential for erosion.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that mitigation measures for increased bare surfaces, runoff and potential for erosion must be implemented.
85		Minimise the potential for surface water pollution	Re-instate topsoil and lightly till disturbance footprint.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that topsoil must be re-instated.
86		Limit the disturbance and destruction of delineated wetlands	At all crossings install sandbags on downstream side of the footprint to trap sediment until the site has been constructed and vegetation has re-established.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that at all crossings must have installed sandbags on downstream side of the footprint to trap sediment until the site has been constructed and vegetation has re-established.
87	Vegetation clearing and site preparation  Trench excavation and installation of pipeline	Contamination of wetlands with hydrocarbons due to machinery leaks and eutrophication of wetland systems with human sewerage and other waste	Make sure all excess consumables and building materials / rubble is removed from site and deposited at an appropriate waste facility.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all excess consumables and building materials / rubble is removed from site and deposited at an appropriate waste facility.
88		Minimise the potential for surface water pollution	Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g. concrete) in such a way as to prevent them leaking and entering the wetland areas.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all diesel or hazardous storage must be within a bunded area.
89			Mixing of concrete must under no circumstances take place within the wetland or buffer areas.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that mixing of concrete must under no circumstances take place within the wetland or buffer areas.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
90		Limit the disturbance and destruction of delineated wetlands	Regularly maintain stormwater infrastructure, pipes, pumps and machinery to minimise the potential for leaks. Check for oil leaks, keep a tidy operation, install bins and promptly clean up any spills or litter.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that regularly maintenance of stormwater infrastructure, pipes, pumps and machinery must be implemented to minimise the potential for leaks
91			Provide appropriate sanitation facilities during construction and service them regularly. These must be beyond the wetland and buffer area.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that appropriate sanitation facilities must be provided during construction and serviced regularly
92			Monitor and inspect machinery, vehicles and equipment for leaks and spills.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that machinery, vehicles and equipment must be maintained and inspected for leaks and spills.
93	Backfilling of trench	Disruption of wetland soil profile and alteration of hydrological regime-Minimise the potential for surface water pollutionLimit the disturbance and destruction of delineated wetlands	Document the soil profile on removal and check the order in which soil is replaced. Separate the topsoil (including seedbank) from the subsoil layer.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that topsoil (including seedbank) must be separated from the subsoil layer.
94			Ensure that topsoil is appropriately stored and re-applied during trench backfilling.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that topsoil needs to be appropriately stored and re-applied during trench backfilling.
95			Ensure that the soil is backfilled and compacted to accepted geotechnical standards to avoid flow canalisation along the trench and the potential for sinkhole formation.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the contractor must ensure that the soil is backfilled and compacted to accepted geotechnical standards to avoid flow canalisation along the trench and the potential for sinkhole formation.
<b>HERITAGE</b>						
96	Site clearing and preparation Trench excavation and installation of infrastructure	Impact on graves and cemeteries found along SE2 pipeline route - Protect and preserve heritage resources	All recorded graves and burial sites should be indicated on development plans and avoided with a buffer of 30m.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that all recorded graves and burial sites should be indicated on development plans and avoided with a buffer of 30m.
97			The graves and cemeteries must be accessible at all times during construction.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that graves and cemeteries must be accessible at all times during construction.
98			Burial sites (LWUA 1,2,3) must be cleared of vegetation to establish the boundaries of the sites to determine the possibility of unmarked graves.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that burial sites (LWUA 1,2,3) must be cleared of vegetation to establish the boundaries of the sites to determine the possibility of unmarked graves.



Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
99			Implement dust suppression around graves and cemeteries to minimise dust fallout on headstones.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that dust suppression should be implemented around graves and cemeteries to minimise dust fallout on headstones.
100			Implement the chance find procedure should an artefact or grave be uncovered during construction.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that should an artefact or grave be uncovered during construction implementation the chance find procedure will be required.
101			Implement the chance find procedure should an artefact or grave be uncovered during construction.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that a the chance find procedure should be implemented if an artefact or grave be uncovered during construction.
102	Site clearing and preparation Trench excavation and installation of infrastructure	Impact of the ephemeral walling at LWUA 04 - Protect and preserve heritage resources	If it not possible to avoid site LWUA 4, a permit in terms of section 35(4) of the NHRA must be applied from SAHRA prior to the construction phase.	NA	The final section of the pipeline from Dwarsrivier to Mototolo will not be constructed as of yet, the pipeline will stop at Dwarsrivier Pump Station. The LWUA 4 site area will therefore be avoided completely by the construction activities.	None
103			Submit monitoring reports to SAHRA once the construction phase has been completed	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that monitoring reports must be submitted to SAHRA once the construction phase has been completed
<b>NOISE</b>						
104			Ensure high level of equipment maintenance, especially intake and exhaust mufflers.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that high levels of equipment maintenance, especially intake and exhaust mufflers must be ensured.
105	Site clearing and preparation Trench excavation and installation of pipeline Construction of reservoir	General rise in ambient noise levels-Minimise the generation of noise	Replace pure tone (beeping) with broadband (hissing) reversing alarms.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must replace pure tone (beeping) with broadband (hissing) reversing alarms.
106			Construction activities to take place only during daylight hours.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that construction activities are to take place only during daylight hours.
<b>AIR QUALITY</b>						
107	Site clearing and preparation Trench excavation and	Increased dust fallout around construction areas	Apply dust suppressants to gravel roads used.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that dust suppression must be undertaken on any gravel roads used

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
108	Construction of reservoir	- Minimise atmospheric emissions and dust generation	Set speed limits to 40 km/h to minimise the creation of fugitive dust within the project boundary.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must set speed limits to 40 km/h to minimise the creation of fugitive dust.
109			Dust-reducing mitigation measures must be put in place and must be strictly adhered to, during the construction phase. This includes wetting of exposed soft soil surfaces and not conducting activities on windy days which will increase the likelihood of dust being generated.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that dust-reducing mitigation measures must be put in place and must be strictly adhered to
<b>SOCIAL</b>						
110	Construction of SE2 pipeline and reservoir	Benefits resulting from employment and income opportunities created by the construction of the pipelines - Maximise employment opportunities and social benefits	Develop a clear and concise employment policy prioritising local employment	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must develop a clear and concise employment policy prioritising local employment
111			Employ local works if qualified applicants with the appropriate skills are available.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must employ local works if qualified applicants with the appropriate skills are available.
112			Purchase goods and services at a local level if available.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must purchase goods and services at a local level if available.
113	Construction of SE2 pipeline and reservoir	Influx of people and construction workers leading to increased pressure on social services and infrastructure, social pathologies and disruptions, resulting in spontaneous settlements - Maximise employment opportunities and social benefits	Develop a clear and concise employment and recruitment policy that prioritizes local recruitment. Ensure that contractors adhere to this policy.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must develop a clear and concise employment and recruitment policy that prioritizes local recruitment.
114			Identify and support community development programmes that address challenges raised by population influx and spontaneous settlement.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must identify and support community development programmes.
115			Support local government capacity for integrated development planning.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must support local government capacity for integrated development planning.
116			Prepare a detailed vocational training program in consultation with the local community to be implemented during the construction phase.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must prepare a detailed vocational training program in consultation with the local community to be implemented during the construction phase.

Audit findings of the EMPr						
NR	ACTIVITY THAT MAY CAUSE AN IMPACT	MANAGEMENT OUTCOME	EMP COMMITMENT	COMPLIANCE	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
117			Through the stakeholder engagement process ensure that expectations are managed around employment opportunities and practices.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must through the stakeholder engagement process ensure that expectations are managed around employment opportunities and practices.
118	Construction of SE2 pipeline and reservoir	Dissatisfaction over employment opportunities and conditions of procurement which could potentially lead to community protests and unrests, as well as conflicts within communities - Maximise employment opportunities and social benefits	Develop a clear and concise employment and recruitment policy that prioritizes local recruitment. Ensure that contractors adhere to this policy.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must develop a clear and concise employment and recruitment policy that prioritizes local recruitment.
119			Through the stakeholder engagement process ensure that expectations are managed around employment opportunities and practices.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must through the stakeholder engagement process ensure that expectations are managed around employment opportunities and practices.
120			Monitor and implement the Grievance Management Mechanism.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must monitor and implement the Grievance Management Mechanism.
121			Involve Local Ward Councillors and keep them informed about project developments, and included in all stakeholder engagement processes. Their involvement will assist with the successful development of relationships between the LWUA, the municipality and the communities.	NA	The project is currently in pre-construction phase and therefore this commitment does not apply yet.	LWUA to take cognisance that the site must involve Local Ward Councillors and keep them informed about project developments.
<b>Total Compliance Score</b>				8		
<b>Total Compliance Percentage</b>				100%		

Table 4:3 Audit findings of SAHRA's conditions

Audit findings of SAHRA's conditions				
NR	SAHRA CONDITION	COMPLIANCE STATUS	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
<b>FINAL COMMENTS</b>				
1	The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit and the Burial Grounds and Graves (BGG) Unit have no objection to the proposed development;	2	No objections to the proposed development was raised by SAHRA.	None
2	The recommendations of the specialists are supported and must be adhered to. Further additional specific conditions are provided for the development as follows:	2	Lebalelo Water User Association understands that all recommendations made by the specialists need to be adhered to.	None
2.1	APM Unit conditions: If it not possible to avoid site LWUA 4, a permit in terms of section 35(4) of the NHRA must be applied from SAHRA prior to the construction phase;	NA	The final section of the pipeline from Dwarsrivier to Mototolo will not be constructed as of yet, the pipeline will stop at Dwarsrivier Pump Station. The LWUA 4 site area will therefore be avoided completely by the construction activities.	None
2.2	Monitoring reports must be submitted to SAHRA once the construction phase has been completed	NA	This condition is not applicable at the time of this audit as no construction has taken place.	Lebalelo Water User Association to take cognisance that once construction has been completed all monitoring reports needed to be submitted to SAHRA
2.3	BGG Unit conditions: Identified Burial sites (LWUA 1, 2, 3) must be cleared of vegetation to establish the boundaries of the sites as the possibility of unmarked graves exists;	NA	This condition is not applicable at the time of this audit as no construction has taken place.	Lebalelo Water User Association to take cognisance that prior to construction vegetation must be cleared at the LWUA 1, 2, and 3 heritage sites to ensure no unmarked graves will be disturbed by this project. If any unmarked graves are unearthed Condition 4 must be adhered to.
3	If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ask concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;	NA	Lebalelo Water User Association understands that if any heritage site is identified during construction all work must cease and SAHRA's APM Unit must be informed, this site must be evaluated by a heritage professional.	None
4	If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thigahangwii Tshivhase/ Ngqalabutho Madida 012 320 8490), must be altered immediately as per section 36(6) of the NHRA and item 5 of the Schedule;	NA	Lebalelo Water User Association understands that if any unmarked burial site is uncovered during construction all work must cease and SAHRA's BGG Unit must be informed.	None
5	See section 51 of the NHRA regarding offences;	NA	Lebalelo Water User Association understands that if conditions are not adhered to SARHA can issue LWUA with an office as per Section 51 of the NHRA.	None
6	The following conditions apply with regards to the appointment of specialists:			
6.1	With reference to the mitigation work noted above, a qualified archaeologist must be appointed to undertake the work in terms of the permit applied for as noted above;	NA	Lebalelo Water User Association understands that if any heritage site is identified during construction all work must cease and the site must be evaluated by a qualified heritage professional.	None

Audit findings of SAHRA's conditions				
NR	SAHRA CONDITION	COMPLIANCE STATUS	OBSERVATION IN SEPTEMBER 2022 AUDIT	RECOMMENDATIONS BY AUDITOR
6.2	If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;	NA	Lebalelo Water User Association understands that if any heritage site is identified during construction all work must cease and the site must be evaluated by a qualified heritage professional.	None
6.3	The Final BAR and EMPr must be submitted to SAHRA for records purposes;	2	The final BAR and EMPr was uploaded onto SAHRIS by AVDE on 28 September 2022.	None
6.4	The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.	2	The final decision was provided to SARHA during the notification of I&AP's. this email was sent to SARHA on the 13 September 2022.	None
<b>Total Compliance Score</b>		<b>10</b>		
<b>Total Compliance Percentage</b>		<b>100%</b>		

## **5 CONCLUSION AND RECOMMENDATIONS**

An overall compliance rating of 100% has been achieved for the September 2022 environmental audit, which also serves as the pre-construction compliance audit for the project. Conditions and commitments from three documents were considered, namely the environmental authorisation, approved EMPr and final comments from SAHRA. Refer to the table below.

<b>Document</b>	<b>% Compliance</b>
Environmental authorisation	100%
EMPr	100%
SAHRA	100%
<b>Total % Compliance</b>	<b>100%</b>

As construction of the authorised listed activities have not commenced at the time of the audit, several conditions and/or commitments were considered not applicable.

It is the opinion of the auditors that the EMPr sufficiently provide for the management and mitigation of potential environmental impacts associated with the undertaking of the authorised listed activities.

## **6 ANNEXURES**

## ***ANNEXURE A: DECLARATION***

I, Suzanne van Rooy, declare that I –

- Act as the independent environmental practitioner for this environmental audit;
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulation 2014 (as amended);
- Undertake the environmental audit based on information provided to me by the environmental authorisation holder and appointed contractor, and additional information obtained during the environmental audit; and
- All the particulars furnished in this report, to the best of my knowledge, are true and correct.



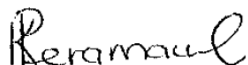
---

Suzanne van Rooy

Environmental Consultant

I, Kirthi Peramaul, declare that I –

- Act as the independent environmental practitioner for this environmental audit;
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulation 2014 (as amended);
- Undertake the environmental audit based on information provided to me by the environmental authorisation holder and appointed contractor, and additional information obtained during the environmental audit; and
- All the particulars furnished in this report, to the best of my knowledge, are true and correct.



---

Kirthi Peramaul

Environmental Consultant



I, Tyla Leigh Smith, declare that I –

- Act as the independent environmental practitioner for this environmental audit;
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulation 2014 (as amended);
- Undertake the environmental audit based on information provided to me by the environmental authorisation holder and appointed contractor, and additional information obtained during the environmental audit; and
- All the particulars furnished in this report, to the best of my knowledge, are true and correct.

A handwritten signature in black ink that reads "Smith". The signature is written in a cursive style and is contained within a light grey rectangular box.

---

Tyla Leigh Smith

Environmental Consultant

# ANNEXURE B: ATTENDANCE REGISTER



Postnet Suite #745  
 Private Bag X1007  
 Lyttelton  
 1040  
 Tel: 012 940 9457  
 Fax: 086 634 3967  
 alta@avde.co.za

".....attitude of gratitude....."

SE2 Raw Water Pipeline and Associating Infrastructure  
 Pre-Construction Audit and Environmental Training

Project Management, Peer Review, Advisory, Education

Date: 16 September 2022

FULL NAME	ORGANISATION	TELEPHONE	CELL NO	E-MAIL	SIGNATURE
CHARLES GAGHAN	ESOR	0825544310	0825544310	charlesg@esor.co.za	
Etene Clarke	"	0794936309		e.kenne@avde.co.za	
Macedonald Sedimo	ESOR	0739061142		johankl@esor.co.za	
Johann Klopper	ESOR	0848042226		johankl@esor.co.za	
Kirithi Paramaul	AUDE	0129409457		Kirithi@avde.co.za	
Tyla Smith	AUDE	0129409457	0832544136	tyla@avde.co.za	
Suzanne v. Looy	AUDE		0781966002	Suzanne@avde.co.za	

".....we all live down stream....."

Company Registration Number: 2011/059764/23

***ANNEXURE C: ENVIRONMENTAL AWARENESS TRAINING  
PRESENTATION***



**SE2 pipeline and associated infrastructure near Steelpoort, Limpopo**



**Alta van Dyk Environmental**

Environmental Awareness Training  
16 September 2022

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## Agenda

1. Welcome and Introduction
2. Project Description
3. Legislative framework and permitting
4. Roles and Responsibilities
5. Compliance Conditions
6. Important Information



2



## Legal framework and permitting

- Environmental Authorisation in terms of the National Environmental Management Act (NEMA)
  - Basic Assessment environmental authorisation process undertaken
  - Competent authority is the Department of Forestry, Fisheries and the Environment (DFFE)
  - Approved Environmental Authorisation (14/12/16/3/3/1/2442 dated 28 April 2022)
  - Amended Environmental Authorisation and Approved Environmental Management Programme (EMPr) (14/12/16/3/3/1/2442/AM1 dated 16 August 2022)
  - Commitments in EMPr and Conditions in the environmental authorisation needs to be adhered to
- General Authorisation in terms of the National Water Act (NWA)
  - General Authorisation process undertaken
  - Competent authority is the Department of Water Affairs
  - Approved General Authorisation (27/2/2/B741/28/2 dated 12 October 2021)
  - Conditions in General Authorisation needs to be adhered to



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## Legal framework and permitting

- Approval in terms of the National Heritage Resources Act
  - Phase 1 Heritage Impact Assessment undertaken
  - Competent authority is the South African Heritage Resources Agency (SAHRA)
  - SAHRA provided the project with conditions that need to adhered to (Case 17429 comments received 17 January 2022)



6






## Roles and Responsibilities

-  Applicant – Lebalelo Water User Association
  -  Ensure compliance with conditions of EA and EMPr
  -  Appointment of ECO
-  Environmental Control Officer (ECO) - AVDE
  -  Legal requirement in terms of EA and EMPr
  -  Auditing the construction as per the approved EA and EMPr
  -  AvDE will be undertaking **MONTHLY** inspections on compliance
  -  Report submitted to Lebalelo, Infraburo, Esor and DFFE
-  Contractor – Esor
  -  Ensure site is managed in terms of EA & EMPr on a day-to-day basis
  -  Liaise with ECO to ensure compliance
  -  Maintain on-site compliance file
  -  Address non-compliances



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## Roles and Responsibilities

-  Competent Authority – DFFE
  -  Regulatory authority
  -  Review of audit reports undertaken by ECO
  -  Undertake unannounced site inspections to ensure compliance to EA and EMPr
  -  Penalties may be issued for non-compliances



8



9

## Mirco-siting / Pegging

- 🌍 The micro-siting / pegging of the route for the SE2 raw water pipeline must be undertaken prior to commencement with construction activities



10



## Sensitive areas

- Delineated wetland areas
- Ephemeral watercourses
- Drainage lines
- Heritage sites (graves, graveyard)



11

## Drainage Lines

- No laydown areas or ablation facilities within 100m from wetlands, watercourses or drainage lines
- Implement Stormwater Management Plan including the temporary diversion of upstream run-off from the construction and laydown areas



12

## Watercourses & Wetlands

- 🌐 Mark out the positions where the pipeline will enter and exit the 15 m buffer on the boundary of a wetland on the layout plans as well as on the ground.
- 🌐 Restrict all secondary activities (not construction) to outside of wetlands and their prescribed buffers.
- 🌐 Signpost the area beyond the construction footprint where the pipeline traverses the wetlands as an environmentally sensitive area.
- 🌐 Undertake wetland crossing construction within the dry months as far as possible.
- 🌐 Place sandbags on the downstream side to prevent sedimentation of the resource.
- 🌐 **Confirm if the pipeline will cross above ground or be buried at the watercourse crossings?**



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Demarcated 15 meter buffer zone



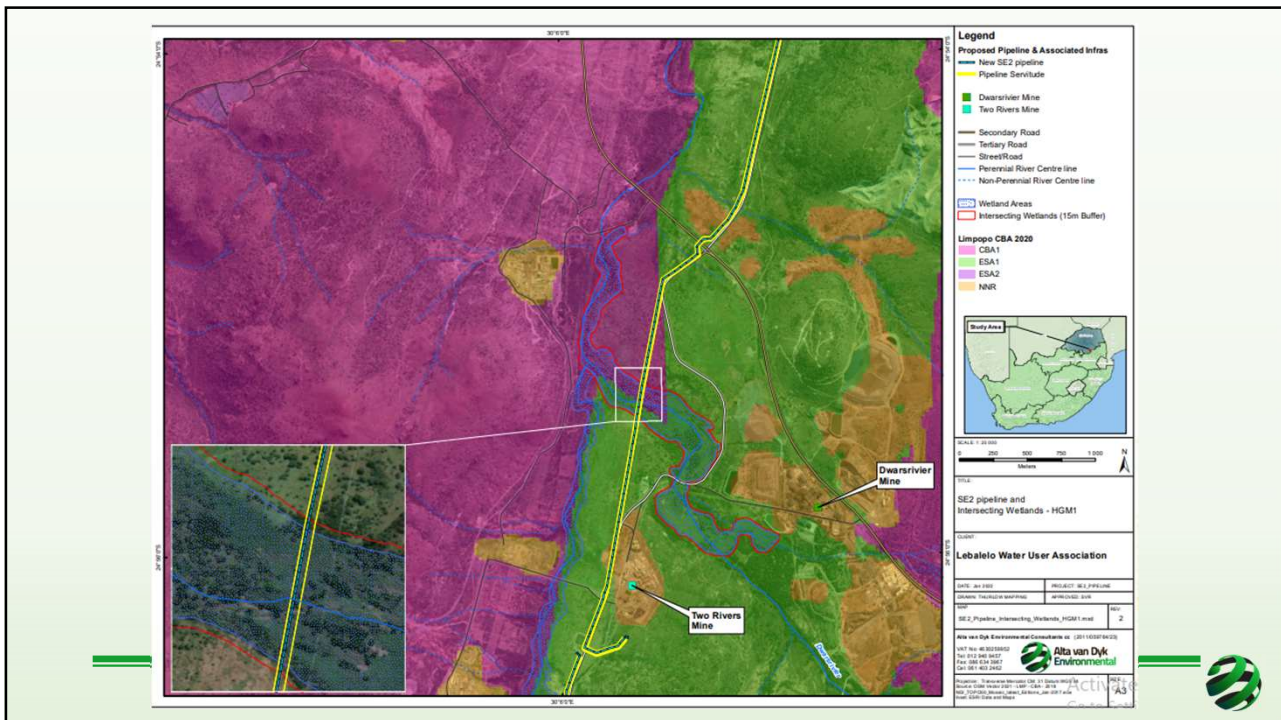
Signposts



Sand Bags



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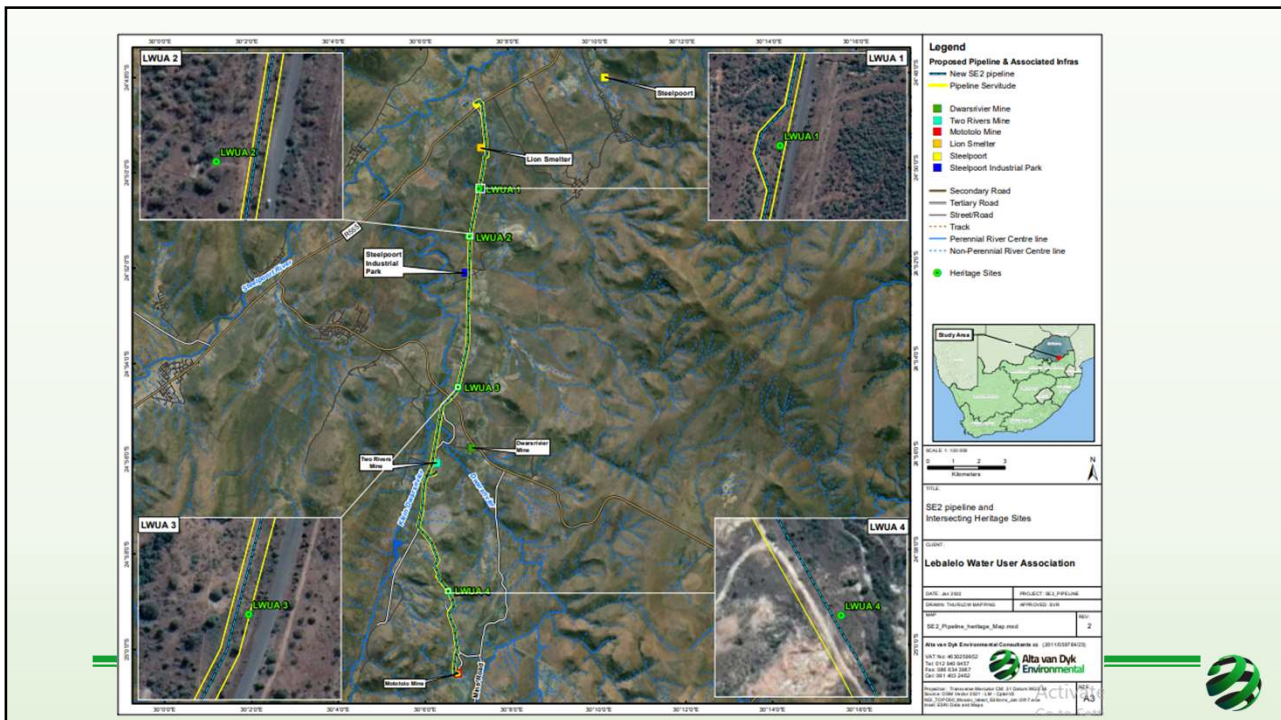
15

## Burial Sites

- 🌿 These areas must be cleared of vegetation to establish the boundaries of the sites as the possibility of unmarked graves exists
- 🌿 If any unmarked graves are uncovered during construction all work must cease and SAHRA's BGG Unit must be informed
- 🌿 The graves must remain accessible at all times
- 🌿 Implement dust suppression to minimise dust fallout on headstones
- 🌿 Once construction is completed, monitoring reports must be submitted to SAHRA



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## Protected Trees

- 🌳 A permit to remove protected trees has been lodged with the DFFE
- 🌳 High visibility flags must be placed near any threatened / protected plants in order to avoid any damage or destruction of the species.
- 🌳 If possible any threatened or protected trees should be replanted as to encourage the tree to flourish once more



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## Waste Management

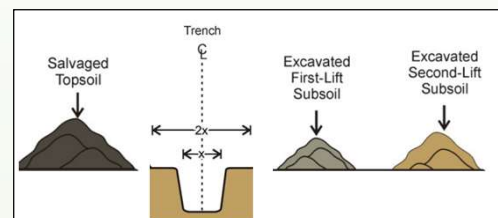
- Permit arranged with Landfill site to dispose of waste
- General Waste Bin/skip at construction laydown area and active construction sites
- General Waste bins to be emptied once full or weekly, no overflowing of waste onto ground.
- Implement a pest control plan



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## Topsoil and Subsoil

- Storage of topsoil and subsoil separately on each side on trench.
- These areas need to be protected from erosion
- Surround area with bunds to ensure no disturbance during construction.
- Construction must be divided up into 100 m intervals. Each interval's soil must be stockpiled and filled back up (in the correct order) to avoid long periods of stockpiling
- Soil found to be compacted must be ripped to loosen the soil structure.



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## Machinery & Equipment Management

- 🌀 Inspect machinery and equipment regularly for faults or leaks
- 🌀 Ensure equipment reversing alarms are broadband (hissing) not pure tone (beeping)
- 🌀 Implement a hydrocarbon spill management plan.
- 🌀 Keep a hydrocarbon emergency spill kit on site
- 🌀 Ensure there are drip trays under all equipment when not in use
- 🌀 Place any diesel or hazardous substance (chemicals) storage in bunded areas
- 🌀 Ensure all servicing takes place in demarcated areas outside the project area.
- 🌀 Implement a fire management plan



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## Footprint Area Management

- 🌀 Ensure footprint areas are reduced as far as possible and vegetation only to be cleared as deemed necessary.
- 🌀 Demarcated footprint areas with visibility tape / mesh and signs.
- 🌀 Use existing access routes to all sites, and ensure speed limits are followed (40 km/h).
- 🌀 All laydown areas, chemical toilets etc. should be restricted to low sensitivity areas.
- 🌀 1 chemical toilet must be provided for every 10 persons.
- 🌀 No plant species whether indigenous or exotic should be brought into/taken from the project area.
- 🌀 Implement an alien vegetation management plan, do not use herbicides near water resources.
- 🌀 Don't leave holes / deep excavations over night. If needed cover them in the evening to ensure no small animals fall within the holes.



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## General Authorisation

- 🌀 Any secondary activities (not construction) must be located outside the 1:100 year flood line or riparian habitat of a water resource and must be removed within 30 days after the completion of any works.
- 🌀 All works, including emergency alterations or the rectification of incidents, start upstream and proceed in a downstream direction.
- 🌀 No substance or material that can potentially cause pollution of the water resource must be used while working at the water resource.



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## General Authorisation - Monitoring

- 🌱 Undertake and implement monitoring programmes to include the following:
  - 🌱 In- stream water quality monitoring once prior to construction and weekly during construction.
  - 🌱 In- stream flow monitoring, both upstream and downstream from the works, on an ongoing basis starting one week prior to the initiation of the works.
  - 🌱 Taking of photographs and video- recordings both 20 meters upstream and downstream and on each bank on a weekly basis, starting one week prior to construction until 1 month after completion.
- 🌱 Undertake annual environmental audits for 3 years after completion.



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## Rehabilitation


- 🌱 Landscape topsoil areas to promote vegetation growth
- 🌱 Areas that are denuded (stripped) during construction need to be re-vegetated with indigenous vegetation
- 🌱 Undertake progressive rehabilitation
- 🌱 If open trench crossings are utilized at the water resources backfilling and rehabilitation must be undertaken



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## Important Information

- 🌱 All personnel working on the project should undergo Environmental Induction
    - 🌱 Please ensure a record of such is kept for the audit reports.
  - 🌱 The construction project must utilize local people and products as far as possible.
  - 🌱 Grievance Management must be implemented – complaints to be registered and closed out
  - 🌱 Involve Local Ward Councillors and keep them informed on project developments
  - 🌱 All monthly audit documents must be printed and kept within the On-Site Compliance File
  - 🌱 Submit methods statements to ECO prior to commencement of construction
  - 🌱 Incidents must be logged in a register
- 
- 


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## Questions?





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## Contact details


 Suzanne van Rooy


 [suzanne@avde.co.za](mailto:suzanne@avde.co.za)

 078 196 6002

 Kirthi Peramaul

 [kirthi@avde.co.za](mailto:kirthi@avde.co.za)

 072 256 4733

 Tyla Smith

 [tyla@avde.co.za](mailto:tyla@avde.co.za)

 083 256 4136



***ANNEXURE D: PHOTOGRAPHS OF THE PRE-CONSTRUCTION STATUS  
QUO***

**Photo 1: Along SE2 raw water pipeline route**

**24°49'42.46"S, 30° 7'28.76"E**



**Photo 2: No construction taking place**

**24°49'42.46"S, 30° 7'28.76"E**



**Photo 3: Wetland area – no construction**

**24°55'42.70"S, 30° 6'31.35"E**



**Photo 4: Wetland area - no construction taking place**

**24°55'42.70"S, 30° 6'31.35"E**



**Photo 5: Reservoir site - no construction taking place**

**24°56'19.63"S, 30° 6'17.57"E**



**Photo 6: Burial Site LWUA 2 – No disturbance**

**24°51'23.11"S, 30° 7'5.58"E**



**Photo 7: Laydown area at Steelpoort Industrial Park**

**24°52'4.91"S, 30° 7'9.02"E**

