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Preapplication DRAFT BASIC ASSESSMENT REPORT

In terms of the **National Environmental Management Act** (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations as amended for:

PREAPPLICATION DRAFT BASIC ASSESSMENT REPORT FOR THE UPGRADE OF A WASTE WATER TREATMENT WORKS AND INSTALLATION OF SMALL-BORE SEWAGE RETICULATION SYSTEM IN WOODLANDS KOUKAMMA LOCAL MUNICIPALITY, SARAH BAARTMAN DISTRICT MUNICIPALITY , EASTERN CAPE

DEDEAT REFERENCE: APPLICATION TO BE SUBMITTED AFTER INITIAL REVIEW OF PREAPPLICATION DRAFT BAR (THIS REPORT)

FOR 30-DAY REVIEW AND COMMENT: 4 SEPTEMBER – 6 OCTOBER 2025 ON PREAPPLICATION DBAR

DWS REFERENCE: WU-42922

FOR 60 DAY REVIEW, COMMENT, OBJECTION ON WULA

PREPARED FOR THE APPLICANT:	Koukamma local Municipality Represented by Mr Mziwamadoda M. Qalaba EMAIL: mzi.qalaba@koukamma.gov.za
PREPARED BY:	CLAIRE DE JONGH (EAPASA REG: 2021/3519)
DATE:	4 September 2025

Table of Abbreviations

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
CD:NGI	Chief Directorate: National Geo-spatial Information
CRR	Comments and response report
DEDEAT	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
DFFE	Department of Forestry, Fisheries and the Environmental
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECBCP	Eastern Cape Biodiversity conservation Plan
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme
ESA	Ecological Support Area
GA	General Authorisation issued in terms of the NWA
IAP	Interested and Affected Party/ies
KKLM	Koukamma Local Municipality
MCC	Motor Control Centre
NEMA	National Environmental Management Act (Act 107 of 1998)
NFEPA	National Freshwater Ecosystem Priority Areas
NPAES	National Protected Area Expansion Strategy, 2008
NWA	National water Act (Act 36 of 1998)
NWM5	National Wetland Map 5
PA	Protected Area -
PLCs	Programmable Logic Controllers
PPP	Public Participation Process
SANBI	South African National Biodiversity Institute
SBDM	Sarah Baartman District Municipality
SCADA	Supervisory Control and Data Acquisition System
WUL	Water Use License issued in terms of the NWA

Section contained within Appendix 1 of EIA Regulations	Description	Cross reference in BAR
3a	Details of the EAP and CV	EMPr (Annexure 2)
3b	Location of Activities	Section A
3c	Layout Plan	Section A1; Appendices A - C
3d	Description of the scope of the proposed activity including the triggered and specified activities, associated structures and infrastructure and the way the proposed development relates to the triggered activities	Section A10
3e	Description of the policy and legislative context within which the development is proposed and how is each one applicable to the proposed activity	Section A10
3f	The motivation for the need and desirability (including the development at that specific location)	Section A9
3g	The motivation for the preferred site, activity, and technology alternative	Section A1 - 8
3h (i)	Details of all the alternatives considered	Section A1 - 8
3h (ii)	Details of the Public Participation Process (PPP) undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs Section 5	Section C
3h (iii)	A summary of the issues raised by interested and affected parties, and an indication of the way the issues were incorporated, or the reasons for not including them Section 5	Section C, Appendix E
3h (iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	Section B and Section D2
3h (v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed, or mitigated;	Section D

3h (vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	Appendix G
3h (vii)	Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	Section D2
3h (viii)	Possible mitigation measures that could be applied and the level of residual risk	Section D2; Appendix F
3h (ix)	Outcome of the site selection matrix	Section D2; Appendix F
3h (x)	If no alternatives, including alternative locations for the activity, were investigated, the motivation for not considering such	Section A1 - 8
3h (xi)	Concluding statement indicating the preferred alternatives, including the preferred location of the activity	Sections D4
3i	Full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue, risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures	Sections D
3k	Summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report	Sections D4
3l	Environmental impact statement containing a map and a summary of the positive and negative impacts of the proposed development and alternatives	Sections D4
3m	Based on the assessment, and where applicable, impact management measures from specialist	Section D

	reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr	
3n	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of the authorisation	Section D
3o	Description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed	Section A and Section D
3p	Reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	Section D
3q	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post-construction monitoring requirements finalised	Section A
3r	Undertaking under oath or affirmation by the EAP	Application for EA (appendix 14)
3s	Details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of adverse environmental impacts	Not applicable

EXECUTIVE SUMMARY

1. INTRODUCTION

Woodlands Settlement is a rural settlement located in the Koukamma Local Municipality (KKLM) and situated on the R102 route in the Eastern Cape. The Woodlands Settlement is located approximately 15km southwest of Kareedouw Town.

The existing small-bore gravity sewer reticulation and digester system servicing Woodland's settlement is in urgent need of upgrade:

- The hydraulic and treatment capacity (ADWF) of the existing treatment plant is 250 kl/d
- The system was designed to take septic tank sludge; not domestic wastewater
- There is no Inlet works, thus no screening, degritting or flow measurement as legislated by DWS
- The system overflows in peak conditions;
- There is no inlet for "honey suckers"
- Limited capacity to clean the digesters has often led to unsanitary conditions.
- There is no chlorine contact tank
- There is no sludge management system
- As the system is not operational, effluent is not compliant with the limits of the general authorisation issued in terms of the National Water Act (Act 36 of 1998).

The Koukamma Local Municipality (LM) has commissioned SMEC South Africa for the design and implementation of the internal sewer reticulation, bulk sewer reticulation, and wastewater treatment works within the Woodlands Settlement.

2. LOCATION

The WWTW is located on Erf RE/1 (SG Code:C03400160000000100000) which is approximately 327 ha in extent.

- The expanded development footprint will be a total of approximately 2.2 ha in extent. Central coordinates: 34° 0'45.35"S; 24° 9'35.41"E)
- The proposed pipeline route alternatives will traverse Farm Palmiet River 2 / 584 (SG Code: C03400000000058400002)

3. PROJECT OVERVIEW

Decommissioning

- Discontinue current digester tank system; replace internal reticulation pipes with 160mm diameter class 34 uPVC pipes.

Reticulation

- The new system will operate as a gravity sewer, directing all pipes towards the settlements lower points.
- The alternative 1 Bulk Sewer Main runs adjacent to the boundary of the Woodlands Development. Future development will place dwelling units over the pipe route, which can potentially cause

unsanitary conditions if a pipe bursts, to mitigate, alternatives of Bulk Main sewer will be rerouted to run alongside the new developments and removed where they intersect future developments.

A 160mm diameter pipe, operating at 80% capacity, is sufficient for the development. To accommodate more than the anticipated 20% stormwater ingress, the pipe size will increase to a 200mm diameter class 34 uPVC pipe for the final 900 meters, connecting to the WWTW. Manholes should be placed every 80m, at pipe bends and all pipe connections.

Site layout and placement of bulk pipe line

The site layout has been revised to exclude infrastructure from sensitive aquatic areas as far as possible. Site layout 2 is deemed an acceptable layout option (Appendix A)

Design Capacity

The plant shall be designed for waterborne domestic sewage for the following flows:

ADWF – 500 kl/d,
PDWF – 800 kl/d,
PWWF – 1000 kl/d.

There is an additional requirement for receiving sewage from "honey suckers"

Future hydraulic load calculations (taking into account planned SDF housing in the area) provided by SMEC (Concept and Viability report – summary treatment options, May 2025 – Appendix C) are as follows:

ADWF – 462.37 kl/d,
PDWF – 869.45 kl/d,
PWWF – 1041.122 kl/d.

Head of Works

- The head of works will consist of:
    - A tanker dumping area
    - 1x 10mm coarse mechanical screen
    - 2x degritting channels.

Sewage treatment process

Waste water treatment processes have been investigated, and the preferred treatment process is the Biological Nutrient Removal process consisting of anaerobic (no oxygen), anoxic (no oxygen, some nitrate), and aerobic (with oxygen) zones. Clarification will be applied (settling of activated sludge - Flux loading in summer can be expected to be 50 kg TS/m2/day and 65kg/m2/day in winter);

Effluent Treatment

Treated effluent will gravitate to 2x chlorine contact tanks. Effluent will then be discharged to a perennial stream south of the site and eventually reach the Groot Rivier.

Sludge Management

Sludge management options have been investigated and two sludge drying beds and dried sludge storage area is provided for in the design. Sludge is aimed to be treated to sludge classification a1A for beneficiation of surrounding community members and / or off-site disposal at registered waste site.

Stormwater Management

A stormwater dam whereby the excess flow overflows at the Inlet works and gravitates to a stormwater dam has been provided in the layout.

4. ENVIRONMENTAL SENSITIVITIES

A screening tool has been developed by the Department of Forestry, Fisheries and Environmental Affairs (DFFE). The Screening Tool identifies related exclusions and/ or specific requirements including specialist studies applicable to the proposed site and/or development, based on the national sector classification and the environmental sensitivity of the site. A screening report was generated for the proposed project; the sensitivities identified and verified are provided in Table 1.

Specialist Studies

The following specialist studies have been carried out:

- Geological and groundwater assessment (DHS Groundwater) (Appendix D1)
- Aquatic Assessment (Confluent Environmental Pty (Ltd)) (Appendix D2)
- Terrestrial Biodiversity Assessment and Flora Assessment (Jamie Pote) (Appendix D3)
- Fauna Assessment (Jonathan Colville and Callan Cohen) (Appendix D4)
- Agriculture desktop assessment (SoilzSa) (Appendix D5)
- Heritage, archaeology, paleontology screening assessment (CTS Heritage) (Appendix D6)

Table 1: Verification of environmental sensitivity identified in DFFE screening tool report;
***Application Category:** Any activities within or close to a watercourse*

Theme and / or protocol	**Environmental sensitivity as per screening tool report**	**Verification of environmental sensitivity**	**Description**
Landscape/Visual Impact Assessment	NA	NA	WWTW is not located close to visual receptors with exception of bulk line and internal reticulation. Visual impacts are assessed by the EAP – refer to section D.
Agricultural theme	High Sensitivity	Low	The site is used as a WWTW site and size of area is not conducive to large farming. Effluent and / or sludge can be beneficial to surrounding agricultural land users. A compliance statement has been prepared and states that there will be no loss of future agricultural production potential as a result of the development. The site is located in close proximity to the Woodlands residential development, the site is small (2.2 ha) and therefore prevents economies of scale, and there is no existing-agricultural infrastructure on the land. The agricultural potential is considered low.

Theme and / or protocol	Environmental sensitivity as per screening tool report	Verification of environmental sensitivity	Description
Animal Species	High Sensitivity	Low	Site is highly disturbed and not sensitive in terms of habitat provision due to current impacts. Some foraging may occur by raptors in the area, and rodents, amphibian and snakes and other reptiles likely occur due to the adjacent wet areas and landfill.
Aquatic Biodiversity	Very High	Very High	Site is within a strategic water source area, with a high aquifer potential, a fish FEPA and ECBCP aquatic ESA1. The site needs to be correctly managed to prevent impacts associated with WWTW on sensitive aquatic and groundwater systems. The current treatment urgently requires an upgrade to address current pollution and health impacts.
Hydrology Assessment			
Archaeological and Cultural Heritage	Low sensitivity	Low	it is unlikely that the proposed development of the WWTW will negatively impact on the cultural landscape value of the area
Paleontological	Very High	Low / Very high	it is unlikely that the proposed development of the WWTW will negatively impact on significant palaeontological and archaeological resources.
Plant Species Assessment	Medium sensitivity	Low	Secondary vegetation and alien vegetation dominates the site. No SCC present; species listed on PCNO are present and will require permits.
Terrestrial Biodiversity Impact	Very High Sensitivity	Low	The development is not considered to have any significant impact on terrestrial biodiversity sensitivity of the area.
Socio-Economic	NA	NA	Aspects related to socio-economic impacts will be addressed in the basic assessment, however no specific specialist study was deemed to be required.
Civil Aviation Assessment	Medium sensitivity		A civil aviation assessment / compliance statement is excluded as the proposed development will not have an impact on civil aviation aerodrome.
Defence theme	Low sensitivity		A defence them compliance statement is excluded as the proposed development will not have an impact on the defense theme.

5. LEGAL REQUIREMENTS

National Water Act 36 of 1998

The Woodlands WWTW currently has a valid General Authorization in place dated 28 September 2017. The GA (Ref 27/2/2/K480/7/8) allows a volume of **1772.8 m3/annum** into the Groot River. (S21f)

An integrated Water Use License (WUL) for the proposed WWTW upgrade is required for the following water uses:

- Section 21(c) of the Act: Impeding or diverting the flow of water in a watercourse.
- Section 21(i) of the Act: Altering the bed, banks, course, or characteristics of a watercourse.
- Section 21(f) of the Act: Discharging waste or water containing waste into a water resource.

Note: Section 21 (g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource - *confirmed will not be triggered by DWS, preapplication meeting, May 2025*
Note: Section 21 (e) of the Act: Reuse of effluent for irrigation – has not been included in the current WULA and will need to be applied for in the future should KKLM intend to reuse the treated effluent.

National Environmental Management Act (Act 107 of 1998)
The NEMA 2014 Environmental Imapct Assessment (EIA) Regulations (as amended, 2017) sets out a list of identified activities that may not commence without environmental authorisation from the competent authority. The proposed upgrade and associated development will requiring environmental authorisation for activities listed in GNR 327 and GNR 324.

National Environmental Management: Waste Act (Act 59 of 2008)
A waste management license is not likely to be required for the upgraded WWTW system in terms of the Waste management activities, GN 921, 2013 (as amended) published in terms of the National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA). No disposal of waste is planned to occur on site.

All sludge management guidelines2006 – 2009, apply to the sludge management on the woodlands WWTW site as a combination of management methods are currently being considered including:

- Reuse of sludge by farmers
- Reuse of sludge by brickmakers
- Further composting of sludge onsite
- Offsite disposal

Treatment of organic waste using composting is being considered by the KKLM. Any composting facility and operation on site will require compliance to the Composting Norms and standards.
Existing practices (burying and covering of waste in hole) should have had a waste management license (and by default an environmental authorisation in place) however due to the urgency of the upgrade to address the existing significant environmental and health risks it is requested the proposed upgrade be authorised and the existing pollution be addressed as a part of this planned upgrade.

It is important to note that any WWTW treating only domestic waste has the potential to generate two very valuable agricultural input resources (treated effluent and sludge), and this should be strongly considered by the KKLM in all future planning around the settlement.

National Heritage Resources Act (Act 25 of 1999)

As required in terms of the National Heritage Resources Act (Act 25 of 1999), a Notice of Intent to Develop (NID) has been submitted to the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) supported by the screener report prepared by CTS heritage.

6. IMPACT ASSESSMENT SUMMARY

Water quality is currently poor as a result of the non-functioning treatment system; the contamination needs to be urgently addressed. The proposed upgrade and planned placement of facilities and treatment and operational facilities are considered, overall, to be beneficial for the local environment (natural and social). Long term impacts on surface water and groundwater must be prevented through effective planning and design, effective construction and placement of facilities, and effective operations of the plant. The current negative impacts are expected to be adequately addressed through the upgrade and with all recommendations and mitigation measures in place. Effective operational management and supporting facilities, electricity and operators is critical to ensure this proposed treatment process is operationally sound. The significance of the majority of impacts with mitigations in place are rated as low / negligible; the exception is income generation which is considered to be a positive impact; reuse of all sludge is considered positive, an AIS management plan implemented in operations can have a positive impact. Of the feasible and reasonable site layout alternatives, site layout 3 (Appendix A) is deemed an acceptable layout option which includes: bulk pipeline route 3, structures (including section of access road) removed from delineated wetland area, inclusive of a sludge storage area.

Table 2: Summary of impacts associated with planning and design Phase and subsequent construction and operation

Impact 1:	**Placement of WWTW and supporting infrastructure on sensitive areas**							
Nature	Direct (site) / Indirect (surrounding environment) / cumulative (downstream in combination with existing impacts)							
Description	Incorrect placement of structures in sensitive areas can result in direct, indirect and cumulative impacts on the environment. Site layout 3 is deemed an acceptable site layout option for the upgrade; road and structures placed outside delineated wetland.							
Impact Rating	Impact Status	Negative Impact			Negligible to negative low impact			
	Impact Criteria	Without mitigation (baseline / no go alternative)			With mitigation (upgraded process - site layout 3)			
	Impact Significance	Negative high (considerably harmful)	22		Negative Low	10		
Impact 2:	**Placement of bulk pipeline on sensitive areas**							
Nature	Direct (immediate environment) / Indirect (surrounding people and environment) / cumulative (downstream)							
Description	Route 1 is not feasible due to placement in future housing area and traversing delineated floodline, wetland. Route 2 crosses the wetland over a longer distance. Route 3 is environmentally preferred; distance over the wetland is shorter, gradient best suited to the gravity requirements.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		Negative Impact	
	Impact Criteria	No go alternative		Pipeline 1		Pipeline 2		Pipeline 3	
	Impact Significance	Negative high	22	Negative Medium High	16	Negative Medium	11	Negative Low	10
Impact 3:	**Treatment of effluent**							
Nature	Direct / Indirect / cumulative as applicable							
Description	Treatment of sewage from woodlands settlement via the proposed BNR and chlorine contact tanks, sw pond							
Impact Rating	Impact Status	Negative			Negligible			
	Impact Criteria	No go alternative			Treatment of effluent			
	Impact Significance	Negative medium high	19		Positive Low / Negligible	10		
Impact 4:	**Flooding, Erosion and sedimentation**							
Nature	Direct at discharge site / Indirect from sedimentation in streams / cumulative on streams							
Description	Potential sewage overflow events; Discharge of effluent per day, emergency discharge of SW							

Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative Impact		
	Impact Criteria	No go alternative (current discharge)		discharge no mitigation		discharge with mitigation		
	Impact Significance	Negative Medium	15	Negative Medium	15	Negative Low	10	
Impact 5:	**Loss of treated effluent that can be reused**							
Nature	Direct at discharge site / reuse							
Description	Reuse of treated effluent (5Kl per day) is encouraged by the KKLM to be incorporated into future planning of the area. A Section 21e water use license / general authorisation as applicable would need to be applied for in order to authorised irrigation with water containing waste;							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Positive Impact		
	Impact Criteria	No go alternative (current discharge – no reuse)		Effluent discharge (planned discharge - no reuse)		Reuse effluent		
	Impact Significance	Negative Low	10	Negative Low	10	Positive medium	13	
Impact 6:	**Incorrect management of sludge leading to soil, surface and groundwater contamination**							
Nature	Direct (immediate environment) / Indirect (downstream environment) / cumulative (in combination with downstream impacts)							
Description	Mismanagement of sludge due to failed operations, flooding of site or spillage onto ground can result in site contamination.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negative / Negligible impact		
	Impact Criteria	No go alternative (current)		drying beds, storage area (no mitigation)		drying beds and storage area (with mitigation)		
	Impact Significance	Negative Medium high	17	Negative medium	11	Negative low / negligible	7	
Impact 7:	**Incorrect treated sludge management leading to site contamination**							
Nature	Direct (immediate environment) / Indirect (downstream environment) / cumulative (in combination with downstream impacts)							
Description	Mismanagement of dried sludge can result in insufficient space in management facilities, operational difficulties, overdried sludge no longer useable, incorrect management (e.g burying of waste). Sludge operational procedure, skilled operators, reuse / disposal plan required.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negligible / Positive Impact		
	Impact Criteria	No go alternative (current)		Operational sludge management (no mitigation)		Operational sludge management (with mitigation; reuse & / or disposal offsite)		
	Impact Significance	Negative Medium high	17	Negative Medium	13	Positive Low / negligible	7	
Impact 8:	**Reuse versus off-site disposal of sludge**							
Nature	Indirect (beneficial offsite use) / cumulative (increasing disposal at landfills)							
Description	Reuse of sludge is preferred to offsite disposal. Reuse options of dried sludge include agricultural use, reuse for brick making operations. Composting of sludge is encouraged and can prevent overdying of sludge and result in saleable product for reuse.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Positive Impact		Negative Impact	
	Impact Criteria	No go alternative (current)		Operational sludge management (no mitigation)		Operational sludge management (reuse only)		Drying beds and offsite disposal (reuse and disposal)	
	Impact Significance	Negative Medium high	17	Negative Medium	12	Positive Low	10	Negative Low	9
Impact 9:	**Groundwater contamination**								
Nature	Direct / Indirect / cumulative as applicable								

Description	i)Leakage from pipework associated with the WWTW ii) Leakage from sewage holding tank. iii) Leaks, leachate from the WWTW. iii) Discharge of improperly treated effluent. iv) WWTW failure. v) Flooding of WWTW during storms. vi) Leachate from the sludge storage facilities.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Negligible / negative Impact		
	Impact Criteria	No go (current)		Without mitigation		With mitigation		
	Impact Significance	Negative Medium high	19	Negative Medium high	16	Negligible / low negative	9	

Table 3: Summary of impacts associated with construction phase and decommissioning as applicable and maintenance during operations as required

Alternative:	**All - Site 1; pipeline (preferred 3); BNR design; sludge drying beds; effluent discharge; internal reticulation and small-bore installation, roads**							
Impact 1:	**Inadequate planning and *Non-compliance with Conditions of the Environmental Authorisations***							
Nature	Direct / Indirect / cumulative. Poor planning and / or lack of budget for environmental management will result in unmitigated impacts.							
Description	Without correct planning negative impacts can be expected during construction phase and operations							
Impact Rating	As per impacts identified for planning, construction / operational phase as applicable without / with mitigation implemented							
Impact 2:	**Loss of heritage, archaeological, palaeontological resources.**							
Nature	Direct (loss of resource / damage to resource / collection of resource)							
Description	Excavation activities can unearth archaeological / palaeontological resources and result in unnecessary disturbance if measures are not in place.;							
Impact Rating	Impact Status			Negative Impact		Positive Impact		
	Impact Criteria	No go alternative		Without mitigation		With mitigation		
	Impact Significance	Negligible		Low	7	Low	7	
Impact 3:	**Unnecessary loss of vegetation, disturbance to watercourses and disturbance to fauna**							
Nature	Direct (loss of vegetation, disturbance to watercourses, disturbance to fauna)							
Description	By their nature, construction projects involving large numbers of workers using heavy machinery, with movement of materials over a large area are likely to create more disturbance to the natural environment (and watercourses) than necessary.							
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact		
	Impact Criteria	No go alternative (baseline)		No go alternative		With mitigation		
	Impact Significance	Negligible	Negligible	Medium	7	Low	7	
Impact 4:	**Stormwater Runoff Causing Erosion, Sedimentation and Pollution During Construction**							
Nature	Direct (loss of vegetation and soil, erosion) and indirect and cumulative (sedimentation in watercourses, disturbance to aquatic ecosystems)							
Description	Large areas of exposed soil, stockpiled mobile materials, and compacted soil without vegetation are susceptible to erosion							
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact		
	Impact Criteria	No go alternative (baseline)		Without mitigation		With mitigation		
	Impact Significance	Low	10	Medium	13	Low	7	
Impact 5:	**Soil disturbance**							
Nature	Direct (soil erosion, soil loss, damage to soil structure); Indirect (sedimentation, impact on surrounding vegetation, aquatic systems)							
Description	Mismanagement of soil leads to damage of soil structure and loss of soil							
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact		

	Impact Criteria	Baseline / no go		Without mitigation		With mitigation		
	Impact Significance	Negligible	5	Medium	12	Low	10	
Impact 6:	**Working in and Adjacent to the Drainage Line for Construction of the WWTW and Associated Outlets**							
Nature	Direct (erosion and sedimentation) and indirect and cumulative (disturbance to watercourses)							
Description	Construction within wet areas can cause soil disturbance and impact on wetland functioning							
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact		
	Impact Criteria	Baseline / no go		Without mitigation		With mitigation		
	Impact Significance	Negligible	5	Medium	12	Low	10	
Impact 7:	***AIS Displacing indigenous flora and fauna; decrease of natural runoff in catchment area***							
Nature	Direct and indirect and cumulative (Sensitive Aquatic Habitat, water, disturbance to flora and fauna; health impacts)							
Description	Disturbed construction areas are often impacted with AIS seedlings. Ongoing removal during construction required.							
Impact Rating	Impact Status	Negative Impact		Negative Impact		Positive / negligible Impact		
	Impact Criteria	No go / current		Without mitigation (current)		With mitigation		
	Impact Significance	Medium High	18	Medium High	18	Low to negligible	6/7	
Impact 8:	***General Waste pollution***							
Nature	Direct and indirect and cumulative (Aquatic Habitat, groundwater, surface water, disturbance to flora and fauna; health impacts, visual impacts)							
Description	This impact mainly concerns the proper management of construction related waste materials.							
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact		
	Impact Criteria	No go / baseline		Without mitigation		With mitigation		
	Impact Significance			Medium	14	Low	9	
Impact 9:	***Hazardous Waste pollution***							
Nature	Direct and indirect and cumulative (Aquatic Habitat, groundwater, surface water, disturbance to flora and fauna; health impacts, visual impacts).							
Description	Spillages of diesel, petrol, oil, paints, other harmful chemicals. Potentially percolate into groundwater and enter surrounding environment.							
Impact Rating	Impact Status	Negligible		Negative Impact		Negative Impact		
	Impact Criteria	No go / baseline		Without mitigation		With mitigation		
	Impact Significance			Medium	15	Low	10	
Impact 10:	***Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment***							
Nature	Direct (fire) and indirect (visual, smoke, smog)							
Description	Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment.							
Impact Rating	Impact Status	Negative		Negative Impact		Negative Impact		
	Impact Criteria	No go / baseline		Without mitigation		With mitigation		
	Impact Significance	Medium	12	Medium	12	Low	10	
Impact 11:	***Noise impacts***							
Nature	Noise impacts disturbing residents and associated activities in the settlement							
Description	With mitigation measures in place, the noise impacts will be short-lived and considered to be negative and of low significance.							

Impact Rating	Impact Status	Negative		Negative Impact		Negative / Negligible	
	Impact Criteria	No go / baseline – not applicable		Without mitigation		With mitigation	
	Impact Significance			Low	9	Negligible	5
Impact 12:	***Visual impacts***						
Nature	Visual impacts from construction activities in close proximity to residents						
Description	Poor housekeeping and waste management. Receptors of visual impacts during construction includes the neighbouring residents in the area.						
Impact Rating	Impact Status	Negative		Negative Impact		Negative / Negligible	
	Impact Criteria	No go / baseline – not applicable		Without mitigation		With mitigation	
	Impact Significance			Low	9	Negligible	5
Impact 13:	**Income generation**						
Nature	Direct (employment, sourcing of materials and associated services) and indirect (skills development and transfer of skills)						
Description	Direct employment, sourcing of materials and services Skills development An estimated 40 - 70 employment opportunities. The expected value of the project is estimated at 61 million.						
Impact Rating	Impact Status	Negative		Negative Impact		Positive Impact	
	Impact Criteria	No go / baseline – no employment opportunities form construction		Without mitigation		With mitigation	
	Impact Significance			Low	10	Medium	11

Table 4: Summary of impacts associated with operational phase

Alternative:	**All - Site layout 3; pipeline (preferred 3); BNR design; sludge drying beds; effluent discharge; internal reticulation and small-bore installation, roads**						
Impact 1:	***AIS Displacing indigenous flora and fauna; decrease of natural runoff in catchment area***						
Nature	Direct and indirect and cumulative (Aquatic Habitat, terrestrial)						
Description	Ongoing removal during operations during operations on site and in surrounding area can result in a positive impact if implemented and lead to natural rejuvenation of indigenous vegetation, if implemented.						
Impact Rating	Impact Status	Negative Impact		Negative Impact		Positive Impact	
	Impact Criteria	No go / current		Without mitigation (current)		With mitigation	
	Impact Significance	Medium High	18	Medium High	18	Low	9
Impact 2:	***Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment***						
Nature	Direct (fire) and indirect (visual, smoke, smog)						
Description	Unintentional and uncontrolled fires can have high significant impacts on the social and natural environment.						
Impact Rating	Impact Status	Negative		Negative Impact		Negative Impact	
	Impact Criteria	No go / baseline		Without mitigation		With mitigation	
	Impact Significance	Medium	12	Medium	12	Low	10
Impact 3:	**Income generation**						
Nature	Direct (employment, sourcing of materials and associated services) and indirect (skills development and transfer of skills)						
Description	Direct employment (operations on site) and associated services required. Skills development is expected to result. An estimated 10 - 20 income opportunities will be created during the operational phase. Operational management costs estimated at R6 million over 5 years.						

<table>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Positive</td><td colspan="2">Positive</td><td colspan="2">Positive Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td>Low</td><td>9</td><td>Low</td><td>9</td><td>Medium</td><td>10</td></tr>
</table>
</td></tr>
<tr><td>Impact 4:</td><td>Pipeline Blockages, Sewage Spills, and Operational Issues</td></tr>
<tr><td>Nature</td><td>Direct / Indirect / cumulative as applicable</td></tr>
<tr><td>Description</td><td>Short-term spills are likely on an occasional basis; chronic leakage or discharge of poorly treated or untreated sewage causes long-term damage Mitigation to prevent leakage, and the appropriate response are essential.</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No-go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td>Medium</td><td>16</td><td>Medium</td><td>11</td><td>Low</td><td>6</td></tr>
<tr><td>Mitigation</td><td colspan="6">Possible</td></tr>
<tr><td>Confidence</td><td colspan="6">High</td></tr>
</table>
</td></tr>
<tr><td>Impact 5:</td><td>Groundwater contamination, aquatic impact, flora and fauna, health impacts</td></tr>
<tr><td>Nature</td><td>Direct / Indirect / cumulative as applicable
Since the impact is negligible negative with mitigation, cumulative impacts to groundwater with other projects are not anticipated.</td></tr>
<tr><td>Description</td><td>Ineffective SW management resulting in contaminated runoff</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No-go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td>Medium</td><td>16</td><td>Medium</td><td>11</td><td>Low</td><td>6</td></tr>
</table>
</td></tr>
<tr><td>Impact 6:</td><td>Risk of Increased Access to Aquatic Habitats for Dumping</td></tr>
<tr><td>Nature</td><td>Direct / Indirect / cumulative as applicable</td></tr>
<tr><td>Description</td><td>The creation of a new servitude for the pipeline will result in easier access and may lead to increased dumping incidences</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No-go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td>Medium</td><td>16</td><td>Medium</td><td>11</td><td>Low</td><td>6</td></tr>
</table>
</td></tr>
<tr><td>Impact 7:</td><td>General Waste pollution</td></tr>
<tr><td>Nature</td><td>Direct and indirect and cumulative (Aquatic Habitat, groundwater, surface water, disturbance to flora and fauna; health impacts, visual impacts)</td></tr>
<tr><td>Description</td><td>This impact mainly concerns the proper management of operational related waste materials</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negligible</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td>Medium</td><td>14</td><td>Medium</td><td>14</td><td>Low</td><td>9</td></tr>
</table>
</td></tr>
<tr><td>Impact 8:</td><td>Hazardous substance management</td></tr>
<tr><td>Nature</td><td>Direct and indirect and cumulative (Aquatic Habitat, groundwater, surface water, disturbance to flora and fauna; health impacts, visual impacts).</td></tr>
<tr><td>Description</td><td>Spillages of diesel, petrol, oil, paints, clears and other harmful chemicals. These substances may potentially percolate into the groundwater and enter the surrounding environment. Ablutions facilities will be equipped with 8000-liter conservancy tank.</td></tr>
<tr><td>Impact Rating</td><td>
<table>
<tr><td>Impact Status</td><td colspan="2">Negligible</td><td colspan="2">Negative Impact</td><td colspan="2">Negative Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td></td><td></td><td>Medium</td><td>15</td><td>Low</td><td>10</td></tr>
</table>
</td></tr>
<tr><td>Impact 9:</td><td>Health impacts from pollution in the area</td></tr>
<tr><td>Nature</td><td>Direct (Pollution from current sewage and waste water management); indirect, cumulative (users downstream)</td></tr>
</table>

<table>
<tr><td>Description</td><td colspan="8">Current sewage management is resulting in pollution impacting on the natural and social environment. Inadequate management and operation of upgraded system can result in negative impact and associated health and pollution risks on the site and in the surrounding area. The upgrade is expected to address the current impacts. Effective operational management and supporting facilities, electricity and operators is critical to ensure this treatment process is operationally sound.</td></tr>
<tr><td rowspan="3">Impact Rating</td><td>Impact Status</td><td colspan="2">Negative</td><td colspan="2">Negative Impact</td><td colspan="2">Negligible Impact</td></tr>
<tr><td>Impact Criteria</td><td colspan="2">No go / baseline</td><td colspan="2">Without mitigation</td><td colspan="2">With mitigation</td></tr>
<tr><td>Impact Significance</td><td>Medium high</td><td>17</td><td>Low</td><td>10</td><td>Negligible</td><td>5</td></tr>
</table>

7. SUMMARY OF PUBLIC PARTICIPATION

The following public participation activities have been carried out:

- Initial IAP register – applicant, landowner, adjacent landowners, organs of state, identified stakeholders and any NGOs
- The notice of intention to submit a Water use license application and environmental authorisation application and call for registration of interested and affected parties was distributed as follows:
    - Placing two posters close to the site to inform the public of the process, dated 27 March 2025
    - Emailing notice and BID to organs of state, landowners, adjacent landowners and potential IAPs on 27 March 2025
    - Placing an advertisement in the KOUGA EXPRESS on 27 March 2025
- Registration period: 27 March to 2 May 2025 (NEMA and WUL) (30 days registration and initial comments)
- Update IAP register with additional registrations / identified parties (e.g. WUL officials, interested farmers, local brick making facilities)

The following public participation will take place:

- Advert, site notice and notices including the following:
    - The pre-application draft basic assessment report (this report) will be distributed to all registered interested and affected parties for a 30-day review and comment period to registered interested and affected parties prior to submission of the NEMA EA application to the competent authority.
    - The relevant water use license information (this report and appendix G)will be made available for a 60-day comment and objection periods (Note: The pre-application meeting with DWS has taken place and the online ewula process has commenced; Reference: WU-42922).
    - Link to reports will be provided in notices and adverts.
- The pre-application DBAR and accompanying PP and CRR (this report) will be updated accordingly
- The NEMA EA application will be submitted to the competent authority
- Upon receipt of the reference number the draft report will be distributed for a further 30-day review and comments period
- The post-application report and accompanying PP and CRR (this report) will be updated accordingly
- The final report submitted to the competent authority for consideration within 90 days of submission of the application (BAR process).

- The NEMA decision-making time frame is 107 days. Once a decision is reached the decision will be distributed to all registered interested and affected parties and provided with a 20-day timeframe to submit an appeal against the decision.
- Once all information has been accepted by the DWS, the decision-making process on the WULA is 90 days.

8. CONCLUSION

The pre-application draft basic assessment report (this report) will be distributed to all registered interested and affected parties for a 30-day review and comment period. The relevant water use license information (this report and appendix G) will be made available for a 60-day comment and objection periods Participation is encouraged by all registered interested and affected parties. Once the NEMA 30-day review and comment period has ended, the report will be updated accordingly and the NEMA application for EA submitted.

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