METHOD STATEMENT – Wetland and River Crossings

METHOD STATEMENT

WETLAND AND RIVER CROSSINGS: GENERIC CROSSING PROCEDURE

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<th>Rev.</th>
<th>Date</th>
<th>Reason for Issue</th>
<th>Prepared by</th>
<th>Checked by</th>
<th>Client Approval</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>02.07.2012</td>
<td>Issued for Review</td>
<td>Semane</td>
<td>Jones &amp; Wagener</td>
<td></td>
</tr>
</tbody>
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Category Code | Category Code Description
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Area Code     | SOUTH AFRICA
Document Type | Generic

Wetland and River Crossings Procedure
**GENERIC METHOD STATEMENT: WETLAND AND RIVER CROSSINGS**

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1.0 Purpose

The purpose of this document is to describe and define the general method used for Wetland and River Crossings at the New Largo Project.

2.0 Scope of work

This procedure describes method of safely removing 150mm of topsoil, excavating for subsurface drainage or undercut for road construction, footings and plinths, layerworks for pavement structure, backfill and compact around structures, construct concrete works, and reinstatement of Wetland and River Crossings at the New Largo Project.

The intention is to undertake the works utilising dedicated and well trained teams to ensure that the works are progressed in a safe and environmentally responsible manner.

3.0 General Measures

The following general measures should be implemented during construction:

- The area of disturbance should be kept to a minimum to allow clearing of the construction right of way, excavation, layerworks, construct concrete works, backfill, to restore the construction right of way. This should not exceed:
  - The construction footprint width must be kept to a minimum, for both the wetland and the river crossing.

- A sequential construction strategy should be followed, i.e.
  - Construction should be immediately followed by rehabilitation;
  - Soils excavated in the wetland should be stored in sequence and not in the wetland perimeter;
  - Soils must be replaced in same sequence as excavated;
  - Soil surfaces should not be left open for lengthy periods to prevent erosion. Sods must be stored and placed back immediately after sub-soils have been backfilled.
• Storm water management measures should be implemented;
• Where possible, construction should take place during the dry season. Weather forecasts from the South African Weather Bureau of up to three days in advance must be monitored on a daily basis to avoid exposing soil or building works during a storm event. Appropriate action must be taken in advance to protect construction works should a storm event be forecasted;
• Appropriate erosion and sediment control measures should be implemented. Sediment barriers should be constructed across the entire construction right of way at all watercourse crossings where necessary to prevent sediment flow into the watercourse;
• Vegetation and soil should be retained in position for as long as possible, and should only be removed immediately ahead of construction / earthworks in any specific area;
• Remove only the vegetation where essential for the continuation of construction of the conveyor/access road. Do not allow any disturbance to the adjoining natural vegetation cover or soils.

4.0 Construction Procedures

4.1 Seepage Wetlands

Due to the sensitivity of the wetlands, a method is proposed to install flow drains either side of the construction area for water to flow in both direction at the wetland. This will ensure that the water flow in the wetlands will not be jeopardised by the any construction procedure.

5.0 Start Date and Duration of Construction

To be confirmed by the appointed civil contractor.

6.0 Materials and Equipment to be used

• Construction plant
The following plant is likely to be used during construction and specific details should be provided in the method statements on which plant will be used in the various construction methodologies at implementation phase:
  o Excavators (20 to 30 ton)
  o Rollers suitable for the compaction of trenches
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- Graders
- Type D6 Dozers
- TLB’s
- Tipper trucks (10 m3) or equivalent ADT’s
- Watercarts
- Mobile crane

• Material
A detailed list of material to be used in the watercourses during construction should be included in the method statement according to the specifications, Bill of Quantities and Drawings.

7.0 Movement of Material and Equipment from the Watercourse Crossings

Access roads will be constructed prior to any construction work at the wetland areas, indicated on the drawings. The access road will be cleared and the fill material will be ended tipped to reduce the construction footprint. The alignment of the access road will be as per permanent service road. Bulk excavated material will be transported on the access road with Tipper Trucks or ADT’s and will be stockpile outside the wetland or river crossing perimeter.

8.0 Handling of all Materials, Excess Materials and Waste Materials

• Storage
No construction materials may be stored or disposed of within the delineated wetlands or within the buffer zone of 30 m from the wetlands.

No concrete batching may take place within the delineated wetlands or within the buffer zone of 30 m from the wetlands.

No refuelling may take place within the delineated wetlands or within the buffer zone of 30 m from the wetlands.

• Disposal
All material must be removed to a designated area, or a licenced waste disposal facility, if it cannot be re-used.
9.0 Rehabilitation

In areas where construction activities have been completed and no further disturbance is anticipated, rehabilitation and re-vegetation should commence as soon as possible.

- For channelled watercourses:
  - Profile the banks of the watercourse over the disturbed areas to an acceptable slope and replace topsoil;
  - Where requested by the engineer, cover the disturbed area at watercourse crossings with a biodegradable woven jute geotextile erosion control blanket (e.g. Geojute);
  - Where requested by the engineer, ensure that the erosion control blanket is well anchored burying the edges and pegging the rest of the material on a 1 m² grid over its entire area. Use only wooden pegs;
  - Take plugs of indigenous sedge and grass material from the adjacent areas;
  - Plant these plugs on a 50 x 50 cm grid in holes punched through the erosion control blanket. Add appropriate fertiliser in the bottom of the hole prior to planting;
- Water the planted plugs thoroughly immediately after planting and continue to water every three days in the absence of more than 10 mm of rainfall until plants are established.
- Re-vegetation of disturbed areas must be undertaken with indigenous species and in accordance with the instructions issued by the Environmental Control Officer (ECO).
- Replanting activities should be undertaken at the end of the dry season (middle to end September) to ensure optimal conditions for germination and rapid vegetation establishment;
- Should plants not successfully establish within two growing seasons after the first planting, new plant material should be provided;
- Any weed or alien species that germinates during the contract period should be cleared by hand before flowering;
- Any erosion channels developed during the construction period should be appropriately backfilled (and compacted where relevant) and the areas restored to a condition similar to the condition before the construction erosion occurred.
10.0 **Notes**

1. All construction and reinstatement activities in wetland areas to comply in strict accordance to the EMP and specific requirements from DWAF.

2. A detailed method statement will be drafted for authorisation by all parties concerned for each wetland to be crossed. The ECO will sign-off these after completion of each crossing as required by the Water Use License.

3. The ECO will continually update a working wetlands table indicating progress of wetland authorisations and crossing completion.