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Zitholele Consulting	Date	Note Number
	11/11/2018	NGHES_17_04_01
Attention: Mathys Vooslo		
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The present addendum to the "Continuous ash disposal facility at Kendal Power Station Groundwater numerical model for Source Pathway Receptor study" report (GHES_17_04_02Final) focuses on the assessment of the impacts to the groundwater resulting from the proposed Class D liner which was finally recommended in the "Source-Pathway-Receptor study for the Kendal Power Station existing Ash Disposal Facility" report (17126-46-Rep-001-SPR Kendal PS).

The methodologies (categories and ranking criteria) used for the quantification of the impacts per alternative sites have been provided by Zitholele. A matrix (Excel spreadsheet) was developed by Zitholele using given categories and ranking criteria, and has been availed to GHES.

Impacts assessments

Construction phase

The risk impacts that result in the groundwater quality deterioration is probable and the significance is rated low. With a strict application of the proposed mitigation measures, the significance of the residual impacts risk at the construction phase can be reduced to "very low".

Operation phase

Prior to mitigation, the risk impacts that result in the groundwater quality deterioration is possible. The significance of the risk impacts that result in the groundwater quality deterioration, is rated low. The strict application of the

proposed mitigation measure, the significance of residual impacts risk during the operation phase will be kept at "low".

Closure phase

The risk impacts that result in the groundwater quality deterioration is probable and the significance is rated low. With a strict application of the proposed mitigation measures, the significance of the residual impacts risk at the closure phase can be reduced to "very low".

GROUNDWATER IMPACT ASSESSMENT 2018

Impact	Unmitigated / Residual Impact	Direction of Impact	Degree of Certainty	Magnitude (before mitigation)	Magnitude (after mitigation)	Spatial	Temporal	Probability	Significance Rating (Impact Risk)
Phase: Construction Phase Contamination of groundwater resource, due to construction activities (wastes, hydrocarbon spills)	Impact (Unmitigated)	Negative	**Probable**	3	2	2	3	3	**1,6**
				MOD	LOW	*Site*	Med	*Could*	LOW
	Residual Impact (Mitigated)	Negative	**Possible**	2	1	1	3	2	**0,8**
				LOW	VLOW	*Iso*	Med	*Unlike*	VLOW
Phase: Operational Phase Contamination of groundwater resource, due to seepage and leachate infiltration (leakage of the liner system) from ash dam, contaminated water trenches and pollution control dam.	Impact (Unmitigated)	Negative	**Probable**	3	3	3	3	3	**1,8**
				MOD	MOD	*Loc*	Med	*Could*	LOW
	Residual Impact (Mitigated)	Negative	**Probable**	2	1	1	3	3	**1,2**
				LOW	VLOW	*Iso*	Med	*Could*	LOW
Phase: Closure Phase Contamination of groundwater resource, due to seepage and leachate infiltration (leakage of the liner system) from ash dam, contaminated water trenches and pollution control dam, and from closure activities	Impact (Unmitigated)	Negative	**Probable**	3	3	3	3	3	**1,8**
				MOD	MOD	*Loc*	Med	*Could*	LOW
	Residual Impact (Mitigated)	Negative	**Probable**	2	1	1	3	2	**0,8**
				LOW	VLOW	*Iso*	Med	*Unlike*	VLOW

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