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Water Balance Assessment for the Proposed Karpowership Project – Richards Bay Port

Report

Version – Final Rev 3

23 February 2021

Triplo4 Sustainable Solutions (Pty) Ltd

GCS Project Number: 20-0909

Client Reference: 20-0909_WB3

WATER BALANCE ASSESSMENT FOR THE PROPOSED KARPOWERSHIP PROJECT - RICHARDS BAY PORT

Report
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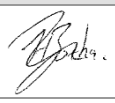
20-0909_WB3

DOCUMENT ISSUE STATUS

Report Issue	Final Rev 3		
GCS Reference Number	GCS Ref - 20-0909_WB3		
Client Reference	20-0909_WB1		
Title	Water Balance Assessment for the Proposed Karpowership Project - Richards Bay Port		
	Name	**Signature**	**Date**
Author / Editor	Hendrik Botha (MSc, PriSciNat)		23 February 2021
Director / Reviewer	Pieter Labuschagne (MSc, PriSciNat)		23 February 2021

DECLARATION OF INDEPENDENCE

GCS (Pty) Ltd (GCS) was appointed to conduct this specialist water balance study and to act as an independent specialist. GCS objectively performed the work, even if this results in views and findings that are not favourable. GCS has the expertise in conducting the specialist investigation and does not have a conflict of interest in the undertaking of this study. This report presents the findings of the investigations which include the activities set out in the scope of work.

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LIST OF ACRONYMS

Acronym	Description
BA	Basic Assessment
BOD	Biological oxygen demand
COD	Chemical oxygen demand
CSWMP	Conceptual stormwater management plan
DEM	Digital Elevation Model
DWS	Department of Water and Sanitation
GCS	GCS Water and Environment (Pty) Ltd.
SW	Surface Water
GN704	General Notice 704
ha	Hectare
HRU	Hydrological Response Unit
IWULA	Integrated Water Use Licence Application
m^3	Cubic Metres
MAE	Mean annual evaporation
MAR	Mean Annual Runoff
MIPI	Midgley and Pitman
NEMA	National Environmental Management Agency
n-Value	Manning's Roughness Coefficients
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PCD	Pollution Control Dam
PFD	Process flow diagram
SDF	Standard design flood
TDS	Total dissolved solids
TIN	Triangulated Irregular Network
WMA	Water Management Area
WR2012	Water Resources of South Africa 2012
FSRU	Floating storage and regasification unit
LNG	Liquefied natural gas

1 INTRODUCTION

GCS Water and Environment (Pty) Ltd (GCS) was appointed by Triplo4 Sustainable Solutions (Pt) Ltd (Triplo4) to undertake a conceptual water balance for the proposed generation of electricity via Mobile Floating Karpowerships, moored in the Richards Bay, Kwa-Zulu Natal.

1.1 Project background

The Project Concept comprises gas engine power ships or barges provided by Karpower moored on a spread mooring close to the shore or in the protection of a harbour to export power via transmission cables to an Eskom transmission substation on the shore (refer to Figure 1-1).

A floating storage and regasification unit (FSRU) for liquefied natural gas (LNG) is intended for use and will act as the storage and regasification facilities and thus not require any permanent construction of LNG facilities within the preferred sites. Furthermore, if required, this facility can be removed at the end of the life of the generation project without any impact through the removal of permanent infrastructure.

The FSRU is moored in the vicinity of the gas engine Karpowership or barge and will generate natural gas through a process of evaporation. The gas will be transported through hoses and pipelines. The FSRU will be refuelled by LNG carriers (LNGC) that will moor to the vessel in a Ship-To-Ship (STS) configuration.

The Karpowership and FSRU will be moored on independent spread-moorings but nearby to reduce the gas distribution pipeline length and overall footprint of the operation.

The project will entail the mooring, deploying and operation of the Karpowerships at Richards Bay – Port of Ngqura which İS designated Strategic Economic Zones (SEZ's).

Associated facilities and infrastructure include natural gas supply, storage and distribution and transmission lines for the evacuation of the generated electricity to the transmission connection point. The fuel used by the Powership will be natural gas sourced from the FSRU via gas pipeline (ship to ship). The subsea gas pipeline connecting the FSRU to the Powership will be routed along the toe of the existing dredged slopes and will connect to the vessels via a flexible marine hose riser.

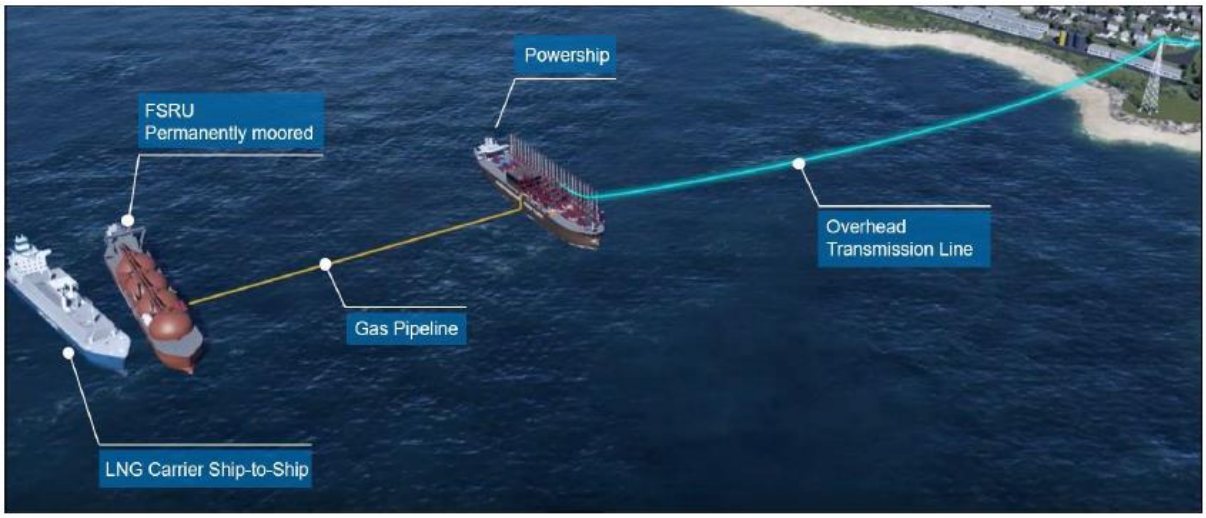

Figure 1-1: Generic Project Concept (Triplo4, 2020)

The power generated on the ship is converted by the onboard High Voltage substation and transmitted along 132kV transmission lines. Existing distribution power lines will be used where possible to reduce costs. Therefore, minimal land is required, and construction risk is minimal. The overhead transmission lines will be developed where possible within existing servitudes.

1.2 Study objectives

The objective of this study was to develop a process flow diagram and subsequent conceptual water balance for the generation of electricity via Khan and Shark class Karpowerships which will be moored in the Richards Bay. The water balance aims to:

- Provide a conceptual block process flow diagram (PFD) illustrating the average water distribution for the water sub-systems associated with the Karpowerships, namely:
    - Seawater use.
    - Fresh/potable water use; and
    - Wastewater flows.
- Provide a static average water balance illustrating the total water balance for the water distribution systems.

The conceptual water balance diagrams are required to illustrate all Water and Wastewater flows consistent with minimising Water use and restrictions on the volumes of effluent produced. Subsequently, the water balance is required to determine whether a water use license or an integrated water use license will be required in terms of the National Water Act, 36 of 1998 for the activities to be undertaken to the Project.

1.3 Scope of work

The scope of work completed was as follows:

1. **Desktop study and Data Review:**
    a. Review available Karpowership operational water use schematic drawings to understand typical water reticulation and water requirements for the generation of offshore electricity.
    b. Review the water demand data provided by the client and derive likely water use and wastewater quantities.
2. **Water balance:**
    a. A conceptual Process Flow Diagram (PFD) was developed on which the Water Balance is based (refer to section 2.4).
        i. Process and volume information was supplied by the Client.
        ii. General water demands for the project were made available by the client.
        iii. If no data was made available, water quantities were estimated based on assumptions made in this document.
    b. A spreadsheet-based Water Balance in the Department of Water Affairs (DWA) format (G2) was developed.

1.4 Methodology

A schematic presentation of the water process flow diagram (PFD) was drafted using the information obtained from the client regarding the components that need to be licensed. The included PFD represented the operational phases of the Karpowership project for the generation of electricity.

The PFD presents schematically the sources of water, storages, linkages to different uses and losses from the system. The PFD was derived from the general cooling designs and water requirements for the project and refined based on input from the client.

The client provided the estimates of the daily water requirements for the operational phase. The provided estimates of water requirements were used together with the finalised PFDs to calculate the average annual water balances. In the case where there was a lack of information in terms of water requirements, reasonable assumptions were made to determine water balance.

The water balance is based on techniques as described by (DWAF, 2006). Whilst these guidelines were compiled for use in the mining industry only, they have been successfully applied in other scenarios. The water balance also adheres to the "Guidance document on the application of water balances for supporting the implementation of the Water Framework Directive" (European Commission, 2015).

1.5 Study Limitations

The project will consist out of two (2) components, namely (1) pre-constructed ships moored in the harbour and (2) the development and operation of transmission lines on the land surface.

Due to the nature of the land development (i.e. the development of transmission lines and pylons over a large area where little to no water will be required) the water balance focused on conceptualising the likely water use and distribution for the Karpowership electricity generation (i.e. water used on the ships will be derived from seawater).

A water balance for the land component of the project is deemed unnecessary for water quantities used during this process (i.e. for drinking or technical water) will most probably be sourced by local contractors on a very small scale.

2 CONCEPTUAL WATER BALANCE

The following section supplies the PFD and water balance for the Karpowership project.

2.1 Available information

The following *information was supplied by the client* and was used to guide the water balance and PFD (refer to Table 2-1). GCS provided the client with a questionary to determine basic water reticulation and demand criteria.

Table 2-1: Summary of available water balance data

Component	Comments	
Daily water demand	Daily water demand Drinking water = 300 litres bottled water and stored in disposable bottles (0.3 m^3/day) 650 litres technical water (generators operation) – (0.65 m^3/day) – evaporation losses in the cooling system, then to bilge separator @ 1.8 m^3/month 5 000 litres per STG operation (5 m^3/day) – diagram indicates 3 STGs – uses seawater (so 5 475 m^3/year) 20 000 litres for potable water (20 m^3/day) – grey and blackwater comes from this.	
Where water will come from	Power ships uses seawater for cooling of the close loop freshwater cooling system of engines, condensers of steam turbine and other auxiliaries. Water is primarily used for steam generation, makeup water consumption and domestic consumption. The Powership operates a once-through cooling system, which abstracts water directly for cooling and discharges into the sea. However, part of the cooling water is processed into water through the vaporization process for steam generation (onboard water treatment unit) and non-process water consumption. Drinking water will be supplied from local suppliers in the form of disposable bottled water. Water supply for domestic use including potable water and technical water will be treated from the sea via freshwater generators and a seawater reverse osmosis system. Water that is to be used for cleaning and bathing is produced using an onboard water treatment unit.	
Where will water be stored, and storage volumes	**KHAN CLASS** Drinking water is purchased and stored in disposable bottles. Potable and technical water is store in Powership dedicated tanks. No:1 FW Coll. Tk: 35 m^3 No:2 FW Coll. Tk: 35 m^3 Fresh Water Tk Port:256 m^3 Fresh Water SB Tk: 256 m^3	**SHARK CLASS** Drinking water is purchased and stored in disposable bottles. Potable and technical water is store in Powership dedicated tanks. Tech. FW Tank: 171.7 m^3 FW Tank Port: 38.4 m^3 FW Tank Starboard: 38.4 m^3

Component	Comments
What the anticipated losses for the generation of electricity	25 litres per engine (0.025 m^3/day) 5 000 litres per STG operation (5 m^3/day) The hotter the STG becomes before the restart higher the water consumption.
How much water will become blackwater and greywater	There will be effluent of domestic wastewater and bilge water produced in the Powership. According to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78 or "MARPOL Convention" in short) (Annexes I, II and IV), discharge of oil, noxious liquid substances, and sewage from vessels into the marine environment is prohibited. All black and grey wastewater generated during the operation of Powership facilities shall be transferred to a subcontracted licensed Environmental Service Company for appropriate off-site treatment and disposal. Records and certificates of waste collection are always appropriately documented and maintained.
Approximate volumes of sewage (black water) generated.	Monthly Average Sewage Amount = 75 m^3/month (Grey and blackwater)
Bilge Water	Estimated 1.8 m^3/month and is derived from the technical cooling water (which is a recycled circuit – only topped up when required).

2.2 Water use and reticulation observations for supplied data

Seawater is generally used for the outer cooling systems, while a portion of seawater is treated for distribution into the fresh water supply to be used in the inner cooling systems (i.e. the low-temperature cooling, generator cooling, condensate cooling systems etc.) and for domestic use. Sub-systems are sensitive to saline water. It is noted that the vessels operate via a continues seawater feed system, where only a small volume of seawater is used in the generation of electricity (i.e. losses to steam, condensers and treatment). This means that large volumes of seawater are discharged back to the ocean (termed seawater overboard discharge).

Based on the available data, seawater is attained via several sea chest intakes and distributed to the seawater cooling systems [external use on generators (GN), low-temperature (LT) coolers, alternators, turbine stacks]. An excess amount of seawater is flushed through the system, and the water used by the GN and LT coolers are very low.

A portion of the seawater intake is treated at onboard water treatment plants (WTPs) including evaporator, seawater reverse osmosis system and distributed to freshwater, collection and technical water tanks, to supplement freshwater supply to the dedicated sub-systems and cooling systems. Process seawater (i.e. water which has already gone through the cooling system) is either discharged back to the ocean or used to replenish the sea chests via antifouling anode treatment tanks. Wastewater effluent is collected in the onboard dedicated waste storage tanks for temporary storage.

Available data suggest that the freshwater system is interconnected throughout the vessels, and that recirculation of the water takes place (i.e. water from the engines and steam turbines is redistributed to the mixed cooling units and LT cooling systems) and water is “topped up” as required to ensure adequate pressure and flow in the cooling system. Only evaporation losses and operational losses of fresh are anticipated for the cooling system. As such, there are freshwater close-loop circuits for the cooling system of engines, water circulates from/to expansion tanks of the engines. The only reason for consumption on this system is evaporation due to the heat of Engines.

In terms of domestic water use, the client indicated that both treated seawater (i.e. desalinated) and drinking water will be used for domestic purposes. Potable (drinking water) will further be supplemented by stocking bottled water. All grey and blackwater generated on the vessels will be stored in a waste storage tank to be taken off-site by an accredited service provider. No discharge of grey or blackwater will take place in the ocean.

2.3 Assumptions and limitations

The following assumptions and limitations apply to the water balance:

- The combined water use and reticulation for the project does not consider water processes for the individual Karpowership Vessels.
- The water balance is static and provides an average case water balance, based on information supplied by the client (refer to Table 2-1).
- Due to the nature of this project (i.e. a ship where nearly 100% of precipitation on the vessel will turn into runoff and flow to the ocean), no precipitation runoff and evaporation is incorporated into the balance.
- The balance does not consider water use for emergency application (i.e. fire water and foam extinguisher water).
- Freshwater and saline water usage for known systems were applied, and estimates were made in terms of evaporation losses.
- The client provided the average potable, generators, bilge separators, and STG use volumes.
- The average sewage volume is inclusive of greywater and blackwater.
- The engine F/W system (generators, auc machinery, exhaust) is only topped up with fresh water when required. Moreover, the bilge separator monthly volumes were applied in the water balance model.
- It is assumed that the total potable water volume provided by the client is split into potable/domestic uses (i.e. washing, bathing and other uses) as well as toilets.
- Onboards storage tanks volumes are not modelled and are assumed to run at full capacity. Excess water is accounted for as water storage. This was done to show average mass-balanced water flow though the reticulation / PFD system.
- The water balance does not consider or represent the maximum design operational capacity flow quantities (i.e. engineering specified flow rates) of the Karpowership. Instead, data supplied by the client in Table 2-1 was applied and trial and error calibration based on the above-mentioned assumptions were made (i.e. inverse modelling from available data).

2.4 Process flow diagram (PFD)

The conceptual process flow diagram (PFD) for the generation of electricity for the Richards Bay Karpowership Project is shown in Figure 2-1, below.

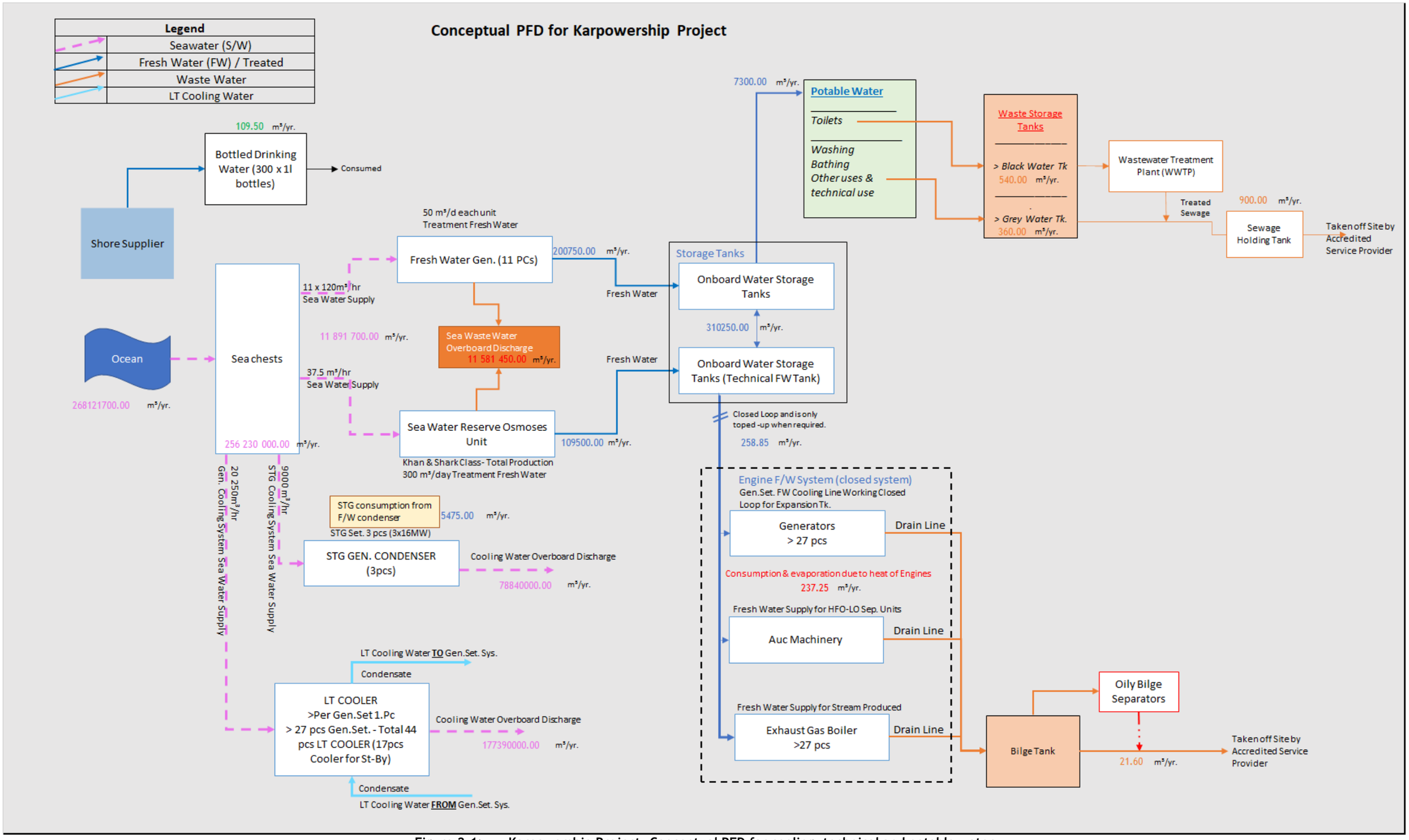

Figure 2-1: Karpowership Project- Conceptual PFD for cooling, technical and potable water

2.5 Water balance

The average annual water balance calculations for the Karpowership Project is provided in Table 2-2, below.

Table 2-2: Karpowership Project – Average Annual Water Balance

Average Annual Water Balance				
Facility Name		**Water In**		**Water Out**
PFD Component	**Water Circuit**	**Quantity (m^3/yr.)**	**Water Circuit**	**Quantity (m^3/yr.)**
Local Supplier	In: Bottled Water (packed)	109.50	To: Consumed	109.50
	Total IN	109.50		109.50
Sea chest (Seawater)	In: Ocean	268121700.00	To: Fresh Water Gen. (11pcs)	11563200.00
			To: Sea Water Reserve Osmoses Unit	328500.00
			To: STG GEN. CONDENSER (3 pcs)	78840000.00
			TO: LT COOLER	177390000.00
	Total IN	268121700.00		268121700.00
Fresh Water Gen. (11pcs)	In: Sea chest (Seawater)	11563200.00	To Water Storage Tanks	200750.00
			To: Waste Water Overboard Discharge	11362450.00
	Total IN	11563200.00		11563200.00
Sea Water Reverse Osmoses Unit	In: Sea chest (Seawater)	328500.00	To Water Storage Tanks	109500.00
			To: Waste Water Overboard Discharge	219000.00
	Total IN	328500.00		328500.00
STG GEN. CONDENSER (3 pcs)	In: Sea chest (Seawater)	78840000.00	To: Cooling Water Overboard Discharge	78840000.00
	Total IN	78840000.00		78840000.00
LT COOLER	In: Sea chest (Seawater)	177390000.00	To: Cooling Water Overboard Discharge	177390000.00
	Total IN	177390000.00		177390000.00
STG GEN F/W Consumption form Condensers	In: Condensate	5475.00	STG Operation / Consumption	5475.00
LT Cooling Water to Gen.Set.Sys from Condensers	In: Condensate	41756.00	TO: LT Cooling Water To Gen.Set. Sys.	41756.00
	Total IN	177390000.00		177390000.00
Storage Tanks	In: Fresh Water Gen. (11pcs)	200750.00	To: Potable Water	7300.00
	In: Sea Water Reverse Osmoses Unit	109500.00	***To: Engine F/W Systems (toped-up only when needed)***	***258.85***
			To: Remains in Storage	302691.15
	Total IN	310250.00		310250.00
Engine F/W System	In: Storage Tanks	258.85	To: Evaporation & Cooling Losses	237.25
			To: Bilge Tank & Oily Bilge Separators (Taken off-Site by Accredited Service Provider)	21.60
	Total IN	258.85		258.85
Potable Water	In: Water Storage	7300.00	To: Black Water Tk	540.00
			To: Grey Water Tk	360.00

Average Annual Water Balance				
Facility Name		**Water In**		**Water Out**
			To: Losses / Consumed	6400.00
	Total IN	7300.00		7300.00
Sewage Holding Tank	In: Black Water Tk via WWTP	540.00	To: Sewage holding tank (Taken off-Site by Accredited Service Provider)	900.00
	In: Grey Water Tank	360.00		
	Total IN	900.00		900.00
Net balance				0.00

Green = Bottled Water, Blue = Fresh Water, Orange = Waste Water, Red = Evaporation & Cooling Losses, Pink = Sea Water

3 CONCLUSIONS

Based on the PFD and water balance conducted, the following conclusions are drawn:

- Drinking water for the project will be supplied by a local supplier in the form of 1-litre bottles (estimated 300 bottles/day).
- Seawater will be taken in through several sea chests on the Power ships. Freshwater will be derived from seawater via the onboard freshwater generators and reverse osmosis units.
- No wastewater or treated wastewater discharge will take place from the Karpowership vessels during the generation of electricity.
    - Bilge sludge treated sewage and sewage water will be stored in the dedicated waste storage tanks.
    - Waste will be taken off-site by an accredited service provider. It should be noted that only unused seawater will be discharged back to the ocean (i.e. water not converted to freshwater or used for cooling).
- The general water volumes for potable, technical, operational and wastewater for the Karpowership project is estimated as follows (refer to Figure 3-1):
    - Drinking water (bottled) is in the order of 109 m^3/yr.
    - Technical water (generators operation) is in the order of 237 m^3/yr.
    - STG operation is in the order of 5475 m^3/yr.
    - Potable water is in the order of 7 300 m^3/yr.
    - Wastewater (stored in onboard storage tanks) is in the order of 900 m^3/yr.
    - Bilgewater (stored in onboard storage tanks) is in the order of 21.6 m^3/yr.
- Based on the above, the average annual consumption for the Karpowership project is in the order of 13 121 m^3/yr., and wastewater is in the order of 921 m^3/yr.

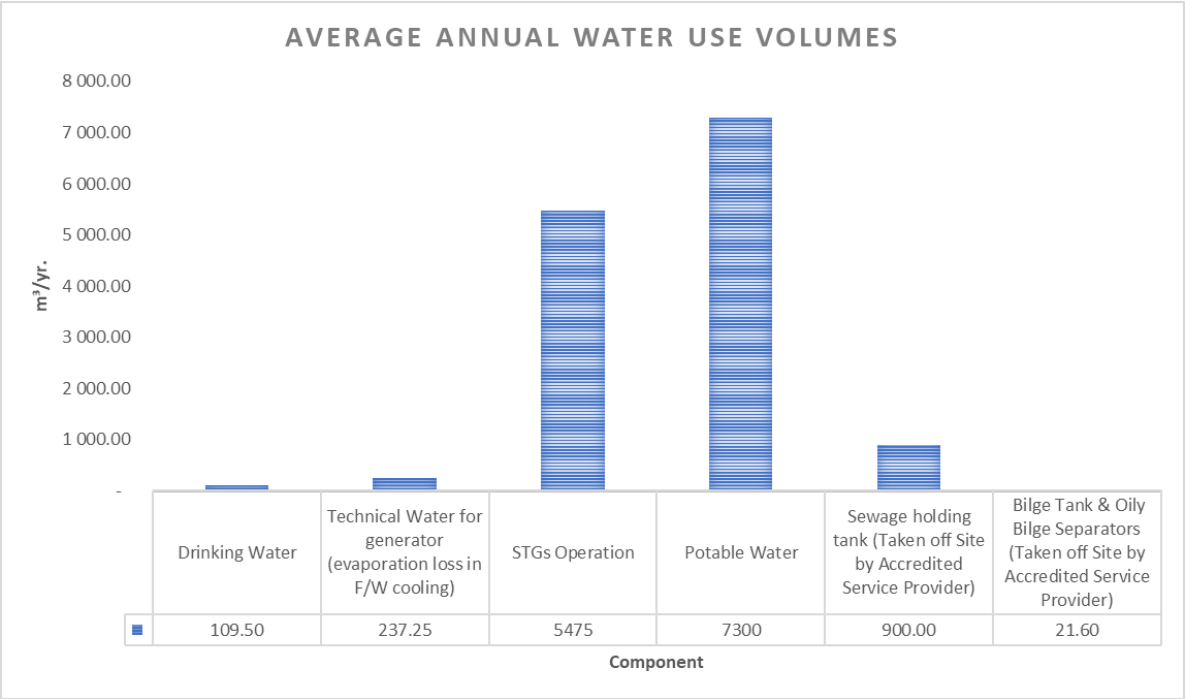

Figure 3-1: Average annual water use volumes for the Karpowership Project

3.1 Recommendations

It is recommended that the dynamic water balance be developed by a process engineer and calibrated when there is actual flow data available for the ships during the operational phase. This can be considered once the Karpowerships are operational (i.e. during the operational phase when electricity is generated). The dynamic water balance can be used to accurately determine water losses, discharge volumes, conversion volumes and discharge volumes.

The water balance indicated that all water will be obtained from the ocean (except bottled drinking water) and stored in sealed water tanks, and hence no Section 21(a) or 21(b) water uses are triggered. Wastewater will be stored in dedicated storage tanks (Section 21 (g)) and will be taken off-site by an accredited service provider.

Based on the current project configuration, only the transmission lines will trigger a water use (Section 21(c) & (i)). Provided the necessary mitigation measures are implemented, the low risk to the proximate watercourse will allow Karpowership to rely on a General Authorisation instead of having to obtain a water use licence, subject to written confirmation from DWS following submission of the necessary documentation.

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APPENDIX A: DISCLAIMER & DECLARATION OF INDEPENDENCE

The opinions expressed in this Report have been based on site /project information supplied to GCS Water and Environment (Pty) Ltd (GCS) by Triplo4 and is based on public domain data and data supplied to GCS by the client. GCS has acted and undertaken this assessment objectively and independently.

GCS has exercised all due care in reviewing the supplied information. Whilst GCS has compared key supplied data with expected values, the accuracy of the results and conclusions are entirely reliant on the accuracy and completeness of the supplied data. GCS does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.

Opinions presented in this report, apply to the project conditions and features as they existed at the time of GCS's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this report, about which GCS had no prior knowledge nor had the opportunity to evaluate.

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Water Balance Assessment for the Proposed Karpowership Project - Richards Bay Port

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.environment.gov.za/documents/forms.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	GCS Water and Environment			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	
Specialist name:	Hendrik Botha			
Specialist Qualifications:	MSc. Environmental Science			
Professional affiliation/registration:	PriSciNat (400139/17)			
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Postal code:	3610	Cell:	071 102 3819	
Telephone:	+27 (0) 31 764 7130	Fax:		
E-mail:	hendrikb@gcs-sa.biz			

2. DECLARATION BY THE SPECIALIST

I, Hendrik J Botha, 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 Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, 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; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

GCS Water and Environment (Pty) Ltd

Name of Company:

23 February 2021

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, _____, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist

Name of Company

Date

Signature of the Commissioner of Oaths

Date

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

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Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Water Balance Assessment for the Proposed 450 MW Karpowership Project - Richards Bay Port

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.environment.gov.za/documents/forms.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	GCS (PTY) LTD			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100.1
Specialist name:	HENDRIK BOTHA			
Specialist Qualifications:	MSC			
Professional affiliation/registration:	PriSciNat			
Physical address:	74 VICTORIA RD, NEWCASTLE, KZN			
Postal address:	" "			
Postal code:	2940	Cell:	071 102 3819	
Telephone:	—	Fax:	—	
E-mail:	hendrikb@gcs-sa.biz			

2. DECLARATION BY THE SPECIALIST

I, HENDRIK BOTHA, 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 Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, 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; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

GCS (PTY) LTD

Name of Company:

08/02/2021

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Hendrik Botha. , swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

HBotha

Signature of the Specialist

GCS (Pty) Ltd.

Name of Company

08-02-2021

Date

L P BOTHA BD 44601

Signature of the Commissioner of Oaths

08/02/2021

Date

AFFIDAVIT

I CERTIFY THAT THE ABOVE STATEMENT WAS TAKEN BY ME AND THAT THE DEPONENT HAS ACKNOWLEDGED THAT HE/SHE KNOWS AND UNDERSTANDS THE CONTENTS OF THIS STATEMENT AND HAS NO OBJECTION TO TAKING THE PRESCRIBED OATH AND REGARDS THE OATH AS BIDING ON HIS/HER CONSCIENCE. AFTER WHICH THIS STATEMENT WAS SWORN TO BEFORE ME AND THE DEPONENT'S SIGNATURE/MARK OR THUMBPRINT WAS PLACED THEREON IN MY PRESENCE.

AT: NEWCASTLE ON: 08/02/2021 TIME: 17:00

(SIGNATURE) COMMISSIONER OF OATHS
LEON PIETER BOTHA ID: 6601295071087
RANK: MARRIAGE OFFICER
(AND COMMISSIONER OF OATHS)
REG. NO: BD 44601 CELL: 071 125 5535

CONTACT DETAILS
STREET: 30 HEUWEL AVE
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