



STORMWATER MANAGEMENT PLAN

FOR

THE PROPOSED ESTABLISHMENT OF AN 2.5 KM LONG WATER SUPPLY PIPE LINE ON ERVEN
1886 AND 1887, WOLSELEY

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TABLE OF CONTENTS

TABLE OF CONTENTS	1
1. SCOPE, PURPOSE, AIMS AND OBJECTIVES	2
2. LEGISLATION AND STANDARDS	2
2.1 National Environmental Management Act, 1998 (Act 107 of 1998)	2
2.2 Conservation of Agricultural Resource Act 43 of 1983	2
2.3 National Water Act, 1998 (Act 36 of 1998)	3
3. STORMWATER MANAGEMENT (CONSTRUCTION)	3
4. STORMWATER MANAGEMENT (OPERATION)	4

1. SCOPE, PURPOSE, AIMS AND OBJECTIVES

The purpose of the Storm water Management Plan (SMP) is to provide measures to manage storm water flow that will minimise impacts on the environment along the newly proposed Tierhokskloof water pipe line.

During construction, measures are to be put in place that control the volume, velocity and quality of water that flows into natural drainage lines, rivers within and adjacent to the works.

For the operation phase, storm water management measures are built into the engineering design, with the primary aim being to maintain the status quo of flow of the existing water courses and minimise alteration to flows. This is achieved by ensuring that the post development runoff does not exceed the pre-development runoff. In the case of the proposed upgrades, this is achievable as the footprint of the upgrade does not influence the regional runoffs to any measurable extent.

The SMP has the following objectives:

- Allow for natural surface and sub-surface flows.
- Avoid impeding the movement of water along drainage lines.
- Promote the dissipation of storm water runoff.
- Minimise soil erosion.
- Minimise sedimentation and pollution of water courses.
- Minimise impacts on existing natural habitats on site.
- Preserve or recreate the structural integrity of natural plant communities in adjacent riparian/wetland habitats.

2. LEGISLATION AND STANDARDS

Legislation relevant to the control of storm water on site is described hereunder.

2.1 National Environmental Management Act, 1998 (Act 107 of 1998)

The National Environmental Management Act (Act 107 of 1998) (NEMA) provides for the right to an environment that is not harmful to the health and well-being of South African citizens. In addition, there is recognition that development must be socially, environmentally and economically sustainable, and that the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied (Government Gazette, 1998).

2.2 Conservation of Agricultural Resources Act 43 of 1983

The aim of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (CARA) is to provide for control over the utilisation of the natural agricultural resources within South Africa and to promote the conservation of soil and water resources, indigenous vegetation and the control of invasive plants.

Thus, in terms of CARA, the landowner or land user is responsible for the maintenance of all soil conservation works located on his/her property. Added to this, the maintenance and improvement of the structure and function of wetlands furthers the aims of CARA.

2.3 National Water Act, 1998 (Act 36 of 1998)

The National Water Act, 1998 (Act 36 of 1998) (NWA) has various sections of relevance to the construction. The Department of Water and Sanitation (DWS) is the responsible authority with regard to matters affecting water resource management, including water quality. Added to this, certain provincial and local authority powers also influence the regulation of water resources, including agriculture, the environment, health services, nature conservation, pollution control, regional planning and development soil conservation and water and sanitation services.

Part 4 of the NWA deals with pollution prevention, and, in particular, the situation where pollution of a water resource occurs or might occur as a result of activities on land. The person who owns, controls, occupies or uses the land in question is responsible for taking appropriate measures to prevent the pollution of water resources. If these measures are not taken, the catchment management agency concerned may, itself, do whatever is necessary to prevent the pollution or to remedy its effects, and to recover all reasonable costs from the persons responsible for the pollution.

3. STORMWATER MANAGEMENT (CONSTRUCTION)

The Contractor shall submit to the Engineer for approval, proposals to control storm water drainage and prevent negative impacts on the environment and infrastructure during construction and rehabilitation. This shall be implemented and maintained throughout the construction and rehabilitation period.

The following general guidelines are to be adhered to:

- Remove only vegetation essential for construction and do not allow any disturbance to the adjoining natural vegetation cover.
- Ensure that measures are in place to control the flow of excess water so that it does not impact on surface vegetation.
- The accumulation of water on the surface must be prevented. The drainage of the surface must be done in such a way that storm water will be led away quickly and efficiently without any erosion taking place.
- Runoff from the pipeline must be managed to avoid erosion and pollution problems both on and off site.
- Prevent storm water or contaminated water directly entering any watercourse.
- Install waste traps if necessary, to catch litter conveyed by surface runoff.

The following specific recommendations arising from the specialist studies and Basic Assessment Report must be included in the Contractor's Storm water Management Plan:

- "Trench-breakers", which are in-trench barriers, should be installed within any trench excavations to minimise the interception and accumulation of surface runoff water from upslope areas.

- Where construction activities take place within flood lines of watercourses, temporary berms must to be formed to ensure the construction site and disturbed soils are protected from flooding, storm-flows and erosion.

4. STORM WATER MANAGEMENT (OPERATION)

The SMP for operation is built into the design of the infrastructure. The total catchment areas feeding all the cross drainage structures will not increase due to the pipeline construction. The concentration of storm water from pipe line is mitigated by the construction of energy dissipaters which ease the flow of water into the natural stream, where needed.

Once the storm water facilities along the pipeline have been completed, the maintenance and monitoring thereof will remain the sole responsibility of Witzenberg Municipality who will take financial responsibility for the operation and maintenance of the storm water infrastructure along the pipeline during the operational life of the pipeline. Management of the storm water infrastructure will include the following activities:

- Routine surveys of the pipeline by qualified Engineers to ensure the structural integrity of the pipeline.
- Routine maintenance to pipeline servitude area.
- All storm water infrastructure will be kept clear of blockages.