

A.	Impact Rating: Construction	Alternative 2: Not preferred Alternative - Expansion of Brand se dam Port 33 of Farm Rietvalley 364, Ceres.	WITHOUT MITIGATION					WITH MITIGATION					Short Description of Mitigation Measures	
			Probability	Extent	Duration	Magnitude	Receiving Environment	Without Mitigation Score (Baseline)	Probability	Extent	Duration	Magnitude		Receiving Environment
No.	ASPECT	IMPACT												
1	Botanical	Potential loss of Ceres Shale Renosterveld	-1	-2	-1	-16	-1	-1	-2	-1	-1	-1	-1,2	<p>No loss of Ceres Shale Renosterveld is expected as the area is transformed by agricultural activities. Recommendations from the Biodiversity Specialist:</p> <ul style="list-style-type: none"> <li>* A suitably qualified ECO must be appointed;</li> <li>* Before any work is done physically demarcate the footprint of the proposed dam &amp; access routes route and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area - This can be done with danger tape, which should be removed once the construction activities have been completed;</li> <li>* Ensure signs are put up reminding workers to stay on the existing roads;</li> <li>* Indiscriminate cleaning of areas must be avoided;</li> <li>* All alien plants to be removed within the construction footprint and immediate surroundings;</li> <li>* An integrated waste plan to be agreed upon and implemented;</li> <li>* Environmental Awareness training to be conducted with all workers</li> </ul>
		Loss of Ecological Support Areas (ESA)	-1	-2	-16	-2	-1	-1	-2	-4	-1	-1	-1,8	<p>ESA are already highly compromised in the area. Recommendations from the Biodiversity Specialist:</p> <ul style="list-style-type: none"> <li>* Ecological support areas should be established along the small streams. As a potential off-set the re-establishment and protection (fencing them off) of a more natural riparian vegetation along these streams should be considered. But this will be difficult as the area has been subject to intensive agriculture over a long period of time.</li> <li>* Before any work is done physically demarcate the footprint of the proposed dam &amp; access routes and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area.</li> <li>* Ensure signs are put up reminding workers to stay on the existing roads/ in the construction footprint.</li> <li>* Indiscriminate cleaning of areas must be avoided;</li> <li>* Environmental Awareness training to be conducted with all workers</li> </ul>

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\* Inspect all vehicles daily for the early detection of deterioration or leaks.  
 The contractor should ensure drip trays are placed under stationary vehicles.  
 \* Spill kits must be available. Workers should be trained how to use spill kits to rectify a spill immediately.  
 \* Records must be kept of any spills.  
 \* Portable toilets must be located at least 32m from the boundary of the any streams must be serviced regularly in order to prevent leakage/spillage.  
 \* No cement mixing on site.

**The riparian habitats are already considered to be critically disturbed .**  
 To mitigate further disturbance:  
 \* Ecological support areas should be established along the small streams. As a potential off-set the re-establishment and protection (fencing them off) of a more natural riparian vegetation along these streams should be considered. But this will be difficult as the area has been subject to intensive agriculture over a long period of time.  
 \* Before any work is done physically demarcate the footprint of the proposed dam & access routes and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area. \* Ensure signs are put up reminding workers to stay on the existing roads.  
 \* Indiscriminate cleaning of areas must be avoided; \* Environmental Awareness training to be conducted with all workers  
 \* As a precautionary measure, importance must be given to emergency preparedness with regards to any spillages or leakage of hydrocarbons on site.

Soil contamination from vehicles on site

Loss of riparian habitat

Water



B.	Impact Rating: Construction Phase	Alternative 2: Not preferred Alternative - Expansion of Brand se dam Port 33 of Farm Rietvalley 364, Ceres.	WITHOUT MITIGATION					WITH MITIGATION					Short Description of Mitigation Measures	
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No.	ASPECT	IMPACT												
1	Botanical	Potential loss of Ceres Shale Renosterveld	-1	-2	-1	-1	-1	-1,2	-1	-2	-1	-1	-1,2	<p>No loss of Ceres Shale Renosterveld is expected as the area is transformed by agricultural activities. Recommendations from the Biodiversity Specialist:</p> <ul style="list-style-type: none"> <li>* A suitably qualified ECO must be appointed;</li> <li>* Environmental Awareness training to be conducted with all workers</li> <li>* Ensure construction activities are restricted to the demarcated footprint, strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area</li> <li>* Access roads to the dam should be limited to a single circular route in and out. Ensure construction vehicles stay on existing roads and erect signs to remind workers not to deviate from the roads.</li> </ul>
		Loss Ecological Support Areas	-1	-2	-1	-1	-1,2	-1	-2	-1	-1	-1,2	<p>ESA are already considered compromised.</p> <p>Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area.</p>	
		Soil contamination from vehicles/ concrete/ portable toilets	-2	-2	-2	-1	-1,6	-1	-2	-1	-1	-1,2	<ul style="list-style-type: none"> <li>* Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area.</li> <li>* No concrete will be mixed on site and surplus must be disposed of in the correct manner.</li> <li>* Inspect all vehicles daily for the early detection of deterioration or leaks.</li> <li>* The contractor should ensure drip trays are placed under stationary vehicles.</li> <li>* Spill kits must be available. Workers should be trained how to use spill kits to rectify a spill immediately. Records must be kept of any spills.</li> <li>* Portable toilets must be placed no less than 32m from any watercourse/ stream and serviced regularly in order to prevent leakage/spillage. No portable toilets to be placed in watercourse 1 where the weir it to be rehabilitated.</li> </ul>	

2	Water	Loss of riparian habitat during construction of the dam wall & spillway	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	Riparian habitats are already considered critically disturbed with no riparian vegetation left * Ensure construction activities and vehicles are restricted to the demarcated areas to prevent further degradation. Access roads to the dam should be limited to a singular route in and out; * Vehicles will not be permitted to drive through the streams; * Ensure construction footprint is kept as small as possible.
		The dam is not connected to any of the natural streams. The raising of the dam wall would merely store water that is currently flowing through to downstream farming operations. None of this water is currently flowing back to any river and therefore not making any contribution to river health and aquatic ecology.												The dam and the spillway should be not any higher than the dam's full capacity, after the 182 000m3 has been added to the capacity of the dam. This would ensure that if the dam is at its design capacity, it would overflow during exceptional very high rainfall events. * Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area. * No concrete will be mixed on site and surplus must be disposed of in the correct manner. * Construction should be limited to the dry season * Ensure no building material allowed to wash down stream * Line the spillway with natural stone rather than concrete; * Ensure construction footprint is kept as small as possible;
		Alternation of hydrology/ flow othe stream downstream of the dam wall during construction of the dam wall & spillway	-8	-2	-4	-2	-1	-3,4	-1	-2	-1	-1	-1,2	
3	Heritage	Loss of archaeological/ palaeological resources	-1	-2	-1	-1	-1	-1,2	-1	-2	-1	-1	-1,2	In the case of any significant new fossil finds exposed during dam construction (e.g. concentrations of well-preserved fossil shells such as "starfish beds"), these should be safeguarded - preferably in situ - and reported by the ECO as soon as possible to Heritage Western Cape (Att: Mr Andrew September 021 483 9543).
4	Dust	Potential dust from construction activities	-2	-2	-1	-1	-1	-1,4	-1	-2	-1	-1	-1,2	Dust will be monitored. If dust becomes a problem, dust will be controlled by means of water spray vehicles. No over watering of the site area or roads surfaces should occur. Speed limits must be enforced in all areas to limit the levels of dust pollution. Max speed of 40km/h must be maintained. Protect stockpiled topsoil using tarp or erosion blankets. Stockpile topsoil within an area where no stormwater runoff is expected
5	Visual	Potential visual impact from construction	-1	-2	-1	-1	-1	-1,2	-1	-2	-1	-1	-1,2	Construction related activities should remain within the demarcated footprint

6	Noise	Potential noise from construction	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1	-1	-1,2	* Construction noise is expected to be minimal communities in close proximity to the construction site * No * Construction should take place during daylight hours.
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C.	Impact Rating: Operational Phase	Alternative 2: Not preferred Alternative - Expansion of Brand se dam Port 33 of Farm Rietvalley 364, Ceres.	WITHOUT MITIGATION					WITH MITIGATION					Short Description of Mitigation Measures		
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No.	ASPECT	IMPACT													
1	Water	Alteration of hydrological regime flow of stream downstream of the dam wall and spillway	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1	-1,2	The dam is not connected to any of the natural streams. The raising of the dam wall would merely store water that is currently flowing through to downstream farming operations. None of this water is currently flowing back to any river and therefore not making any contribution to river health and aquatic ecology. * The dam and the spillway should be not any higher than the dam's full capacity, after the 182 000m3 has been added to the capacity of the dam. This would ensure that if the dam is at its design capacity, it would overflow during exceptional very high rainfall events * Ensure the spillway is clear of nuisance vegetation and sedimentation to ensure overflow.
		Erosion and sedimentation	-4	-2	-4	-4	-1	-1	-2	-1	-1	-1	-1,2	* Monitor areas below the dam wall (at the spillway) after heavy rainfall events for erosion and sedimentation. * Should erosion and incision be noted, immediate corrective measures must be undertaken. * Nuisance vegetation and sedimentation to be removed to ensure overflow; * Rehabilitation measures may include the filling of erosion gullies and fills, and the stabilization of gullies with silt fences.	
2	Dust	Potential dust from operations	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	No dust expected during operations	
3	Visual	Potential visual impact from operations	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	No visual impact expected during operations, the dam will fit in with the surrounding land use which is agriculture	
4	Noise	Potential noise impact from operations	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	No noise expected during operations	

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No.	ASPECT	IMPACT												
1	Water	Alteration of hydrological regime flow of stream downstream of the dam wall and spillway	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	<p>The dam is not connected to any of the natural streams. The raising of the dam wall would merely store water that is currently flowing through to downstream farming operations. None of this water is currently flowing back to any river and therefore not making any contribution to river health and aquatic ecology.</p> <p>* The dam and the spillway should be not any higher than the dam's full capacity, after the 182 000m3 has been added to the capacity of the dam. This would ensure that if the dam is at its design capacity, it would overflow during exceptional very high rainfall events *</p> <p>Ensure the spillway is clear of nuisance vegetation and sedimentation to ensure overflow.</p>
		Erosion and sedimentation	4	-2	-4	-4	-1	-1	-2	-1	-1	-1	-1,2	<p>* Monitor areas below the dam wall (at the spillway) after heavy rainfall events for erosion and sedimentation. *</p> <p>Should erosion and incision be noted, immediate corrective measures must be undertaken. *</p> <p>Nuisance vegetation and sedimentation to be removed to ensure overflow, *</p> <p>Rehabilitation measures may include the filling of erosion gullies and rills, and the stabilization of gullies with silt fences.</p>
2	Dust	Potential dust from operations	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	No dust expected during operations
3	Visual	Potential visual impact from operations	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	No visual impact expected during operations, the dam will fit in with the surrounding land use which is agriculture
4	Noise	Potential noise impact from operations	-1	-2	-1	-1	-1	-1	-2	-1	-1	-1	-1,2	No noise expected during operations



