



**Royal  
HaskoningDHV**  
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## **Appendix E: Wetland Verification Exercise**





# Scientific Aquatic Services

Applying science to the real world

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**Ref:** SAS 215078

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Dear Prashika

**RE: VERIFICATION OF THE PRESENCE OR ABSENCE OF WETLANDS AS PART OF THE ENVIRONMENTAL ASSESSMENT AND AUTHORISATION PROCESS FOR THE PROPOSED SASOL CHARLIE POLLUTION CONTROL DAM IN SECUNDA, MPUMALANGA PROVINCE**

Scientific Aquatic Services (SAS) was appointed to conduct a wetland delineation and verification assessment on a portion of land identified for the proposed construction of a pollution control dam (PCD) within Sasol Secunda, hereafter referred to as the "study area". The study area is located within the Secondary operations area of the Sasol plant, adjacent the western boundary of the Charlie 1 land fill site which is situated approximately 650m east of Walter Sisulu Road and approximately 1km west of PDP Kruger Road (Figure 1 and 2).

A site visit was conducted to verify the presence of any wetland resources that would require environmental authorization and/or water use licensing for the proposed development. The assessment was undertaken in consideration of DWAF, 2005: "A practical Guideline Procedure for the Identification and Delineation of Wetlands and Riparian Zones" as Advocated by DWA in order to determine the presence or absence of any wetland features in terms of the National Water Act (NWA) (Act 36 of 1998) and the National Environmental Management Act (NEMA) (Act No. 107 of 1998) which defines a wetland as:

*"land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."*



Figure 1: Digital satellite image depicting the location of the study area in relation to surrounding area.



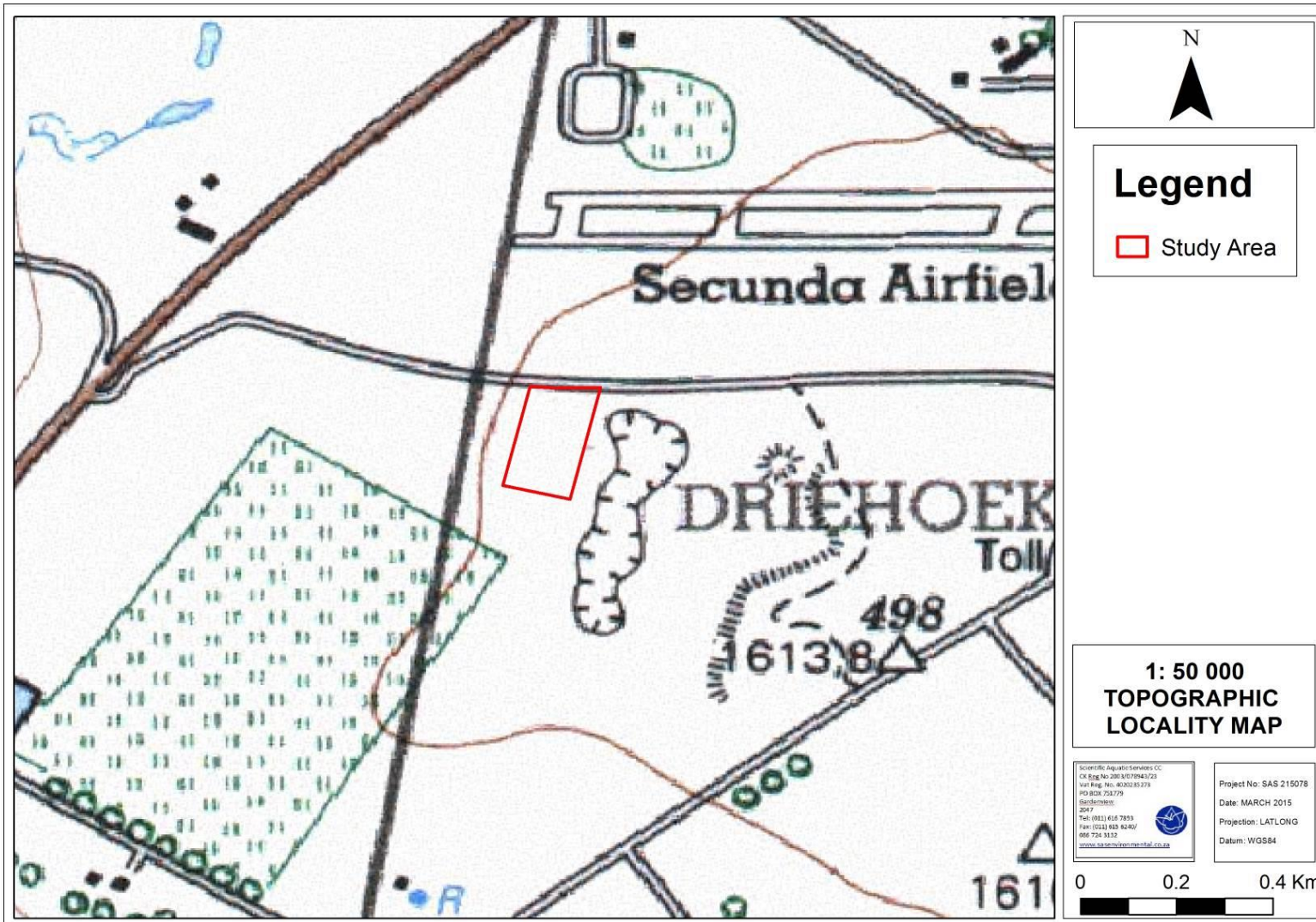


Figure 2: Study area depicted on a 1:50 000 topographical map in relation to surrounding area.



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**Summary of background conclusions drawn upon completion of the wetland study:**

1. The proposed activities fall within the Highveld Ecoregion and within the C12D quaternary catchment;
2. The National Freshwater Ecosystem Priority Areas (NFEPA) database was consulted with regards to areas in close proximity to the study area that may be of ecological importance. Aspects applicable are discussed below:
  - The study area falls within the Upper Vaal Water Management Area (WMA). Each Water Management Area is divided into several SubWater Management Areas (subWMA) and the subWMA indicated is the Upstream Vaal Dam;
  - The NFEPA database indicates that no wetland resources are present within the study area as well as the 500m buffer (Figure 3);
  - No RAMSAR wetlands are indicated by the NFEPA database within or in close proximity of the study area;
  - The Mpumalanga Biodiversity Sector Plan (MBSP) database was consulted in order to determine site-specific issues and areas within the study area considered sensitive with regards to any wetland resources which may be present. This database indicates that a portion of the study area is located within a heavily or moderately modified area as illustrated in Figure 4; and
  - No wetlands are indicated by the MBSP database.



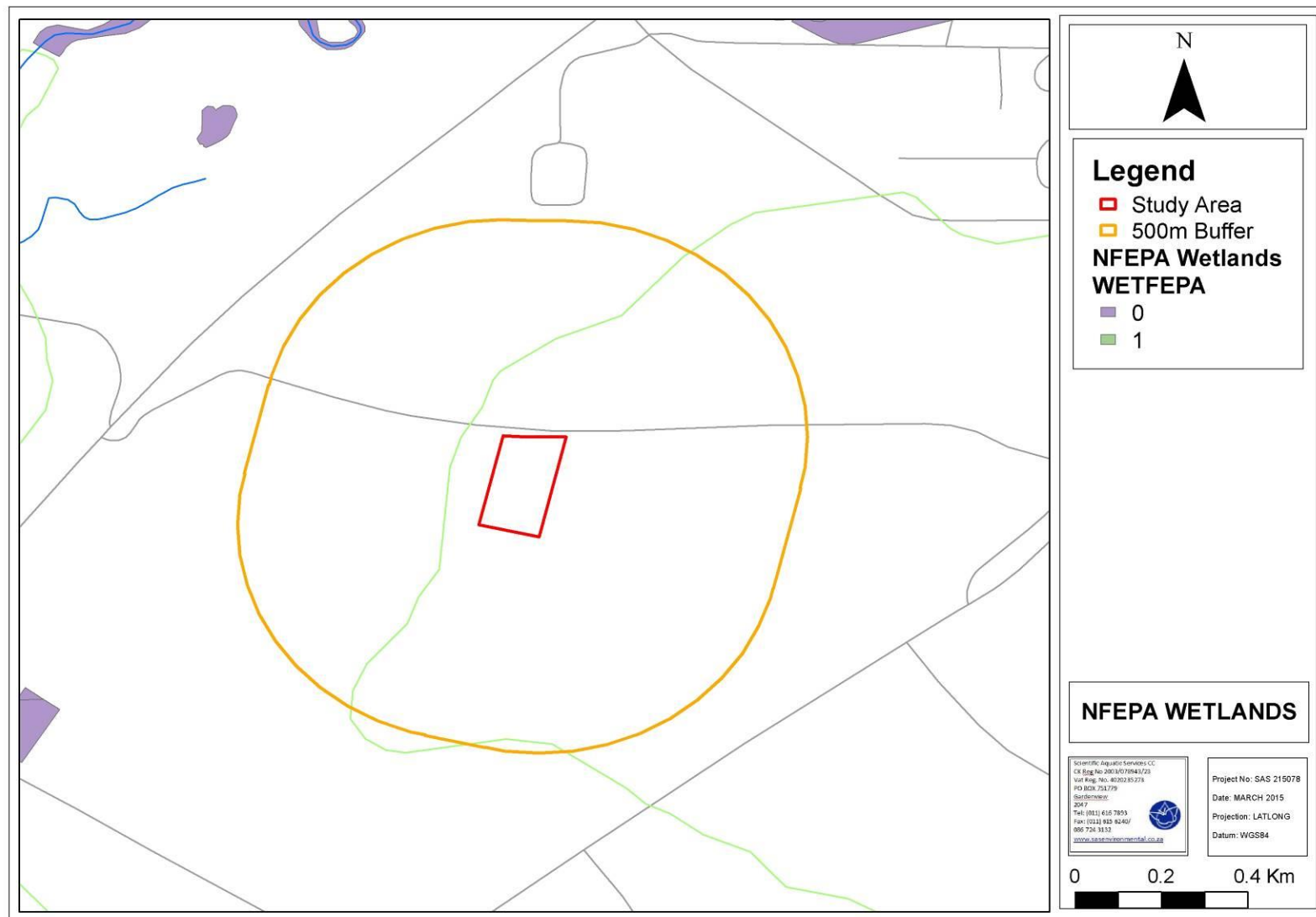


Figure 3: Map illustrating the wetlands within the 500m buffer zone according to the NFEPA database.



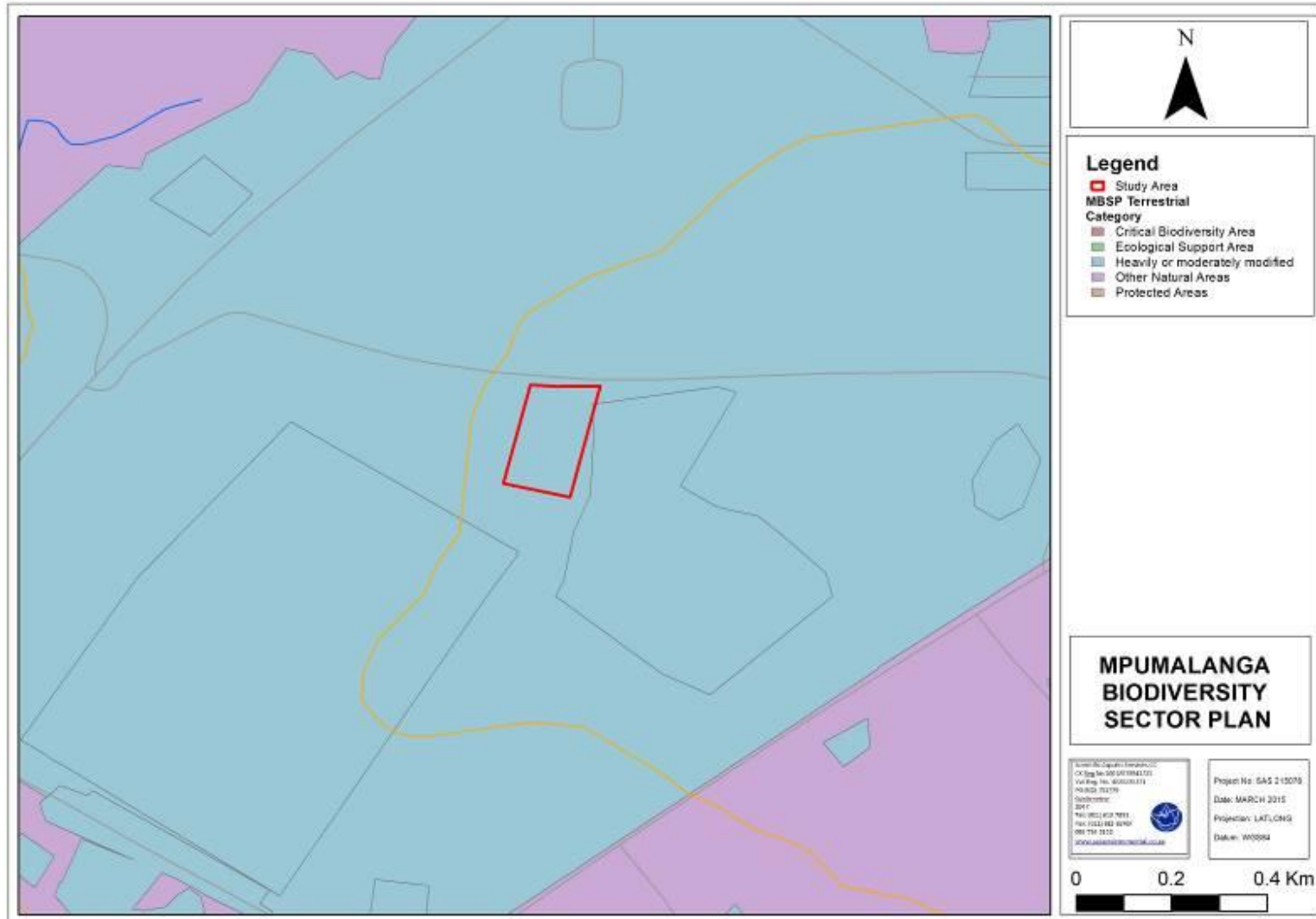


Figure 4: The Mpumalanga Biodiversity Sector Plan (MBSP) indicating the importance of the study area





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**The points below briefly present the findings and the conclusions drawn:**

1. The study area was extensively investigated on foot for wetland indicators such as facultative or obligate wetland vegetation and mottled or gleyed soils;
2. The dominant vegetation consisted of terrestrial species such as *Cirsium vulgare*, *Cynodon dactylon* and *Hyparrhenia hirta*, as well as alien invasive species such as *Cosmos bipinnata*, *Verbena bonariensis* and *Tagetes minuta*. No vegetation associated with wetlands was encountered within the site or within 32m or 32m thereof, indicating that insufficient water is present to support vegetation typically adapted to life in saturated soil as per the definition of a wetland according to the National Water Act (NWA) (Act 36 of 1998) and the National Environmental Management Act (NEMA) (Act No. 107 of 1998);
3. Soil auguring took place at several points within the study area to determine whether soils that are associated with prolonged and frequent saturation and a fluctuating water table which leads to soil mottling were present. However no signs of mottling was observed in the soil samples taken within the site or within 32m thereof as depicted in Figure 5;



**Figure 5: Representative photograph of a soil sample taken within the study area.**

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4. The southwestern portion of the study area is currently being utilised for agricultural activities;
  5. Two areas were identified using digital satellite imagery which may potentially have been wetlands, and these were specifically investigated during the field assessment. One is located in the northern portion of the study area, and the second is located approximately 200m south of the study area (i.e. west of the Charlie 1 landfill site). Upon investigation however, neither of these areas displayed any wetland characteristics as described by DWAF (2005). The area in the northern section contained only terrestrial floral species. In addition the soil samples taken in this area did not show any gleying or mottling which would indicate that this could be considered as wetland resources;
  6. The channel-like feature identified to the south of the study area was found to be unvegetated, and soil samples taken within this area did not display gleying or mottling which would be indicative of wetland conditions. The channel-like formation is deemed likely to have been formed as a result of seepage originating from the Charlie 1 landfill site located on the eastern boundary of the study area. It is also possible that the area has been cleared of vegetation for agricultural purposes. Representative photographs of this channel-like formation are presented in Figure 6;



**Figure 6: Representative photograph of an area resembling a constructed channel, situated approximately 200m south of the study area**

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7. Wetlands within 500m of the study area were investigated, and approximately 100m northeast of the study area, a poorly defined mosaic patch of temporary wetland and moist grassland was identified. This area showed minimal wetland characteristics and the boundary was not clearly discernible and difficult to delineate (Figure 7). Vegetation indicators were also minimal and vegetation such as *Helichrysum kraussii* and *Haplocarpha scaposa* were observed;
  8. The development of the PCD is unlikely to pose a threat to this feature as well as the conservation of wetlands on a local or regional scale; and
  9. Based on the findings of the assessment it is the opinion of the ecologists that from an ecological viewpoint, the proposed project be considered favorably. However, it is recommended that as part of mitigatory measures, the proposed PCD be properly lined to prevent seepage, which may affect the surface and groundwater environment over time.



**Figure 7: A mosaic of temporary wetland and moist grassland located northeast of the study area.**

Yours Faithfully,

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Pr. Sci. Nat.