
ANNEXURE E

Terms of Reference for an Integrated
Water Use Licence Application

Umkomaas Regional Sewage Treatment
Plant

Table of Contents

1. INTRODUCTION	3
1.1. Purpose	3
2. APPLICABLE LEGISLATION	4
2.1. National Water Act (Act No. 36 of 1998)	4
2.2. Other Considerations	5
3. GOLDER (2018) DRAFT WULA	7
4. TERMS OF REFERENCE	7
4.1. iWULA Procedural Requirements	7
4.2. IWWMP Technical Report	9
4.3. Specialist Studies	10
Qualifications and Experience Requirements	10

Table of Tables

Table 1: Section 21 Water Uses	4
Table 2: Gaps with Existing WULA	7

Table of Figures

Figure 1: iWULA Process and Timeframes	8
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1. INTRODUCTION

The eThekweni Water and Sanitation (EWS) Branch of the eThekweni Metropolitan Municipality intends to contract a concessionaire to design, finance, construct, operate and maintain two new sewage treatment plants (STPs) at uMdloti and uMkhomazi as a Public Private Partnership (PPP). This agreement is expected to be in place for twenty (20) to thirty (30) years. For planning purposes, the maximum term of thirty (30) years is utilised and assumed to be between 2023 to 2053. The ultimate objective of this project is for the EWS to improve levels of service and to increase the availability and reliability of water resources in the Municipality. The IFC advisory services has engaged Royal HaskoningDHV (Pty) Ltd (Royal HaskoningDHV) as consultant to provide Technical, Environmental and Social (TES) advisory services in preparation for the bidding process for the PPP.

The project entails the following components:

- Construction of Raw Sewage Conveyance Systems to collect the sewage at the existing main outfall sewers, located at the old STPs, and convey this to the new STP. The following two (2) Sewage Conveyance Systems are proposed:
 - i. Craigieburn STP to new regional Umkomaas STP; and
 - ii. Old Umkomaas STP to new regional Umkomaas STP.
- Sludge Handling and Beneficiation plant within the new regional STP to treat sludge generated by wastewater treatment process,
- A Treated Effluent Pipeline (TEP) to the South African Pulp and Paper Industries (SAPPI) as the off taker plus a bypass discharge to the uMkhomazi River,
- Combined Heat and Power (Biogas) facility, and
- The establishment of a construction camp/s (on or off the new proposed STP site).

The new Umkomaas STP will replace the following existing plants that will need to be decommissioned once the new works is fully operational:

- Old Umkomaas STP, and
- Craigieburn STP.

1.1. Purpose

In line with the TES advisory services for Phase 1, Royal HaskoningDHV has been appointed to undertake a review of the existing Water Use Licence Application (WULA) prepared by GOLDER (2018) and to identify gaps that require additional studies to successfully submit an integrated WULA (iWULA). This document serves to provide a Terms of Reference (ToR) for the iWULA and relates to the proposed **Umkomaas STP**. This ToR is in line with the general minimum requirements stipulated as part of the National Water Act (Act No. 36 of 1998) (as amended) (NWA) and the Department of Water and Sanitation (DWS) WULA requirements, as outlined in the '*Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals*' contained in the Government Gazette No. 40713 of 24 March 2017.

The scope for the iWULA must include the proposed Umkomaas STP and all ancillary infrastructure (e.g. sewage conveyance systems, manholes, access roads, etc.) as one application. Furthermore, should the decommissioning of the existing STPs require pump stations at these sites, these need to be included as well.

The iWULA shall be prepared as part of the Environmental and Social Impact Assessment (ESIA) process for the project, which scope is defined in the ESIA TOR.

2. APPLICABLE LEGISLATION

2.1. National Water Act (Act No. 36 of 1998)

The NWA is a legal framework for the effective and sustainable management of water resources in South Africa. Central to the NWA is recognition that water is a scarce resource in the country which belongs to all the people of South Africa and needs to be managed in a sustainable manner to benefit all members of society. The NWA places a strong emphasis on the protection of water resources in South Africa, especially against its exploitation, and the insurance that there is water for social and economic development in the country for present and future generations.

Water use in South Africa is managed through a water use authorisation process, which requires that every water use is authorised by the DWS or an established Catchment Management Agency (CMA), once the water requirements for the Reserve have been determined. A water use must be licenced unless it is listed in Schedule 1, is an existing lawful use, is permissible under a general authorisation, or if a responsible authority waives the need for a licence.

Water use authorisations are undertaken in terms of Section 21 of the NWA. The following water uses are potentially applicable to the proposed Umkomaas STP.

Table 1: Section 21 Water Uses

Section 21 Water Use	Description	Applicable to
21(a)	Taking water from a water resource	<ul style="list-style-type: none"> Potentially applicable for the abstraction of water for use at the new Umkomaas STP (unlikely and not expected).
21(b)	Storing water	<ul style="list-style-type: none"> Raw (clean) water is not expected to be stored and this activity will not be applicable.
21(c)	Impeding or diverting the flow of water in a watercourse	<ul style="list-style-type: none"> Applicable for all pipeline infrastructure (upgrades or new) within watercourses or within 500 m of wetlands. Applicable to all pump stations within 500 m of wetlands. Applicable to the treated effluent discharge pipeline to the uMkhomazi River. Applicable to any other infrastructure within the proposed STP that falls within watercourses or within 500m of wetlands. Potentially applicable to infrastructure for the decommissioning of the two (2) existing STPs.
21(d)	Engaging in a stream flow reduction activity contemplated in section 36	<ul style="list-style-type: none"> This activity is not applicable.
21(e)	Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1)	<ul style="list-style-type: none"> Potentially applicable for the irrigation of sludge (treated effluent) should this be the preferred option.
21(f)	Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit	<ul style="list-style-type: none"> Applicable to the proposed discharge of treated effluent according to special limits into the uMkhomazi River.

Section 21 Water Use	Description	Applicable to
21(g)	Disposing of waste in a manner which may detrimentally impact on a water resource	<ul style="list-style-type: none"> Applicable to all sludge containment facilities, raw sewage storage facilities, handling tanks, etc. within the new Umkomaas STP. Potentially applicable to pump stations (to be confirmed with DWS at a pre-application meeting).
21(h)	Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process	<ul style="list-style-type: none"> Potentially applicable to any water produced from the biogas pre-treatment process. To be confirmed during detail design. <ul style="list-style-type: none"> Discharge up to 2000m³ of wastewater on any day into a listed wastewater resource as per Table 2.3 of the General Authorisation (GN169 of 2013) for section 21 (h) water uses: <ol style="list-style-type: none"> Complies with the general wastewater limit values in set out in Table 2.1, which may be amended from time to time; Does not alter the natural ambient water temperature of the receiving resource by more than 3°C; and Is not a complex industrial wastewater.
21(i)	Altering the bed, banks, course or characteristics of a watercourse	<ul style="list-style-type: none"> Applicable for all pipeline infrastructure (upgrades or new) within watercourses or within 500 m of wetlands. Applicable to all pump stations within 500 m of wetlands. Applicable to the treated effluent discharge pipeline to the uMkhomazi River. Applicable to any other infrastructure within the proposed STP that falls within watercourses or within 500 m of wetlands. Potentially applicable to infrastructure for the decommissioning of the two (2) existing STPs.
21(j)	Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people	<ul style="list-style-type: none"> Potentially applicable for any dewatering applicable to the installation of pipelines or infrastructure at the proposed STP. Potentially applicable for any dewatering applicable to the decommissioning of the two (2) existing STPs.

It is understood that a General Authorisation (GA) is in place for the existing uMkomaas STP. This GA is dated 28 January 2011 and it is unclear if this GA remains valid. Furthermore, a Coastal Waters Discharge Permit (CWDP) is required for this STP as the discharge is to the uMkhomazi Estuary. Additionally, it is unclear if the other existing STPs to be decommissioned have existing licences in place. This will need to be determined by the iWULA consultant as well as water uses associated with the decommissioning of the existing STPs.

The water uses identified above are not exhaustive and will need to be confirmed once detail design information is available.

2.2. Other Considerations

Additional legislation, policies or standards that should be considered in the compilation of the iWULA include:

- Discharge of waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit and disposing in any manner of water which contains waste from, or

which has been heated, in any industrial or power generation process - GN 665 in GG 36820, 06 September 2013.

- Engaging in a Controlled Activity, identified as such in Section 37(1)(a): Irrigation of any Land with Waster or Water containing Waste generated through any Industrial Activity or by a Waterwork, GN 665 in GG 36820, 06 September 2013.
- General Authorisation in terms of Section 39 of the NWA, Water Uses Section 21 (c) and (i) (GN 509 in GG 40229, 26 August 2016).
- General Authorisation in terms of Section 39 of the National Water Act (Act No. 36 of 1998, Water Uses Section 21 (a) and (b) - GN 538 in GG 40243, 02 September 2016).
- Water Quality Management Series Operational Guideline No. U2.1 Aide Memoire for the Preparation of a Water Quality Management Report to Support for the Application for Licences for Sewage Treatment Works in terms of the Requirements of the NWA.
- National Sanitation Policy - White Paper (1996).
- National Water Resources Strategy (September 2004).
- National Norms and Standards for Domestic Water and Sanitation Services, GNR 982, 08 September 2017.
- National Water and Sanitation Master Plan (2018).
- National Environmental Management: Waste Act (Act No. 59 of 2008) as amended.
- Department of Water Affairs and Forestry. Guidelines for the Utilisation and Disposal of Wastewater Sludge Selection of management options: Volume 1 (2006).
- Department of Water Affairs and Forestry. Guidelines for the Utilisation and Disposal of Wastewater Sludge: Requirements for the on-site and off-site disposal of wastewater sludge: Volume 3 (2007).
- Department of Water Affairs and Forestry. Guidelines for the Utilisation and Disposal of Wastewater Sludge: Requirements for the beneficial use of sludge at high loading rates: Volume 4 (2008).
- Department of Water Affairs and Forestry. Guidelines for the Utilisation and Disposal of Wastewater Sludge: Requirements for thermal sludge management practices and for commercial products containing sludge: Volume 5 (2008).
- IFC Performance Standards.
- World Bank Group Environmental, Health and Safety Guidelines (General).
- World Bank Group Environmental, Health and Safety Guidelines for Water and Sanitation.

Besides national requirements, the project shall also be developed in compliance with IFC Performance Standards, the World Bank Group Environmental, Health and Safety Guidelines (General) and applicable aspects of the World Bank Group Environmental, Health and Safety Guidelines for Water and Sanitation.

3. GOLDER (2018) DRAFT WULA

GOLDER (2018) have prepared a WULA for the proposed Umkomaas STP and associated infrastructure. This application was based on the design at that time. The Royal HaskoningDHV (2021) Concept Design now deviates from this submission. Additional gaps in the GOLDER (2018) study were identified, specifically with regard to supporting administrative requirements. A summary of identified gaps is provided in Table 2.

Table 2: Gaps with Existing WULA

Gap	Description
Water Uses Applied For	GOLDER applied for Section 21 (c), (f), (g) and (i) water uses, specific to the new regional STP and discharge only. Other water uses potentially applicable are 21 (e) and (j) water uses which will need to be considered further. Moreover, the location and extent of water uses applied for by GOLDER will need to be revisited due to design changes.
Property Description	Unclear and needs to be determined further if all affected properties were applied for.
Supporting Documentation	<p>The following documents were noted as being outstanding by the DWS:</p> <ul style="list-style-type: none"> ▪ Certified ID copy for the Applicant ▪ Zoning Document ▪ Land Clearance Letter ▪ Alternatives ▪ EIA report ▪ Environmental Authorisation ▪ Environmental Management Programme ▪ Wetland Studies ▪ Aquatic Studies ▪ Geotechnical Studies ▪ Geohydrological Studies ▪ Construction method statement ▪ Civil Design Details ▪ Monitoring Programme ▪ Contingency Plans ▪ Public Participation ▪ Financial Provision
Existing Lawful Water Uses (ELUs)	Any ELUs associated with the existing STP's to be decommissioned will need to be determined.
Integrated Water and Waste Management Plan (IWWMP) Technical Report	Detail unavailable to assess further.

Based on this, a ToR for an iWULA is presented which will need to be undertaken on presentation of a detailed design.

4. TERMS OF REFERENCE

4.1. iWULA Procedural Requirements

The iWULA process must comply with the DWS procedural requirements for Water Use Licence Applications and Appeal (Gazette No. 40713, GR. 267, 24 March 2017) and must be lodged with the KwaZulu-Natal Regional Office of the DWS. Application processes are now handled through the Electronic Water Use Licence Application and Authorisation System (e-WULAAS). This system is a tool to facilitate the authorisation and manage the authorisation of water uses. This digital system is an effort

by the Department to streamline and improve efficiency of the iWULA process. The e-WULAAS has been designed to reduce the administrative burden for both the officials and the applicants.

The appointed Consultant will primarily be responsible for compiling the online application but will require assistance from the Applicant as the Applicant will be required to electronically approve the information that is uploaded onto the system. This will require the Applicant to register a profile. The details of the responsible person will be uploaded by the Consultant and the Applicant will respond to prompts from the system to complete the registration process.

The iWULA process (Figure 1) and will entail the following key activities:

- Specialist assessments;
- Pre-application meeting with the DWS;
- Public Participation as prescribed by DWS;
- Notifying registered Interested and Affected Parties of the availability of the iWULA for public review and comment and collating comments (DWS requires a 60-day commenting period);
- Completion of application forms (including the supplementary forms);
- Compilation of an Integrated Water and Waste Management Plan (IWWMP) Technical Report;
- Compilation of a Public Participation Summary Report inclusive of Comments and Responses Report;
- Lodging and maintenance of the iWULA on e-WULAAS;
- Follow-up with the DWS on the progress of the application; and
- Obtain Decision and notify registered Interested and Affected Parties of the decision.

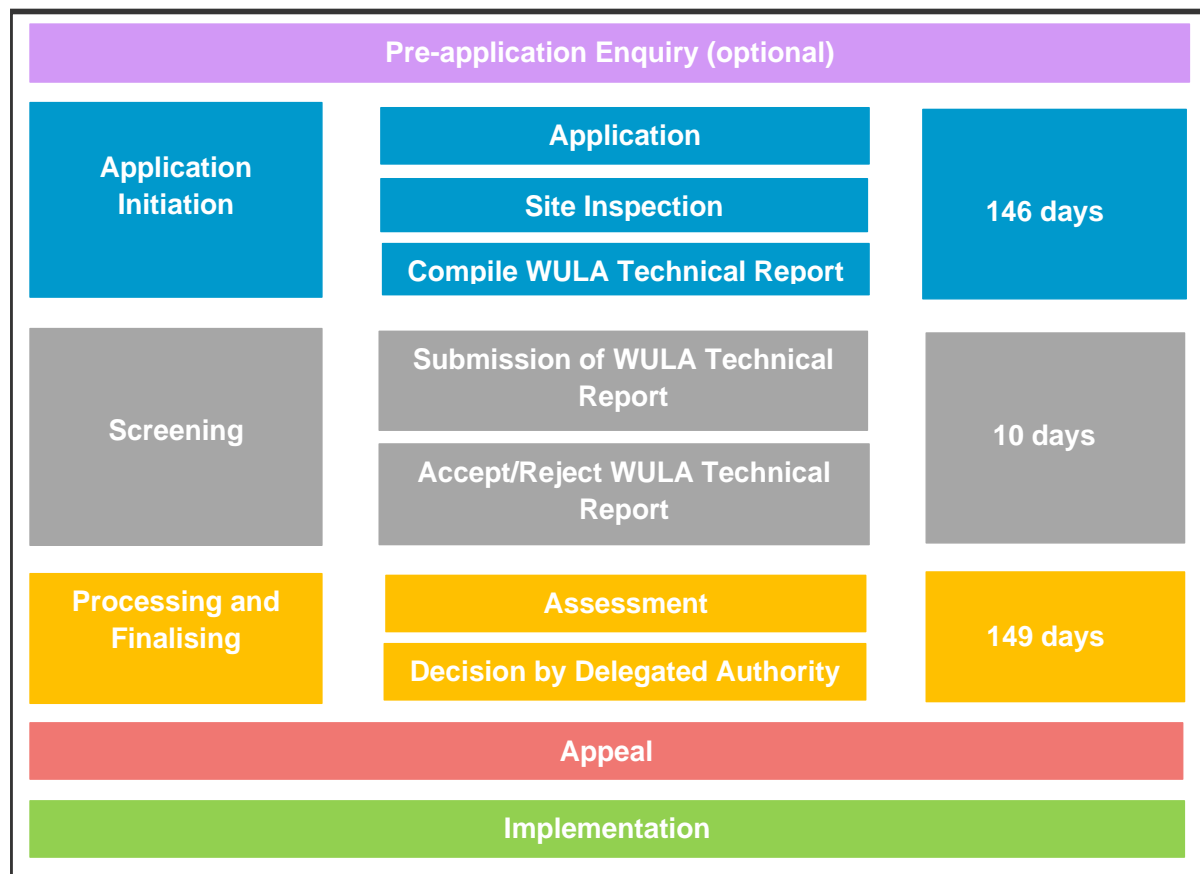


Figure 1: iWULA Process and Timeframes

4.2. IWWMP Technical Report

An IWWMP considers the principles of Integrated Water Resources Management (IWRM) and is linked to the Catchment Management Strategy (CMS) or Integrated Water Resource Management Strategy (IWRM) for the catchment under consideration. An IWWMP is therefore a simple, feasible, implementable plan for the envisaged activity; taking into account the National Water Resource Strategy (NWRS), the applicable CMS for the catchment in question, any established Resource Quality Objectives (RQOs) and the sensitivity of the receiving water resource. It also considers up- and downstream cumulative impacts of the water use activities.

This plan is based on site specific actions that will be implemented over time and is a living document that should be updated as the activities change.

The objectives of the IWWMP are therefore to manage water on-site by:

- Identifying the potential pollution sources, and
- Setting appropriate, effective action plans for the control of these activities and associated impacts.

This IWWMP in summary presents:

- Proposed water uses;
- Policies (safety, health, environment, water and waste);
- The description of the receiving environment (surface water, soil and land capability, climate and socio-economic environment);
- A characterisation of activities (construction and methods);
- Impact assessments (methodology, potential impacts and significance, risk to the environment);
- Matters requiring attention in respect of water management in relation to surface water, and stormwater;
- Performance objectives and associated measures (surface water, ground water and stormwater) for the attainment of the stated performance objectives;
- Environmental monitoring systems addressing surface water, aquatic health, surface rehabilitation, supported by data management and reporting;
- Continual improvement in terms of the above key themes forming the core of this IWWMP; and
- Operational management addressing the organisational structure, awareness training and communication on water matters.

The purpose of this report is to speed up the processing of the licence application, by providing a guide to the supporting documents, giving a brief, but concise overview of all aspects of the application and referring to the appropriate sections in the supporting documents for the further required detail.

The IWWMP Technical Report will be compiled in line with DWS's Operational Guideline for Section 21 (c) and (i) water uses and will typically include:

- Project description;
- Location, extent and property ownership including zoning
- Details of the property owner;
- Organisational structure;
- Environmental regulatory framework;
- Water uses applied for;
- Alternatives considered;
- Regulatory water and waste management framework;
- Description of the baseline environment including wetlands in the 500 m project regulatory area;
- Impact assessment and mitigation including DWS Risk Matrix;
- Public Participation Process undertaken;
- Water and Waste Management Plan including water balance, stormwater management and monitoring requirements; and

- Section 27 of the NWA considerations.

The following documents are required in support of the IWWMP Technical Report:

- Identity Document Copy and Letter of Authority;
- Consultant's iWULA Appointment Letter;
- Letter of Financial Provision;
- Proof of Payment of R115 Application Fee;
- Title Deeds;
- Lease Agreements or Donation Agreements;
- Zoning Documents;
- Letter of Land Clearance;
- DWS Registration Forms – online on e-WULAAS portal;
- Topographic Map;
- Master Layout Plan;
- Engineers Design Report;
- Engineers Design Drawings and Pr.Eng. Certificate;
- Geotechnical Assessment;
- Environmental Impact Assessment Reports;
- Environmental Authorisation;
- Environmental Management Programme;
- Spill Contingency Plan;
- Stormwater Management Plan;
- Construction Method Statement;
- Water Quality Monitoring Programme (refer to ToR in Appendix G3); and
- Specialist Studies.

The appointed Consultant will be responsible for obtaining all required information via a specialist team or from the Client for the successful submission of the iWULA.

4.3. Specialist Studies

The following specialist studies are required (refer to ESIA for ToR):

- Freshwater Impact Assessment inclusive of a hydropedology study;
- Estuarine Assessment; and
- Hydrological and Geohydrological Assessment inclusive of Stormwater Management Plan and Water Balance.

Qualifications and Experience Requirements

Position	Minimum Experience
Aquatic Specialist	<ul style="list-style-type: none"> ▪ 10 years of experience in aquatic assessment. Previous experience in ESIA using IFC Performance and WBG EHS Guidelines, track record in aquatic assessments. ▪ Professional Natural Scientist (SACNASP).
Estuarine Specialist	<ul style="list-style-type: none"> ▪ 10 years of experience in estuarine assessment. Previous experience in ESIA using IFC Performance and WBG EHS Guidelines, track record in estuarine assessments. ▪ Professional Natural Scientist (SACNASP).
Hydrological and Geohydrological Specialist	<ul style="list-style-type: none"> ▪ 10 years of experience in hydrological and geohydrological assessment. Previous experience in ESIA using IFC Performance and WBG EHS Guidelines, track record in hydrological and geohydrological assessments. ▪ Professional Natural Scientist (SACNASP).