

**APPLICATION FOR EXEMPTION FROM  
UNDERTAKING PHASE 1 HERITAGE IMPACT  
ASSESSMENT**

**PROPOSED CONSTRUCTION OF ADDITIONAL  
WATER RECYCLING PIPELINES FROM THE  
SOUTHERN WASTEWATER TREATMENT, DURBAN  
SOUTH, KWAZULU-NATAL**

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I, **Jean Lois Beater**, act as an independent specialist for this project and I do not have any vested interest either business, financial, personal or other, in the proposed activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014.

### **SPECIALIST DETAILS**

<b>Name</b>	<b>Qualification</b>	<b>Professional Registration</b>
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## 1. INTRODUCTION

The Southern Wastewater Treatment (SWT) facility, located in South Durban, KwaZulu Natal Province has been in operation since 2001. For a number of years, it has been supplying reclaimed water to its current offtake partners, South African Petroleum Refineries (SAPREF) and Mondi. Over the last 10 years or so, studies were undertaken to ascertain the viability of expanding the existing reclaimed water pipeline network not only to supply new clients but also to increase supply of reclaimed water to SAPREF. These studies have been concluded and the possibility of a new pipeline to SAPREF is proposed, in addition to the possibility of new reclaimed water pipelines to the new offtake partners via the gravity fed from the SWT High Level Storage Tank (HLST) (Department of Economic Development, Tourism and Environmental Affairs 2020:1).

The current reclaimed water supply pipelines utilize gravity feed from the SWT HLST to SAPREF and Mondi, which will remain in their current configuration. For this application three (3) new pipelines are being proposed to supply reclaimed water which will also follow the gravity feed concept from the SWT HLST:

- New revised pipeline and route to SAPREF supplying 12 ML/d
- New Pipeline to Engen supplying 7ML/d
- New Pipeline to Toyota supplying 2ML/d

## 2. LOCATION OF THE PROPOSED PIPELINES

The proposed pipelines are located in the South Durban basin area. The pipelines are located east of the old Durban airport and close to the suburbs of Isipingo Beach and Merewent as well as industrial areas located in the area including Prospecton (see **Figure 1**). The approximate centre of the project area is 29°58'58.97" S 30°57'48.09" E.



Figure 1: Location of pipelines indicated in blue and turquoise with Southern WWTW pipeline indicated in orange

### **3. LEGISLATIVE CONTEXT**

The length of the proposed pipelines is as follows: to SAPREF: 1.4km; to Engen 2.15km and to Toyota 7.2km. All the proposed pipelines therefore trigger section 41 (1) (a) of the KwaZulu-Natal Amafa and Research Institute Act, 2018 (Act No 5 of 2018) which lists developments or activities that may require an HIA. Section 41 (1)(a) refers to the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length.

Due to the highly industrialised and disturbed area in which the pipelines will be located, an application for exemption from undertaking a Phase 1 Heritage Impact Assessment (HIA) is being made. In addition, and in support of the application for exemption, it is recommended that the new pipelines follow existing water and sewer pipeline routes.

### **4. HISTORICAL BACKGROUND OF PROJECT AREA**

Site records from the archaeological database of the Natal Museum indicate that pre-colonial settlement of the Durban South Basin (SDB) area included ephemeral Early and/or Middle Stone Age occupation of higher-lying areas around the former Durban International Airport site. Later Stone Age and Early and Late Iron Age middens (concentrations of remains of shellfish, stone and bone, often incorporating human remains) have also been recorded in the primary dune cordon. This settlement pattern probably reflects sporadic or seasonal pre-colonial exploitation of the rocky coastline and surrounding ecotypes. Seasonal inundation of the area between the uMlazi and Isipingo River mouths until well into the twentieth century created swamp-like conditions that discouraged permanent human occupation. Most pre-colonial archaeological sites have been destroyed by modern industrial and residential developments, and it is likely that remaining sites, if any, will be located in areas of the foreshore covered in Coastal Dune vegetation (eThembeni Cultural Heritage 2014: 23-24).

South Durban Basin (SDB), an area of mixed industrial/residential use, is located in the southern half of the eThekweni municipality. Described as the “economic heartland” of Durban, the SDB “is an environmental ‘hotspot’ containing areas of heavy industry and residential development located in close proximity to one another in a topographically contained region”.

The SDB is home to auto manufacturers, oil refineries, paper mills, and various other forms of light and heavy industrial activity (Smith, Yunus *et al*, undated:1).

The area known as Isipingo was ceded to Dick King in 1843 for sugar-cane production. King's efforts brought Indian farmers to the area at least by the turn of the century (SDCEA undated:1). Isipingo was not only the southern outpost of Durban Division in 1850, it was also the southern frontier of settler presence in Natal. It was situated at the southern end of an extensive flat plain bounded on the north side by the Mlazi river (Du Bois 2012:19).

Merebank, which was designated under apartheid as an Indian area, is located in South Durban near the airport. Merebank and its neighbour, Wentworth, are located in the midst of a heavy concentration of petro-chemical industries where one of the proposed pipelines will be situated. Beginning in the late 1950s, many small-holder families of diverse racial origins were forced off their land in Merebank to make way for industrial development and planned, formalised housing (SDCEA undated:1).

Durban International Airport (formerly Louis Botha Airport) was the international airport of Durban from 1951 until 2010, when it was replaced by King Shaka International Airport, situated north of Umhlanga Rocks. The airport was opened in 1951, replacing the Stamford Hill Aerodrome (Wikipedia 2020:1).

## 5. MOTIVATION FOR EXEMPTION FROM PHASE 1 HIA

The motivation will address the three proposed pipelines separately.

### New reclaimed water pipeline specifications to SAPREF

The location point of the proposed supply is at the pipe-rack bridge on Travancore Road, approximately 270m from Tanjore Drive. The route proposed is alongside existing water pipeline servitudes. The pipeline length from the SWT HLST to SAPREF is 1.4 km long (as per the route indicated in green in **Figure 2** below).

As it is proposed to run the pipeline along existing servitudes, the area will have been highly disturbed by the placement of the existing pipelines as well as the activities of the refinery, access roads and the Mlazi River canal and other canals. If there were any heritage resources in the surround area, it is highly unlikely that they would have survived the above activity and it is anticipated that no heritage sites will be impacted by the proposed pipeline.



**Figure 2: New pipeline to SAPREF**



**Figure 3: Travancore Drive crossing canal looking towards SAPREF**





**Figure 4: Pipelines crossing tributary canal with southern WWTW in background**



**Figure 5: View along pipeline route along SAPREF boundary**



**Figure 6: Thick vegetation opposite SAPREF**

New reclaimed water pipeline specifications to TOYOTA

The proposed pipeline will be alongside existing water and sewer pipelines. The pipeline will be uPVC pipeline of 150 mm diameter. However, due to a number of reasons, a larger diameter pipeline may be used (i.e. a 400 mm diameter uPVC pipeline) in order to carry the 14ML/d delivery requirement to SAPREF, and a 200mm diameter uPVC pipeline from the T-off point to carry the additional 2 ML/d supply from SAPREF to Toyota.

The pipeline length from the SWT HLST to Toyota is 7.22 km long (following the route given in **Figure 7** below). This pipeline will follow a route that is highly disturbed by industries and the road along which it will run. Between SAPREF and Prospecton, there are a few intermittent undisturbed areas; however, as long as the proposed pipeline runs next to existing pipelines, there should be no impact on heritage resources, if any, in these areas.

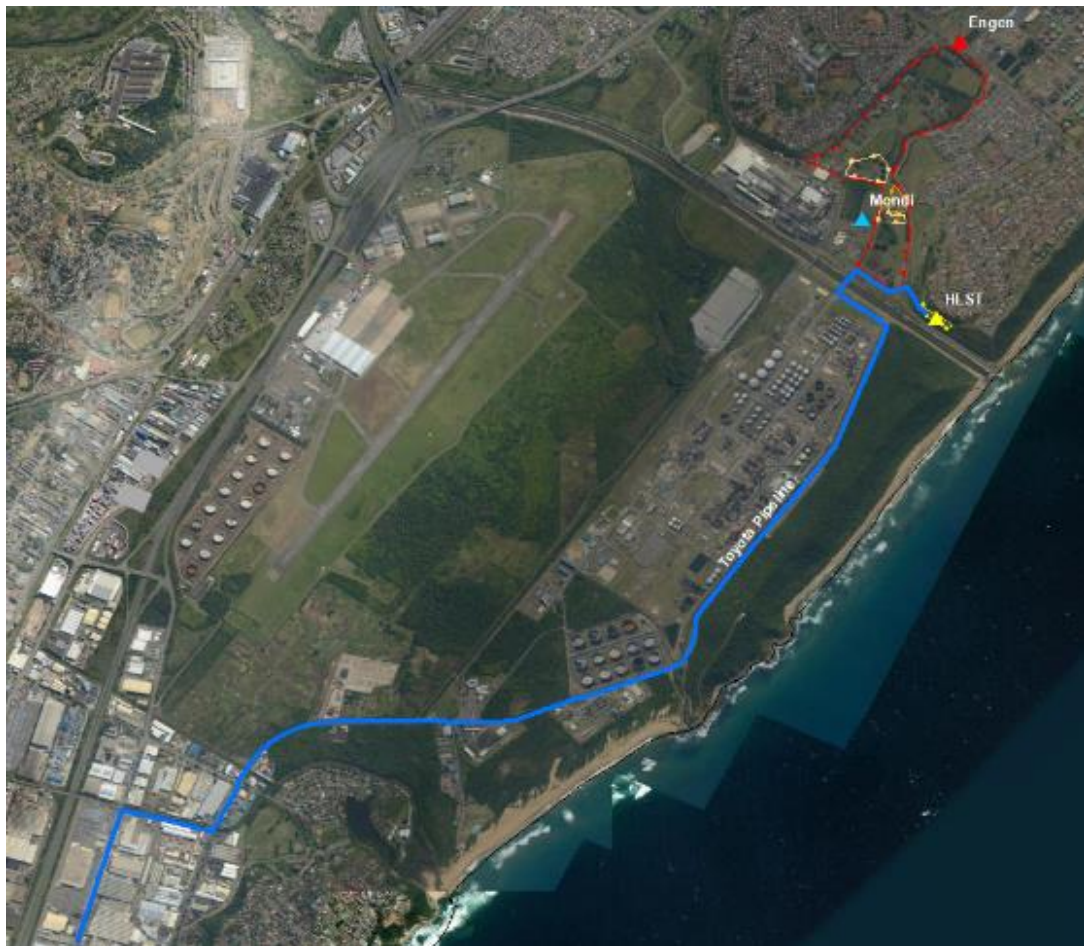


Figure 7: New pipeline to Toyota indicated in blue



Figure 8: View of Refinery Drive looking towards Isipingo Estuary



**Figure 9: View of vegetation and informal farming in background north of Refinery Drive**



**Figure 10: View of existing pipeline rack along R102 crossing Isipingo canal**



**Figure 11: View of Joyner Road / Isipingo River canal crossing looking north-easterly**

#### New reclaimed water pipeline specifications to ENGEN

The location point of the proposed supply is at the boundary of Engen. The proposed route is alongside existing water pipelines that also crosses some sewer pipelines along its route. The pipeline will be a uPVC pipeline of 300 mm diameter. The pipeline length from the SWT HLST to Engen is 2.15 km long (following the route given in **Figure 12** below. Ignore red dotted line which indicates the Southern WWTW).

The route runs largely through the suburb of Merewent hence the area is extensively disturbed by residences, industry and access roads and this has resulted in the destruction of heritage sites (if any). It is anticipated that no heritage sites will be impacted by the construction of the proposed pipeline.



Figure 12: New pipeline to Engen indicated in turquoise



Figure 13: View of road and dense vegetation along new pipeline alignment to WWTW



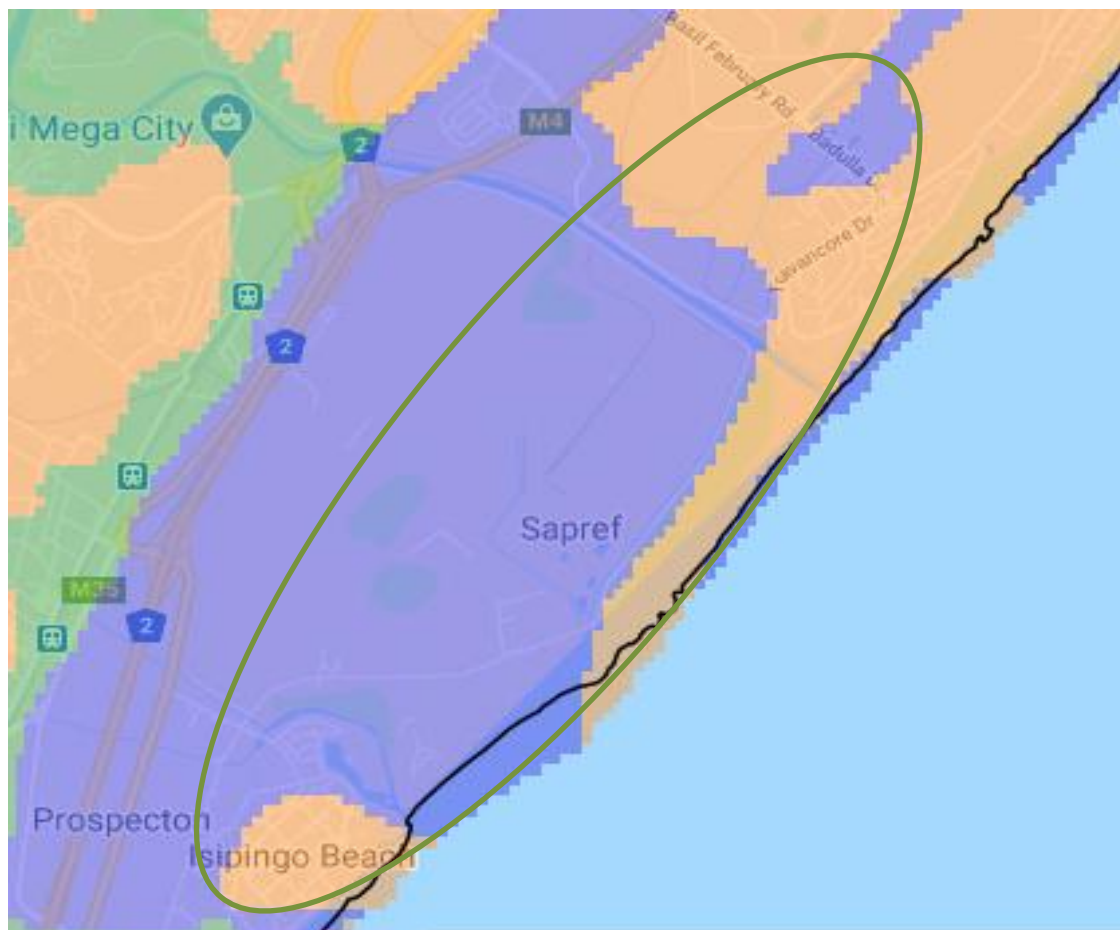
**Figure 14: View of disturbed environment pipeline route**



**Figure 15: View across canal towards Engen refinery along Badulla Drive**

The South African fossil sensitivity map shows that the pipelines going to SAPREF and Toyota fall into an area of low fossil sensitivity indicated by the blue colour in the image below. An area of low fossil sensitivity requires no further study; however, a protocol for chance fossil finds must be provided. This is included in Chapter 6 of this report.

The pipeline going to Engen goes through an area of high fossil sensitivity as indicated by the orange colour in **Figure 16** below. Due to the high disturbance of the area with residential and industrial development, the specialist had an email discussion with a palaeontologist, Professor Marion Bamford from the University of the Witwatersrand regarding the matter. Professor Bamford stated that due to the disturbance of the area as well as the location of the proposed pipeline along existing pipelines, a palaeontological impact assessment was not required for the project (Email correspondence dated 22/09/2020). However, a protocol for chance fossil finds was necessary. A protocol, as mentioned above, is included in **Chapter 6** and must be adhered to by the Applicant.



**Figure 16: Fossil sensitivity of project area indicated with olive green outline**



## 6. CONDITIONS

If exemption from undertaking a Phase 1 HIA is granted for this project, then the following conditions must be met by the Applicant:

- For any chance heritage finds, all work must cease in the area affected and the Contractor must immediately inform the Project Manager. The provincial heritage agency, the KwaZulu-Natal Amafa and Research Institute (hereafter referred to as the Institute) must also be informed.
- A heritage specialist must be called to site to assess the significance of the find.
- Permits must be obtained from the Institute if heritage resources are to be removed, destroyed or altered.
- Only once the heritage specialist gives the go-ahead can work in the area of the find recommence
- Under no circumstances may heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should recent remains be found on site that could potentially be human remains, then the South African Police Service should also be contacted. No SAPS official may remove remains until the correct permit/s have been obtained.
- The following protocol for chance fossil finds must be adhered to:
  - When excavations begin for the pipelines, the rocks and surrounds must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material should be put aside in a suitably protected place.
  - Photographs of the possible fossils can be sent by the on-site person to a palaeontologist for a preliminary assessment.
  - If there is any fossil material found by the developer/environmental officer, then a qualified palaeontologist should visit the site to inspect the selected material and check the dumps where feasible.
  - Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site, permits from the Institute or from the South African Heritage Resources Authority (SAHRA) must be obtained. Annual reports must be submitted to the Institute and/or SAHRA as required by the relevant permits.

- If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A report by the palaeontologist must be sent to SAHRA once the project has been completed only if fossils were found.

## **7. CONCLUSION**

Due to the disturbed and transformed nature of the area where the proposed pipelines are to be constructed, it is highly unlikely that intact heritage resources will be found on the site as a whole. In addition, by using existing pipeline routes, the impact of the proposed pipeline project on heritage resources should be negligible therefore it is recommended that the application for exemption from undertaking a Phase 1 HIA for the project is approved.

## 8. REFERENCES

Department of Economic Development, Tourism and Environmental Affairs. 2020. *Background pipeline information document: Proposed Construction of an Additional Water Recycling Pipelines from the Southern Wastewater Treatment (SWT) facility in Durban South, KwaZulu Natal Province*

Du Bois, D. 2012. Sugar and settlers: early Isipingo in *Natalia* 42 (2012).

(<http://natalia.org.za/Files/42/Natalia%2042%20Article%20Article%20Du%20Bois%20pp%2019-32.pdf>)

Smith, Yusuf, et al. Undated. *Urban farming in the South Durban Basin*.

(<https://www.semanticscholar.org/paper/Urban-Farming-in-the-South-Durban-Basin-Smith-Yusuf/7f7d35c9ccc4dbcdbd202ffb69a8b5b3aed5cdcc9>)

South Durban Community Environmental Alliance. Undated *Isipingo – History and environment problems*.

(<https://msu.edu/~wiley/sdcea/isipingolong2.html#:~:text=The%20Isipingo%20area%20was%20inhabited,the%20turn%20of%20the%20century>)

South Durban Community Environmental Alliance. Undated. *Merebank – History and environmental problems*. (<https://msu.edu/~wiley/sdcea/merebanklong.html>)

Wikipedia. 2020. *Durban International Airport*

([https://en.wikipedia.org/wiki/Durban\\_International\\_Airport](https://en.wikipedia.org/wiki/Durban_International_Airport))