

Basic Assessment Report



agriculture & environmental affairs

Department:
Agriculture
& Environmental Affairs
PROVINCE OF KWAZULU-NATAL

(For official use only)

EIA File Reference Number:
NEAS Reference Number:
Waste Management Licence Number:
(if applicable)
Date Received:

DM/0008/2014
KZN/EIA/

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

Basic Assessment Report

9. The KZN Department of Agriculture & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

Basic Assessment Report

DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	
File reference number (Waste Management Licence):	

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	Kerry Seppings Environmental Management Specialists cc (KSEMS)		
Physical address:	4 Woodville Lane, Off Hawkstone Avenue, Summerveld, Assagay		
Postal address:	P. O. Box 396, Gillitts		
Postal code:	3603	Cell:	079 520 1583
Telephone:	031 769 1578	Fax:	086 535 5281
E-mail:	kerry.seppings@telkomsa.net		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Kerry Stanton	MSc Cum laude BSc (Hons) MSc	- EAPSA Certified, - Certified Professional Natural Scientist (400167/12), - Certified GCX Carbon Footprint Analyst (Level 1)	18
Stephanie Williams	MPhil Marine & Environmental Law		2

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
Ryan Edwards	Detailed CV available on request.	Wetlands	Section 4	Proposed Mlazi WP 265 Ex 4 Sanitation Project: Watercourse Impact Assessment Report.

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Construction of a Pump Station and Associated Pipeline and Toilets at WP 265 EX4, Umlazi.

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

As part of the “Provision of Water and Sanitation to Informal Settlements within eThekweni Municipality”, certain priority informal settlements were identified within the eThekweni Municipality that urgently need ablution blocks, as well as water and sewer connections to serve the communities immediate needs. The proposed laid pipes (water and sewer) will tie-into existing reticulation and will provide future reticulation when the area is developed.

The ablution facility chosen by Council to be installed is a temporary modified container (see Figure 1 below). This arrangement allows for future removal and re-placement to other informal settlements, as the settlements are upgraded and individual water and sewer connections are provided to each new formalised dwelling. Each “Ablution” blocks should service approximately 50-75 households and be a maximum distance of 250m from any point. Further detail of the programme scope is attached in Appendix G.

eThekweni Water and Sanitation (EWS) therefore propose to construct two ablution blocks, a pump station and associated pipework in uMlazi E to provide formal sanitation facilities to the informal settlement in the area. Sections of the proposed pipelines and the pump station fall within 32 meters of a watercourse. Cumulatively, infrastructure which is more than 50 square meters is being constructed within 32 meters of the watercourse.

Two pre-fabricated ablution blocks (8 x 9.5m) will be erected and connected to a rising main. The rising main will tie into a proposed pump station. The application includes the construction of a bulk sewer line which will begin at the pump station and extend southwards. The bulk sewer line will connect ablution blocks to the pump station in the future. Please refer to Appendix C for the layout. The proposed pipelines will be 160mm in diameter and will be made from uPVC. Sewage will be transferred to the existing Southern Waste Water Treatment Facility.

The proposed sanitation infrastructure will be located within the uMlazi Informal Settlement (uMlazi E) east of Sibusiso Mdakane Drive. Proposed infrastructure lies adjacent to the Fongozi River and floodplain. The Fongozi River is a “largely modified” tributary to the uMlazi River.



Figure 1: An example of the prefabricated toilets to be constructed within the uMlazi E Informal Settlement.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

<p>As per LN 1_ GNR 544_ 18th June 2010 promulgated from the 2nd of August 2010:</p>	<p>No. 11 <i>The construction of:</i> i) Canals; ii) Channels; iii) Bridges iv) Dams; v) Wiers; vi) Bulk stormwater outlet structures; vii) Marinas; viii) Jetties exceeding 50 square metres in size; ix) Slipways exceeding 50 square metres in size; x) Buildings exceeding 50 square metres in size; or xi) Infrastructure covering 50 square metres or more Where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse.</p>	<p>The applicant proposes to construct ablution facilities and associated pipework within the uMlazi Informal Settlement, eThekweni Municipality triggering activity 11 of GNR 544, infrastructure covering an area greater than 50m² within 32 meters of the Fongozi River and floodplains.</p>
--	--	---

4. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Basic Assessment Report

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The purpose and need of the project proposal is for the formalisation of ablution facilities within specific areas of the uMlazi Informal Settlement which currently do not have access to formalised toilets. There are therefore no feasible site alternatives for this application however a number of layouts were initially considered as part of the proposal for the toilet and pipeline sites and are described below.

The number of ablution blocks and associated pipelines as well as the requirement for a pump station remained the same throughout the assessment however, on submission of the Watercourse Impact Assessment Report, the specialist stated that the Fongozi floodplain was locally rare and therefore the location of the pump station and bulk sewer line were adjusted to avoid the Fongozi River's 1:100 year floodplain (please refer to Figure 2 of the Watercourse Impact Assessment Report).

Alternative A1 and S1 (preferred):

Two prefabricated ablution blocks approximately 8 x 9.5m in area will be erected within uMlazi E. Sewage from the toilets will travel through 160mm diameter pipelines (rising sewer main lines) to a proposed pump station in the east of the site. A 160mm diameter bulk sewer pipeline will extend from the pump station southwards following the boundary of the 1:100 year Fongozi River Floodplain as delineated by the wetland specialist. The pipelines will measure a total of approximately 460 m. Please refer to Appendix C for the layout of the proposed toilets, pipelines and pump station. All pipelines will be made from unplasticized poly(vinyl chloride) or uPVC. uPVC is widely used in building materials as it is known as having a strong resistance against chemicals, sunlight, and oxidation from water.

While none of the proposed infrastructure falls directly within a watercourse, there are sections of the rising main, bulk sewer line and proposed pump station that fall within 32 m of the Fongozi River and associated wetlands/ floodplain.

The pump station will be designed according to the layout attached in Appendix C and this will include the construction of the main sump, pump well and electrical rooms. The pump station will be designed with the following safeguards against electrical failure:

- Emergency storage in the main sump with sufficient capacity to handle additional 2 hours storage until normal operation is resumed;
- Connection via telemetry to the operational control room to give early warning of a power failure;
- Odour and noise control considerations will be included in the safety considerations and will include positioning of vents, windows and doors away from any housing or dwellings.

Alternative A2 and S1:

The layout of alternative A2 was proposed prior to receipt of the Wetland Assessment Report (Appendix D) and involved the construction of the same infrastructure with the pump station and sections of the bulk sewer main being located further east (closer to the Fongozi River).

This alternative was dismissed as the proximity to the Fongozi River has been increased in the preferred layout (Alternative A1 and S1). Alternative A2 and S1 has therefore not been assessed in this BAR. Both layout alternatives have been included in Appendix C.

Basic Assessment Report

No Go Alternative i.e. not constructing the ablution facilities in this section of uMlazi E. The no go alternative would result in the local communities continued use of other forms of ablution and their continued exposure to unsanitary conditions. The construction of formalised sanitation facilities is aimed at improving hygienic conditions within this area of the eThekweni Municipality, which would not result if the project did not go ahead.

Sections B 5 – 15 below should be completed for each alternative.

5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

Alternative: N/A	Latitude (S):			Longitude (E):		
Alternative S1 ¹ (preferred or only site alternative)						
Alternative S2 (if any)						
Alternative S3 (if any)						

In the case of linear activities:

Alternative:	Latitude (S):			Longitude (E):		
Alternative S1 (preferred or only route alternative)						
• Starting point of the rising sewer main	29°	57'	07.25"	30°	55'	12.64"
• Middle point of the rising sewer main	29°	57'	05.42"	30°	55'	13.93"
• End point of the rising sewer main (i.e. location of pump station)	29°	57'	05.73"	30°	55'	15.49"
• Middle point of bulk sewer main	29°	57'	08.95"	30°	55'	14.34"
• End point of bulk sewer main	29°	57'	10.61"	30°	55'	10.75"
• Ablution Block 1	29°	57'	08.05"	30°	55'	14.08"
• Ablution Block 2	29°	57'	05.72"	30°	55'	15.11"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 500m along the route for each alternative alignment. **N/A**

6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1² (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

Alternative A1	N/A m ²
Alternative A2	N/A m ²
Alternative A3	N/A m ²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Total length of the pipelines:

Alternative A1	Approximately 460 m
Alternative A2	N/A m

¹ "Alternative S.." refer to site alternatives.

² "Alternative A.." refer to activity, process, technology or other alternatives.

Basic Assessment Report

Alternative A3 (if any)

N/A m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Size of the servitude of the pipelines:

Alternative A1 (preferred activity alternative)

Approximately 1380 m ²

Alternative A2 (if any)

N/A m ²

Alternative A3 (if any)

N/A m ²

Alternative:

Total size of the toilet platform area:

Alternative A1 (preferred activity alternative)

Approximately 152 m ²

Alternative A2 (if any)

N/A m ²

Alternative A3 (if any)

N/A m ²

7. SITE ACCESS

Does ready access to the site exist?	YES	NO
	X	
Access to the site is off Sibusiso Mdakane Drive. Turn right into 109155 Street. The site lies to the east of this Street.		
If NO, what is the distance over which a new access road will be built	N/A m	
Describe the type of access road planned:		
N/A		

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as **Appendix A** to this report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material; **N/A**
- 8.7. servitudes indicating the purpose of the servitude; **N/A**
- 8.8. sensitive environmental elements within 100metres of the site or sites including (but not limited thereto):
 - rivers, streams, drainage lines or wetlands;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);

Basic Assessment Report

8.9. for gentle slopes the 1metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and

8.10. the positions from where photographs of the site were taken.

9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under **Appendix B** to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as **Appendix C**. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development phase of the activity?

What is the expected value of the employment opportunities during the development phase?

What percentage of this will accrue to previously disadvantaged individuals?

How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

R 2 million	
R0	
YES X	NO
YES X	NO
Approximately 3 local contract workers	
Approximately R200 000	
100%	
1	
R 65 400	
100%	

11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The uMlazi area within the eThekweni Municipality consists largely of high/medium density informal settlements. Currently, many households in this area do not have access to waterborne sewerage connections and are exposed to unsanitary conditions and a high risk of infection with excreta-related diseases.

According to the Constitution of the Republic of South Africa Act 108 of 1996 and the Water Services Act 108 of 1997, Local Government must ensure that all their residents have access to safe water and sanitation. This project forms part of eThekweni Municipality's Provision of Water and Sanitation to Informal Settlements programme. The proposed sanitation infrastructure is expected to improve hygienic conditions within Bottlebrush.

More details of the programme are provided in Appendix G.

Indicate any benefits that the activity will have for society in general:

Basic Assessment Report

To date, in terms of employment of local labour through the programme, 270 000 person days have been worked and 1176 FTE's created by this programme. In addition, local businesses (materials suppliers including stone, sand, cartage and security companies) and communities have gained employment and business from the project construction in their areas. This project is part of this programme and will further assist in improving the above outcomes. In addition, by formalising the ablution facilities the potential for sewage to contaminate the stream is also reduced. This is beneficial for communities as well as the environment downstream.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

This project forms part of eThekweni Municipality's Provision of Water and Sanitation to Informal Settlements programme, whereby waterborne sanitation will have been provided to approximately 990 000 people within Informal Settlements within eThekweni (based on 522 facilities x 60 dwellings x 6 people) should the project be extended to end June 2016. The improvement of life quality and health environment has had a positive direct effect for the people having access to waterborne sanitation, water and washing facilities. More details of the programme are provided in Appendix G.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act	All organs of State.	1998
Environment Conservation Act	DEA / DAEA	1989
National Heritage Resources Act	SAHRA/AMAFA	1999
National Water Act	DWA	1998
National Water Resources Strategy	DWA	2004
Occupational Health and Safety Act	DOL	1993
Hazardous Chemical Substance regulations	DOL	1995
Environmental Regulations for Workplaces	Department of Labour	1987
General Administrative Regulations	Department of Labour	2003
Construction Regulations	DOL	2003
eThekweni Municipality by-laws (General By-laws)	eThekweni Municipality	2008
Noise Induced Hearing Loss Regulations	Department of Labour	2003
National Environmental Management: Air Quality Act	DEA / DAEA	2004
National Environmental Management: Waste Act	DEA / DAEA	2008
National Standards (SANS)	SABS	2003

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
X	
Approximately 2 m ³	

If yes, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of? (describe)

Solid waste is expected to be minimal as materials excavated for trenches as required by the pipelines will be used again as fill material. What solid waste is generated by the contractors must be removed from the site to a designated disposal area within the construction site camp and disposed of at the closest available registered landfill site.

Where will the construction solid waste be disposed of? (provide details of landfill site)

Basic Assessment Report

Any solid waste generated must be disposed of at the nearest available registered landfill site. The closest landfill site is the Mariannhill Landfill site approximately 15km from the site. The closest hazardous landfill site is the Umlazi IV H:h landfill situated in Isipingo Beach. Should alternative landfill sites be used, this disposal site must be fully licensed and registered and must be approved by the ECO prior to the disposal of waste at this facility.

Will the activity produce solid waste during its operational phase?	YES	NO X
If yes, what estimated quantity will be produced per month?	N/A m³	

How will the solid waste be disposed of? (provide details of landfill site)

N/A

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	YES	NO X
--	-----	---------

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO X
---	-----	---------

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO X
--	-----	---------

If yes, what estimated quantity will be produced per month?

N/A m³

Will the activity produce any effluent that will be treated and/or disposed of on site?

Yes	NO X
-----	---------

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	NO X
---	-----	---------

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	Cell:	N/A
E-mail:	N/A	Fax:	N/A

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:
N/A

The reuse or recycling of waste water will not be required as little to no wastewater is expected to be produced from the construction phase. During the operational phase, no wastewater will be produced.

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES X	NO
--	----------	----

Basic Assessment Report

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
<input checked="" type="checkbox"/>	<input type="checkbox"/>

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

If no, describe the emissions in terms of type and concentration:

Dust will be produced during the construction phase as well as emissions from construction vehicles accessing the site. The vehicle emissions will be comprised primarily of Carbon Dioxide (CO₂) and will be of a low concentration.

13.4. Generation of noise

Will the activity generate noise?

YES	NO
<input checked="" type="checkbox"/>	<input type="checkbox"/>

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
<input type="checkbox"/>	<input checked="" type="checkbox"/>

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

The proposed activity will generate noise during the construction phase from construction vehicles and equipment. It is not expected that noise levels during construction and operation will exceed 85dBa.

Should activities that generate high levels of noise be required, nearby residents must be notified of the activities prior to the event. Workers will be trained regarding noise on site and construction hours will be kept to working hours (07h00 to 17h00). Work should not continue on weekends, after hours or public holidays, unless prior consent is obtained.

14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal <input checked="" type="checkbox"/>	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
--	-------------	-------------	-------------------------------	-------	------------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

N/A

Does the activity require a water use permit from the Department of Water Affairs?

YES	NO
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Infrastructure will not impeded or divert the flow of water in the adjacent watercourse. No other section 21 water uses are triggered.

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

15. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The proposal is for sewer reticulation and as such no design measures are available to ensure the activity is energy efficient.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

It is recommended that energy saving light bulbs be used in the ablution facilities.

SECTION C: SITE/AREA/PROPERTY DESCRIPTION

Basic Assessment Report

Important notes:

- For linear activities (pipelines, etc.) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g.A):

- Subsections 1 - 6 below must be completed for each alternative.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15 X	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------------------	-------------	--------------	-------------	---------------------

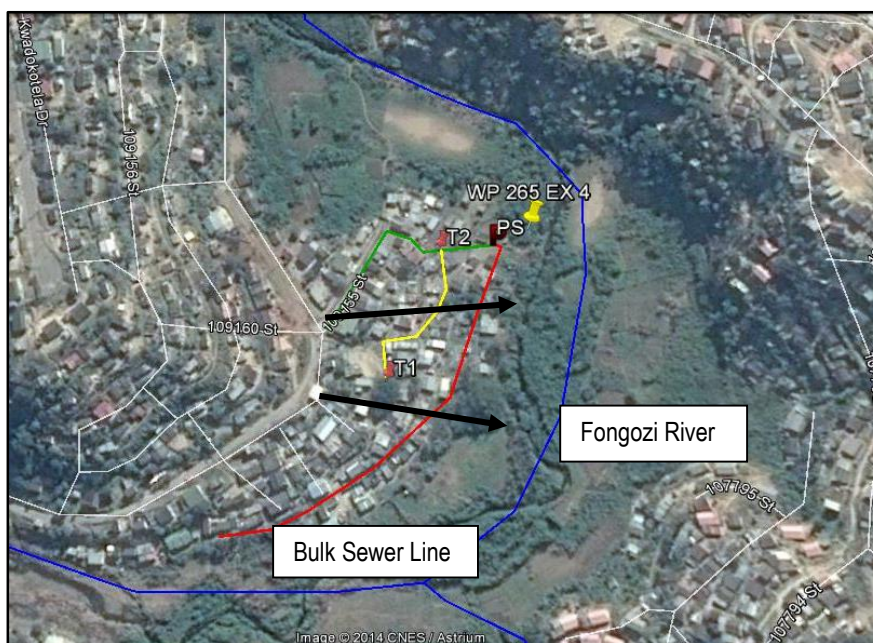


Figure 2: Black arrows indicating the slope of the land from 109155 Street to the Fongozi River (source: Google Earth, 2013)

Alternative S2 (if any):N/A

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	---------------------

Alternative S3 (if any):N/A

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	---------------------

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (Please cross the appropriate box).

Alternative S1 (preferred site):

Basic Assessment Report

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley X	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	------------------	-------	----------------------------	------	-----------

Alternative S2 (if any): N/A

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

Alternative S3 (if any): N/A

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?

YES	NO
----------------	----

If YES, please complete the following:

Name of the specialist:

Ryan Edwards from GCS Water and Environmental Consultants

Qualification(s) of the specialist:

Available on request.

Postal address:

4a Old Main Road, Judges Walk, Kloof

Postal code:

3610

Telephone:

031 764 7130

Cell:

-

E-mail:

ryane@gcs-sa.biz

Fax:

031 764 7140

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?

YES	NO
-----	---------------

If YES, specify and explain:

n/a – although the site is located within the KZN Coastal Belt vegetation unit, the natural vegetation on site has been cleared and totally transformed by the uMlazi Ex4 informal settlement. The only vegetation that remains is secondary alien plants dominated by wetland and riparian vegetation. No intact primary KZN Coastal Belt vegetation is present (page 19 of the Watercourse Impact Assessment Report in Appendix D).

Are there any special or sensitive habitats or other natural features present on any of the alternative sites?

YES	NO
----------------	----

If YES, specify and explain:

The Fongozi River floodplain and wetlands have been designated as "Freshwater Wetland" with the D'MOSS that links into the greater Mlazi floodplain system. While none of the proposed infrastructure falls within the delineated D'MOSS area, the site boundary lies directly adjacent to the delineated area.

A summary of the specialist findings is provided below.

Are any further specialist studies recommended by the specialist?

YES	NO
-----	---------------

If YES, specify:

n/a

If YES, is such a report(s) attached in Appendix D?

YES	NO
----------------	----

Signature of specialist:

See signature on Wetland Report attached under Appendix D.

Date:

-

Basic Assessment Report

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any): N/A		Alternative S3 (if any): N/A	
	YES	NO	YES	NO	YES	NO
Shallow water table (less than 1.5m deep)	X					
Dolomite, sinkhole or doline areas	YES	NO X	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO X	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO X	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO X	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES X	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO X	YES	NO	YES	NO
An area sensitive to erosion	YES	NO X	YES	NO	YES	NO

3.1 Desktop Watercourse Impact Assessment Report

GCS Water and Environmental Consultants were appointed to compile a watercourse impact assessment to delineate and describe the current state of the adjacent watercourses in the study area. Mitigation against potential impacts that may occur as a result of the proposed construction and operation of the abluent blocks and pump station were also prescribed.

3.1.1. Summary of Findings of Wetland Assessment

The proposed abluent blocks, pump station and associated pipelines are located on gently sloping lower reaches of the Mlazi River primary catchment. The adjacent Fongozi and Mlazi Rivers, both classified as major rivers by eThekweni, meet approximately 1km south of the study site. Three distinct watercourse units were identified and classified as follows:

- Fongozi River
- Fongozi Riparian Floodplain
- Floodplain Wetland

The proposed infrastructure lies west of the Fongozi River and associated floodplain. The Fongozi Wetland is situated north-west of the abluent blocks. The natural vegetation has been totally transformed by the informal settlement. Please see Figure 3 below indicating the location of the three watercourses in relation to the project proposal.

All three systems were found to be highly disturbed and modified and in a poor state. The value of the ecosystem services provided by the Fongozi River was rated as **low** however both the riparian floodplain and the floodplain wetland area were assessed as being of moderate/intermediate importance in terms of surface water management ecosystem services. This is because the systems are located on a locally rare floodplain area that plays an important role in flood attenuation and sediment trapping.

Basic Assessment Report

Impacts identified during construction and operation phases include:

- Direct disturbance
- Erosion and sedimentation
- Water quality impact
- Cumulative impacts

The wetland specialist concluded that most of the impacts pre-mitigation are of **low** significance however the potential cumulative impacts could be assessed as **acceptable but undesirable**. This is due to the potential operational water quality impacts. With strict adherence to the recommended mitigation measures, the magnitude and significance of all the potential impacts can be reduced. Key aspects influencing post-mitigation significance scores are related to proper design and construction of the pump station and pipelines, the proper use and maintenance of the toilet systems, design and maintenance and the location of the infrastructure.

Specialist recommendations have been prescribed to reduce the significance of the potential impacts during construction and operational phases and it is imperative that all the recommended mitigation measures are strictly adhered. The mitigation measures are listed on pages 33 – 40 of the Watercourse Impact Assessment Report in Appendix D. These measures have been incorporated into the Environmental Management Programme (EMPr, Appendix F).

Upon receipt of the specialist report, the EAP advised the applicant to relocate a section of the pipeline and the pump station out of the 1:100 year floodline, as delineated by the wetland specialist in Figure 1 of the Watercourse Impact Assessment Report. Please refer to the two layout alternatives in Appendix C. The preferred layout alternative was therefore designed.

Basic Assessment Report

Legend

- Bulk Boundary (Study Area)
- Fongozi River Channel
- Wetland
- Riparian Zone (Floodplain)
- 32m Buffer

FIGURE NO.: 2

MAP NUMBER: 14-033/F2-01

DRAWN BY: R. EDWARDS
WETLAND SPECIALIST

REVIEWED BY: R. STOW
SENIOR SCIENTIST

DATUM: WGS84

PROJECTION: GEOGRAPHIC

DATE: FEB 2014

CLIENT: KSEMS

PROJECT: MLAZI WP 265 EX 4

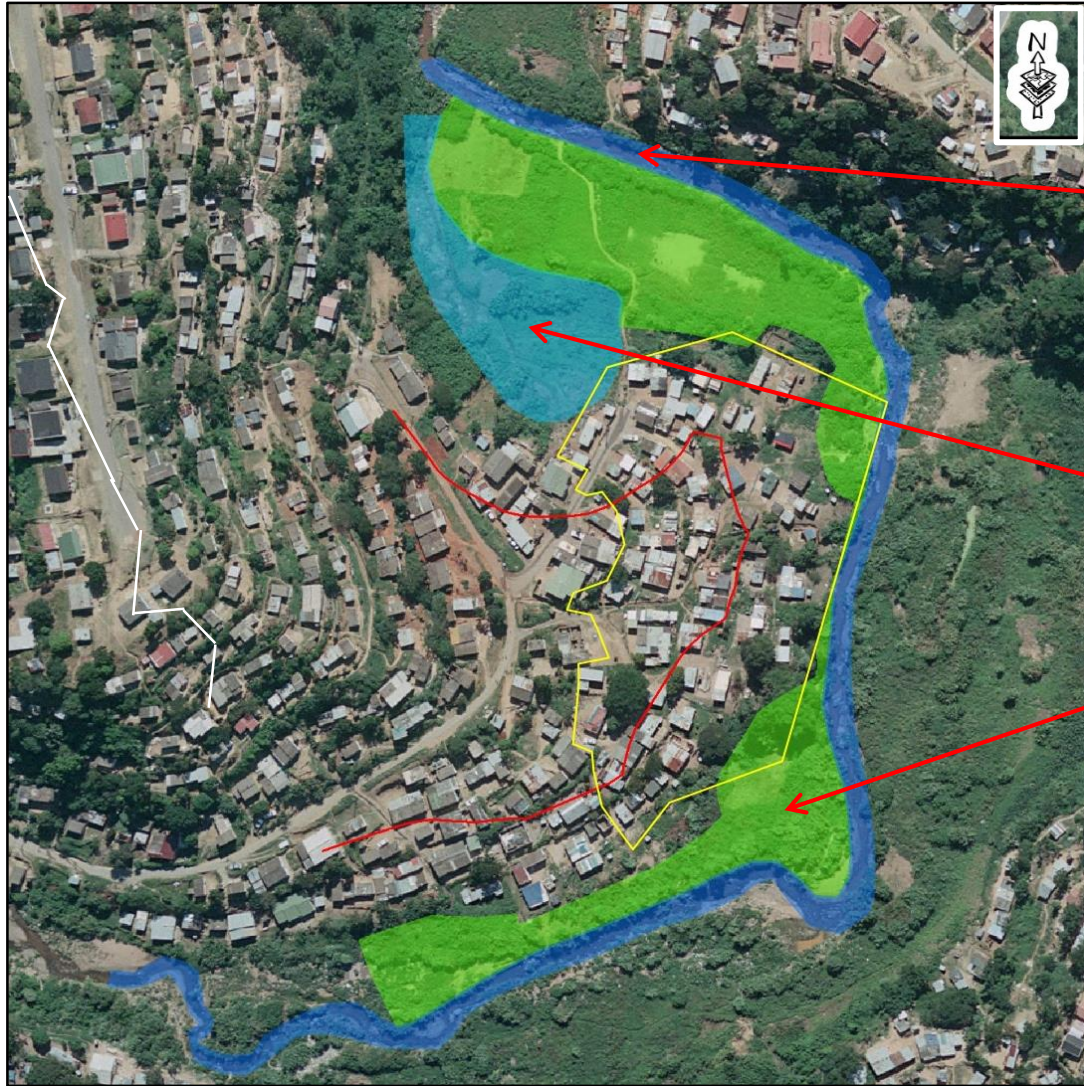
SCALE: 1:1 957

0 10 20 40 Meters

4a Old Main Road
Judges Walk
Kloof, 3610
South Africa



T • +27(31) 764-7130
F • +27(31) 764-7140



Fongozi River: Perennial River which is highly disturbed. The channel is 3-5m in width and 1-2m deep. The bank and bed of the river has been substantially disturbed and modified. Classified as “largely to severely modified”.

Wetland: Seasonal floodplain wetland unit within a relict backswamp depression. The habitat was highly disturbed and in some places completely cleared for cultivation. The system is largely fed by lateral subsurface inputs and as such doesn’t function as a true floodplain wetland however surface inputs into the system during flood events likely occur. Classified as “severely modified”.

Fongozi Floodplain: Extensive and flat that can be classified as “riparian”. The habitat was observed to be completely transformed. Classified as “moderately to largely modified”.

Figure 3: Watercourses identified by the wetland specialist. The yellow line indicates the proposed study area with the red line showing the 32m buffer zone (source: GCS Watercourse Assessment Report).

Basic Assessment Report

GROUND COVER

Has a specialist been consulted for the completion of this section?

YES	NO
-----	---------------

If YES, please complete the following:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?

	YES	NO
--	-----	---------------

If YES, specify and explain:

N/A

Are there any special or sensitive habitats or other natural features present on any of the alternative sites?

	YES	NO
--	-----	---------------

If YES, specify and explain:

N/A

Are any further specialist studies recommended by the specialist?

	YES	NO
--	-----	---------------

If YES, specify:

N/A

If YES, is such a report(s) attached in Appendix D?

	YES	NO
--	-----	----

Signature of specialist: _____ Date: _____

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).n/a

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy infestation ^E	Veld dominated by alien species ^E X	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil X

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

Section 5.3 of the Watercourse Impact Assessment Report describes the vegetation and habitat characteristics. The banks of the **Fongozi River** consist of a dense mix of alien invasive plants such as *Tithonia diversifolia* (Mexican Sunflower), *Pennisetum purpureum* (Napier Fodder) and *Ricinus communis* (Castor Oil). Small isolated stands of indigenous bank vegetation were observed along the wetter edges such as *Cyperus dives* (Giant Sedge) and *Persicaria senegalensis* (Silver Snakeroot).

The **Fongozi River Riparian Floodplain** consists of a mosaic of dense terrestrial and facultative alien invasive plant-dominated communities, grass and subsistence farming. No natural vegetation was observed.

The vegetation of the **wetland** comprised of a mosaic of disturbed stands of indigenous, monotypic, sedge-dominated plant communities, patches of alien species and cleared areas currently used for subsistence farming. Wetland communities dominated by *C.dives* with *Ludwigia octovalvis* (Shrubby Ludwigia) and *P. senegalensis* occurring to a lesser extent. These communities are interspersed within a disturbed cultivated land and alien clumps dominated by *Bidens pilosa* (Common Blackjack) and *T. diversifolia*.

5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area	YES X	NO	D'MOSS is located to the north, south and east of the proposed study area however no infrastructure falls within the delineated D'MOSS area. The natural area associated with the Fongozi River and floodplains has been totally transformed to accommodate the informal settlement (see page 15 of the Watercourse Impact Assessment Report). A map of the location of D'MOSS is provided in the Watercourse Impact Assessment Report in Appendix D.
Low density residential	YES	NO X	
Medium density residential	YES	NO X	
High density residential	YES	NO X	
Informal residential	YES X	NO	The site is situated within the uMlazi township. Where possible, the pipeline will be constructed between the houses to avoid impacts on these houses.
Retail commercial & warehousing	YES	NO X	
Light industrial	YES	NO X	
Medium industrial	YES	NO X	
Heavy industrial	YES	NO X	
Power station	YES	NO X	
Office/consulting room	YES	NO X	
Military or police base/station/compound	YES	NO X	
Spoil heap or slimes dam	YES	NO X	
Quarry, sand or borrow pit	YES	NO X	
Dam or reservoir	YES	NO X	
Hospital/medical centre	YES	NO X	
School/ creche	YES	NO X	
Tertiary education facility	YES	NO X	
Church	YES	NO X	

Basic Assessment Report

Old age home	YES	NO X	
Sewage treatment plant	YES	NO X	
Train station or shunting yard	YES	NO X	
Railway line	YES	NO X	
Major road (4 lanes or more)	YES	NO X	
Airport	YES	NO X	
Harbour	YES	NO X	
Sport facilities	YES	NO X	
Golf course	YES	NO X	
Polo fields	YES	NO X	
Filling station	YES	NO X	
Landfill or waste treatment site	YES	NO X	
Plantation	YES	NO X	
Agriculture	YES	NO X	
River, stream or wetland	YES X	NO	A section of the proposed pipelines, ablution block and pump station fall within 32metres of a watercourse. The Fongozi River, adjacent to the proposed bulk sewer line drains into the uMlazi River approximately 2.4km east of the study area. The study site falls within the uMlazi River catchment. The infrastructure has been relocated outside of the Fongazi 1:100 year floodplain in the preferred alternative layout (Appendix C).
Nature conservation area	YES	NO X	
Mountain, hill or ridge	YES	NO X	
Museum	YES	NO X	
Historical building	YES	NO X	
Protected Area	YES	NO X	
Graveyard	YES	NO X	
Archaeological site	YES	NO X	
Other land uses (describe)	YES X	NO	The local community currently utilises the nutrient rich floodplains for subsistence farming (e.g.

Basic Assessment Report

			<i>Colocassia esculenta</i> (Madumbe) farming). Construction of the proposed infrastructure should not disturb or impact significantly on these crops.
--	--	--	--

6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?

YES	NO
-----	----

If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

n/a

Will any building or structure older than 60 years be affected in any way?

YES	NO
-----	----

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
-----	----

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

SECTION D: PUBLIC PARTICIPATION

Public Participation commenced on 06th of December 2013. All proof of public participation has been included in Appendix G. Signboards were placed around the site and along 109155 Street, west of the study site.

The following authorities and interest groups were notified of the application: Department of Water Affairs (DWA), KZN Wildlife, AMAFA and eThekweni Municipality. The Ward Councillor (Mthokozisi Nojijyeza) was also notified telephonically of the proposed project. The Background Information Document was distributed to all I & APs on 20 February 2014.

The notice of application was advertised in the Daily News (Regional Newspaper) on the 15th of January 2014 and in the Umlazi Eyethu (Local Newspaper) on the 24th of January 2014.

Should a meeting be requested, it may be held with registered interested and affected parties (I&APs).

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;

Basic Assessment Report

- (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
- (v) the local and district municipality which has jurisdiction in the area;
- (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
- (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture & Environmental Affairs in terms of the EIA Regulations, 2010; (ii)
 - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
 - (iv) where further information on the application can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Agriculture & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Basic Assessment Report

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as **Appendix E** to this report.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

Has any comment been received from the local municipality?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

Has any comment been received from a traditional authority?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

N/A

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

No comments have been received since this is the Draft BAR however the Comments and Response Table will be included in Appendix E of the Final BAR.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

No comments have been received since this is the Draft BAR however the Comments and Response Table will be included in Appendix E of the Final BAR.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

During the initial planning phase, the applicant submit the "alternative" layout in Appendix C. After the submission of the Watercourse Impact Assessment Report, carried out by GCS, the EAP recommended that the bulk sewer pipeline and pump station be relocated outside of the delineated 1:100 year Fongozi Floodplain. The applicant confirmed that the relocation was viable from an engineering perspective and therefore this is the "preferred alternative" as included in Appendix C.

The revised layout has reduced the operational impacts whereby a potential leak/ blockage in the pipeline and/or the pump station could have impacted on the water quality should a 1:100 year flood occur (please refer to page 38 of the Watercourse Impact Assessment Report for operational impacts).

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

Description Of Environmental Issues Identified, Assessment Of The Significance Of Each Issue And An Indication Of The Extent To Which The Issue Could Be Addressed By The Adoption Of Mitigation Measures [Regulation 22 (2) (i-k)].

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

Alternative A1 and S1 (preferred alternative)

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
SOIL										
Collapse and / erosion of stockpiled material (stone, sand and gravel).	Direct	Local	Construction phase (short-term)	Yes – can be managed.	No	Medium	High	Material must be stockpiled in such a way that it cannot fall or cause injury or damage to properties or the natural environment. Stockpiles must not exceed 2m in height and must be covered if exposed to heavy wind or rain. Stockpiles must not be located in close proximity to any streams or drainage lines and must not be allowed to erode into these features. Alternatively, low walls or berms must be constructed around the stockpiles. A site-specific Environmental Management Programme (EMPr) has been designed to manage construction activities (Appendix F).	Low	Low
The onsite erosion of exposed soil before rehabilitation is completed.	Direct	Local	Construction phase (short-term)	Yes – can be managed	No	Medium	High	As a general principle, contractors must limit vegetation clearing to the workable corridor/site along the pipelines only. The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation of the watercourses. Only vegetation	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								that needs to be removed to accommodate the proposed sewer infrastructure and pipelines must be removed in a phased and controlled manner. A site specific EMPr has been designed to manage construction activities and is attached under Appendix F.		
Risk of contamination to soil during cement mixing during toilet structure and pump station construction.	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	High	High	Only minor cement mixing activities will be required but cement mixing must take place on a hard surface or cement mixing trays need to be used. Cement mixing must not be permitted to occur where run-off can enter stormwater drainage lines or streams. Construction must be monitored by an independent ECO who must monitor compliance with the construction EMPr.	Low	Low
STORMWATER										
Poor stormwater management during construction can lead to erosion and loss of soil.	Direct	Local	Construction phase (short-term)	Yes – can be prevented	No	Medium	High	Temporary stormwater control structures i.e. the use of Hessian bags, silt curtains etc., must be utilised during construction. Construction must be monitored by an independent ECO who must monitor compliance with the construction EMPr (Appendix F).	Low	Low
Washing of construction vehicles on site resulting in contamination of	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Medium	High	No vehicle washing must occur on site unless in a designated wash bay which must then be constructed. Wash bays must be installed with sand and grease traps if required on	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
stormwater drainage lines and/or streams								site.		
High velocity sheet erosion taking place increasing pollution and sediment runoff into the adjacent watercourse and habitats (GCS Watercourse Impact Assessment Report).	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Medium	High	Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected, clearing activities should be put on hold. In this regard, the Contractor is to be aware of weather forecasts. Where construction is taking place in close proximity to the watercourse, sandbags and silt fences should be established along the downslope edge of the construction zone to slow down runoff and capture sediment (page 35 of the GCS Watercourse Impact Assessment Report).	Low	Low
FLORA										
Soil disturbance due to construction activities resulting in a proliferation of weeds.	Direct	Local	Long-term	Yes – can be prevented.	No	Medium	High	Following completion of construction, an alien removal programme must be implemented. The site must be re-vegetated with indigenous vegetation. Top soil must be used for rehabilitating the site and must be kept free of alien vegetation.	Low	Low
Damage and removal of indigenous vegetation.	Direct	Local	Construction phase (short-term)	Yes – can be managed.	No	Low	Medium	While it is unlikely that the infrastructure will result in the removal of the indigenous vegetation, vegetation should only be cleared from the disturbed area where trenching is to take place. The	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								disturbed area is to be rehabilitated with indigenous grass species with species.		
Damage and/or removal of local community crops.	Direct	Local	Construction phase (short-term)	Yes – can be managed.	No	Low	Medium	The local community are currently using the northern sections of the study site to cultivate crops. Although unlikely, construction should not impact on these crops (e.g. stockpiles/ lay down areas are to not encroach into these areas).	Low	Low
FAUNA										
Potential loss or disturbance to fauna present within the proposed site	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Low	Low	The proposed construction of the pipelines is a linear activity, in the form of a comparatively narrow pathway extending across the landscape. At the landscape level, the disturbance is relatively small. Due to human presence and the disturbed landscape, it is unlikely that fauna species exist in large numbers at these sites, however, contractors and staff must be trained to avoid impacts on fauna. This must be monitored with an EMP (Appendix F).	Low	Low
SENSITIVE ENVIRONMENTAL AREAS (i.e. watercourses)										
Potential pollution and contamination of the Fongozi River and riparian floodplain with cement and other hazardous materials used	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Low	High	Pollution and contamination of the watercourses is to be avoided at all times. Designated concrete mixing areas and storage areas for any hazardous materials must be assigned. These areas must not lie directly adjacent to the Fongozi River, wetland or sensitive riparian areas.	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
during construction.								Cement mixing is also not permitted in any area where runoff can enter the watercourses. The Fongozi Riparian Floodplain is to be delineated as a "no-go" area for the duration of the construction phase. Construction must be managed through the site specific EMPr (Appendix F) and compliance must be monitored by an independent ECO.		
Erosion from vegetation clearing and exposure of bare soil to the elements resulting in sediment deposition within the drainage lines and adjacent Fongozi River during construction.	Direct	Local	Construction phase (short-term)	Yes – can be prevented and managed.	No	Medium	High	With successful implementation of the recommended mitigation measures provided by the wetland specialist on pages 35 of the Watercourse Impact Assessment Report, the significance of this potential impact is reduced to "low and acceptable". These recommendations have been included in the attached EMPr but include erosion control measures (silt fences, sandbags etc.) and rehabilitation measures. As soon as possible after construction, exposed areas that have resulted from the construction activities must be re-vegetated to assist in the prevention of erosion.	Low	Low
Littering in the Fongozi River, contributing to the degradation of the watercourses within the study	Direct	Local with the potential to impact regionally should the	Construction phase (short-term)	Yes – can be prevented and managed.	No	Medium	High	Illegal dumping is not permitted within the site and site staff must remove any waste and litter from the construction site at the end of each day.	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
site.		pollution wash down-stream.								
WASTE										
Improper storage of hazardous waste i.e. used oil from vehicles, old cement bags etc.	Direct	Local (within construction site)	Construction phase (short-term)	Yes - can be prevented.	No	Medium	High	The volume of pollutants is not expected to be high and the impact on the integrity of the riparian and in-stream habitats within the study area is expected to be low as the habitats are already highly degraded and polluted. Hazardous waste must however be temporarily stored on a hard surface within a bunded area of the site camp and must not be allowed to enter stormwater drains and the surrounding environment. All hazardous waste must be disposed of at an appropriate landfill site and all safe disposal certificates must be obtained and kept on site at all times. This must be monitored through an EMP (Appendix F).	Low	Low
Improper storage and disposal of general waste resulting in possible contamination of the surrounding environment.	Direct	Local	Construction phase (short-term)	Yes - can be prevented.	No	Medium	High	All solid waste generated during the construction process must be placed in a designated waste collection area within the construction camp and must not be allowed to blow around the site, be accessible by animals, or be placed in piles adjacent to the skips / bins. All solid waste must be disposed of at the nearest licensed landfill and safe disposal certificates	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/ reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								must be obtained and kept on site at all times during construction. The waste containers must be appropriate to the waste type contained therein and where necessary should be lined and covered. This must be managed through the site specific EMP (Appendix F) and monitored by the ECO.		
Littering around the site.	Direct	Local	Construction phase (short-term)	Yes – can be managed	No	Medium	High	Littering on the site should be kept to a minimum and general housekeeping must be enforced. General waste bins must be readily available for litter disposal and general housekeeping. The EMP must be followed during construction.	Low	Low
Improper disposal of rubble i.e.: burying or neglecting building rubble resulting in direct mechanical damage to surrounding vegetation and untidiness of the site.	Direct	Local (within construction site)	Construction phase (short-term)	Yes impact can be managed	No	Medium	High	Building rubble is anticipated to be minimal however rubble can be temporarily stored on site in designated skips until it is ready for disposal. All excess material and rubble must be removed from the site so not to restrict the rehabilitation process. Any construction rubble produced must be disposed of at a designated landfill site. Rubble is not to be stored in the Fongozi Riparian Floodplain.	Low	Low
Use of the bush and/ residents properties as toilets by contractors.	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Medium	High	Staff must be provided with chemical toilets. The toilet waste must be disposed of at an appropriate disposal site and safe disposal certificates must be obtained. The	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								staff may not use the bush or residents properties as toilets. Workers must be briefed by the person in charge of managing construction activities on the do's and don'ts on the property, when workers arrive at the site. This must be repeated in weekly toolbox talks and monitored through a site specific EMPr (Appendix F).		
Improper disposal of toilet waste from chemical toilets resulting in contamination of the surrounding environment.	Direct	Local	Construction phase (short-term)	Yes – can be managed	No	Medium	High	Chemical toilets must be placed within the construction camp and not in close proximity to the Fongozi River or Riparian Floodplain. The chemical toilets must be provided by a registered company and all effluent must be regularly disposed of at a licenses facility. Safe disposal certificates must be kept on record.	Low	Low
Increase waste to landfill site.	Cumulative	Regional	Construction phase (short-term)	Yes – can be managed	No	Low	High	Due to the nature of the activity, waste is anticipated to be minimal. Where possible, recycling of waste will take place to limit the amount of waste being added to the landfill site.	Low	Low
HAZARDOUS CHEMICALS / FUELS										
Risk of spills from construction equipment (oils, fuels, cement etc) contaminating soil and stormwater.	Direct	Local	Construction phase (short-term)	Yes – can be managed	No	Medium	High	Any construction equipment that could leak oil must be placed on a suitably sized drip tray. Stationary construction vehicles must have a drip tray placed beneath them and any oil leaks must be controlled and attended to over a drip tray. All equipment must be in good working	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								order to reduce the likelihood of oil leaks occurring. Any re-fuelling of equipment must occur on a hardened surface, within a designated re-fuelling area where any spills can be contained. Construction must be monitored by an independent ECO must monitor compliance with the construction EMPr.		
NOISE										
Noise generated by construction workers, machinery and construction vehicles disturbing surrounding residents.	Direct	Local (within construction on site)	Construction phase (short-term)	Yes – can be managed	No	Medium	High	Excessive noise must be controlled on site. Workers will be trained regarding noise generation on site and construction hours will be kept to working hours (07h00 to 17h00).The construction activities will be monitored by an ECO who will ensure compliance with the construction EMPr. All precautions must be taken to ensure that noise generation is kept to a minimum. If excessive noise is expected during certain stages of the construction, nearby residents must be notified prior to the event.	Low	Low
AIR QUALITY										
Emissions generated from construction vehicles	Direct	Local	Construction phase (short-term)	Yes – can be managed	No	Low	High	The only emissions that will be generated will be from construction vehicles which will be minimal and is not expected to significantly affect the surrounding communities or the environment. Regular maintenance of construction vehicles must be	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								undertaken to ensure they are good working order and thereby reducing the amount of emissions generating from vehicles.		
Generation of dust being a nuisance to surrounding residents.	Direct	Local	Construction phase (short-term)	Yes – can be managed	No	Medium	High	Emissions will only be generated from construction vehicles. Emissions will be minimal and not expected to significantly affect surrounding communities. Dust control measures must however be implemented to ensure that excessive dust levels are not experienced on site. Measures to control dust generated during construction must be put controlled through the EMPr i.e. cleared surfaces to be replanted as soon as possible behind the working front or dampening of dirt access roads, stockpiles and cleared areas. The dust levels must be kept below the required SANBS standard to ensure minimal impact on the surrounding community and the environment.	Low	Low
RESOURCE USE & CONSERVATION										
Sourcing of raw materials i.e.: (gravel, stone, sand, cement and water) from unsustainable sources resulting in illegal sand mining and mining	Direct	Local (potential to become regional)	Construction phase (short-term)	Yes – can be managed	No	Low	High	All materials must be obtained from a registered and sustainable source and all delivery notes and slips must be made available to the ECO, where applicable. Municipal water will most likely be used for dust suppression however should water be extracted from the watercourse, the amount must not exceed 50 000 litres per	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
operations causing significant environmental damage.								day. If this limit is exceeded, a permit is required from DWA.		
TRAFFIC										
Increased use of roads by construction vehicles increasing the risk of an accident.	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Medium	High	Clear signs, flagmen and/ signals must be set up where necessary. Access to residential properties shall be maintained and speed limits established. Where roads are used by children to reach school, vehicle traffic must be minimized during hours that children are travelling to and from school.	Low	Low
SOCIO-ECONOMIC										
Interruption or damage to services (electricity, water etc.).	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Low	High	This impact can be fully mitigated against by identifying services prior to construction and avoiding damage to existing services. Alternatively, if service disruption is unavoidable, the parties affected must be notified in advance. A site-specific EMPr has been designed to manage construction activities (Appendix F).	Low	Low
Damage to surrounding neighbours' properties i.e. houses, fence lines, gardens and accesses.	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Medium	High	Surrounding neighbours must be consulted prior to construction to discuss the construction process and potential impacts on nearby properties, as well as opportunities regarding employment. Should unplanned impacts occur, the contractor will be responsible for the necessary repairs.	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
Safety of construction workers and local community members in close proximity to the trenches.	Direct	Local	Construction phase (short-term)	Yes – can be prevented.	No	Medium	High	Construction workers must be made aware of these areas where safety may be a concern (i.e. open trenches). Open trenches must be clearly demarcated during the day and night. Contractors must ensure that all workers are made aware of the associated dangers through an awareness / weekly toolbox training programme. This must be monitored through a site specific EMPr (Appendix F).	Low	Low
Positive impact. Potential temporary employment during construction.	Direct	Local	Construction phase (short-term)	Positive impact no mitigation required. Skilled local community members may be granted employment during the construction phase.						
CULTURAL										
Potential unearthing and damage to items of cultural or historical significance	Direct	Local	Construction phase (short-term)	Yes – can be managed.	No	Low	High	If any item of cultural or historical significance are discovered construction must cease immediately and AMAFA must be contacted. Construction should then cease until further notice. Staff must be made aware of what archaeological objects of significance may look like, e.g. pottery, etc.	Low	Low

Basic Assessment Report

No-Go Alternative:

Nature of Impact (potential)	Direct, Indirect or cumulative	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
IMPACTS OF THE NO-GO OPTION										
There will be no construction impacts. Residents and households in this area will continue to have limited access to waterborne sewerage connections and will be exposed to unsanitary conditions with a high risk of infection by excreta-related diseases.										

2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

Alternative A1 and S1 (preferred alternative)

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
The potential for leakages at joints and manhole connections resulting in soil / groundwater contamination due to development of cracks in the pipelines.	Direct	Local with the potential for a regional impact should contamination occur.	Long – term	Yes – can be prevented and managed.	No	Medium	High	It is anticipated that pipelines will develop cracks over time and this will be accelerated if the pH is above 10 or less than 7. It is recommended that a maintenance procedure be implemented to ensure that the pipelines are checked on a regular basis. Should any cracks be identified, the portion of pipe must be immediately replaced to ensure that there is no surface or groundwater contamination. The pipeline must be designed as per engineering specifications. The pipeline must be constructed according to the relevant SABS standards. Should any cracks be identified, it is recommended that a groundwater study be conducted to	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
								determine if there has been any contamination.		
Potential blockage increasing the risk of spillages along the pipe as well as manhole overflow.	Direct	Local	Long - term	Yes – can be prevented.	No	High	High	The pipeline must be regularly inspected as part of a maintenance/ inspection procedure to ensure 100% integrity of the structure. eThekweni Water and Sanitation (EWS) employ and train a local community member to be a “caretaker” for the toilet blocks. The caretaker is responsible for operation maintenance and general up keep. The caretaker is to inform EWS of any maintenance issues. The caretaker is to inform EWS of any operational maintenance. The maintenance programme must specify the frequency and timing of manhole inspections, aimed at identifying and clearing up material deposited during overflow events. Ablution facilities must also be included in the maintenance programme and must be regularly inspected for blockages and leaks. An abluion maintenance team must be set-up using local labour.	Low	Low
Spill of raw sewage resulting in eutrophication of stagnant pools onsite or downstream, degradation of the	Indirect	Local	Long - term	Yes – can be prevented.	No	High	High	Given the current state of the watercourse, the specialist rated this impact to have moderately-low significance, provided the recommended mitigation measures are adhered to. The specialist lists a number of mitigation measures to	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
local in-stream habitat, domination of particular floral species, dieback of floral and faunal species increase the competitive advantage of alien species (Wetland Assessment Report, GCS).								reduce the significance of the impact further (page 40 of the Watercourse Impact Assessment Report). For example, measures to reduce the risk of surcharging sewer manholes onsite and downstream and the employment of a caretaker to monitor the pipeline and report any leaks to EWS. These measures have been incorporated into the EMPr.		
Cumulative degeneration in the integrity and ecosystem functioning of the local freshwater systems of the Mlazi River over time (Watercourse Impact Assessment Report, GCS).	Indirect	Regional	Long - term	Yes – can be prevented and managed.	No	High	High	The significance of this impact was assessed as being medium-low and acceptable but undesirable. Successful implementation of specialist recommendations will reduce the potential impact to acceptable levels. The relocation of the pump station and section of bulk sewer line outside of the 1:100 year flood line has further reduced this impact. The wetland specialist's recommendations have been included in the attached EMPr.	Low	Low
Erosion of surrounding areas due to increase in stormwater from ablation block sites. Runoff generated will	Indirect	Local	Operational phase (long term)	Yes – can be managed.	No	High	Medium	The wetland specialist rates this impact as having a medium-low significance, provided that the mitigation measures, listed on pages 36 and 37 of the report, are adhered to. These have been included in the attached EMPr. Stormwater control	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
likely follow existing erosion rills and gullies onsite or create new ones (Watercourse Impact Assessment Report, GCS).								measures will need to be implemented prior to the completion of the construction (i.e. vegetation reinstatement and stone-filled infiltration ditches).		
Potential increase in volume of waste (sludge) sent to the South Durban Waste Water Treatment Works (WWTW).	Direct (Cumulative)	Regional	Operational phase (long term)	Yes – can be provided for.	No	High	Medium	There will be an increase in the amount of sludge directed to the South Durban WWTW however there is enough capacity to handle the increase (see proof of capacity in Appendix G).	Low	Low
Odour generated from the pump station.	Direct	Local	Long - term	Yes – can be managed.	No	High	High	The pump station must consist of an odour control system to prevent the escape of odours from the pump station during operation.	Medium	Low
Noise generated from the pump station.	Direct	Local	Long - term	Yes – can be managed.	No	High	High	The building housing the pump station must be designed in accordance with the engineering specifications and the relevant SABS standards to avoid the break out of mechanical noise from plant and equipment. The standby generator set must be housed in an acoustic shroud to prevent noise break out.	Medium	Low
Overflow of the holding tanks in the pump station resulting in	Direct	Local with the potential to impact	Long - term	Yes – can be managed.	No	Medium	High	The pump station must be designed to have a standby pump. The pump station will have a sump capacity of 2 hours. The pump station will be	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
contamination of surrounding vegetation and water resources.		regionally.						equipped with the relevant alarm and telemetry system to notify staff of the potential for an overflow. It is recommended that an inspection procedure be implemented to monitor the pump station on a regular basis to prevent any potential adverse situation.		
Positive Impact. Local community households connection to waterborne sewerage.	Direct	Local	Long - term	Positive impact, no mitigation required. The result of the infrastructure provision is the reduced exposure to unsanitary conditions and a decrease in potential infection by excreta-related diseases.						
Positive Impact. Reduced risk to the catchment due to the containment of existing raw sewage.	Indirect	Regional	Long – term	Positive impact, no mitigation required.						
Positive Impact. Improved service delivery to this section of the uMlazi informal settlement.	Direct	Local	Long – term	Positive impact, no mitigation required.						
Positive Impact. Improvements in the living conditions and standards for the local community	Direct	Local	Long – term	Positive impact, no mitigation required.						

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
through the installation of waterborne sewerage system.										

No-Go Alternative:

IMPACTS OF THE NO-GO OPTION										
Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
Potential for raw sewage to continue to flow from informal toilets polluting the watercourse.	Direct	Regional	Long – term	Yes – can be prevented and managed.	No	High	High	By providing formal sanitation facilities to this area of the informal settlement, the raw sewage entering the watercourse will be reduced.	Medium	Low
Continual establishment and growth of weeds along the riparian zone.	Indirect	Local	Long – term	Yes – can be managed.	No	High	Low	Alien vegetation and weeds are required to be removed during construction activities should the formalisation of the ablution facilities be approved. While the proposed activity will not eradicate the alien vegetation completely, there is an opportunity to establish indigenous grasses along the stream units.	Low	Low

2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

The prefabricated ablution facilities are temporary solutions to the sanitation requirements of the community in the area and are intended to be decommissioned at a later stage when formal housing developments are implemented in the area. The ablution blocks will therefore be decommissioned in the future should the system be converted to a full water borne sewage system. The pipelines and pump station are however highly unlikely to be decommissioned.

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
Potential contamination of the wetland, Fongozi River and drainage lines with raw sewage.	Direct	Local	Short – term	Yes – can be managed.	No	Medium	High	It must be ensured that that all pipes and ablution facilities are pumped empty prior to decommissioning. When removing the ablution facilities and pipes, any spills or leaks must be immediately cleaned up. All piping leading to the ablutions must be carefully removed if necessary, ensuring that the material contained in the pipes is not allowed to leak or enter watercourses. All trenches along the pipes must be covered. If the tanks or pipes have to be washed prior to removal, the wastewater must be treated as contaminated.	Low	Low
If any tanks are not completely emptied prior to decommissioning there is potential for sewage to contaminate soil and nearby water resources.	Direct	Local	Short – term	Yes – can be prevented.	No	Medium	High	The tanks and pipelines must be pumped empty by an approved contractor prior to decommissioning.	Low	Low
Potential contamination of	Direct	Local	Short – term	Yes – can be prevented.	No	Medium	High	Rubble can be temporarily stored on site in a designated skip until it is	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
the wetland, Fongozi River or drainage lines with rubble and waste.								ready for disposal. All excess material and rubble must be removed from the site so not to restrict the rehabilitation process. Any rubble produced must be disposed of at a designated landfill site. This must be monitored through a site specific decommissioning EMPr.		
Decommissioning activities causing erosion near the wetland, river or drainage lines.	Direct	Local	Short – term	Yes – can be prevented.	No	Medium	High	Temporary erosion control measures must be implemented to prevent erosion to any watercourse during decommissioning. All exposed areas resulting from decommissioning activities must be rehabilitated with indigenous vegetation to prevent potential erosion on the exposed areas. Decommissioning must be managed with an EMPr that has been designed specifically for the site. A site specific EMPr must be designed to guide the decommissioning process should decommissioning need to occur.	Low	Low
The onsite erosion of exposed soil before rehabilitation is completed.	Direct	Local	Short – term	Yes – can be prevented.	No	Medium	High	As a general principle, contractors must limit vegetation clearing to the workable corridor/site along the pipelines only. The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation. Only vegetation that needs to be removed to accommodate the decommissioning must be removed in a phased and controlled manner.	Low	Low

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
Poor stormwater management during decommissioning can lead to erosion and loss of soil.	Direct	Local	Short – term	Yes – can be managed.	No	Medium	High	Temporary stormwater structures i.e. the use of Hessian bags etc. must be utilised during decommissioning. Decommissioning must be monitored by an independent ECO who must monitor compliance with the decommissioning EMPr	Low	Low
Local community households will no longer be connected to waterborne sewerage resulting again in exposure to unsanitary conditions and an increase in potential for infection by excreta-related diseases.	Direct	Local	Long – term	Yes – can be prevented.	No	High	Low	Local community households will again have no waterborne sewage connections in close proximity resulting in community members again being exposed to potential disease, infection and unsanitary conditions. The decommissioning will only take place should formal housing be developed in this area with access to formal sanitation facilities.	High	High
Direct impacts on the Fongozi River and associated floodplain by community members.	Direct	Local with the potential to impact regionally.	Long – term	Yes – can be prevented.	No	High	Low	With no waterborne sewage, community members will again be forced to use alternative forms of effluent disposal resulting in further potential for contamination of watercourses and the surrounding environment by raw sewage. The decommissioning will only take place should formal housing be developed in this area with access to formal sanitation facilities.	High	Medium

Basic Assessment Report

Nature of Impact (potential)	Direct or Indirect	Extent of Impact	Duration of Impact	Can impact be prevented/reversed or managed?	Will irreplaceable resources be lost?	Probability before mitigation	Mitigatory Potential	Mitigation measure	Probability after mitigation	Significance after mitigation
Risk of spills from equipment (oils, fuels etc.) contaminating soil and stormwater.	Direct	Local	Short – term	Yes – can be managed.	No	Medium	High	Any demolition equipment that could leak oil must be placed on a drip tray. Construction vehicles must have a drip tray and any oil leaks must be attended to over a drip tray. All equipment must be in good working order to reduce the likelihood of oil leaks occurring. Any re-fuelling of equipment must occur on a hardened surface, within a designated re-fuelling area where any spills can be contained.	Low	Low

2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative A1 and S1 (preferred site)

Construction phase: It is recommended that monitoring be done through monthly environmental construction audits ensuring compliance with an Environmental Management Programme (EMPr). An independent ECO must be appointed to undertake this monitoring process.

Operation phase: The applicant must ensure inspections and scheduled maintenance of infrastructure. A Post Construction Audit (PCA) must be undertaken by the ECO to ensure the EMPr requirements have been met. It is further recommended that a second PCA take place 3/4 months after rehabilitation to monitor the efficiency of the rehabilitation and erosion control.

Assumptions, Uncertainties and Gaps in Knowledge [Regulation 22 (2) (m)]

There are no uncertainties or gaps in the information provided and the EAP is confident that sufficient information has been provided to allow an assessment of the proposal.

3. ENVIRONMENTAL IMPACT STATEMENT

Environmental impact statement with a reasoned opinion as to whether the activity should be authorised or not be authorized; [Regulation 22 (2) (n)]

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

It is the opinion of the EAP that the application submitted for the proposed sewer infrastructure (Alternative S1 and A1) be approved. Wetland specialist recommendations have been incorporated into the Environmental Management Programme (EMPr), which is to be strictly adhered to during construction, the proposal would result in minor environmental impacts. The activity would have a positive social impact on the local community by providing them access to formal sanitation facilities and reducing their exposure to unsanitary conditions that are currently experienced in the area. Employment opportunities for construction and maintenance of the pipelines within the local community will also benefit this area.

Alternative A1 and S1 (preferred alternative)

As part of the "Provision of Water and Sanitation to Informal Settlements within eThekweni Municipality", EWS propose to construct ablution facilities, as well as water and sewer connections to serve the communities immediate needs. The proposed laid pipes (water and sewer) will tie-into existing reticulation and will provide future reticulation when the area is developed.

This application has assessed the construction of a number of pipelines, two toilet platforms and a pump station within a section of uMlazi E which are located within 32m of the Fongozi River and associated riparian floodplain which form part of the uMlazi River catchment.

All potential impacts that may occur during the construction and operational phase of the sewerage facilities have been identified in Section E above and key impacts and mitigation measures are discussed below.

The main construction impacts identified relate to the potential contamination of the watercourses through poor construction practises, lack of stormwater management and increased risk of erosion. The EMPr has been

Basic Assessment Report

designed to mitigate pollution/contamination and should be constantly obeyed by the contractor to ensure pollution is avoided. Temporary stormwater and erosion controls must be implemented in areas susceptible to erosion (see sections 3.4 and 3.10 of the attached EMPr). Rehabilitation of disturbed areas must also be undertaken to further ensure the stability of cleared areas to prevent potential erosion and sedimentation of the stream units.

A Watercourse Impact Assessment Report was undertaken by GCS Water and Environmental Consultants and is summarised in Section C of above with the full report available in Appendix D. The wetland specialist acknowledged the degraded state of the stream units and associated vegetation however a number of site specific recommendations were made by the specialists which must be adhered to throughout the construction process. These have been incorporated into the attached EMPr. Recommendations were also taken into account during the planning phase with the pump station and section of bulk sewer line being relocated outside of the Fongozi River's 1:100 year floodline.

In terms of the operational phase of the proposed activity, rehabilitation measures must be implemented upon completion of the construction activities. This will ensure that sedimentation of the Fongozi River and associated floodplain does not occur. The operational phase will have positive impacts for the community members as they will have access to formal sewage and ablution facilities enhancing living conditions in this area. Regular maintenance and monitoring of the pipelines, pump station and ablution facilities must be undertaken to identify and prevent any potential spills/damage to pipelines and thereby the surrounding environment during the operational phase.

The construction and operational phase of the proposed development is also anticipated to provide employment to members of the community members thus assisting in poverty reduction in this area as well as benefiting the community's health and safety.

The EMPr produced for this development is attached under Appendix F and includes methods and protocol to be followed by each of the parties involved during the construction phase (including wetland specialist recommendations). It is envisaged that, provided the EMPr is strictly adhered to during the construction process, it is not expected that the proposal will have significant impacts on the environment. In conclusion, if all the suggested mitigation methods outlined in this report are followed, then impacts can be rated as low.

Alternative A2 and S1

While the potential impacts will be similar to those listed in Section E, the alternative layout would result in a greater likelihood for spills to occur in the close vicinity of the Fongozi Riparian Floodplain during construction. During operation, there is a greater potential for any spills/leaks to directly impact on the floodplain. The pump station and the emergency storage facilities over flow would be located within this floodline. The layout provided for Alternative A1 and S1 above, is therefore an approved amendment to Alternative A2 and S1.

No-go alternative (compulsory)

The 'No-Go' alternative (i.e. not upgrading the sanitation facilities in the uMlazi E area) will lead to the primary goal of providing sewer connections to toilet blocks in the informal settlement within eThekweni Municipality not being met. The significance of this is that the local community members will be forced to continue to use other forms of informal ablution facilities and would thus continue to be exposed to unsanitary conditions and potential excreta-related disease. While the risk of leaking sewerage pipelines would not be an impact for the no-go alternative, the watercourse would continue to receive raw sewage from the informal facilities currently in use.

It is also expected that no new employment opportunities will be created for local residents during construction and operation.

Basic Assessment Report

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAPs sufficient to make a decision in respect of this report?

YES	NO
X	

If "NO", please contact the KZN Department of Agriculture & Environmental Affairs regarding the further requirements for your report. **N/A**

If "YES", please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

1. It is recommended that layout Alternative A1 and S1 (i.e. formalisation of ablution facilities in uMlazi E) be accepted from an environmental perspective.
2. The applicant must ensure that mitigation measures and controls specified in the EMPr are adhered to. The construction of the pipelines, pump station and ablution blocks must be monitored by an independent ECO who should ensure compliance with the construction EMPr.
3. It is recommended that environmental construction audits be conducted on a monthly basis. In addition a pre-construction audit and post-construction audit (PCA) must be conducted. A second PCA must take place 3/4 months after rehabilitation to monitor the efficiency of the rehabilitation and erosion control.
4. The contractor and his staff must attend an environmental awareness training course, presented by the site engineer or a suitably qualified EO from the engineers / contractors, prior to construction commencing. The environmental awareness training course should cover the following key aspects: (a) basic awareness and understanding of key environmental features of the work site and the surrounding environment, (b) understanding the importance of, and reasons why, the environment must be protected, (c) ways to minimize environmental impacts, and (d) requirements of the Environmental Authorisation and EMPr. The EAP must be available to aid with any environmentally-based questions.
5. Construction activities must comply with designated working hours and surrounding residents must be informed prior to commencement of construction activities.
6. Emergency contact numbers must be placed at each construction site.
7. Adequate chemical toilet facilities must be provided for all staff members as standard construction practice. The chemical toilets must be from a registered company and all sewage must be disposed of at an appropriate facility. Safe disposal certificates must be kept on record.
8. Existing infrastructure (i.e. electricity lines, water pipelines) must be identified prior to construction. Any costs associated with negative impacts to these services must be borne by the applicant and should the need arise to disrupt these services for any reason, the relevant authority must be contacted for permission and details of the disruption must be communicated to the affected residents.
9. As there are no formal stormwater drainage facilities on site, the contractor must prepare a Stormwater Control Method Statement (MS) to ensure that all construction methods adopted on site do not cause, or precipitate, soil erosion. The designated responsible person on site, as indicated in the Stormwater MS (usually the contractor) should ensure that no construction work takes place before the stormwater control measures are in place. The Stormwater MS must be submitted to the ECO prior to implementation.
10. The duration of exposed soil must be kept to a minimum and rehabilitation of the disturbed area must be initiated as soon as construction is completed.
11. Materials must be stockpiled in appropriate areas where storm water runoff cannot erode into the stockpile.
12. Dust control must be implemented throughout the construction phase.
13. Any alien vegetation found within the construction site must be cleared to ensure that invasion of disturbed areas does not occur.
14. Cement mixing must take place on a hard surface or on cement mixing trays. Cement mixing will not be

Basic Assessment Report

permitted to occur where run off can enter the Fongozi River. In addition cement and fuels must be stored within bunded and hard surfaced areas. If the creation of a permanent bunded area is not feasible, these materials must be stored on drip trays capable of holding at least 110% of the spilled volume.

15. Littering must not be permitted on the site and general housekeeping must be enforced.
16. Waste must be stored in the bins within the waste collection area in the construction camp and must not be allowed to blow around the site, be accessible by animals, or be placed in piles adjacent to the skips / bins and must be disposed of at an appropriate land fill site.
17. Hazardous waste must be stored on a hard surface within a bunded area and must not be allowed to enter watercourses and the surrounding environment.
18. All excess material and rubble must be removed from the site so as not to restrict the rehabilitation process. All excess material and rubble must go to an approved, designated landfill and a safe disposal certificate must be obtained.
19. Recycling should be undertaken where possible to limit waste added to the landfill site.
20. The watercourse may not be used as a water source by staff unless water abstraction is approved and permitted by DWA.
21. A spill response procedure must be designed to manage spills during construction. Suitable spill kits must be available and staff must be made aware of the spill response procedure.
22. In the event of Heritage resources or artefacts being uncovered during construction, activities around the site must cease immediately and AMAFA must be contacted to investigate the findings.
23. A maintenance plan for the operational phase of the development must be drawn up to monitor and identify any potential spills or leaks along the pipeline or at the ablution facilities and pump station.

SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information

Basic Assessment Report

Appendix A – Site Plan(s)

- Topographical Map indicating the proposed site and adjacent land uses.
- GIS Map illustrating affected land portions.
- Aerial image indicating current land use, existing services & environmental features.
- Aerial image showing the contour intervals.
- Aerial photograph showing location of photographs in Appendix B.

Appendix B – Site Photographs

Basic Assessment Report

Appendix C – Facility Illustration(s)

- Proposed Layout of Alternative A1 and S1 (preferred alternative)
- Proposed Layout of Alternative A2 and S1
- Prefabricated Toilet Layout
- Pump Station Layout

Basic Assessment Report

Appendix D – Specialist Reports

- Proposed Mlazi WP 265 Ex 4 Sanitation Project: Watercourse Impact Assessment Report (GCS Water and Environmental Consultants, March 2014).

Basic Assessment Report

Appendix E –Comments and Responses Report

No comments received to date however comments received on the Draft BAR will be included in this Appendix for the Final BAR submission.

Appendix F – Draft Environmental Management Programme

Basic Assessment Report

Appendix G – Other Information

Public Participation Process

- Signboards
- Notification of Landowner
- Notification of Authorities
- Newspaper adverts
- Distribution of BID and BID
- Registered I & APs
- Notification of release of Draft BAR (To be included in Final BAR)
- Additional project information from the applicant

KERRY SEPPINGS
ENVIRONMENTAL



MANAGEMENT
SPECIALISTS

Please click on the link below to access the Appendices for the eThekweni Water and Sanitation WP 265 EX 4 Thokozana Project (DM/0008/2014)

<https://www.dropbox.com/sh/cz446d5jvetoevt/TJNEzQb1?n=195501416>

www.ksems.co.za

Kerry Seppings Environmental Management Specialists cc

Phone: 031 7691578 Fax: 086 535 5281 E- Mail: kerry.seppings@telkomsa.net

P.O. Box 396, Gillett's, 3603

Company Registration no: 1999/049452/23

Members: K.A. Stanton (Director)