MS 04: INCREASED RUNOFF, EROSION AND SEDIMENTATION CONTROL DURING CONSTRUCTION ACTIVITIES

DESCRIPTION OF TASKS AND SUBORDINATE ACTIONS

The purpose of this method statement is to describe the methods to be used for the mitigation of runoff, erosion and sedimentation during the construction phase of the project. Earth moving activities, associated with the construction phase can result in increased stormwater runoff and flow velocities into the unchanneled valley bottom wetland. This may result in the erosion and incision of the wetland system. Earth moving activities may also result in increase in runoff of sediment into downstream wetland habitat.

PRE-WORK REQUIRED

Demarcation of the development footprint of the proposed dam with signs that prohibit any vehicles or construction related activities outside of demarcated footprint (Section 7.10.4 of the EMPr).
E Environmental awareness training as per the Environmental Management Programme (Section 7.5.1 of the EMPr).

DESCRIPTION OF WORK TO BE DONE: WHAT, WHEN, WHERE AND HOW

The following section describes the mitigation measures, as per the freshwater specialist, to reduce runoff, erosion and sedimentation during construction activities of the proposed Dasberg dam.

- It is suggested that the development of the dam should be undertaken during the dry summer months.
- Erosion control measures must be implemented to prevent erosion and sedimentation of downstream wetland areas. These methods can include the strategic placement of straw bales (not Lucerne or hay) which will divert stormwater away from the areas susceptible to erosion.
- Strategically divert runoff from areas where earth moving activities is undertaken in the direction of pegged straw bales where required, in an attempt to intercept sediment-laden runoff before it reaches downstream wetland habitat.
- Protect stockpiles, if required, from erosion using tarp or erosion blankets.
- Seed the dam wall after construction with indigenous grass that has a good soil binding capacity such as *Cynodon dactylon* or stabilised with geotextiles in order to prevent erosion.

MONITORING

- Check straw bales weekly to ensure these are still intact (can be done by the proponent or a reliable farm employee) and cleared of sediment as needed.
- The ECO must check the site for erosion damage and sedimentation after every heavy rainfall event. Should erosion or sedimentation be noted, immediate corrective measures must be undertaken. Rehabilitation measures may include the manual removal of accumulated sediment, the filling of erosion gullies and rills, and the stabilization of gullies with silt fences.

ACCESS TO AND FROM THE SITE

No additional access required (there is existing access to the site).

Actions	***Responsibility***	***Potential impacts of these actions***	***Severity of impacts*** **High**: ***Disturbance of area with important conservation value; destruction of rare or endangered species. No possible mitigation or mitigation is difficult, expensive, and time-consuming.*** **Medium**: ***Disturbance of area with potential conservation value or of use as a resource; complete change in species occurrence or variety.*** **Low**: ***Disturbance of degraded area with little conservation value; minor change in species occurrence or variety. Mitigation easily achieved or little required.***	***Measures to mitigate the severity of these impacts***	***Corrective/remedial measures if mitigation measures are not properly implemented on site***
Strategic placement of straw bales to reduce erosion and sedimentation of the downstream wetland habitat	*Contractor and trained personnel under supervision of the ECO*	*Correct placement of straw bales will intercept sediment laden stormwater as well as decrease the velocity of stormwater, decreasing the erosion potential*	*Positive impact*		
		Incorrect placement of the straw bales can lead to increased erosion and sedimentation of the downstream wetland habitat due to high velocity flow of surface water.	*Medium*	*Ensure the contractor places straw bales strategically*	*Rehabilitation includes the manual removal accumulated sediment, infilling of erosion gullies and rills and stabilization of gullies and silt fences.*
		Failure to peg straw bales can lead to the blocking of the	*Medium*	*Ensure straw bales are pegged*	

		downstream wetland habitat			
Protect stockpiles of any material	*ECO/ trained personnel*	*Stockpiled material can wash into the wetland habitat causing blockages and erosion of the downstream wetland habitat*	*Medium*	*Ensure stockpiles are located at least 32m from the border of the unchanneled valley bottom wetland.* *Cover stockpiles with tarp or erosion blankets*	*Manual removal of washed away material from the downstream wetland habitat*
Seeding the dam wall to prevent erosion	*ECO/ trained personnel*	*Plating the incorrect seeds with no soil binding capacity can lead to erosion of the dam wall which will lead to the increased sedimentation and erosion of the downstream wetland habitat.* *Planting of alien invasive plants species can lead to an imbalance of the ecological functioning of the local habitat.*	*Medium*	*Ensure personnel is trained with regards seeding of the dam wall.* *Ensure personnel use the recommended seeds:* Cynodon dactylon *or an indigenous grass with good soil binding capacity*	*Rehabilitation includes the manual removal accumulated sediment, infilling of erosion gullies and rills and stabilization of gullies and silt fences*

Monitoring	*ECO/ trained personnel/ reliable farm employee*	*Negligence in checking straw bales will only increase sedimentation and erosion of the downstream wetland habitat* *Failing to check for erosion damage and sedimentation after a flood event*	*High* *High*	*Check straw bales weekly to ensure these are still intact and cleared of sedimentation as needed* *Check straw bales after a flood event to ensure these are still intact and cleared of sedimentation as needed*	*Recovering the local environment by removing all IAPs and ensure monitoring programme is adhered to.*