



edtea

Department :

Economic Development, Tourism and
Environmental Affairs

PROVINCE OF KWAZULU-NATAL

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Reference: DC26/0008/2019
Inkomba :
Verwysing:

Fax : 035 – 870 9389
iFeksi :
Faks :

Date :
Usuku :
Datum : 12/12/19

Zululand District Municipality

400 Ugagane Street

Private Bad x76

Ulundi

3838

Attention: Mr. Bongokuhle Patrick Mnguni

E – Mail Address: bmnguni@zdm.co.za

Dear Sir.

DC26/0008/2019: ENVIRONMENTAL AUTHORIZATION FOR THE EXPANSION OF EMONDLO BULK WATER SUPPLY SCHEME INFRASTRUCTURE AT FARM HLAHLINDLELA NO. 17482 AND MVUNYANA DAM NO. 17994 AT ABAQULUSI LOCAL MUNICIPALITY WITHIN ZULULAND DISTRICT MUNICIPALITY.

The KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs has **authorized** the abovementioned project. This environmental authorization and reasons for the decision are attached herewith.

ENQUIRIES

Please note that:

- All queries regarding this application for environmental authorization (including the Department's decision) must be directed to the official of this Department with contact details provided on the letterhead above.
- **Only** queries regarding appeals must be submitted to the Office of the MEC (details provided below).

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NOTIFICATION OF DECISION ON APPLICATION

In accordance with regulation 4(2) of the EIA Regulations 2014 as amended, the applicant must in writing **within 14 days** of the date of this decision ensure that

- a. All registered interested and affected parties are provided with access to this decision and the reasons for the decision; and
- b. The attention of all registered interested and affected parties is drawn to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations 2014, if such appeal is available in the circumstances of the decision.

APPEALS

In accordance with regulation 4(1) of the National Appeal Regulations, 2014 an appellant must submit an appeal to the appeal administrator and a copy of the appeal to the applicant, any registered interested and affected party and organ of state with interest in the matter **within 20 days** from the date of notification of this decision.

An appellant must comply with regulation 4(2) and submit the appeal in writing, on the form obtainable from the Appeal Administrator and **by post, fax, e-mail or hand delivery** to the following address:

The Appeal Administrator,

Office of the KwaZulu-Natal MEC for Economic Development, Tourism & Environmental Affairs

POSTAL/ FAX/ E-MAIL:	PHYSICAL:
Private Bag X9152 PIETERMARITZBURG 3200 Tel: 033 – 264 2651 Fax: 033 – 264 2674 Mobile: 081 731 7361 (Haresh Inderlall) E-mail: haresh.inderlall@kznedta.gov.za	2 nd Floor, Room 218.23 270 Jabu Ndlovu Street PIETERMARITZBURG 3201

Yours faithfully

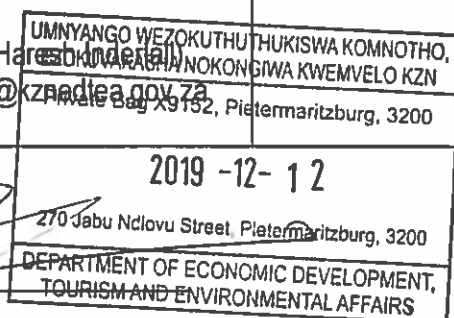

Mr. Sabelo Ngcobo

Director: South Region & Coastal Management

for: Acting Head of Department

KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs

cc: Green Door Environmental: Phillipa harrison:phillipa@greendoorgroup.co.za





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Department :
Economic Development, Tourism and
Environmental Affairs

PROVINCE OF KWAZULU-NATAL

Environmental Authorization

**In terms of regulation 25 of the
Environmental Impact Assessment Regulations, 2014**

Project Title: The expansion of eMondlo bulk water supply scheme infrastructure at
Hlahlindlela No. 17482 and Mvunyana Dam No. 17994 at Abaqulusi Local Municipality
within Zululand District Municipality

Local Municipalities: Abaqulusi Local Municipality

Application Number: DC26/0008/2019

NEAS No. KZN/EIA/0001202/2019

Date of first issue: 12/12/19

Date amended:

Authorization holder: Zululand District Municipality

Location: The project is located at Farm Hlahlindlela No. 17482 and Mvunyana Dam No. 17994 at Abaqulusi Local Municipality within Zululand District Municipality.

Environmental Authorization

THE EXPANSION OF MONDLO BULK WATER SUPPLY SCHEME INFRASTRUCTURE AT HLAHLINDLELA NO. 17482 AND MVUNYANA DAM NO. 17994 AT ABAQULUSI LOCAL MUNICIPALITY WITHIN THE ZULULAND DISTRICT MUNICIPALITY

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Environmental Authorization

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Project Proposal

The expansion of eMondlo bulk water supply scheme infrastructure at Hlahlindlela No. 17482 and Mvunyana dam No. 17994 at Abaqulusi Local Municipality within Zululand District Municipality.

The expansion of eMondlo bulk water supply scheme infrastructure entails and includes the following infrastructural components:

- The installation of a new 4km long 450/500 diameter ductile iron /PVC – pipeline to replace the leaking sections of existing 400mm diameter raw water bulk pipeline between the pump station and the eMondlo WTW; and
- Refurbishment of electrical and mechanical components of the existing Emondlo WTW.

Decision

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014, the

KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs

(hereafter referred to as the “Department”)

grants environmental authorization

to:

Zululand District Municipality (herein after referred to as “the authorization holder”)

Details of the contact person:

Mr. B. P. Mnguni

400 Gagane Street

Ulundi,

3838



Tel: 035 - 874 5500

E – Mail Address: bpmnguni@zdm.co.za

to undertake the following activities (hereafter referred to as "the activities") as described in section 1 below.

1 Activities Authorized and Location of Activities

The following activities in Government Notice No. R. 983; dated 08th December 2014 are triggered by the abovementioned project:

1.1 Description of Activities and location

Component (or phase) of the project	Listing Notice 1: Activity No.	Listed Activity Applicability
GNR 983 [327] Listing Notice 1: 08 December 2014	<p><i>45: The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure:</i></p> <ul style="list-style-type: none"><i>i) Has an internal diameter of 0,36 metres or more; or</i><i>ii) Has a peak throughput of 120 litres per second or more;</i> <p><i>and</i></p> <ul style="list-style-type: none"><i>a) where the facility or infrastructure is expanded by more than 1000 metres in length; or</i><i>b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more</i> <p><i>Excluding where such expansion</i></p> <ul style="list-style-type: none"><i>aa) Relates to transportation of water or storm water or storm water within a road reserve; or</i><i>a) Will occur within an urban area.</i>	<p>The activity is applicable because of the establishment of a new 4km long 450 mm / 500mm diameter section of pipeline from Mvunyane Dam towards the eMondlo Water Treatment Works.</p> <p>The 2.7 km pipeline internal diameter will not be applicable to this activity as it is smaller than 0,36 metres.</p>



Environmental Authorization
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<p>GNR 983 [327] Listing Notice 1: 08 December 2014</p>	<p><i>19: The infilling or depositing of any material of more than 10³ into, or the dredging, excavation, removal or moving of soil, sand shells, shell grit, pebbles or rock of more than 10³ from a watercourse:</i></p> <p><i>But excluding where such infilling, depositing, dredging, excavation, removal or moving-</i></p> <p><i>a) Will occur behind a development setback</i></p> <p><i>b) Is for maintenance purposes undertaken in accordance with a maintenance management plan;</i></p> <p><i>c) Falls within the ambit of activity 21 in this Notice, in which case that activity applies</i></p>	<p>The activity is applicable because a new 4km long 450mm / 500mm diameter pipeline will include one watercourse crossing point along its route. The watercourse crossings will comprise a buried crossing of approximately 2 metre depth. The removal of more than 10 m³ of material from within the watercourse is therefore required at the watercourse crossing point.</p>
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as described in the Final Basic Assessment Report dated September 2019 and received by the Department on the September 2019.

1.2 The physical address or farm name:

The Project is located on the following properties:

1. Farm Hlahlindlela No. 17482 and Mvunyana Dam No. 17994

Surveyor – General 21 Digit Code:

1. NOGT0000000174820000
2. NOGT0000000179940000

Start point for 4km pipeline	Degrees	Minutes	Seconds
South	28	02	14.06
East	30	46	38.14
Watercourse Crossing Point:	Degrees	Minutes	Seconds
South	28	02	01.93

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East	30	45	35.05
End Point for 4km Pipeline:	Degrees	Minutes	Seconds
South	28	01	36.04
East	30	44	40.81

Conditions of Authorization

This Environmental Authorization is subject to the conditions set out below:

2.1. Period of Validity: The listed activities authorized must commence within **ten (10) years** from the date of issue. If commencement of the authorized activities do not occur within that period, this authorization lapses.

2.2 Environmental Audit Report

2.2.1 All the documentation, for instance, environmental audit reports / monitoring reports / compliance reports must be submitted to this Department on quarterly basis after the receipt of the development commencement notification.

2.2.2 The environmental audit reports must be compiled in accordance with Appendix 7 of the Environmental Impact Assessment Regulations, 2014 [as amended in 2017] and must indicate the date of the audit, the name and the outcome of the audit in terms of compliance with the environmental authorisation conditions as well as the requirements of the EMPr.

2.2.3 Records relating to monitoring and auditing must be kept on site and made available for inspection to the Department.

2.2.4 This Department reserve the right to audit the development at any time of the development phase.

2.3 Environmental Management Programme

2.3.1 The Environmental Management Programme (EMPr) **dated September 2019** for the expansion and operational phases of this project as submitted for the environmental authorization of this



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project complies with section 24N of NEMA and Appendix 4 of the EIA Regulations, 2014. This EMPr is hereby **approved** and must be implemented.

2.3.2 The EMPr must be kept on site during all phases of the development.

2.3.3 The EMPr must be updated where the findings of the environmental audit reports indicate insufficient mitigation of environmental impacts associated with the undertaking of the activity, or insufficient levels of compliance with environmental authorisation or EMPr.

2.3.4 The updated EMPr must contain recommendations to rectify the shortcomings identified in the environmental audit report.

2.3.5 The updated EMPr must be submitted to the Department for approval together with the environmental audit report, as per Regulation 34 of GN R. 982. 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.

2.4 Monitoring and Reporting to the Department

2.4.1 All requirements for the management, monitoring and reporting of impacts for all phases of the project must be as specified in the approved EMPr.

2.4.2 The holder of environmental authorisation must appoint an experienced - qualified independent Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation measures and recommendations referred to in this environmental authorisation are implemented and to ensure compliance with the provisions of the approved EMPr.

2.4.3 The ECO must be independent and have the necessary experience and qualifications to understand, interpret, audit and implement the EMPr and conditions of the environmental authorisation. Feedback must be given in the form of an audit report which must address any non-compliance that may have arisen from the audit.

2.4.4 The ECO must be appointed before commencement of any authorised activities.

2.4.5 Once appointed, the name and contact details of the ECO must be submitted to the Zululand Assistant Director: Compliance, Monitoring and Enforcement Component of the Department.



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- 2.4.6 The ECO must keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.
- 2.5 All documentation, for instance, audit / monitoring / compliance reports and notifications, required to be submitted to the Department in terms of environmental authorisation, must be submitted to the Assistant Director: Compliance, Monitoring and Enforcement Component of the Department.
- 2.6 The holder of environmental authorisation must, for the period during which the environmental authorisation and EMPr remain valid, ensure that project compliance with conditions of the environmental authorisation and EMPr are audited, and that the audit reports are submitted to the Assistant Director: Compliance, Monitoring and Enforcement Component of the Department
- 2.7 The activities authorized must only be carried out at the location as described in **section 1** above.
- 2.8 **Written notice of the commencement of the development and operational phases**
- 2.8.1 Not less than **seven (7) days** written notice must be given to the Department that the construction phase will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the construction will commence.
- 2.8.2 Not less than **thirty (30) days** written notice must be given to the Department that the operational phase will commence.
- 2.9 **Specific Development Phase Conditions**
- 2.9.1 The expansion of eMondlo bulk water supply scheme infrastructure must be upgraded in accordance with **Appendix C: Layout Plan**; included in the Final Basic Assessment Report compiled by Green Door Environmental and attached as **Annexure 3** in this Environmental Authorisation
- 2.9.2 If the **Layout Plan stated at Section 2.9.1** above is amended, the amended layout plan must be submitted to the Department for approval prior to the commencement of construction or construction continues.



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- 2.9.3 The development footprint required for the eMondlo pipeline must be pegged and clearly demarcated by a barrier tape.
- 2.9.4 The existing tracks and roads must be used to access the work servitude.
- 2.9.5 The pipeline must be buried at a sufficient depth so that it does not interfere with surface water movement leading to erosion.
- 2.9.6 The environmental authorisation holder must ensure that no stockpiling of any material must take place within the wetland systems.
- 2.9.7 The excavation for the pipeline must not be undertaken during a storm event.
- 2.9.8 The chemicals must be stored in a bunded area with an impermeable base, which is capable of containing 110% of bunded material.
- 2.9.9 The spillages of fuels, oils and other harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using proper solid / hazardous waste facilities.
- 2.9.10 The machinery and equipment must be maintained and well serviced to prevent leakages and unnecessary noise.
- 2.9.11 The materials storage areas and parking of machines must be demarcated away from the sensitive areas; such areas are Mvunyane river, primary grassland and wetland habitats.
- 2.9.12 The environmental authorisation holder must ensure that fire fighting equipment is present at all times on construction site in accordance with Occupational Health and Safety Act (85 of 1993).
- 2.9.13 The portable toilets must be placed outside of the 1:100 year flood line of Mvunyane river.
- 2.9.14 All labour or staff must be advised by means of environmental awareness programme training on the biodiversity importance of the area.
- 2.9.15 The environmental authorisation holder must ensure that all watercourses, wetlands are free from construction rubble, spoil materials and waste materials.
- 2.9.16 The environmental authorisation holder must repair any environmental damage that the construction works has caused to neighbouring properties.
- 2.9.17 The disturbed sites must be rehabilitated as soon as construction in an area is complete.
- 2.9.18 All the building rubble must be removed from the construction site and disposed of at a permitted landfill site.



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- 2.9.19 A more detailed geotechnical investigation must be carried out prior the commencement of the construction of the sections of the pipeline to confirm the findings of the Desktop Geotechnical Investigation Report.
- 2.9.20 The KwaZulu-Natal and Research Institute must be contacted if any heritage objects are identified during earthmoving activities and all development must cease until further notice.
- 2.9.21 The environmental authorisation holder must ensure that; no structures older than sixty years or parts thereof are allowed to be demolished, altered or extended without a permit from the KwaZulu-Natal and Amafa Research institute.
- 2.9.22 Any heritage material must not [under any circumstances] be destroyed or removed from site unless under the direction of KwaZulu-Natal and Amafa Research Institute and heritage specialist.
- 2.9.23 The environmental authorisation holder must ensure that no activities are allowed within 50 metre of a site, which contains rock art.
- 2.9.24 If any remains may be on site, that is potentially human remains, the South African Police Service [SAPS] must be contacted. But no SAPS official may disturb or exhume such remains, without the necessary permission from KwaZulu-Natal and Amafa Research Institute.
- 2.9.25 The environmental authorisation holder must limit the degradation of the natural agricultural resource, during or after the construction and operation of expanded Mondlo bulk water supply scheme infrastructure.
- 2.9.26 The environmental authorisation holder must ensure that no buildings or any structures other than fence, hedge or a wall that does not rise higher than 2.1 metres above or below the surface of the land on which it stands shall be erected on the land within a distance of 15 metres measured from the road reserve boundary or a blacktop surfaced main road.
- 2.9.27 The environmental authorisation holder must ensure that all structures and services are to be approved and placed in consultation with and to the satisfaction of the Cost Centre Manager, Vryheid on Telephone No. 034 – 980 0404.



- 2.9.28 An alien eradication and control programme must be developed and implemented during development to eradicate alien vegetation in disturbed areas after eMondlo pipeline commencement construction and during the operation phase.
- 2.9.29 The environment authorisation holder is responsible for compliance with the provision for *Duty of Care and Remediation* of damage in accordance with Section 28 of NEMA; Act 107 of 1998, as amended. Determination of damage rests in this Department.
- 2.10 **Availability of this environmental authorization**
- 2.10.1 A copy of this environmental authorization must be kept by the authorization holder and made available to any official of the Department on request.

3. General

3.1 Compliance with the conditions of this authorization

In terms of section 24F of the National Environmental Management Act, 1998 (Act No. 107 of 1998), no person may commence with an activity listed in terms of section 24(2) (a) or (b) of the Act, unless the competent authority has granted an environmental authorization.

3.2 Understanding the conditions of this authorization

- 3.2.1 It is the responsibility of the environmental authorization holder to understand the conditions of this authorization. Any queries regarding this environmental authorization must be submitted in writing to the Department (contact details in section 3.4).
- 3.2.2 It is the responsibility of the environmental authorisation holder to apply for an amendment of the environmental authorisation with the Department for any transfer or change of ownership rights in the property on which the activity is to take place.



3.3 Amendments to the project or EMPr

- 3.3.1 Any changes to, or deviations from, the project description set out in this authorization must be approved, in writing, by the Department before such changes or deviations may be effected.
- 3.3.2 Any subsequent amendments to the approved EMPr must be submitted to the Department for review. The amendments must only be implemented after being approved by the Department.

3.4 Contact details of the Department

The following contact details for the Department must be used for all reports, notices etc. which must be submitted to the Department:

KZN Department of Economic Development, Tourism and Environmental Affairs

Private Bag X22

Ulundi; 3838

Fax No: 035 – 870 9389

Cellphone No. 082 322 1316

E-Mail Address: Nkosinathi.Mqadi@kznedtea.gov.za

Attention: Control Environmental Officer: Compliance, Monitoring & Enforcement Component, Zululand District Office.

Date of environmental authorization:

UMNYANGO WEZOKUTHUTHUKISWA KOMNOTHO, EZOKUVAKASHA NOKONGIWA KEMVELO KZN Private Bag X9152, Pietermaritzburg, 3200
2019 -12- 12
270 Jaba Ndlovu Street, Pietermaritzburg, 3200
DEPARTMENT OF ECONOMIC DEVELOPMENT, TOURISM AND ENVIRONMENTAL AFFAIRS

Mr. Sabelo Ngcobo

Designation: Director South Region and Coastal Management

for: Acting Head of Department

KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs

Annexure 1: Reasons for Decision

1. Information considered in making the decision

In reaching its decision, the Department took, *inter alia*, the following into consideration -

- a) Application Form dated 24th July 2019;
- b) Amended Application Form dated 22 October 2019;
- c) The Final Basic Assessment Report [FBAR] dated September 2019;
- d) Addendum to the Basic Assessment Report dated 01 November 2019;
- e) The comments received from the organs of state and interested and affected parties as included in the FBAR dated September 2019 and received by the Department in September 2019; including comments and information from;

<u>Document</u>	<u>Compiled by</u>	<u>Date</u>
Pre –Application Meeting	Green Door Environmental	24 June 2019
Application Form	Green Door Environmental	24 th July 2019
Background Information Document	Green Door Environmental	01 April 2019
Draft Basic Assessment Report	Green Door Environmental	April 2019
Final Basic Assessment Report	Green Door Environmental	March 2019
Desktop Geotechnical Investigation Report	Geozone GeoServices	09 May 2019
Heritage Impact Assessment	Active Heritage cc	06 April 2019
Wetland Assessment	Malachite Ecological Services	April 2019
Biodiversity Assessment	Peter le Roux	November 2015
Correspondence	Department of Agricultural Resources Management : LURU	11 April 2019
Correspondence	Department of Agricultural Resources Management : LURU	21 August 2019



Environmental Authorization
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Correspondence	Department of Agriculture, Forestry and Fisheries	05 April 2019
Correspondence	Department of Agriculture, Forestry and Fisheries	14 August 2019
Correspondence	Amafa AkwaZulu Natal	03 July 2019
Correspondence	Ezemvelo KZN Wildlife	15 August 2019
Correspondence	Department of Transport	12 September 2019

- f) Mitigation measures as proposed in the FBAR dated September 2019 (including specialist studies) have been incorporated in the EMP dated September 2017; and
- g) The findings of the site visits undertaken by Department's official on the 24th June 2019.

2. Key factors considered in making the decision

a) Final Basic Assessment Report (FBAR) dated September 2019 received by Department in September 2018.

- i. The FBAR dated September 2019 complies with the requirements of the EIA Regulations, 2014 and have been accepted by the Department;
- ii. The FBAR dated September 2019 included a description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity.
- iii. The methodology used in assessing the potential impacts identified in the FBAR dated September 2019 and the specialist studies have been adequately indicated.

b) Public Participation Process:

The public participation process was undertaken according to Regulations 39 to 44 of the EIA Regulations as promulgated under the National Environmental management Act, Act 107 of 1998. The public participation process complies with the requirements of Chapter 6 of the EIA



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Regulations, 2014 and the comments from the organs of state and interested and affected parties have either been included in the FBAR dated September 2019. Interested and Affected Parties [IAPs] were identified and informed of the proposed eMondlo pipeline development. IAPs were provided with an opportunity to register any environmental issues or concerns regarding the eMondlo pipeline project. Through the public participation process and specialist studies undertaken; potential negative environmental impacts were identified and subsequently the mitigation measures were identified and management appropriate options to address such identified environmental issues and concerns.

c) **Need and Desirability:**

- The eMondlo bulk water supply scheme refurbishment project is directly in line with the Abaqulusi Local Municipality IDP in terms of basic service delivery and infrastructure development as well as addressing the challenges associated with the aging infrastructure;
- Eradicate backlogs and promote basic services infrastructure and delivery;
- Employment opportunities during the construction phase;
- Skills development and improved basic infrastructure;
- Employment opportunities during the construction phase;
- Promote provision of sufficient bulk infrastructure services [demand and supply]; and
- Priority spending on the infrastructure upgrading needs [new and maintain].

d) **Wetland Impact Assessment**

The Wetland Impact Assessment Report, dated July 2019, associated with the Mondlo pipeline was conducted by Malachite Ecological Services. The assessment concluded that based on the current identification of four wetland indicators, four hydro geomorphic units were delineated within the assessment area. These hydro geomorphic units were classified as a floodplain system associated with Mvunyane River, a channelled valley bottom system which forms confluence with Mvunyane River and two seep systems. The floodplain and channelled valley



bottom system were delineated along the route associated with the new 4km pipeline while the two seep systems were delineated within 500m of the proposed 2.7 pipelines. The major impacts to the health of hydro geomorphic stems from Mvunyane river and potential impacts to the wetland systems are associated with soil erosion and sedimentation leading to the future degradation of wetland systems, pollution potential of water resources. The potential impacts identified would be mitigated by a list of mitigation measures listed.

e) Desktop Paleontological Assessment

The paleontological assessment was undertaken as part of the Heritage Impact Assessment It indicated that the study area falls within an area that has a low fossil sensitivity. No further paleontological studies were therefore required for the study site.

f) Heritage Impact Assessment

The Heritage Impact Assessment; dated 08 April 2019; was undertaken by Active Heritage cc. The assessment concluded that no heritage sites were along the proposed pipeline and associated structures. No heritage sites occurred within 50m from the footprint. The greater area is also not part of any known cultural landscape.

The recommendations were listed against the degradation of cultural resources if they are exposed by earthworks.

g) Biodiversity Assessment

The biodiversity impact assessment for the Mondlo pipeline was conducted and compiled by Peter le Roux.

The study identified and concluded that the vegetation along the new 2.7km pipeline route was mostly transformed with the exception of final 215 metres stretch up to the reservoir that traversed primary grassland on granite substrate. The 4km pipeline route traversed a rock outcrop with primary grassland and shrub land below the dam wall, with existing pipeline route and breather



chambers visible in places. The project area site does not protrude into any Critical Biodiversity Areas. Recommendations were listed against the biodiversity related impacts.

h) Geotechnical Investigation Report

The Desktop Geotechnical Investigation Report for the Mondlo pipeline development was compiled by GeoZone GeoServices dated 09 May 2019. The aim of the geotechnical investigation was the determination of geotechnical conditions of the proposed Mondlo pipeline project.

The investigation concluded that the study site is composed of two different geological units, that is: sedimentary lithological of the Karoo aged Vryheid Formation and intrusive dolerite. The entire route of the pipeline from Mvunyane dam to Purim is underlain by dolerite, as is the majority of the 4km eMondlo route. The only section of pipeline underlain by Vryheid formation sediments is the latter part of the route from 3.300 km to the end of the pipeline.

The soil thickness, rock head levels, groundwater and trench stability will all impact on the installation of the pipeline in a number of ways and it is recommended that a more detailed geotechnical investigation be carried out prior to the commencement of the construction of the sections of the pipeline to confirm the findings of this desktop study.

i) Alternatives:

The proposed eMondlo pipeline project intends to service specific eMondlo community with potable water at various locations. The old pipeline is leaking and water is wasted. The amount of water to be supplied to community must be increased.

• Site location

The refurbishment of eMondlo pipeline will serve the same community and the pipeline alignment renders the preferred site alternatives as appropriate. There is no need to investigate the alternative route or location.



- Design or layout of the activity

The proposed pipeline route for both the 4km long section of the 450mm / 500mm pipeline and 2.7km long section of 125mm pipeline are located adjacent to the existing pipelines, within the existing pipeline servitudes, which minimises the potential for detrimental impacts to occur.

- Technological/Layout Alternatives

A surge analysis was undertaken to determine the optimal sizing of pipelines as well as placement of air and scour valves.

- No – go Alternative

This alternative would leave the site with least negative direct impacts. No reliable domestic water supply intended to communities would be realised.

j) Impact Statement

The objective of the assessment of impacts is to identify; assess and analyse all significant impacts that may arise from the undertaking of an activity. The findings of the impact assessments are used to inform the competent authority's decision as to whether the activity should be authorised; authorised subject to conditions that will mitigate the impacts to within acceptable levels or should be refused.

The analysis of significance of the varied environmental impacts before mitigation were mainly medium to high; and subsequently rated mainly medium to low after mitigation which may be considered not to impact the study area environment heavily. Conclusively the negative environmental impacts can be mitigated; avoided and managed to acceptable levels. So the Department authorises the uSuthu off-channel storage dam development subject to conditions to be implemented by the applicant.

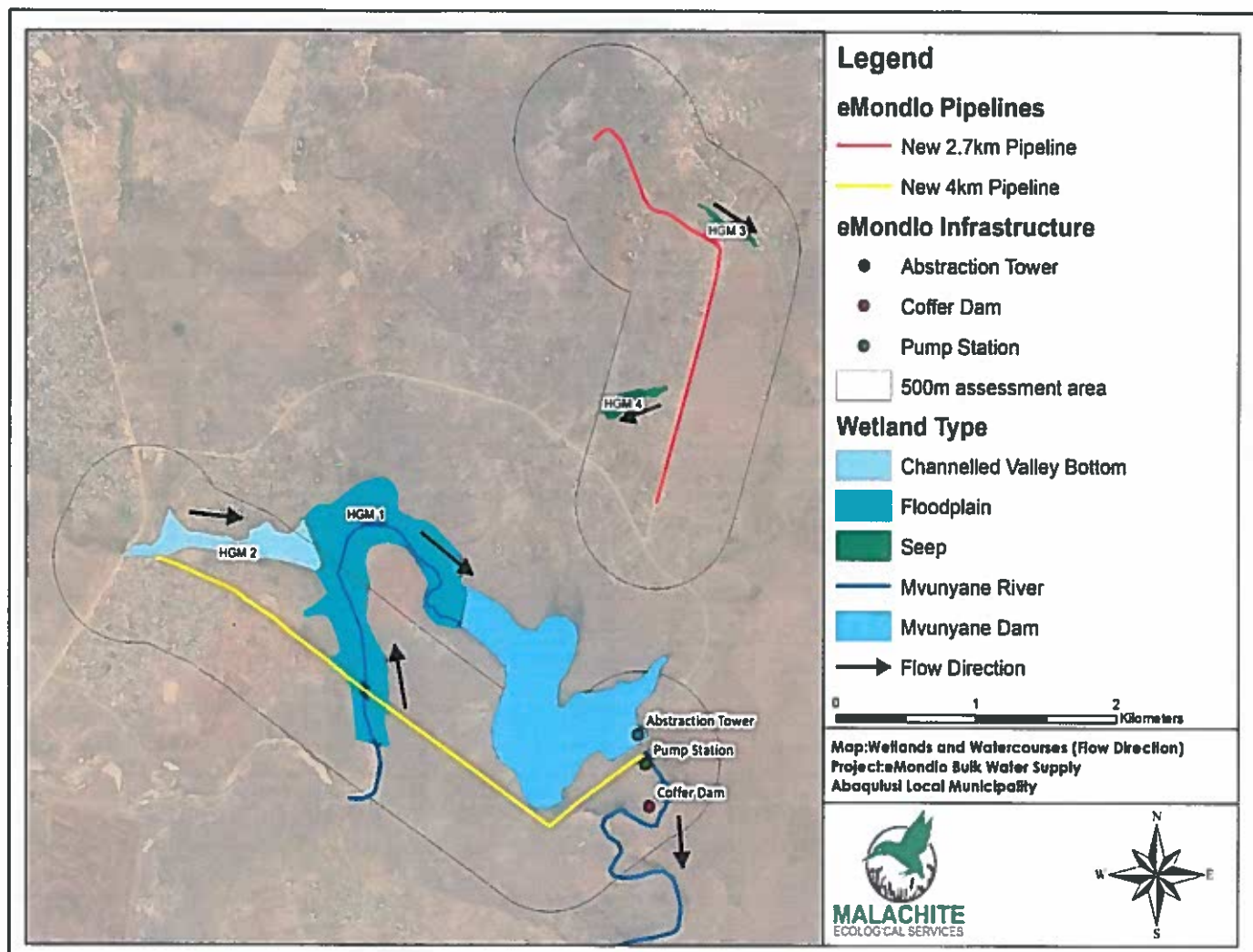


k) Objectives of integrated environmental management:

The Department is satisfied that, subject to compliance with the conditions contained in the environmental authorization, the general objectives of integrated environmental management laid down in Chapter 5 of NEMA will be met.

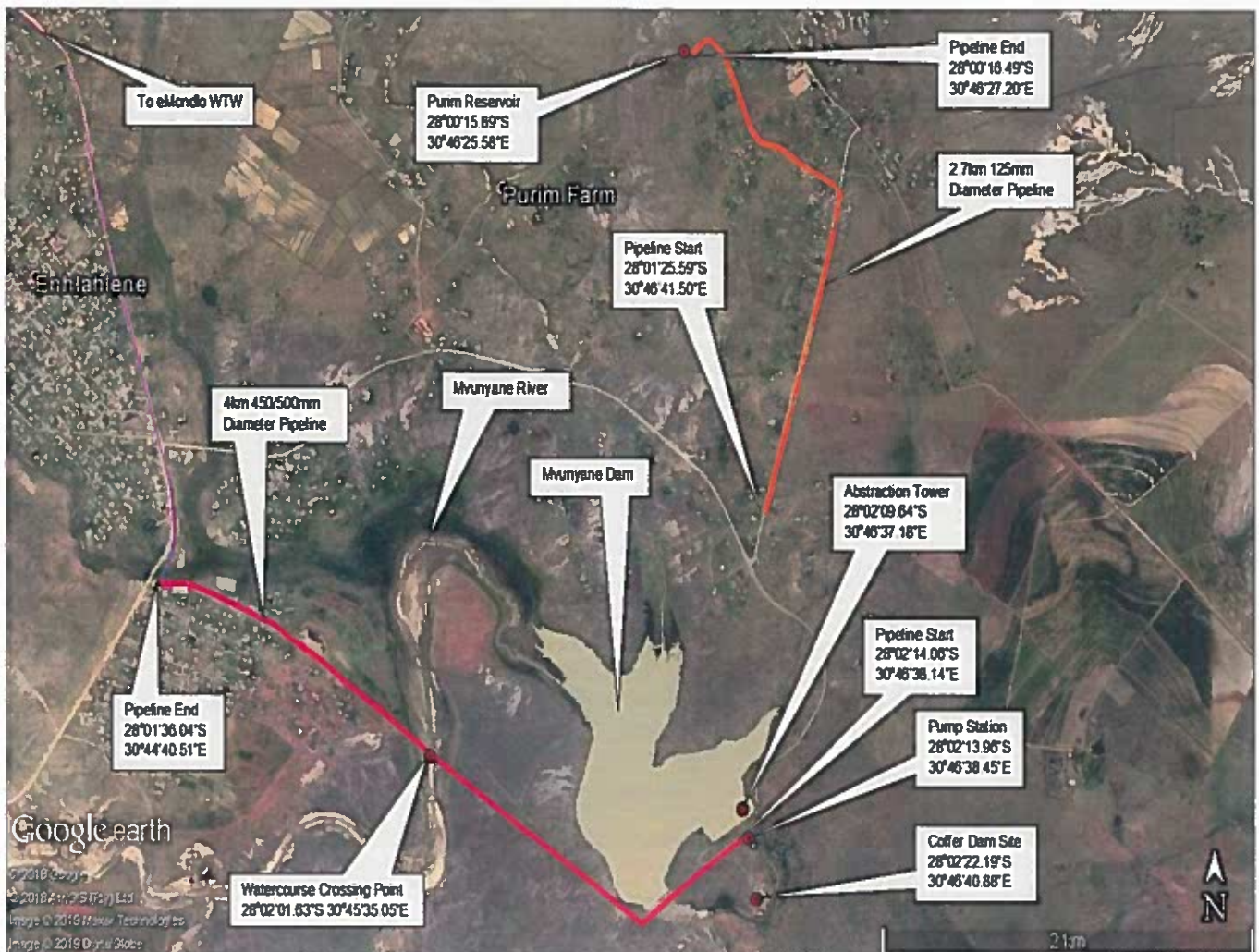


Annexure 2: Locality Map



Annexure 3 (a): Appendix C – Facility Illustrations

The development of eMondlo bulk water scheme infrastructure must be developed in accordance with Layout Plan attached below; included in the Final Basic Assessment Report compiled by Green Door and as Annexure 3 (a) in this Environmental Authorisation.



"Attainment of Radically Transformed, Inclusive and Sustainable Economic Growth for KwaZulu - Natal"

Annexure 3 (b): Appendix C – Facility Illustrations

The development of eMondlo bulk water scheme infrastructure must be developed in accordance with Layout Plan attached below; included in the Final Basic Assessment Report compiled by Green Door and as **Annexure 3 (b)** in this Environmental Authorisation

