
Prepared for:



RAND WATER

**AMMENDMENT OF THE ENVIRONMENTAL
AUTHORISATION (EA) ISSUED ON 12 JUNE 2013 FOR
DUPLICATION OF VLAKFONTEIN (BENONI)-MAMELODI
WATER SUPPLY PIPELINE WITHIN EXISTING
SERVITUDE. PHASE 2: FROM SOUTHERN BOUNDARY
OF THE RIETVLEI NATURE RESERVE TO MAMELODI**

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List of Abbreviations

DEA: Department of Environmental Affairs

DWA: Department of Water Affairs

EA: Environmental Authorisation

EAP: Environmental Assessment Practitioner

EMPr: Environmental Management Programme

GDARD: Gauteng Department of Agriculture and Rural Development

I&AP: Interested and affected party

NEMA: National Environmental Management Act

NEMBA: National Environmental Management Biodiversity Act

NWA: National Water Act

NWMS: National Waste Management Strategy

SWMP: Storm Water Management Plan

Glossary of Terms

Alien species: A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

Biodiversity: The variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are apart.

Ecology: The study of the inter relationships between organisms and their environments.

Environment: All physical, chemical and biological factors and conditions that influence an object and/or organism. Also defined as the surroundings within which humans exist and are made up of the land, water, atmosphere, plant and animal life (micro and macro), interrelationship between the factors and the physical or chemical conditions that influence human health and well-being.

Environmental Management Programme: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

Study Area: Refers to the entire study area encompassing the total area of the land parcels as indicated on the study area map.

1. INTRODUCTION AND BACKGROUND

1.1. General

The purpose of this Amendment Report is to apply for authorisation of the R5 pipeline phase two Environmental Authorization for pipeline route re-alignment of approximately 2KM at Woodhill Golf Estate in Tshwane Metropolitan Municipality. The study site falls in the jurisdiction of the City of Tshwane Metropolitan Municipality.

The **study area** is situated in the capital city of the country (Tshwane, Gauteng Province). The study area consists of pipelines that provide water to the residents of Mamelodi and other surrounding areas. The location of the **study area** is therefore very important from a social perspective. The Current land-use is residential golf estate.



Figure 1: Rand water pipeline

Environmental Authorisation (EA) (**Authorisation number 002/13-14/E0045**) was successfully granted to Rand Water by the Gauteng Department of Agriculture and Rural Development (GDARD) on **12 June 2013** for the **duplication of the Vlakfontein (Benoni)- Mamelodi water supply pipeline within the existing servitude. Phase 2: from the southern boundary off the Rietvlei nature reserve to Mamelodi.** (Refer to Annexure B for a copy of the *Environmental Authorisation*).

Rand Water has applied for an environmental amendment to amend the current environmental authorization, to permit Rand Water to lay the R5 pipeline phase two within the Rand Water servitude at Woodhill Estate. The realignment of the pipeline at Woodhill Estate from the Environmental Authorisation approved deviation (0.62 km) to the preferred alignment within the Rand Water servitude (1.16 km)

1.2. Environmental Assessment Practitioner (EAP)

The 2014 NEMA Environmental Regulations require that the relevant details of the Environmental Assessment Practitioner be included as part of the report. In this regard, attached as **Annexure D**, is a copy of the CV of the EAP for this project, Ms. Takalani Muavha from Taktho Environmental Strategy CC. In summary details of the EAP are indicated below:

- **Name:** Takalani Muavha
- **Company:** Taktho Environmental Strategy CC
- **Qualifications:** BA Hons: Geography & Environmental Management, University of Johannesburg, in 2007
in the following fields:
 - o Environmental Planning and Management;
 - o Compilation of Environmental Impact Assessments;

Ms. Takalani Muavha is a registered member of the International Association of Impact Assessments (IAIA), and Member of the Society of South African Geographers (SSAG)

2. STATUS, UPDATED INFORMATION AND LAYOUT PLAN CHANGES

Taktho Environmental Strategy was appointed by Rand Water to apply for an environmental amendment to the previously approved plan.

The Environmental specialist, Ms. Takalani Muavha conducted the public participation process to give all interested and affected parties a chance to voice their concerns on the project. Comments from I&AP in the public participation process are awaited.

3. MORE DETAILS REGARDING THE AMENDMENTS

Rand Water want to amend the current environmental authorization, to lay the R5 pipeline phase two within the Rand Water servitude at Woodhill Estate. The realignment of the pipeline at Woodhill Estate from the Environmental

Authorisation approved deviation (0.62 km) to the preferred alignment within the Rand Water servitude (1.16 km).

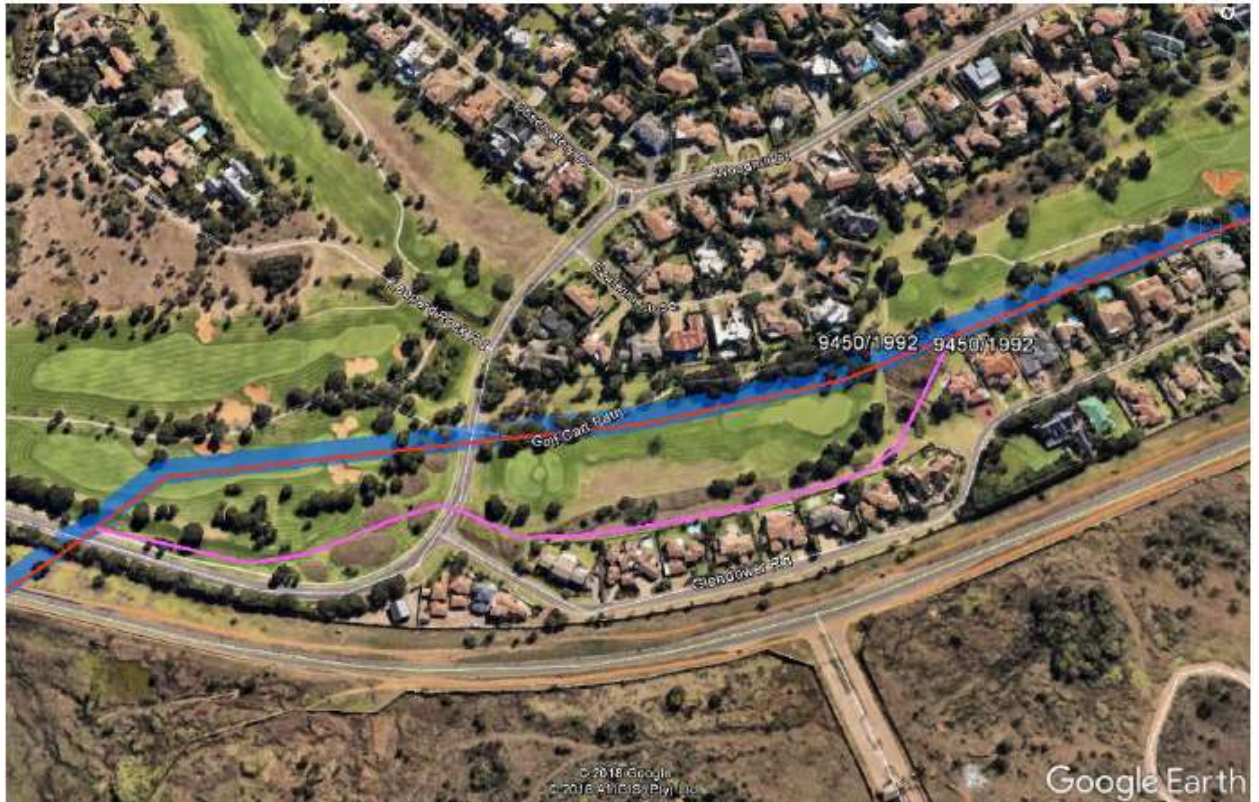


Figure 2: Option C (Pink line) – approved deviation, red line indicates the proposed re-alignment within Rand Water servitude (blue area)

4. AMENDMENT APPLICATION IN TERMS OF THE 2017 NEMA EIA REGULATIONS

The Minister of Environmental Affairs and Tourism passed (in April 2006) Environmental Impact Assessment Regulations (the Regulations) in terms of Chapter 5 of the National Environmental Management Act, 1998 (NEMA). The Regulations replaced the environmental impact assessment (EIA) regulations, which were promulgated in terms of the Environmental Conservation Act, 1989 in

1997. The new regulations came into place on 3 July 2006. In June 2010 the Minister of Environmental Affairs (DEA) passed the Amended Environmental Impact Assessment Regulations in terms of Chapter 5 of the National Environmental Management Act, 1998 (NEMA). The Amended Regulations came into effect on 4 December 2014 where the Regulations and associated Listing Notices were amended. In April 2017 the regulations were amended, and it is the latest amendment. These 2017 NEMA EIA Regulations came into

5. DETAILS OF THE PUBLIC PARTICIPATION PROCESS

((Refer to Annexure F for all public participation details))

The principles of the National Environmental Management Act, 1998 (Act No 107 of 1998) and the Environmental Impact Assessment Regulations, April 2017 govern many aspects of Environmental Impact Assessments, including Public Participation. These include provision of enough and transparent information on an ongoing basis to stakeholders to allow them to comment and to ensure the participation of previously disadvantaged people, women, and youth.

Effective public involvement is an essential component of many decision-making structures, and effective community involvement is the only way in which the power given to communities can be used efficiently. The Public Participation Process is designed to provide enough and accessible information to interested and affected parties I&AP's in an objective manner to assist them to:

- ☐ Raise issues of concern and suggestions for enhanced benefits;
- ☐ Verify that their issues have been captured;
- ☐ Verify that their issues have been considered by the technical investigations; and
- ☐ Comment on the findings of the Basic Assessment Report.

In terms of the Guideline Document for Environmental Impact Assessment (EIA) Regulations promulgated in NEMA, stakeholders I&AP's, will be notified of the Environmental Evaluation Process through:

The Draft Amended Report will be made available to all registered I&APs and Stakeholders for scrutiny.

6. IMPACT ASSESSMENT OF PROPOSED DEVELOPMENT

The assessment is completed with the same definitions as used in the EIA submission of 2008. The impacts that were identified in 2008 are indicated below and the associated and assessed impact of the proposed development is provided with each aspect.

7. DESCRIPTION AND ASSESSMENT OF ENVIRONMENTAL IMPACTS

The most significant anticipated environmental impacts associated with the amendment, including the advantages and disadvantages relating to the proposed changes, are discussed in this section with reference to possible mitigation measures that will minimize negative impacts and enhance positive impacts.

Describe any negative environmental impacts that may occur if the application for amendment is granted, amongst others information on any increases in air emissions, waste generation, discharges to water and impacts of the natural or cultural environment must be included.

Construction activity within the existing Rand Water servitude at the Woodhill Golf Estate will have the social and economic impact on the Woodhill Golf Estate.

The following are potential environmental impacts that may result if the amendment application is granted:

- Social Impact: Some of the green playing section of the golf course area will have to be temporary closed during the pipeline laying. Some infrastructure that was constructed very close to the Servitude line might be affected and will have to be removed. There is financial investment that was incurred by the Woodhill Golf Estate during the green playing section, tar road, pavement, swimming pool, and building structures planning and construction. Woodhill Golf Estate will have lost the financial investment where they have built within the servitudes areas.
- Loss of income by Woodhill Golf Estate during the construction period as there will be some destruction in some areas of the green playing section.
- Herpetofauna: Transformation and disturbance of a very small area of natural habitat as well as the potential for any fauna found on site to be unintentionally killed by workers.
- Mammals: Impacts that may be experienced include the following: Reduction of suitable habitat through habitat destruction; Habitat fragmentation; Noise pollution and ground vibrations; Intentional killing or hunting of animals; Death of a proportion of small mammals by direct physical damage, through earth moving equipment. Increase in runoff and

pollution which may adversely affect the down-slope drainage line. Illegal harvesting of plant or animal species.

- Invertebrates: Habitat disturbance of the small mammals
- Flora: The servitude will be cleared of all vegetation (95% of which is the Golf course greens). Impacts that may be experienced include the following: Disturbance of small area that is used for recreational activity.
- Surrounding environment: There is the potential for pollution of the surrounding environment with regards to the incorrect disposal of waste (domestic, construction and demolishing waste).
- Traffic: The realignment of the pipeline will result in an increased movement of heavy machinery and trucks
- Soil contamination may occur as a result of accidental spills, leakages from poorly sealed containers, spillages during the handling of hazardous material, poorly maintained equipment as well as the incorrect disposal of hazardous waste on site.
- Loss of soil fertility: This may be as a result of the clearance of vegetation from site, excavation and stockpiling of topsoil, compaction caused by machinery onsite and an increase in erosion.
- Air quality: The upgrade of the pipeline will result in the clearing of vegetation from the site as well as bulk earth moving activities. These activities may result in an increase in the volume of dust generated in the area.
- along the access road. The change in route alignment as per the requested amendment shall not change the impacts already identified in the BAR and mitigated in the approved EMP.
- Cultural and Heritage: No cultural or heritage significance were identified along the servitude.

Describe any negative environmental impacts that may occur if the application for amendment is not granted.

- Rand water pipeline are useful for transportation of water for domestic and commercial towards different areas over a long distance therefore if the application for amendment is not granted the supply of water to different areas will be affected due rejection of alternative servitude by Tshwane Metropolitan municipality.
- No upgrade of pipeline will be constructed
- Rand water will have challenges to supply enough water to the communities and new township
- Water supply crisis will increase due to high demand as a results of population growth
- It will be difficult to fix the pipeline and it will not function properly to serve its objective purpose
- Local economy will be highly affected due to lack of supply of water
- There will be lots of community protest due lack of water supply services
- If the proposed pipeline, follow the existing servitude there will be minimal environmental impact on Woodhill Golf Estate. The medium impact that will

- occur will be the social impacts as some parts of the golf course greens, swimming pool and parts of houses have been built within the servitudes.
- These migratory measures have been incorporated into a comprehensive Environmental Management Plan

Describe any positive environmental impacts that may occur if the application for amendment is granted, amongst others information on any reduction in the ecological footprint, air emissions, waste generation and discharges to water must be included.

If the proposed pipeline, follow the existing servitude there will be very minimal environmental impact on Woodhill Golf Estate. The medium impact that will occur will be the social impacts as there is a golf greens, swimming pool and houses that have been built within the servitudes identified for the alternative alignment will have a Medium to Low significance as all existing and predicted impacts can be reduced to within acceptable levels through the implementation of specific mitigation measures which are in line with legislative and policy requirements and objectives.

These migratory measures have been incorporated into a comprehensive Environmental Management Plan.

The R5 steel pipeline will be underground next to the existing pipeline, within the existing servitude. The top cover will be rehabilitated concurrent with the backfilling of the trenches.

The site has been transformed from the natural state, the land cover of the site is the Golf course green, pavement, Tar road and concrete material and this will automatically reduce the natural ecological footprint that will be destructed.

The ecological impact and footprint shall be limited to the Rand Water servitude for both constructions of the R5 pipeline and future maintenance works for both the R5 pipeline and R1 pipeline in comparison to separate footprints for the R1 pipeline (Rand Water servitude). Further the R5 pipeline will be laid in a previously disturbed footprint.

Should the approval be received for the Rand Water R5 pipeline to be routed within the existing Rand Water servitude, Rand Water shall install the R5 pipeline and undertake maintenance on the R1 at the same time to minimize the cumulative impact.

The following negative potential environmental impacts shall be avoided should the amendment application be granted:

Soil contamination:

Soil contamination may occur as a result of accidental spills, leakages from poorly sealed containers, spillages during the handling of hazardous material, poorly maintained equipment as well as the incorrect disposal of hazardous waste on site.

Mitigation: All storage tanks containing hazardous materials must be placed in bunded containment areas with sealed surfaces. The bund wall must be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential stormwater events.

Any hazardous substances must be stored at least 20m from any of the water bodies on site.

Loss of soil fertility: This may be as a result of the clearance of vegetation from site, excavation and stockpiling of topsoil, compaction caused by machinery onsite and an increase in erosion.

Mitigation: All erosion control mechanisms need to be regularly maintained. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.

Retention of vegetation where possible to avoid soil erosion

Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.

Re-vegetation of disturbed surfaces should occur immediately after the construction activities are completed.

No impediment to the natural water flow other than approved erosion control works is permitted.

Air quality: The upgrade of the pipeline will result in the clearing of vegetation from the site as well as bulk earth moving activities. These activities may result in an increase in the volume of dust generated in the area, during construction.

Mitigation: Dust suppression must be implemented always through spraying water in the area that has potential for dust during construction phase.

Retention of vegetation where possible will reduce dust travel.

Excavations and other clearing activities must only be done during agreed working times to avoid drifting of sand and dust into neighbouring areas.

The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the Landowner or neighbouring Communities.

A speed limit of 40km/h must not be exceeded on dirty roads.

Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.

Surface water quality: Removal of green playing section will lead to an increase in erosion. Any spilt hazardous materials will contribute to this form of pollution which may be transported within the site Boundary.

Mitigation: The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids, silt or chemical pollutants.

Temporary cut of drains and berms may be required to capture stormwater and promote infiltration.

Herpetofauna: Transformation and disturbance of natural habitat as well as the potential for any fauna found on site to be intentionally or unintentionally killed by workers during construction.

Mammals: Impacts that may be experienced include reduction of suitable habitat through habitat destruction; Habitat fragmentation;

Mitigation: During construction activities; wherever possible work should be restricted to one area at a time and the trench area. This will give smaller birds, mammals, reptiles and amphibians an opportunity to move into undisturbed areas close to their natural habitat. The Developer must ensure that no faunal species are disturbed, trapped, hunted or killed during the construction phase. Where practical, termite mounds, dead trees, branches, loose rocks, leaf and organic litter should be left undisturbed as these special niches provide essential foraging, roosting and nesting sites for numerous animal species.

Noise pollution and ground vibrations;

Noise and vibration due to construction activities and personnel working on site.

Mitigation: The personnel on site should behave in appropriately manner. The machinery and vehicles used on site should be kept in good condition. Limit construction activities as far as possible to working hours, i.e. 7am – 5pm weekdays, excluding public holidays. Should after hours work take place nearby resident should be notified. No loud music to be allowed on site.

Increase in runoff and pollution which may adversely affect the down-slope drainage line;

Flora: The servitude will be cleared of all vegetation

Mitigation: Activities should be restricted to the current servitude in order to minimise disturbances to the adjacent grassland areas. All alien invasive vegetation should be removed from the servitude.

It is recommended that pollutant and contaminants from the proposed pipeline upgrade should not result in habitat degradation of the associated drainage line.

Surrounding environment: There is the potential for pollution of the surrounding environment with regards to the incorrect disposal of waste (domestic, construction and hazardous) along the construction area.

Mitigation: Construction rubble shall be disposed of in pre – agreed, demarcated spoil dumps that have been approved by the relevant Municipality. Sufficient waste bins must be provided at the construction site for different types of waste disposal and for recycling purposes. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site.

Traffic: The upgrade of the pipeline will result in an increased movement of heavy machinery and trucks along the access road.

Mitigation: Where roads have very high traffic volumes and can be classed as roads with a collection, distribution or mobility function, the pipeline is to be constructed by jacking it underneath the road. This will reduce the impacts on traffic flow.

It is recommended that where necessary alternative routes must be established for the traffic to use while the road is closed during construction.

Cultural and Heritage: none identified

Impact assessment for the R5 pipeline phase two within the Rand Water servitude at Woodhill Estate. The realignment of the pipeline at Woodhill Estate from the Environmental Authorisation approved deviation (0.62 km) to the preferred alignment within the Rand Water servitude (1.16 km).

Findings

No Red Data faunal species were observed directly or indirectly within the servitude area and the Golf course. The proposed amendment will be on the existing servitudes which cross through the built up residential stands, road and Golf course. The site has been completely modified and transformed. There is a Golf course that is crossing over the servitude area.

8. CONCLUSION AND RECOMMENDATIONS

The environmental authorization of 12 June 2013, which Rand Water obtained from GDARD, to lay the proposed R5 pipeline is subject to some approved deviations outside of Rand Waters servitude, one being at Woodhill Golf Estate. Rand Water seeks to lay the full length of pipeline (except for the 9km section at Rietvlei Nature Reserve) within its servitude area without any deviations. Therefore, an application to the Department of Environment Affairs (Competent Authority for Rand Water) needs to be lodged for the approximate 2 km section at Woodhill Golf estate for the proposed re-alignment of the pipeline into Rand Water existing registered servitude.

Rand Water did not receive the approval from City of Tshwane when trying to register the new servitudes that was authorised by this Environmental Authorisation, thus has led into Rand Water having to go back to the existing Servitudes. Other factor is that the pipeline is being gravitated and the deviation outside the servitude will affect pressure and according to treasury, going outside the existing servitude is deemed as a wasteful expenditure for the procurement of a new servitude.

Annexure A
Map indicating the locality of the
study area.





Figure 2: Option C (Pink line) – approved deviation, red line indicates the proposed re-alignment within Rand Water servitude (blue area)

Annexure B

Site photographs

**THE PROPOSED AMENDMENT OF THE R5 PIPELINE ENVIRONMENTAL
AUTHORISATION FOR PIPELINE ROUTE RE-ALIGNMENT OF APPROXIMATELY
2KM AT WOODHILL GOLF ESTATE**

APPENDIX 2 SITE PHOTOGRAPHS

**1. Pictures showing existing pipeline and servitude within and adjacent the
existing golf course:**





2. Pictures showing the yard that was build on the existing piperline and servitude within woodhill golf eastate:



3. Pictures showing existing pipeline and servitude from the southern side
(Outside the golf estate to pass through the golf course:





4. Pictures with a view from Clubhouse showing the golf course that the pipeline has pass within:



