FEN CONSULTING

FRESHWATER COMPLIANCE STATEMENT

OF ERF 2433, FOR A PROPOSED CREMATORIUM, MONTAGUE GARDENS, WESTERN CAPE

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

GLOSSARY OF TERMS

Alien vegetation:	Plants that do not occur naturally within the area but have been introduced either intentionally or unintentionally. Vegetation species that originate from outside of the borders of the biome -usually international in origin.
Catchment:	The area where water is collected by the natural landscape, where all rain and run-off water ultimately flow into a river, wetland, lake, and ocean or contributes to the groundwater system.
Delineation (of a wetland):	To determine the boundary of a wetland based on soil, vegetation, and/or hydrological indicators.
Ecoregion:	An ecoregion is a "recurring pattern of ecosystems associated with characteristic combinations of soil and landform that characterise that region".
Facultative species:	Species usually found in wetlands (76%-99% of occurrences) but occasionally found in non-wetland areas
Gleying:	A soil process resulting from prolonged soil saturation which is manifested by the presence of neutral grey, bluish or greenish colours in the soil matrix.
Hydromorphic soil:	A soil that in its undrained condition is saturated or flooded long enough to develop anaerobic conditions favouring the growth and regeneration of hydrophytic vegetation (vegetation adapted to living in anaerobic soil).
Hydrology:	The study of the occurrence, distribution, and movement of water over, on and under the land surface.
Hydromorphy:	A process of gleying and mottling resulting from the intermittent or permanent presence of excess water in the soil profile.
Indigenous vegetation:	Vegetation occurring naturally within a defined area.
Obligate species:	Species almost always found in wetlands (>99% of occurrences).
Seasonal zone of wetness:	The zone of a wetland that lies between the Temporary and Permanent zones and is characterised by saturation from three to ten months of the year, within 50 cm of the surface
Temporary zone of wetness:	The outer zone of a wetland characterised by saturation within 50 cm of the surface for less than three months of the year.
Watercourse:	In terms of the definition contained within the National Water Act, 1998 (Act 36 of 1998) a watercourse means: • A river or spring; • A natural channel which water flows regularly or intermittently; • A wetland, dam, or lake into which, or from which, water flows; and • Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse; • and a reference to a watercourse includes where relevant, its bed and banks.
Wetland:	"Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."
Wetland Vegetation (WetVeg) type:	Broad groupings of wetland vegetation, reflecting differences in regional context, such as geology, climate, and soil, which may, in turn, influence the ecological characteristics and functioning of wetlands.

DOCUMENT GUIDE

The table below provides the specialist report requirements for the assessment and reporting of impacts on areas with a **low sensitivity to the aquatic biodiversity** in terms of Government Notice 320 as promulgated in Government Gazette 43110 of 20 March 2020 in line with the Department of Environmental Affairs screening tool requirements, as it relates to the National Environmental Management Act, 1998 (Act No. 107 of 1998).

No.	Requirements	Section in Report
3.1	The compliance statement must be prepared by a suitably qualified specialist registered with the SACNASP, with expertise in the field of aquatic sciences.	Annexure B
3.2	The compliance statement must:	-
3.2.1	be applicable to the preferred site and the proposed development footprint;	Section 1, 2, 5 and Annexure A
3.2.2	confirm that the site is of "low" sensitivity for aquatic biodiversity; and	Section 5.1 and 7
3.2.3	indicate whether or not the proposed development will have an impact on the aquatic features.	Section 7
3.3	The compliance statement must contain, as a minimum, the following information:	-
3.3.1	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Appendix B
3.3.2	a signed statement of independence by the specialist;	Appendix B
3.3.3	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 3.2
3.3.4	a baseline profile description of biodiversity and ecosystems of the site;	Section 5.2
3.3.5	the methodology used to verify the sensitivities of the aquatic biodiversity features on the site including the equipment and modelling used where relevant;	Section 3 and 5.2
3.3.6	in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase;	N/A
3.3.7	where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;	Section 7
3.3.8	a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and	Section 1.1
3.3.9	any conditions to which this statement is subjected.	N/A
3.4	A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.	EAP to ensure this requirement is met.

1. INTRODUCTION

Freshwater Ecological Network (FEN) Consulting (Pty) Ltd was appointed by Sharples Environmental Services (the Environmental Assessment Practitioner (EAP)) to verify the presence of potential watercourses within Erf 2433, Montague Gardens, within the City of Cape Town Metropolitan Municipality (hereafter referred to as the 'study area') and if appropriate, prepare a watercourse impact and compliance statement as part of the Environmental Authorisation (EA) process for the proposed development. The 'proposed development' entails the refurbishment of the existing warehouse in the study area to a crematorium facility, with all activities limited to the existing infrastructure footprint in the study area. A 500 m "zone of investigation" around the study area, (in accordance with Government Notice (GN) 509 of 2016 (as it relates to the National Water Act (Act No. 36 of 1998)), was generated to determine potential risks to possible watercourses associated with the study area. This will henceforth be referred to as the "investigation area". (Appendix A, Figures A1 and A2).

FEN was required to report on aspects of the watercourse biodiversity and provide input into any development constraints or enviro-legal constraints that may arise for the proposed development within the study area in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the National Water Act, 1998 (Act No. 36 of 1998).

1.1 Assumptions and Limitations

- The determination of any wetland or riparian zone boundaries is confined to the study area and is based on a single site visit undertaken on the 30th of May 2022. All watercourses identified within the investigation area were delineated in fulfilment of GN 509 of the National Water Act, 1998 (Act No. 36 of 1998) using various desktop methods including the use of topographic maps, historical and current digital satellite imagery, and historical aerial photographs;
- No access to the study area could be obtained, as such, the aquatic biodiversity sensitivity thereof was inferred from desktop analysis. Considering the study area is completely built-up, the deduced sensitivity (as presented in Section 6) is considered accurate bearing the constraints noted;
- The delineation of the watercourses as provided in this report, is considered the best estimate taking into consideration the limitations and conditions at the time of assessment;
- No Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) assessment of watercourses were undertaken as part of the scope of work as the objective of this study was to primarily identify the presence and extent of any watercourses that could pose a constraint to development within the study area. An ecological assessment as well as risk/impact assessment of any watercourses must be undertaken as part of the Environmental Authorisation phase (should it be applicable);
- Global Positioning System (GPS) technology is inherently somewhat inaccurate, and some inaccuracies due to the use of handheld GPS instrumentation may occur; however, the delineations as provided in this report are deemed appropriately accurate to fulfil the authorisation requirements;
- Wetlands and/or riparian zones and terrestrial zones create transitional areas where an ecotone is formed as vegetation species change from terrestrial to obligate/facultative wetland or riparian species. Within this transition zone, some variation of opinion on the watercourse

boundaries may occur. However, if the Department of Water Affairs and Forestry (DWAF)[1] (2008)[2] method is followed, all assessors should get largely similar results; and

- With ecology being dynamic and complex, certain aspects (some of which may be important) may have been overlooked. However, the delineations as provided in this report are deemed appropriately accurate to guide any future development plans.

2. APPLICATION OF THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) SCREENING TOOL.

The protocol for the assessment of freshwater and aquatic biodiversity prepared in support of the Department of Forestry, Fisheries and Environment (DFFE) (previously the Department of Environmental Affairs (DEA)) national web based environmental screening tool (2020), provides the criteria for the assessment and reporting of impacts on aquatic/freshwater biodiversity for activities requiring EA. For the aquatic/freshwater biodiversity theme, the requirements are for sites which support various levels of biodiversity. The relevant aquatic/freshwater biodiversity theme in the national web based environmental screening tool (2020) has been provided by the South African National Biodiversity Institute (SANBI). Based on the sensitivity rating, a suitably qualified specialist must prepare the relevant report or opinion memo which is to be submitted as part of the EA application.

As part of the process of the background information gathering, FEN applied the DFFE (previously DEA) screening tool (2020) to the study area. According to the guidelines, an applicant intending to undertake an activity on a site identified as being of “very high sensitivity” for an aquatic biodiversity theme must submit an Aquatic Biodiversity Impact Assessment or if the area is identified as being of “low sensitivity” then an Aquatic Biodiversity Compliance Statement must be compiled and submitted to the competent authority. It is noted, however, that during a site survey undertaken by a suitably qualified freshwater ecologist should the sensitivity be determined to be different from that assigned by the screening tool (i.e. that a high risk to the regional aquatic biodiversity or freshwater ecosystems in the area is likely even though it is assigned as a “low” sensitivity, or if it is assigned a high sensitivity, however, the proposed development risks are deemed low) then the relevant assessment approach must be followed based on the site survey results and not the DFFE screening tool allocation. According to the national web based environmental screening tool, the **study area is located within an area of low aquatic/ freshwater biodiversity significance** (Figure 1).

[1] The Department of Water Affairs and Forestry (DWAF) was formerly known as the Department of Water Affairs (DWA). At present, the Department is known as the Department of Water and Sanitation (DWS). For the purposes of referencing in this report, the name under which the Department was known during the time of publication of reference material, will be used.

[2] Although an updated manual is available since 2008 (Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas). This is still considered a draft document currently under review.

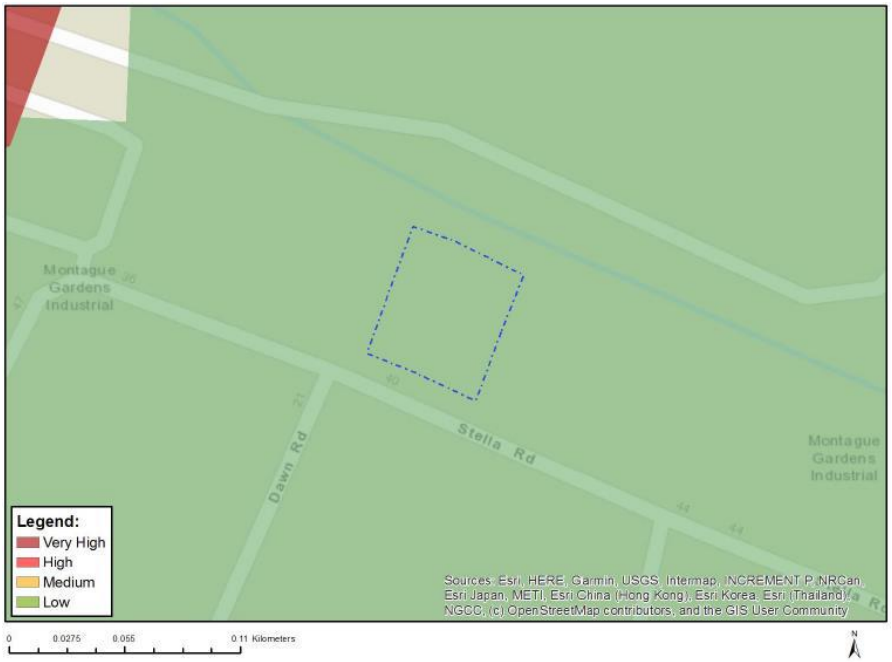

Figure 1: Map of relative aquatic biodiversity according to the DFFE Screening Tool, indicating 'low' sensitivity within the study area.

3. ASSESSMENT APPROACH

3.1 Freshwater Ecosystem Definition

For the purposes of this investigation, the definition of a watercourse, wetland and riparian habitat was taken as per that in the National Water Act, 1998 (Act No. 36 of 1998). The definitions are as follows:

A **watercourse** means:

(a) a river or spring;
(b) a natural channel in which water flows regularly or intermittently;
(c) a wetland, lake, or dam into which, or from which, water flows; and
(d) any collection of water which the Minister may, by notice in the *Gazette,* declare to be a watercourse, and a reference to a watercourse includes where relevant, its bed and banks.

Riparian habitat includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soil, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure **distinct** from those of adjacent areas.

Wetland means "land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."

3.2 Freshwater Ecosystem Site Verification

Verification of potential watercourses took place according to the method presented in the "Updated manual for the identification and delineation of wetland and riparian resources" (DWAF, 2008). The foundation of the method is based on the fact that watercourses have several distinguishing factors including the following:

- Landscape position;
- The presence of water at or near the ground surface;
- Distinctive hydromorphic soils;
- Vegetation adapted to saturated soils; and
- The presence of alluvial soils in stream systems.

A field assessment was undertaken on the 30th of April (Western Cape autumn period[3])during which the presence of any riparian or wetland characteristics as defined by DWAF (2008) and by the NWA, were looked for (please refer to Section 6 of this report).

[3] Site surveys are recommended to take place during a seasonal period where the probability of detecting an identifiable life history stage of vegetation species (such as facultative vegetation species) is highest and in the raining period to ensure optimised conditions for the identification of seasonal watercourses, which may otherwise be overlooked. Thus, the site conditions at the time of the field assessment are considered to be in the correct time period however no significant rainfall has occurred in the study area. Nonetheless, the outcome of this study is considered sufficient for the objective set out in Section 1.

4. DESKTOP INVESTIGATION FINDINGS

A background study of relevant national, provincial and municipal datasets (such as the National Freshwater Ecosystem Priority Areas [NFEPA] 2011 database; the Department of Water and Sanitation Research Quality Information Services [DWS RQIS PES/EIS], 2014 database, and National Biodiversity Assessment (NBA) 2018, the City of Cape Town Wetlands dataset (2017) was undertaken to aid in defining presence of any watercourses prior to the site survey of the study area (see Appendix A, Table 1) as well as the associated 500 m investigation area.

The results are summarised in the points below with the relevant maps presented in Appendix A.

- According to the NFEPA (2011) there are no wetlands nor rivers within the study area. The NFEPA (2011) database indicate that two artificial wetlands and an estuary is located in the northern portion of the investigation area. The wetlands in the investigation area are indicated to be in a heavily to critically modified ecological condition (WETCON = Z2/Z3);
- According to the NBA (2018) there are no wetlands nor rivers within the study area. A depression wetland and an estuary are indicated to be located in the north western portion of the investigation area;
- According to the City of Cape Town Dataset (2017), no wetlands are located within the study area. A natural to semi-natural depression wetland is indicated to be located in the north western portion of the investigation area. A small artificial stormwater pond, also indicated to be a floodplain wetland, is located in the eastern portion of the investigation area;
- The study area falls within the G21F quaternary catchment.

5. RESULTS

5.1 Consideration of available digital satellite imagery

As no access to the study area could be obtained, use was made of digital satellite imagery to identify signatures of watercourses that would imply the study area to be of aquatic biodiversity sensitivity. Based on the review of available digital satellite imagery from 2002 and 2022 (Figure 2), the study area is built-up (comprising a single building and covered with pavement around the building).. A watercourse in noted approximately 118 m north of the study area in the imagery from 2002 (Figure 2, left). Due to subsequent development in the area north of the study area, this watercourse has since been realigned along the northern boundary of the study area (Figure 2, right). Although the study area does not host any watercourses, a watercourse which considered to be of significance is located directly adjacent to the study area.

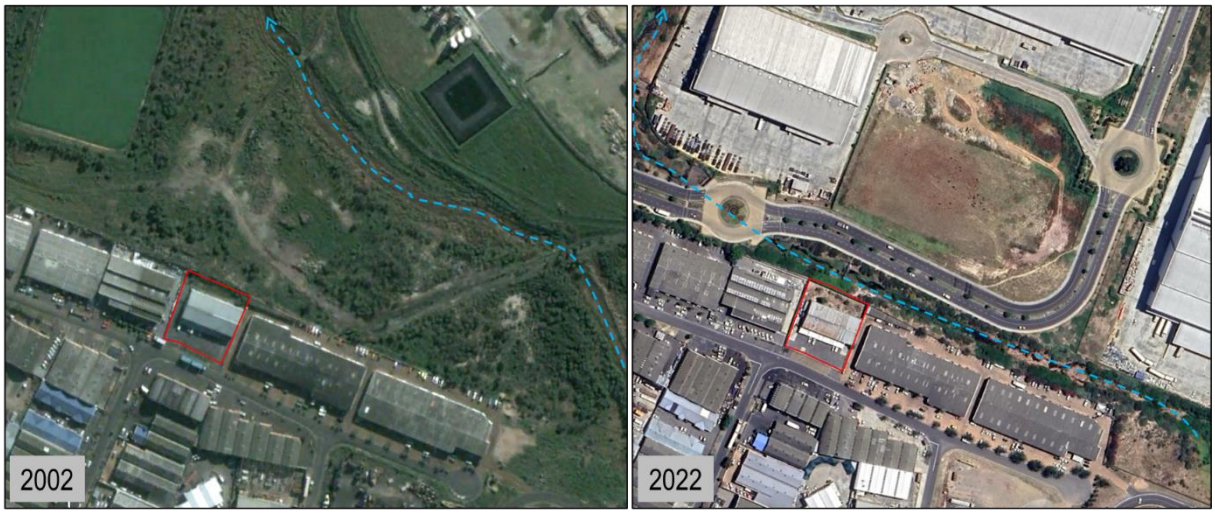

Figure 2: Digital satellite imagery of the study area (red outline) from 2002 and 2022 not displaying any watercourse signatures. A watercourse (blue dashed line) is describable to the north of the study area.

5.2 Site survey outcome

The watercourse, best described as a stream with an associated riparian zone, is located outside an along the northern boundary of the study area (Figure 3), flowing in a westerly direction. This stream was realigned to accommodate developments to the north. The embankment of this system is lined with gabions and includes weirs as well as a stormwater pond (classified as an artificial floodplain wetland by the CoCT Wetlands dataset (Figure A4)). It is assumed that this stream is hydrologically driven by stormwater inputs from the surrounding hardened catchment as it is also described as a 'stormwater open watercourse' by the City of Cape Town Map Viewer[4].

Overall, the system is well vegetated with a variety of terrestrial (on the upper embankments) and facultative wetland species (in the active channel), specifically noting *Phragmites australis* within the upstream reach and *Zantedeschia aethiopica* throughout the assessed reach (Figure 4). The vegetation provides sufficient surface roughness to reduce the velocity of flow in the system as very minor erosion was noted. As the stream is located in an urbanized setting, it provides habitat and a movement corridor for a variety of faunal species, as various common avifaunal species was identified, and the Clicking Stream Frog (*Strongylopus grayii*) were observed (via vocalisation). Due to the influx of (presumably) contaminated stormwater and the disposal of rubble noted in the system, the water quality in the system is considered to be degraded.

The northern boundary of the study area was investigated relative to the stream. As the study area is bounded by a concrete palisade fence and a precast concrete (vibracrete) fence, with no obvious discharge points from the study area into the stream, no existing impacts from the study area on the stream was noted (Figure 4).

[4] Obtained from https://citymaps.capetown.gov.za/EGISViewer/

Figure 3: (Top left) overview of the stream relative to the northern boundary of the study area. (Top right) the stream is well vegetated with no obvious erosion noted. (Bottom) overview of the study area relative to the stream.

The delineated extent of the stream and associated legislative regulated zones (refer to Section 6) relative to the study area is provided in Figure 4.

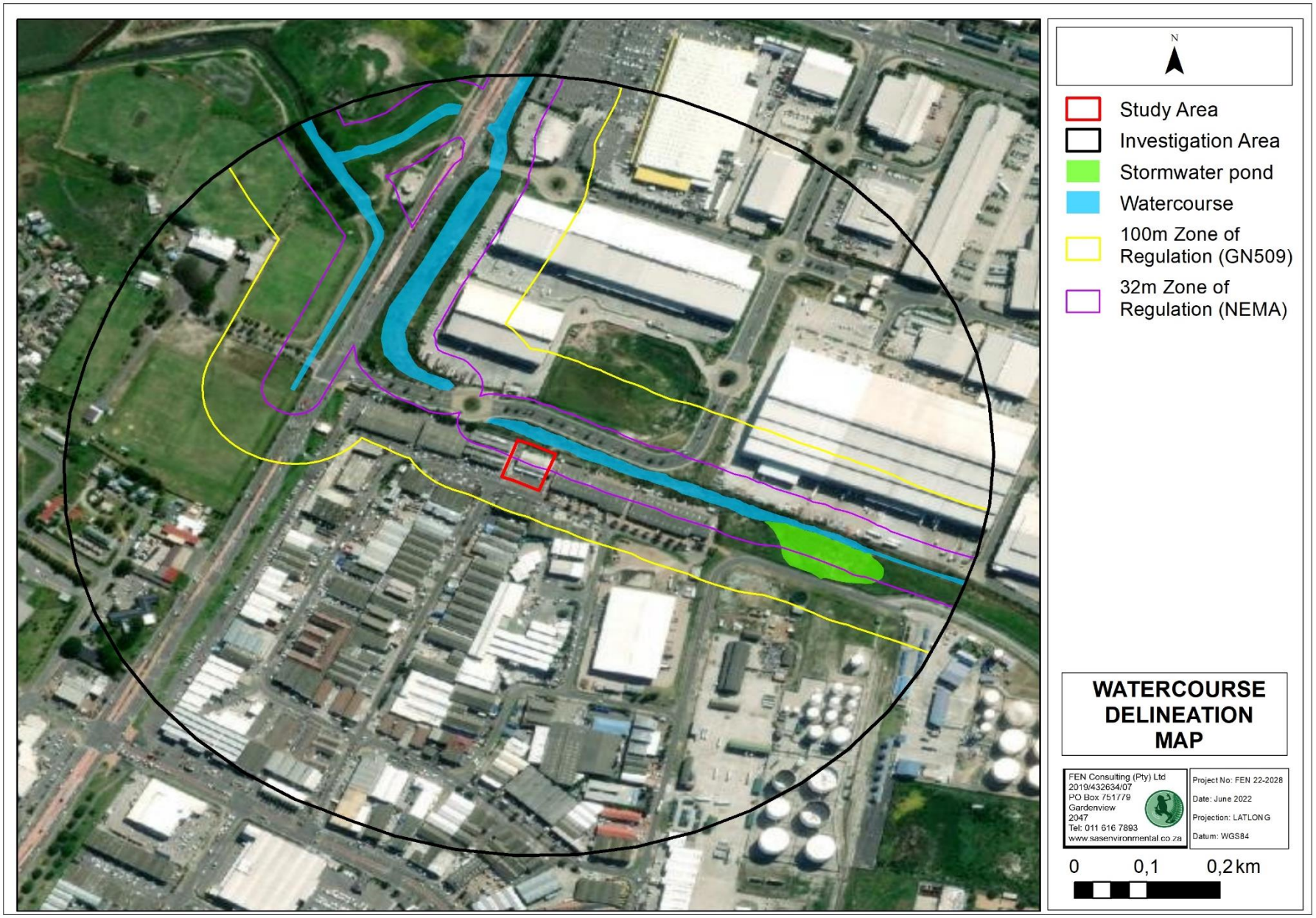

Figure 4: A map depicting the delineated extent of the stream and associated legislative regulated zones (refer to Section 6). Direction of flow is to the west.

6. LEGISLATIVE REQUIREMENTS

The definition and motivation for a regulated zone of activity for the protection of watercourses can be summarised as follows:

Table 1: Articles of Legislation and the relevant zones of regulation applicable to each article.

Regulatory authorisation required	Zone of applicability
Water Use License Application for water uses as stipulated in Section 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998). **Department of Water and Sanitation (DWS)**	**Government Notice 509 as published in the Government Gazette 40229 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998)** In accordance with GN509 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998), a regulated area of a watercourse in terms of water uses as listed in Section 21 (c) and 21(i) is defined as: • the outer edge of the 1 in 100 year flood line and/or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; • **in the absence of a determined 1 in 100 year flood line or riparian area the area within 100 m from the edge of a watercourse where the edge of the watercourse is the first identifiable annual bank fill flood bench; or** • a 500 m radius from the delineated boundary (extent) of any wetland or pan in terms of this regulation.
Listed activities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) EIA Regulations (2014), as amended. **Department of Forestry, Fisheries and Environment (DFFE)**	**Activity 12** of Listing Notice 1 (GN 327) of the National Environmental Management Act, 1998 (Act No.107 of 1998) EIA regulations, 2014 (as amended) states that: The development of – (i) Dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square meters; or (ii) Infrastructure or structures with a physical footprint of 100 square meters or more; Where such development occurs – (a) Within a watercourse; (b) In front of a development setback; or (c) If no development setback exists, **within 32 meters** of a watercourse measured from the edge of a watercourse.

As per the table above, the following applies to the identified stream north of the study area (Figure 4):

- A 32 m Zone of Regulation (ZoR) in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998); and a
- A 100 m ZoR in accordance with the National Water Act, 1998 (Act No. 36 of 1998).

As the study area is located within 32 m of a watercourse, listed activities applicable to watercourses, in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) are triggered. Additionally, the study area is located within the 100 m GN509 ZoR, as such, it is recommended that the proponent consult with the Department of Water and Sanitation (DWS), the custodian of water resources in South Africa, to determine what relevant authorisation process (if any) should be followed in terms of the requirements of the National Water Act 1998 (Act No. 36 of 1998).

7. BUSINESS CASE, OPPORTUNITIES AND CONSTRAINTS APPLICABLE TO THE STUDY AREA

During the field assessment, no natural watercourses were identified within the study area. A riparian watercourse was identified outside the northern boundary of the study area. Considering that the proposed refurbishment activities will be limited to the existing footprint within the study area and that the study area is bounded by a solid precast concrete fence, from a watercourse management perspective, impacts on the freshwater receiving environment due to the proposed refurbishment activities are unlikely to impact upon any watercourse services or functions. It is imperative that the proponent ensure that the operation of the crematorium does not generate any effluent or pollution that could impact on the stream. All operational activities must be contained and managed within the existing footprint within the study area.

Control measures that must be implemented during the refurbishment and operational phase of the proposed crematorium:

- No runoff from the study area may be released or enter the stream during both the refurbishment activities and the operational phase. All stormwater runoff generated in the study area must be managed in appropriate stormwater management structures and released into the municipal stormwater infrastructure. Regular inspection of the stormwater management infrastructure in the study area must be undertaken to ensure proper functioning thereof;
- Suitable dust management practices must be implemented for the duration of the refurbishment activities to prevent dust deposition in the stream that could lead to sedimentation thereof;
- No construction personnel may enter the stream or access the study area along the northern boundary. Access to the study area must be limited to the existing access area along the southern boundary;
- General good housekeeping practices must be implemented during all phases of the proposed development, to ensure limited direct, indirect and cumulative impacts to the stream.

Should the abovementioned control measure be implemented, the refurbishment and operation of the crematorium is expected to pose a low risk significance to the stream.

The study area may potentially be subject to the 100 m zone of regulation in accordance with GN509 as it relates to the National Water Act, 1998 (Act No. 36 of 1998) (Table 1). The EAP has been in consultation with DWS regarding the relevant authorisation process. Based on initial discussions, it is unlikely that Water Use Authorisation would be required (to be confirmed) with the condition that the control measures as provided in this letter be adhered to. Considering this and should DWS agree with the outcome of this letter, the stream is considered a watercourse of aquatic biodiversity importance, however due to the nature of the proposed operation, the study area can be considered of low aquatic biodiversity sensitivity. This compliance statement must be submitted to the relevant competent authority for consideration as part of the EA process.

8. REFERENCES

Department of Water Affairs and Forestry (DWAF). 2005. Final draft: A practical field procedure for identification and delineation of wetlands and Riparian areas.

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ANNEXURE A: DATABASE DASHBOARD AND PROJECT MAPS

Table 2: Desktop data relating to the characteristics of the watercourses associated with the study area.

Aquatic ecoregion and sub-regions in which the study area is located		Detail of the study area in terms of the National Freshwater Ecosystem Priority Area (NFEPA) (2011) database	
Ecoregion	Southern Coastal Belt	FEPACODE	The study area is located within a sub-quaternary catchment classified as a Phase 2 FEPA (FEPA CODE = 3). These are sub-quaternaries identified as the most efficient set for rehabilitating to an A or B ecological condition to meet under-achieved river type targets.
Catchment	Berg/Bot/Potberg		
Quaternary Catchment	G21F		
WMA	Berg		
subWMA	Lower Berg		
Dominant characteristics of the Southern Coastal Belt Ecoregion Level II (24.03) (Kleynhans *et al.,* 2007)		NFEPA Wetlands (Figure A2)	According to the NFEPA Database, no wetlands are located in the study area. Two artificial wetlands (classified as unchannelled valley bottom wetlands) and an area indicated to be an estuary, is indicated by this database to be located in the northern portion of the investigation area. The wetlands in the investigation area are indicated to be in a heavily to critically modified ecological condition (WETCON = Z2/Z3).
Dominant primary terrain morphology	Plains, Moderately Undulating Plains		
Dominant primary vegetation types	Mountain fynbos, Sand plain fynbos, West coast Renosterveld, Dune Thicket.		
Altitude (m a.m.s.l)	Sand Plain Fynbos, Dune Thicket, West Coast Renosterveld, Strandveld Succulent Karoo		
MAP (mm)	500 - 1000	Wetland Vegetation Type	The study area is situated within the Southwest Sand Fynbos (Critically Endangered) Wetland Vegetation Type. The threat status is provided by Mbona *et al.* (2015).
The coefficient of Variation (% of MAP)	0 – 100		
Rainfall concentration index	100 – 400		
Rainfall seasonality	30 – 40		
Mean annual temp. (°C)	50 – 60	NFEPA Rivers	As per the NFEPA database, no rivers are located within the study or investigation area.
Winter temperature (July)	Winter		
Summer temperature (Feb)	16 – 18		
Median annual simulated runoff (mm)	6 – 20		
Importance of the study area according to the City of Cape Town Dataset (2017) (Figure A3)			
According to the City of Cape Town Dataset (2017), no wetlands are located within the study area. A natural to semi-natural depression wetland is indicated to be located in the north western portion of the investigation area. A small artificial stormwater pond, also indicated to be a floodplain wetland, is located in the eastern portion of the investigation area. The depression is classified as an Other Ecological Support Areas (OESAs). OESAs are open space area irreversibly modified by agriculture or other activities. These sites are essential for protected sites. The artificial floodplain wetland is classified as a Critical Ecological Support Area (CESA), which are unselected areas that hosts natural vegetation. These areas are indicated to be essential ecological support for Critical Biodiversity Areas (CBAs) and protected sites.			
Importance of the study area according to the City of Cape Town Biodiversity Network (2017)			
According to the City of Cape Town Biodiversity Network (2017), no areas of biodiversity importance are associated with the study or investigation areas.			
National Biodiversity Assessment (2018): South African Inventory of Inland Aquatic Ecosystems (SAIIAE) (National Wetland Map 5 is included in the NBA) (Figure A5)			
According to the NBA 2018: SAIIAE no wetlands or rivers are located within the study area. A depression wetland and an estuary are indicated to be located in the north western portion of the investigation area. The depression wetland is classified as being in a moderately modified ecological condition (Category C). The Ecosystem Threat Status (ETS) of the depression is endangered, and the ecosystem protection level (EPL) thereof is poorly protected. The ETS of the estuary is indicated as critically endangered, and the EPL as poorly protected.			
National web based environmental screening tool (2020)			
The screening tool is intended for pre-screening of sensitivities in the landscape to be assessed within the EIA process. This assists with implementing the migration hierarchy by allowing developers to adjust their proposed development footprint to avoid sensitive areas.	The study area is located in an area considered of **very low aquatic biodiversity** sensitivity.		

CBA = Critical Biodiversity Area; DWS = Department of Water and Sanitation; EI = Ecological Importance; ES = Ecological Sensitivity; EPL = Ecosystem Protection Level; ESA = Ecological Support Area; ETS = Ecosystem Threat Status; m.a.m.s.l = Metres Above Mean Sea Level; MAP = Mean Annual Precipitation; NBA = National Biodiversity Assessment; NFEPA = National Freshwater Ecosystem Priority Areas; PES = Present Ecological State; SAIIAE = South African Inventory of Inland Aquatic Ecosystems; WMA = Water Management Area

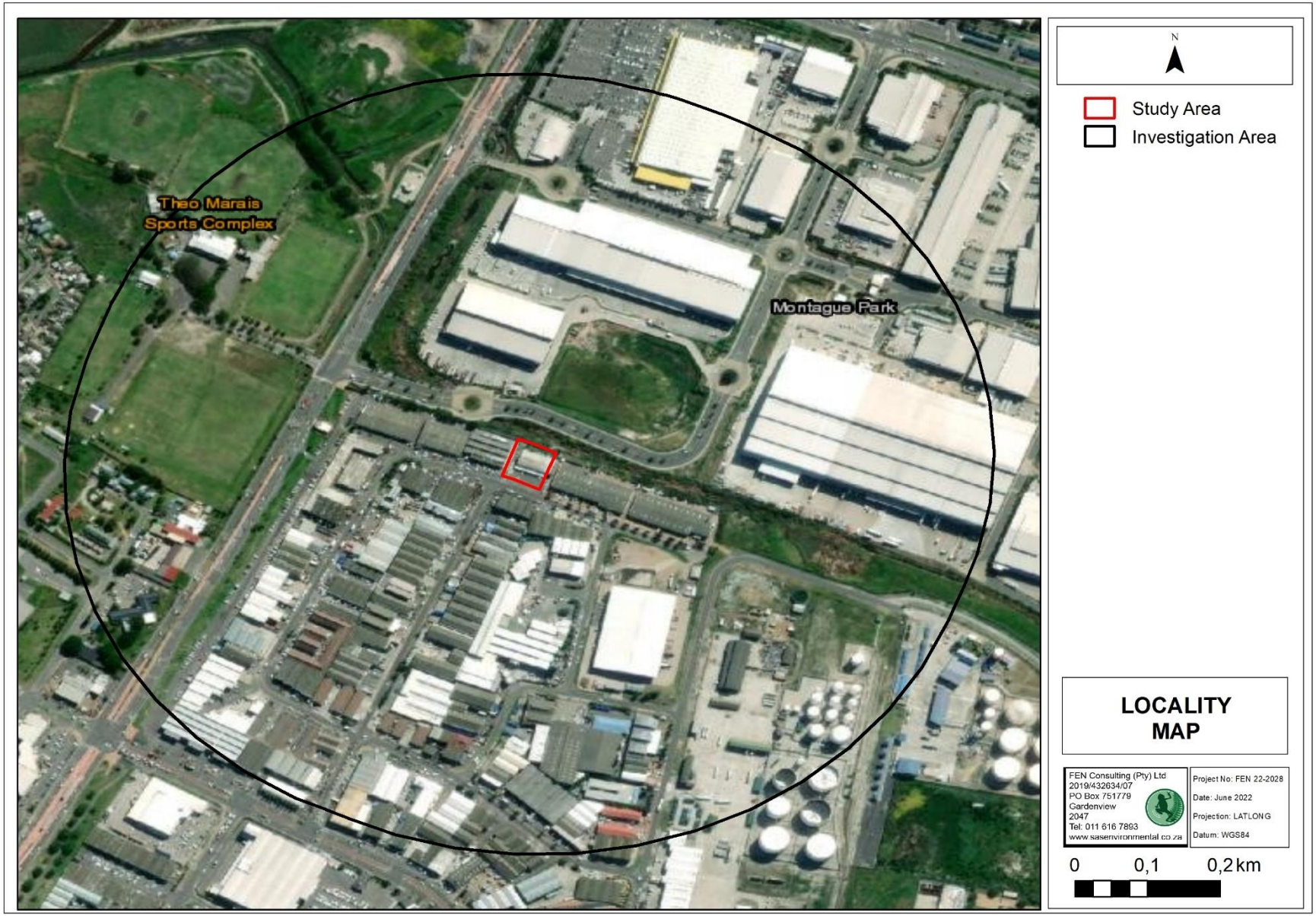

Figure A1: A digital satellite image depicting the study area and associated investigation area in relation to the surrounding area.

Figure A2: The study area and associated investigation area depicted on a 1:50 000 topographical map in relation to the surrounding area.

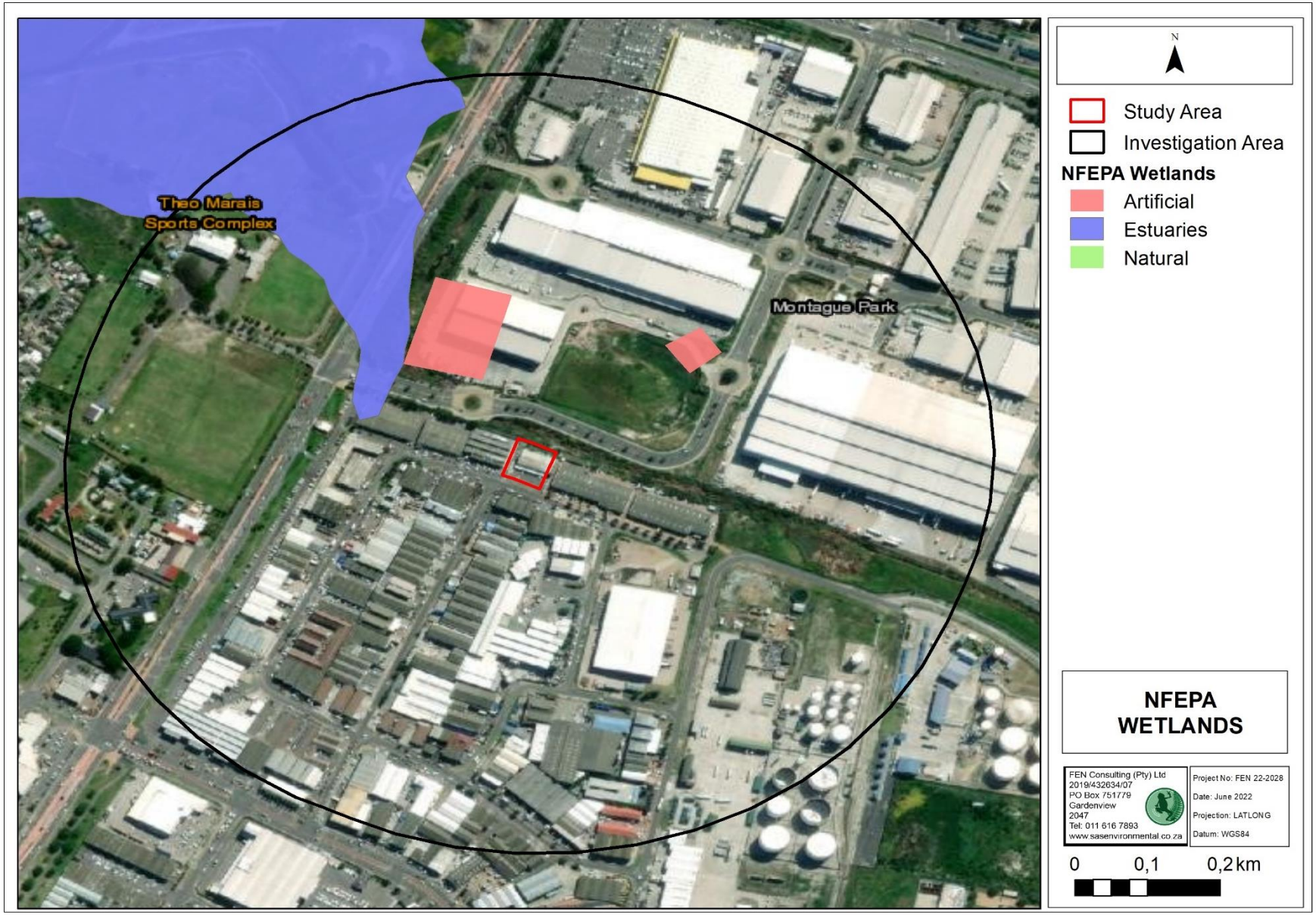

Figure A3: Natural NFEPA wetlands associated with the study and investigation areas as indicated by the NFEPA database (NFEPA, 2011).

Figure A4: Wetlands identified to be associated with the study and investigation areas, as identified by the City of Cape Town Wetlands Dataset (2017).

Figure A4: Wetlands identified to be associated with the study and investigation areas, as identified by the National Biodiversity Assessment Dataset (2018).

ANNEXURE B: Details, Expertise And Curriculum Vitae Of Specialists

1. (a) (i) Details of the specialist who prepared the report

Christel du Preez MSc Environmental Sciences (North West University)
Stephen van Staden MSc Environmental Management (University of Johannesburg)

1. (a). (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae

Company of Specialist:	SAS Environmental Gorup of Companies		
Name / Contact person:	Christel du Preez		
Postal address:	221 Riverside Lofts, Tygerfalls Boulevard, Bellville,		
Postal code:	7539	Cell:	074 580 6823
Telephone:	011 616 7893	Fax:	086 724 3132
E-mail:	christel@sasenvgroup.co.za		
Qualifications	MSc Environmental Sciences (North West University)		
Registration / Associations	Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP)		

1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Christel du Preez, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct

C du Preez
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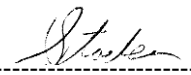
1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Stephen van Staden, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct



Signature of the Specialist

SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF CHRISTEL DU PREEZ

PERSONAL DETAILS

Position in Company	Senior Scientist (Watercourse ecology)
Joined SAS Environmental Group of Companies	2016

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Professional member of the South African Council for Natural Scientific Professions (SACNASP)
(SACNASP – Reg No. 120240/19)
Member of the Western Cape Wetland Forum (WCF)
Member of the Gauteng Wetland Forum (GWF)

EDUCATION

Qualifications

MSc Environmental Sciences (North West University)	2017
BSc Hons Environmental Sciences (North West University)	2012
BSc Environmental and Biological Sciences (North West University)	2011

Short Courses

Wetland and Aquatic plant Identification presented by Carin van Ginkel (Crispis Environmental)	2019
Wetland Management: Introduction and Delineation presented by the Centre of Environmental Management University of the Free State	2018
Tools for Wetland Assessment presented by Prof. F. Ellery and Rhodes University	2017
Basic Principles of ecological rehabilitation and mine closure presented by the Centre for Environmental Management North West University	2015

AREAS OF WORK EXPERIENCE

South Africa – Gauteng, Mpumalanga, Limpopo, Western Cape, Northern Cape, Eastern Cape

KEY SPECIALIST DISCIPLINES

Freshwater Assessments

- Desktop Freshwater Delineation
- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant species and Landscape Plan
- Freshwater Offset Plan

SAS ENVIRONMENTAL GROUP OF COMPANIES
SPECIALIST CONSULTANT INFORMATION –

CURRICULUM VITAE OF STEPHEN VAN STADEN

PERSONAL DETAILS

Position in Company	Managing Member, Group CEO, Water Resource Discipline Lead, Ecologist, Aquatic Ecologist
Date of Birth	13 July 1979
Nationality	South African
Languages	English, Afrikaans
Joined SEGC	2003 (year of establishment)
Other Business	Trustee of the Serenity Property Trust

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP)
Accredited River Health Practitioner by the South African River Health Program (RHP)
Member of the South African Soil Surveyors Association (SASSO) Member of the Gauteng Wetland Forum
Member of the Gauteng Wetland Forum;
Member of International Association of Impact Assessors (IAIA) South Africa;
Member of the Land Rehabilitation Society of South Africa (LaRSSA)

EDUCATION

Qualifications

MSc Environmental Management (University of Johannesburg)	2003
BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg)	2001
BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)	2000

Short Courses

Integrated Water Resource Management, the National Water Act, and Water Use Authorisations, focusing on WULAs and IWWMPs	2017
Tools for Wetland Assessment (Rhodes University)	2017
Legal liability training course (Legricon Pty Ltd)	2018
Hazard identification and risk assessment training course (Legricon Pty Ltd)	2018
Wetland Management: Introduction and Delineation (WLID1502S) (University of the Free State)	2018
Hydropedology and Wetland Functioning (TerraSoil Science and Water Business Academy)	2018

CORE FIELDS OF EXPERTISE

Legislative Requirements, Processes and Assessments
- Water Use Applications (Water Use Licence Applications / General Authorisations)
- Environmental and Water Use Audits
- Freshwater Resource Management and Monitoring as part of EMPR and WUL conditions

Freshwater Assessments
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant Species and Landscape Plans
- Freshwater Offset Plans
- Hydropedological Assessment
- Pit Closure Analysis

Aquatic Ecological Assessment and Water Quality Studies
- Habitat Assessment Indices (IHAS, HRC, IHIA & RHAM)
- Aquatic Macro-Invertebrates (SASS5 & MIRAI)
- Fish Assemblage Integrity Index (FRAI)
- Fish Health Assessments
- Riparian Vegetation Integrity (VEGRAI)
- Toxicological Analysis
- Water quality Monitoring
- Screening Test
- Riverine Rehabilitation Plans

Biodiversity Assessments
- Floral Assessments
- Biodiversity Actions Plan (BAP)
- Biodiversity Management Plan (BMP)
- Alien and Invasive Control Plan (AICP)
- Ecological Scan
- Terrestrial Monitoring
- Biodiversity Offset Plan

Soil and Land Capability Assessment
- Soil and Land Capability Assessment
- Hydropedological Assessment

Visual Impact Assessment
- Visual Baseline and Impact Assessments
- Visual Impact Peer Review Assessments