

A.	Impact Rating: Construction	Pre-Construction	Alternative 1: Preferred Alternative - Expansion of Driefontein 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	With Mitigation Score (Impact assessment)
1	ASPECT		IMPACT	Potential loss of Ceres Shale Renosterveid	-1	-1	-1	-16	-1	-4	-1	-1	-1	-1	-1	No loss of Ceres Shale Renosterveid is expected as the area is transformed by agricultural activities. Recommendations from the Biodiversity Specialist: * A suitably qualified ECO must be appointed; * Before any work is done physically demarcate the footprint of the proposed dam & 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; * Ensure signs are put up reminding workers to stay on the existing roads. * Indiscriminate cleaning of areas must be avoided; * All alien plants to be removed within the construction footprint and immediate surroundings; * An integrated waste plan to be agreed upon and implemented; * Environmental Awareness training to be conducted with all workers
				Loss of Ecological Support Areas (ESA)	-1	-1	-16	-2	-1	-4,2	-1	-1	-4	-1	-1	-1,6

<p>* Inspect all vehicles daily for the early detection of deterioration or leaks. *</p> <p>The contractor should ensure drip trays are placed under stationary vehicles. *</p> <p>* Spill kits must be available. Workers should be trained how to use spill kits to rectify a spill immediately. *</p> <p>* Records must be kept of any spills. *</p> <p>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. *</p> <p>* No cement mixing on site.</p>																															<p>Soil contamination from vehicles on site</p>																																																																																																																																																																																																																																																																																																																																																																																										
<p>The riparian habitats are already considered to be critically disturbed .</p> <p>To mitigate further disturbance:</p> <p>* 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. *</p> <p>* 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. *</p> <p>* Ensure signs are put up reminding workers to stay on the existing roads. *</p> <p>* Indiscriminate cleaning of areas must be avoided; *</p> <p>* Environmental Awareness training to be conducted with all workers *</p> <p>* As a precautionary measure, importance must be given to emergency preparedness with regards to any spillages or leakage of hydrocarbons on site.</p>																															<p>Loss of riparian habitat</p>																																																																																																																																																																																																																																																																																																																																																																																										
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B.	Impact Rating: Construction Phase	Alternative 1: Preferred Alternative - Expansion of Driefontein 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	
No.	ASPECT	IMPACT											
1	Botanical	Potential loss of Ceres Shale Renosterveld	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	No loss of Ceres Shale Renosterveld is expected as the area is transformed by agricultural activities. Recommendations from the Biodiversity Specialist: * A suitably qualified ECO must be appointed; Environmental Awareness training to be conducted with all workers * Ensure construction activities are restricted to the demarcated footprint, strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area * 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.
		Loss Ecological Support Areas	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	ESA are already considered compromised. Ensure construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area.
		Soil contamination from vehicles/ concrete/ portable toilets	-2	-1	-2	-1	-1	-1	-1	-1	-1	-1	* 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. * 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 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.

<p>Riparian habitats are already considered critically disturbed with no riparian vegetation left</p> <p>* 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;</p> <p>* Vehicles will not be permitted to drive through the streams;</p> <p>* Ensure construction footprint is kept as small as possible.</p>	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
<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 construction activities are restricted to the demarcated footprint and strictly prohibit any vehicles or construction related activities outside of the demarcated footprint area.</p> <p>* No concrete will be mixed on site and surplus must be disposed of in the correct manner.</p> <p>* Construction should be limited to the dry season</p> <p>* Ensure no building material allowed to wash down stream</p> <p>* Line the spillway with natural stone rather than concrete;</p> <p>* Ensure construction footprint is kept as small as possible;</p>	-3,2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
<p>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).</p>	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
<p>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</p>	-1,2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
<p>Construction related activities should remain within the demarcated footprint</p>	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

6	Noise	Potential noise from construction	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	<p>* Construction noise is expected to be minimal communities in close proximity to the construction site * Construction should take place during daylight hours. * No</p>
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C.	Impact Rating: Operational Phase	Alternative 1: Preferred Alternative - Expansion of Driefontein 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
1	ASPECT Water	Alteration of hydrological regime flow of stream downstream of the dam wall and spillway	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	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.
2	Dust	Potential dust form operations	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	* 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 rills, and the stabilization of gullies with silt fences.
3	Visual	Potential visual impact form operations	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	No dust expected during operations 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	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	No noise expected during operations

D.	Impact Rating: Rehabilitation Phase	Alternative 1: Preferred Alternative - Expansion of Driefontein 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	Soil contamination from vehicles on site	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	* Vehicles should be inspected to reduce risk of potential soil contamination from hydrocarbon spills. * The contractor should ensure drip trays are placed under stationary vehicles/ trucks. * 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.
2	Water	Loss of riparian habitat	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	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
3	Dust	Dust emissions during rehabilitation	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	* 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 Dust will be monitored If dust becomes a problem, dust will be controlled by means of water spray vehicles or other practical means. No over-watering of the mining area or roads surfaces should occur. Under extreme windy conditions work will be stopped.
4	Visual	Potential visual impact from rehabilitation	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	No visual impact during rehabilitation, if anything rehabilitation of the area will increase visual aesthetic of the area
5	Noise	Potential noise from rehabilitation	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	* Noise is expected to be minimal communities in close proximity to the construction site * Works should take place during daylight hours.