

MENCO

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Reference: 2025/KAN/81
Date: 20 March 2025

Kangra Coal (Pty) Ltd

68 Grayston Drive
Sandown
Sandton
2031

Attention: Mr. Paul Redelinghuys

Dear Sir

**APPLICATION IN TERMS OF REGULATION 3 FOR EXEMPTION IN TERMS OF
REGULATION 4 AND 5, GNR 704 OF JUNE 1999: KANGRA COAL (PTY) LTD:
BALLENGEICH COLLIERY**

Kangra Coal (Pty) Ltd: Ballengeich Colliery hereby wishes to apply for exemption in terms of Regulation 4 and 5 of GNR 704 of June 1999 at the defunct coal mining facility in Ballengeich, Kwazulu-Natal Province insofar it relates to the implementation of rehabilitation measures at the site known as portion 19 of the farm Ballengeich 3299.

BACKGROUND

Kangra Coal (Pty) Ltd is a reliable producer of premium energy coal that is situated in Mkhondo, Mpumalanga Province. The mine produces about 1.4 million tonnes of thermal coal annually at their active mining operations (Maquasa (Maquasa east, Maquasa west and Nooitgesien; and Kusipongo (consists of Balgarthen and Twyfelhoek). Kangra acquired the mining rights for Savmore/Maquasa in 1995 and mined Maquasa until its reserves were depleted. Subsequently, Kangra acquired the Kusipongo mining right, effectively extending its mining operations by over 20 years. In addition, Kangra also surface rights of the defunct Ballengeich Colliery formerly known as Natal Cambrian Colliery that was owned by Shanduka Coal (Pty) Ltd. Ballengeich Colliery is currently subject to the implementation of mitigatory measures to reduce the impact of Acid Mine Drainage (AMD) on the Horn River.

Kangra aims to abide by all relevant provisions of the Mineral and Petroleum Resources Development Act, 28 of 2002 (MPRDA) which is the primary piece of legislation governing rights to conduct reconnaissance, prospecting and mining in South Africa. We also adhere to all other pieces of legislation that specifically governs mining such as the Mining Titles Registration Act 16 of 1967, Mineral and Petroleum Resources Royalty Act 28 of 2008, as well as the Mine Health and Safety Act 29 of 1996 which specifically focuses on the health and safety of the employees on mines.



Kangra further conduct business with our employees on the basis of the Labour Relations Act 66 of 1995 as well as Employment Equity Act 55 of 1998, and also have a particular focus on the Broad-Based Black Economic Empowerment Act 53 of 2003 in terms of how we source our employees and contractor. We have also annually submitted our progress on compliance and alignment with the Mining Charter of South Africa.

Kangra take their Corporate Social Responsibility serious and address it in terms of their Social and Labour Plans (SLP's), which is also regulated by the MPRDA, but Kangra always try and adopt a compassionate practice while focusing on the promotion of sustainable development in the communities in which they operate.

Their environmental compliance is primarily regulated by Kangra's Environmental Impact Assessments and Environmental Management Programmes (EIA's and EMP's) and Water Use Licences (WUL's), which is compiled and approved in terms of the National Environmental Management Act 107 of 1998 and the National Water Act 36 of 1998 respectively. They have a strong compliance focus and see it as part of their Corporate Responsibility to minimise their negative impact on the environment and promote sustainable development. During the licencing, operational and closure periods of Kangra's mines all other pieces of environmental and other legislation is considered and where required complied with, with specific reference to the National Environmental Management: Waste Act 59 of 2008, National Environmental Management: Air Quality Act 39 of 2004, National Environmental Management: Biodiversity Act 10 of 2004, National Environmental Management: Protected Areas Act 53 of 2003, National Heritage Resources Act 25 of 1999.

As part of the operations at Ballengeich Colliery, a Water Use License Application (WULA) and associated Integrated Water and Waste Management Plan (IWWMP) is required for water uses identified in terms of Section 21 of the National Water Act, 1998 (Act No. 36 of 2008), as amended (NWA).

The following water uses require authorisation from the Department of Water and Sanitation:

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m ³ , tonnes and/or m ³ /annum)	Property Description	Co-ordinates
SECTION 21 (c) AND (i) – Impeding or Diverting the Flow of Water in a Watercourse					
1 – (c&i)	Impeding and diverting the natural flow	Discard Dump pit within 500m regulated wetland buffer area	12.2 ha	Portion 19	27°53'27.78"S 29°58'17.29"E
2 – (c&i)	Impeding and diverting the natural flow	Stormwater Management Complex — integrated dirty and clean water separation infrastructure associated with the discard dump rehabilitation and siding operations. Includes: discard dump toe platform, grass-lined V-drains on the rehabilitated dump surface, concrete-lined dirty water channels, and associated silt traps. All infrastructure is located within the 500 m regulated wetland buffer area and within the 1:100-year floodline.	367,500 m ³ (combined PCDs 1–8 and West Decant Sump). See Items 5.1–5.8 for individual PCD capacities.	Portion 19	Start: 27°53'25.39"S 29°58'6.49"E End: 27°53'25.19"S 29°58'40.44"E
3 – (c&i)	Impeding and diverting the natural flow	Old opencast area within 500m regulated wetland buffer area and within 100m of NFEPA River buffer.	43 200 m ³ /a	Portion 19	27°53'13.68"S 29°58'14.52"E
4 – (c&i)	Impeding and diverting the natural flow	The Oxidation Pond is part of passive wetland treatment process and situated within a current wetland and within 100m of NFEPA River buffer.	0.4 ha	Portion 25	27°53'25.08"S 29°57'48.32"E
5.1 – (c&i)	Impeding and diverting the natural flow	PCD 1 within 500m regulated wetland buffer area. Existing unlined earth dam. Retained as regular dam — GN 704 Reg. 4 exemption applied.	31,650 m ² ; 62,300 m ³	Portion 19	27°53'18.51"S 29°58'29.89"E
5.2 – (c&i)	Impeding and diverting the natural flow	PCD 2 within 500m regulated wetland buffer area. Existing unlined earth dam. Retained as regular dam — GN 704 Reg. 4 exemption applied.	10,010 m ² ; 20,400 m ³	Portion 19	27°53'21.55"S 29°58'35.71"E
5.3 – (c&i)	Impeding and diverting the natural flow	PCD 3 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner	7,090 m ² ; 15,500 m ³	Portion 19	27°53'25.39"S 29°58'38.07"E
5.4 –	Impeding and	PCD 4 within 500m regulated wetland buffer area. To be upgraded	3,800 m ² ;	Portion 19	27°53'28.28"S

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
(c&i)	diverting the natural flow	with Class C HDPE-Clay composite liner (GNR 636).	6,800 m ³		29°58'37.38"E
5.4.1 – (c&i)	Impeding and diverting the natural flow	PCD 4 Silt Trap — inlet silt trap associated with PCD 4, located within the 500 m regulated wetland buffer area. Designed to capture sediment-laden stormwater runoff from an 8.8 ha catchment before discharge into PCD 4. Calculated total length: 16.2 m; overflow width: 4.5 m; depth below FSL: 1.5 m; cleaning interval: 28 days.	109 m ³ 14.9 m ³ per 28-day interval	Portion 19	27°53'28.28"S 29°58'37.38"E
5.5 – (c&i)	Impeding and diverting the natural flow	PCD 5 within 500m regulated wetland buffer area. Existing unlined earth dam. Retained as regular dam — GN 704 Reg. 4 exemption applied.	11,600 m ² ; 20,900 m ³	Portion 19	27°53'22.59"S 29°58'31.31"E
5.6 – (c&i)	Impeding and diverting the natural flow	PCD 6 (Old Horn River Dam) within 500m regulated wetland buffer area. Largest on-site PCD. Existing unlined. Retained as regular dam — GN 704 Reg. 4 exemption applied.	45,900 m ² ; 143,700 m ³	Portion 19	27°53'28.54"S 29°58'31.90"E
5.7 – (c&i)	Impeding and diverting the natural flow	PCD 7 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner (GNR 636).	3,700 m ² ; 5,600 m ³	Portion 19	27°53'34.07"S 29°57'59.87"E
5.8 – (c&i)	Impeding and diverting the natural flow	PCD 8 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner (GNR 636).	3,000 m ² ; 5,600 m ³	Portion 19	27°53'33.35"S 29°58'1.97"E
6 – (c&i)	Impeding and diverting the natural flow	Successive Alkaline Producing System (SAPS) used during passive wetland treatment. Located within a wetland system and within a 100m NFEPA River buffer.	1.2 ha	Portion 25	27°53'26.39"S 29°57'47.61"E
7 – (c&i)	Impeding and diverting the natural flow	Anoxic Limestone Drain (ALD 1) used to treat net-acidic, anoxic mine drainage of low to moderate flow. Located within a wetland system and within a 100m NFEPA River buffer.	Length = 420 m	Portion 25	Start: 27°53'33.43"S 29°57'41.38"E End: 27°53'27.63"S 29°57'52.17"E

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
8 – (c&i)	Impeding and diverting the natural flow	Anoxic Limestone Drain (ALD 2) used to treat net-acidic, anoxic mine drainage of low to moderate flow. Located within a wetland system and within a 100m NFEPA River buffer.	Length = 230 m	Portion 19	Start: 27°53'17.33"S 29°58'1.35"E End: 27°53'12.99"S 29°58'8.95"E
9 – (c&i)	Impeding and diverting the natural flow	Aerobic Wetland 1 collects AMD water and provides time for metals and sediments to precipitate. Located within a wetland system and within a 100m NFEPA River buffer.	1.3 ha	Portion 25	27°53'23.00"S 29°57'49.07"E
10 – (c&i)	Impeding and diverting the natural flow	Aerobic Wetland 2 collects AMD water and provides time for metals and sediments to precipitate. Located within a wetland system and within a 100m NFEPA River buffer.	4.4 ha	Portion 19	Start: 27°53'16.64"S 29°58'1.01"E End: 27°53'6.79"S 29°58'27.02"E
11 – (c&i)	Impeding and diverting the natural flow	West Decant PCD ensures that groundwater rebound and decant from mine openings take place in the form of surface water discharge. Located within 500m regulated wetland buffer area.	32,700 m ² ; 86,400 m ³	Portion 19	27°53'19.06"S 29°58'6.84"E
12 – (c&i)	Impeding and diverting the natural flow	Screening and Crushing plant area associated with Quantum's operations. Located within 500m of regulated wetland area.	2.93 ha	Portion 19	27°53'29.72"S 29°58'7.89"E
13.1 – (c&i)	Impeding and diverting the natural flow	Septic Tank 1 — grey water (Kangra/siding operations only). Quantum uses mobile toilets. Located within 500m of regulated wetland area.	10 000 L	Portion 19	27°53'31.03"S 29°58'5.70"E
13.2 – (c&i)	Impeding and diverting the natural flow	Septic Tank 2 — toilet waste (Kangra/siding operations only). Quantum uses mobile toilets. Located within 500m of regulated wetland area.	5 000 L	Portion 19	27°53'31.40"S 29°58'7.59"E

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
14 – (c&i)	Impeding and diverting the natural flow	New Quantum PCD — newly constructed pollution control dam (Class C HDPE-Clay composite liner; GNR 636) for stormwater/dirty water management at the Quantum operations area. Located within 500m regulated wetland buffer area.	1.8 ha 8,600 m ³	Portion 19	27°53'27.65"S 29°58'0.59"E
15 – (c&i)	Impeding and diverting the natural flow	Sharp crested V-Drain weir located directly within the Horn River close to the Ngagane River confluence.	Flow: 8.3 Mm ³ /a	Portion 19	27°53'5.99"S 29°58'26.89"E 27°53'6.53"S 29°58'15.04"E)
16 – (c&i)	Impeding and diverting the natural flow; altering the bed, banks, course or characteristic of a watercourse	Riverbank and riparian rehabilitation along a significant portion of the Horn River on the northern and southern banks.	740 m	Portion 19	Start: 27°53'18.21"S 29°57'54.11"E End: 27°53'4.83"S 29°58'30.03"E
17 – (c&i)	Impeding and diverting the natural flow	Siding & Coal stockpile at Ballengeich Siding within 500m regulated area.	540 000 tonnes/a	Portion 19	27°53'39.19"S 29°58'11.20"E
18 – (c&i)	Impeding and diverting the natural flow	Flood Protection Berms — Berm 1 along Horn River;	Berm 1	Portion 19	Berm 1 Start: 27°53'24.01"S 29°58'8.13"E End: 27°53'14.57"S 29°58'6.95"E
19 – (c&i)	Impeding and diverting the natural flow	Berm 2 along Ngagane River (western side of rail line).	Berm 2	Portion 19	Berm 2 Start: 27°53'33.96"S 29°58'28.68"E End: 27°53'18.21"S

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
					29°58'26.36"E
20 – (c&i)	Impeding and diverting the natural flow	Emergency Spillway — overflow structure associated with the western PCD/dam, designed to discharge excess water during storm events. Located within 500m wetland buffer.	—	Portion 19	27°53'27.26"S 29°58'0.06"E
21	Impeding and diverting the natural flow	New Instream Flow Gauging Weir 2 — located in the Horn River downstream of passive treatment system. Used for flow measurement and compliance monitoring	Flow gauging structure	Portion 19	Start: 27°53'4.65"S 29°58'17.44"E End: 27°53'6.07"S 29°58'17.78"E
22	Impeding and diverting the natural flow	New Instream Flow Gauging Weir 1 — located in the Horn River downstream of passive treatment system. Used for flow measurement and compliance monitoring	Flow gauging structure	Portion 19	Start: 27°53'6.29"S 29°58'11.18"E End: 27°53'8.74"S 29°58'13.67"E
SECTION 21 (d) – Engaging in Stream Flow Reduction Activities					
23 – (d)	Engaging in stream flow reduction activity	Eucalyptus Tree Plantation — Category 1b invasive alien (GN R598, August 2014). AMD Decant Stream Flow Reduction	3.57 ha	Portion 19	27°53'21.91"S 29°58'1.27"E
SECTION 21 (f) – Discharging Waste or Water Containing Waste into a Watercourse					
24 – (f)	Discharging of effluent from mine related infrastructure into a watercourse	Aerobic Wetland 1 — final passive treatment step receiving treated AMD from the Bhekhani Passive Treatment Plant. Treated effluent discharges to Horn River. GN 1873 RQOs required within 12 months of commissioning.	1.3 ha Design Flow: 1,000m ³ /d Annual: 365,000m ³	Portion 25	27°53'22.97"S 29°57'47.24"E
25 – (f)	Discharging of effluent from mine related infrastructure	Aerobic Wetland 2 collects AMD water and provides time for metals and sediments to precipitate. West decant sump and old opencast	4.4 ha Approximately	Portion 19	Start: 27°53'16.77"S

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m ³ , tonnes and/or m ³ /annum)	Property Description	Co-ordinates
	into a watercourse	area contribute to these contaminated effluents.	178–255 m ³ /day		29°58'1.12"E End: 27°53'6.78"S 29°58'27.02"E
26 – (f)	Discharging of effluent from mine related infrastructure into a watercourse	Overflow structures associated with lined PCDs and western dam — excess water discharges via overflow weirs during high rainfall events.	Overflow weirs <i>Intermittent storm event discharge only. Spill frequency <1 in 50 years (GN 704 compliant)</i>	Portion 19	27°53'15.27"S 29°58'30.30"E
SECTION 21 (g) – Disposing of Waste in a Manner Which May Detrimentially Impact on a Water Resource					
27 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Discard Dump within 500m regulated wetland buffer area. Active spontaneous combustion confirmed on northern face.	12.2 ha	Portion 19	27°53'27.78"S 29°58'17.29"E
28 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Old opencast area located close to the Horn River and within the regulated area. Mining material remnants continue to leach AMD into the system.	43 200 m ³ /a	Portion 19	27°53'13.68"S 29°58'14.52"E
29.1 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 1 within 500m regulated wetland buffer area. Existing unlined earth dam. Retained as regular dam — GN 704 Reg. 4 exemption applied.	31,650 m ² ; 62,300 m ³	Portion 19	27°53'18.51"S 29°58'29.89"E
29.2 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 2 within 500m regulated wetland buffer area. Existing unlined earth dam. Retained as regular dam — GN 704 Reg. 4 exemption applied.	10,010 m ² ; 20,400 m ³	Portion 19	27°53'21.55"S 29°58'35.71"E

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
29.3 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 3 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner	7,090 m ² ; 15,500 m ³	Portion 19	27°53'25.39"S 29°58'38.07"E
29.4 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 4 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner (GNR 636).	3,800 m ² ; 6,800 m ³	Portion 19	27°53'28.28"S 29°58'37.38"E
29.4.1 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 4 Silt Trap — inlet silt trap associated with PCD 4. Captures and retains sediment-laden stormwater from an 8.8 ha catchment. Accumulated sediment (14.9 m ³ per 28-day cleaning interval) to be characterised and managed per GNR 635. Located within 500 m regulated wetland buffer area.	109 m ³ silt volume 14.9 m ³ per cleaning cycle	Portion 19	27°53'28.28"S 29°58'37.38"E
29.5 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 5 within 500m regulated wetland buffer area. Existing unlined earth dam. Retained as regular dam — GN 704 Reg. 4 exemption applied.	11,600 m ² ; 20,900 m ³	Portion 19	27°53'22.59"S 29°58'31.31"E
29.6 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 6 (Old Horn River Dam) within 500m regulated wetland buffer area. Largest on-site PCD. Existing unlined. Retained as regular dam — GN 704 Reg. 4 exemption applied.	45,900 m ² ; 143,700 m ³	Portion 19	27°53'28.54"S 29°58'31.90"E
29.7 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 7 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner (GNR 636).	3,700 m ² ; 5,600 m ³	Portion 19	27°53'34.07"S 29°57'59.87"E
29.8 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	PCD 8 within 500m regulated wetland buffer area. To be upgraded with Class C HDPE-Clay composite liner (GNR 636).	3,000 m ² ; 5,600 m ³	Portion 19	27°53'33.35"S 29°58'1.97"E

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
30 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Aerobic Wetland 1 collects AMD water and provides time for metals and sediments to precipitate. Iron hydroxide sludge accumulates — characterised per GNR 635 annually.	1.3 ha Iron hydroxide sludge accumulation approximately 50–100 mm/yr. Desludging every 5–7 years via scour valve.	Portion 25	27°53'22.97"S 29°57'47.24"E
31 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Aerobic Wetland 2 collects AMD water and provides time for metals and sediments to precipitate. Same sludge management obligations as Item 30.	4.4 ha Approximately 178–255 m ³ /day	Portion 19	27°53'9.66"S 29°58'11.51"E
32 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	West Decant PCD. — receives AMD decant from underground workings via existing surface drainage.	32,700 m ² ; 86,400 m ³	Portion 19Di	27°53'19.06"S 29°58'6.84"E
33 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Quantum Operations Screening, Crushing and Stockpile area. Dirty footprint — full operational area inclusive of screening plant, crusher, coal stockpiles and associated hardstand	2.93 ha	Portion 19	27°53'29.72"S 29°58'7.89"E
34.1 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Septic Tank 1 — Sewage storage (Kangra/siding operations only). Quantum uses mobile toilets.	10 000 L	Portion 19	27°53'31.03"S 29°58'5.70"E
34.2 – (g)	Disposing of waste in a manner which may detrimentally impact	Septic Tank 2 — Sewage storage (Kangra/siding operations only). Quantum uses mobile toilets.	5 000 L	Portion 19	27°53'31.40"S 29°58'7.59"E

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
	on a water resource.				
35 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Quantum PCD — disposal of dirty stormwater into a water containment facility. (New Quantum PCD).	1.8 ha 8,600 m ³	Portion 19	27°53'27.65"S 29°58'0.59"E
36 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Kangra Siding & Coal stockpile at Ballengeich Siding. 15-year operational life at 95,000 t/month.	540 000 tonnes/a	Portion 19	27°53'39.19"S 29°58'11.20"E
37 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Dirty water from PCDs used for dust suppression. (Haul Roads, Discard Dump, Siding)	38,400 m ³ /a	Portion 19	27°53'26.28"S 29°58'16.82"E
38 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Passive Treatment Plant (Bhekhani) — treated/partially-treated AMD disposal from passive treatment infrastructure. Iron hydroxide sludge classified per GNR 635.	1,000 m ³ /day. Iron hydroxide sludge precipitate generated	Portion 25	27°53'24.16"S 29°57'48.81"E
39 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Wash Bay — wash bay generates oily/contaminated wash water collected via silt and oil traps → dirty channel → New Quantum PCD.	5,000 L/day (150 m ³ /month)	Portion 19	27°53'33.19"S 29°58'9.53"E
40 – (g)	Disposing of waste in a manner which may detrimentally impact on a water resource.	Quantum Diesel Storage — 2,500 L fully bunded diesel tank on site.	2,500 L (fully bunded)	Portion 19	27°53'29.72"S 29°58'7.89"E
SECTION 21 (j) – Removing, Discharging or Disposing of Water Found Underground					
41 – (j)	Removing, discharging or	Seepage Dewatering Pipeline — 110mm subsoil drainage pipes collect seepage from discard dump toe, discharge to manholes and	Subsoil pipe perimeter;	Portion 19	27°53'24.10"S

Water Use Number	Water use(s)	Purpose	Capacity / Volume (m³, tonnes and/or m³/annum)	Property Description	Co-ordinates
	disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of the people.	pump to lined PCDs 3 and 4. Scenario 1 (dump rehabilitated) only.	pipeline ~200m to PCDs		29°58'26.19"E

Activities were identified and grouped as (a) compliant; (b) non-compliant (but unreasonable and/or impracticable to comply with); (c) partially compliant (but could reasonably and practicably be addressed) given the mining and associated activities. Kangra Coal (Pty) Ltd: Ballengeich Colliery implemented systems and processes to ensure that activities which would be non-compliant with GNR 704 (if retrospectively applied to those activities) do comply with GNR 704. The purpose of this application is to deal with those activities which could be deemed to be still non-compliant for which Ballengeich Colliery seeks exemption.

APPLICATION

Regulation 3 of GNR 704 provides that *“the Minister of Water Affairs may in writing authorize an exemption from the requirements of regulations 4, 5, 6, 7, 8, 10 and 11 on his or her own initiative or on application, subject to such conditions as the Minister may determine.”*

Kangra Coal (Pty) Ltd: Ballengeich Colliery, hereby in terms of the aforesaid section apply for exemption in respect of activities as listed in Annexure A attached hereto. (Please refer to the attached Annexure A in respect of the Exemptions sought). The basis for which exemption is sought in respect of other activities is for DWS to grant Ballengeich Colliery a reasonable period to enable the colliery to comply with GNR 704.

Kangra Coal (Pty) Ltd: Ballengeich Colliery, through this application does not negate its statutory duties and responsibilities toward obtaining an approved WULA, merely lodging this application as a measure to openly communicate areas of compliance concern, in so expecting to bridge the envisioned corrective action period.

CONCLUSION

In conclusion, Kangra Coal (Pty) Ltd: Ballengeich Colliery would like to emphasize the fact that Ballengeich Colliery is fully committed to environmental excellence and the maintenance of sound relationships with all its stakeholders. To date the relationship with DWS has been positive, open and transparent, which they hope to further enhance in future. The application serves as an attempt to do so and to create a firm foundation upon which water related applications will be judged. It is also our hope that this approach will assist the DWS in the implementation of its regulatory function going forward.

If there are any further queries in this regard, please feel free to contact this office.

Yours sincerely,



Johan Maré
Managing Director
M² Environmental Connections (Pty) Ltd

ANNEXURE A
MOTIVATION FOR GNR 704 EXEMPTION

***Motivation for
GN704R Exemption
For
Kangra Coal (Pty) Ltd:
Ballengeich Colliery***

March 2025



M²ENCO

1. INTRODUCTION

As per Departmental requirement the application for Exemption in terms of the GNR704, the Applicant has to submit the following information:

- Motivation and reason for exemption;
- Alternative proposal to the specific requirements of GN704;
- Impact assessment of alternative proposal;
- Management plan associated with alternative proposal; and
- Proposed performance assessment and monitoring techniques.

Kangra Coal (Pty) Ltd: Ballengeich Colliery hereby would like to submit the following report in an attempt to be compliant with the aforesaid Regulations.

1.1 METHODOLOGY AND APPROACH

As per General Condition contained in Appendix I of an issued Water Use Licence (WUL) an annual external audit is required to be conducted, and the report is required to be submitted to the Regional Head within one month of the finalisation of the audit.

The external audit was conducted on 14 December 2024 with the emphasis on the GNR 704 requirements as the Licensee intends to register a water uses license.

The following persons attended the GNR 704 Audit (please refer to **Table 1**).

Table 1: Details of the GNR 704 Auditors

Name	Qualification	Accreditation	Experience
Johan Maré	M.Sc	PriSciNat 400092/91 WISA 26251	37 years' experience in Water Resource Management
Hanjo Fourie	B. Sc	SACNASP 125420 National SASS5 Auditor	13 Years in Mining Rights and Environmental Authorisations

1.2 GNR 704 MOTIVATION

As stated earlier the departmental requirement as depicted in GNR 267 (promulgated on 24 March 2017) stipulates that all waste related water uses are subject to a GNR 704 motivation. The GNR 704 Regulations are applicable for mining related activities and the principles contained in the Regulations that are aimed at the protection of water resources needs to be adhered to. Various section 21 water uses are applicable to the historic coal mine and in this

instance the Regulations on restriction of locality, restrictions on the use of material, capacity requirements as well as protection of water resources needs to be addressed.

As illustrated in **Table 2** it is evident that the historic design principles applied on the majority of waste related water uses at the Ballengeich Colliery does not adhere to the requirements as contained in the GN 704 as well as latest GN 267 Regulations. It is however unexpected that waste related activities and associated mining rehabilitation will ultimately contributes towards environmental degradation.

2. GNR 704 AUDIT

The findings of the GNR 704 audit are contained in **Table 2** below.

Table 2: Compliance with GNR 704 Regulations

Reg No	Description	C	NC	PC	Motivation
Regulation 1: Definitions					
	All definitions as contained in the National Water Act, 1998 are applicable	X			Noted
Regulation 2: Information and notification					
(1)	Any person intending to operate a new mine or conduct any new activity must notify the Department of such intention not less than 14 days before the start of such operation or activity.	Noted			Not applicable. Ballengeich Colliery is a historic coal mining activity that is currently defunct. However, the mine still needs to inform the Regulatory Authorities regarding the rehabilitation of the site.
(2)	Any person in control of an existing mine or activity must-				
(a)	submit a copy of all amendments of their environmental management programme to the Department;	Noted			Applicant in the process of applying for the required authorisations. In terms of the NWA the stipulations as contained in GN 267 of March 2017 are followed. All documentation is to be submitted with the Water Use Licence Application Report.
(b)	notify the Department in writing 14 days before the temporary or permanent cessation of the operation of a mine or the conducting of an activity, or the resumption of such operation or activity;	X			Ballengeich Colliery has ceased mining activities during the late 1990's. The mine is since November 2013 engaged with the DWS regarding water pollution matters.
(c)	notify the Department by the fastest possible means of any emergency incident or potential emergency incident involving a water resource at or incidental to the operation of a mine or the conducting of any activity, furnishing information regarding-	X			Ballengeich Colliery has contingency measures in place in the event of an emergency. The issued Directives have been fully addressed with the accompanying Action Plans dated 2013, 2021 and 2025) for implementation submitted to the DWS for approval.

Reg No	Description	C	NC	PC	Motivation
	(i) the date and time of the incident;	X			Ballengeich Colliery has received a Directive to address the AMD that is decanting into the Horn River. A presentation was made to the DWS indicating the proposed alternatives to be considered for implementation. The preferred option entails the implementation of an artificial constructed wetland system consisting of SAPS, ALD, aerobic and anaerobic ponds. The supporting specialist studies are indicative of a high impact rating without mitigation and moderate with mitigation
	(ii) a description of the incident; remedial action taken or to be taken by the person in control of the mine or activity to remedy the effects of the incident; and	X			
	(iii) the source of the pollution or potential pollution;	X			
	(iv) the impact or potential impact on the water resource and the relevant water users;	X			
(d)	within 14 days after the date of an incident contemplated in paragraph (c) inform the Department in writing of measures taken to correct and prevent a recurrence of such incident.	X			Ballengeich Colliery has compiled an Action Plan which was subsequently updated to address the pollution matters of concern. The Action Plan was eventually approved subject to the submission of a WULA.
Regulation 3: Exemption from requirements of regulations					
	The Minister may in writing authorise an exemption from the requirements of regulations 4, 5, 6, 7, 8, 10 or 11 on his or her own initiative or on application, subject to such conditions as the Minister may determine.	X			Noted. Ballengeich Colliery intends to apply for exemptions on multiple regulations as stipulated in Regulation 3 of GNR 704.
Regulation 4: Restrictions on location					
(a)	locate or place any residue deposit, dam, reservoir, together with any associated structure or any other facility within the 1:100-year flood-line or within a horizontal distance of 100 metres from any watercourse or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked;		X		Ballengeich Colliery is a historic activity pre-dating the legislations, and it is therefore noted that the regulated area is located within the 1:100-year flood-line or within a horizontal distance of 100 metres from surrounding water sources. Flood lines have been determined and the updated SWMP has addressed mitigation measures for the Horn River diversion as well as for project activities occurring within the 1:100-year flood line as well as delineated wetland areas.
(b)	except in relation to a matter contemplated in regulation 10, carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood-line or within a horizontal distance of 100 metres from any watercourse or estuary, whichever is the greatest;		X		The Horn River has been diverted around the toe of the Old Discard Dump. The AMD decant point discharges to the altered Horn River drainage line. The constructed wetlands will be located within the riparian zone and associated wetlands of the altered Horn River drainage line. To this end a section 21 (c & i) water use is being applied for. Nevertheless, this is a brownfield

Reg No	Description	C	NC	PC	Motivation
					project, pre-dating the legislation. Therefore, exemption to this regulation is applied for.
(c)	place or dispose of any residue or substance which causes or is likely to cause pollution of a water resource, in the workings of any underground or opencast mine excavation, prospecting diggings, pit or any other excavation; or		X		Due to the nature of the activity, all discard material as well as pollution control dams are seen as sources of waste in accordance with the waste classification regulations, and do cause a threat to the environment. All of the historic infrastructure falls within the Horn River flood line that necessitate the implementation of a river diversion.
(d)	use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood-line of any watercourse or estuary.				Not applicable.
Regulation 5: Restrictions on use of material					
	No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource.			X	As part of the historic activities at Ballengeich, embankments of the PCD's were constructed with some carbonaceous material. The PCD's were only clay lined and due to the acidic nature of the water the walls and embankments had become porous causing leachate that seeps as a diffuse source of pollution towards the Horn River
Regulation 6: Capacity requirements of clean and dirty water systems					
	Every person in control of a mine or activity must-				
(a)	confine any unpolluted water to a clean water system, away from any dirty area;		X		The entire footprint of the Ballengeich Colliery complex is subject to a new civil engineered stormwater management plan designed to meet the requirements of GN704 Regulations. Due to lack of continuous maintenance, the old SWM system has compromised its integrity allowing for seepage dirty water seeping into clean water areas
(b)	design, construct, maintain and operate any clean water system at the mine or activity so that it is not likely to spill into any dirty water system more than once in 50 years;			X	The newly designed stormwater management plans need to be put in place which diverts clean water away from the dirty water footprint.
(c)	collect the water arising within any dirty area, including water seeping from mining operations, outcrops or any other activity, into a dirty water system;			X	Some containment of dirty water is in place but needs to be upgraded to comply.

Reg No	Description	C	NC	PC	Motivation
(d)	design, construct, maintain and operate any dirty water system at the mine or activity so that it is not likely to spill into any clean water system more than once in 50 years; and			X	The Stormwater management plan should address the design, construction and maintenance of all dirty water management systems to ensure that a spill will not occur more than once in 50 years.
(e)	design, construct, maintain and operate any dam or tailings dam that forms part of a dirty water system to have a minimum freeboard of 0.8 metres above full supply level, unless otherwise specified in terms of Chapter 12 of the Act.		X		The Stormwater management plan should address the design, construction and maintenance of any dam on the property dealing with dirty water to have a minimum freeboard of 0.8 metres. SWMP has been compiled, implementation is required in terms of the rehabilitation measures to be implemented.
Regulation 7: Protection of water resources					
	Every person in control of a mine or activity must take reasonable measures to-				
(a)	prevent water containing waste or any substance which causes or is likely to cause pollution of a water resource from entering any water resource, either by natural flow or by seepage, and must retain or collect such substance or water containing waste for use, re-use, evaporation or for purification and disposal in terms of the Act;		X		Stormwater management is as such that not all dirty water is contained. The mining product is carbonaceous of nature, and apart from containment of runoff in PCD's, pollution is expected from the AMD decant. Nevertheless, the Rehabilitation and associated water resource management plan should address the pollution of the Horn River.
(b)	design, modify, locate, construct and maintain all water systems, including residue deposits, in any area so as to prevent the pollution of any water resource through the operation or use thereof and to restrict the possibility of damage to the riparian or in-stream habitat through erosion or sedimentation, or the disturbance of vegetation, or the alteration of flow characteristics;			X	Some rehabilitation activities are taking place within the Horn River riparian area. However, the mine is still in the process to implement the full extent of the proposed rehabilitation and mitigatory measures
(c)	cause effective measures to be taken to minimise the flow of any surface water or floodwater into mine workings, opencast workings, other workings or subterranean caverns, through cracked or fissured formations, subsided ground, sinkholes, outcrop excavations, adits, entrances or any other openings;			X	During extreme rainfall events, the Horn River floods its banks and ultimately floods the floodplain wetland area. It is envisaged to construct the passive treatment system consisting of anaerobic and aerobic wetlands linked to a SAPS and ALD within the delineated wetland areas.
(d)	design, modify, construct, maintain and use any dam or any residue	X			All designs of infrastructure to be implemented as part of the

Reg No	Description	C	NC	PC	Motivation
	deposit or stockpile used for the disposal or storage of mineral tailings, slimes, ash or other hydraulic transported substances, so that the water or waste therein, or falling therein, will not result in the failure thereof or impair the stability thereof;				Rehabilitation Plan are done in accordance with ECSA approved engineering designs
(e)	prevent the erosion or leaching of materials from any residue deposit or stockpile from any area and contain material or substances so eroded or leached in such area by providing suitable barrier dams, evaporation dams or any other effective measures to prevent this material or substance from entering and polluting any water resources;			X	The mine infrastructure design of the 1960's is not compatible with the latest environmental requirements. Over the years the water resource management measures at the defunct mine have eroded away but still in place to contain the bulk of the runoff water
(f)	ensure that water used in any process at a mine or activity is recycled as far as practicable, and any facility, sump, pumping installation, catchment dam or other impoundment used for recycling water, is of adequate design and capacity to prevent the spillage, seepage or release of water containing waste at any time;	X			Ballengeich Colliery is dedicated to water re-use and recycling. All water used during dust suppression is sourced from the PCD's (i.e. contained stormwater). As part of interim mitigation measures the decant water is also piped to a PCD to reduce the discharge to the Horn River
(g)	at all times keep any water system free from any matter or obstruction which may affect the efficiency thereof; and			X	Maintenance Plan for the efficient management of obstructions should be updated. External physical pollutants (i.e. debris) greatly impacts the stormwater drains.
(h)	cause all domestic waste, including wash-water, which cannot be disposed of in a municipal sewage system, to be disposed of in terms of an authorisation under the Act.	X			Conservancy tanks are in place in regularly scheduled cleanup and maintenance.
Regulation 8: Security and additional measures					
	Every person in control of a mine or activity must-				
(a)	cause any impoundment or dam containing any poisonous, toxic or injurious substance to be effectively fenced-off so as to restrict access thereto, and must erect warning notice boards at prominent locations so as to warn persons of the hazardous contents thereof;	X			All areas are well demarcated (i.e. boarded and signed) and strict access control is in place.
(b)	ensure access control in any area used for the stockpiling or disposal of any residue or substance which causes, has caused or is likely to cause pollution of a water resource	X			

Reg No	Description	C	NC	PC	Motivation
	so as to protect any measures taken in terms of these regulations;				
(c)	not allow the area contemplated in paragraph (a) and (b) to be used for any other purpose, if such use causes or is likely to cause pollution of a water resource; and	X			
(d)	protect any existing pollution control measures or replace any existing pollution control measures deleteriously affected, damaged or destroyed by the removing or reclaiming of materials from any residue deposit or stockpile, and establish additional measures for the prevention of pollution of a water resource which might occur, is occurring or has occurred as a result of such operations.	X			All areas are well demarcated (i.e. boarded and signed) and strict access control is in place. In addition to this a SWMP has been included in support of the Water Use Licence Application.
Regulation 9: Temporary or permanent cessation of mine or activity					
(1)	Any person in control of a mine or activity must at either temporary or permanent cessation of operations ensure that all pollution control measures have been designed, modified, constructed and maintained so as to comply with these regulations.	Noted			Stormwater management plans will ensure that all proposed interventions are of a passive nature and should be easily implementable.
(2)	Any person in control of a mine or activity must ensure that the in-stream and riparian habitat of any water resource, which may have been affected or altered by a mine or activity, is remedied so as to comply with these regulations.	X			Kangra Coal committed themselves to the safeguarding of the environment by appointing M ² Environmental Connections (Pty) Ltd (MENCO), GCS Water and Environmental Consultants (Pty) Ltd (GCS), Bhekhani Engineers (Pty) Ltd and Eco-Pulse (Pty) Ltd to ensure compliance with the regulations.
(3)	On either temporary or permanent cessation of a mine or activity the Minister may request a copy of any surface or underground plans as required in terms of the MPRDA, 1998.	Noted			Requirement noted, even though no mine closure is in sight.
Regulation 10: Additional regulations relating to winning sand and alluvial minerals from watercourse or estuary					
(1)	No person may-				
(a)	extract sand, alluvial minerals or other materials from the channel of a watercourse or estuary, unless reasonable precautions are taken to- (i) ensure that the stability of the watercourse or estuary is not				Not Applicable

Reg No	Description	C	NC	PC	Motivation
	affected by such operations; (ii) prevent scouring and erosion of the watercourse or estuary which may result from such operations or work incidental thereto; (iii) prevent damage to in-stream or riparian habitat through erosion, sedimentation, alteration of vegetation or structure of the watercourse or estuary, or alteration of the flow characteristics of the watercourse or estuary; or				
(b)	establish any slimes dam or settling pond within the 1:50 year flood-line or within a horizontal distance of 100 metres of any watercourse or estuary				Not applicable
(2)	Every person winning sand, alluvial minerals or other materials from the bed of a watercourse or estuary must-				Not Applicable
(a)	construct treatment facilities to treat the water to the standard prescribed in Government Notice No. R.665 dated 6 September 2013 as amended or by any subsequent regulation under the Act before returning the water to the watercourse or estuary;				Not Applicable
(b)	limit stockpiles or sand dumps established on the bank of any watercourse or estuary to that realised in two days of production, and all other production must be stockpiled or dumped outside of the 1:50 year flood-line or more than a horizontal distance of 100 metres from any watercourse or estuary; and				Not Applicable
(c)	implement control measures that will prevent the pollution of any water resource by oil, grease, fuel or chemicals				Not Applicable
Regulation 11: Additional regulations for rehabilitation of coal residue deposits					
	Any person mining or establishing coal residue deposits must rehabilitate such residue deposits so that-				
(a)	all residue deposits are compacted to prevent spontaneous combustion and minimise the infiltration of				As per Directive instruction, the Old Discard Dump footprint will be reworked and reduced to minimise

Reg No	Description	C	NC	PC	Motivation
	water; and				the pollution impact
(b)	the rehabilitation of the residue deposits is implemented concurrently with the mining operation.				Kangra Coal inherit the Old Discard Dump stemming from the ceased mining operations at Ballengeich. No concurrent rehabilitation was done and taking into account the environmental liability, Kangra has opted to rehabilitate the dump concurrently with the rehabilitation of the AMD decant area
Regulation 12: Technical investigation and monitoring					
(1)	The Minister may, after consultation with the Department of Mineral Resources and the Department of Environmental Affairs and Tourism, in writing require any person in control of a mine or activity to arrange for a technical investigation or inspection, which may include an independent review, to be conducted on any aspect aimed at preventing pollution of a water resource or damage to the in-stream or riparian habitat connected with or incidental to the operation or any part of the operation of a mine or activity.	Noted			
(2)	Such investigation must be conducted and a report thereon compiled in the manner and within the time period that the Minister may specify.	Noted			
(3)	The person in control of the mine or activity must inform the Minister as to the expertise and qualifications of the persons who are to conduct an investigation or inspection contemplated in sub-regulation (1) before the commencement thereof.	X			The mining activity pre-dates the legislation. However, Menco and JFK Consulting Engineers will conduct GN704 audit on a yearly basis, while also updating the IWWMP annually. Monitoring will be conducted monthly and all documentation will be submitted to the regulatory authority.
(4)	The Minister may in writing require any person in control of a mine or activity to submit a programme of implementation to prevent or rectify any pollution of a water resource or damage to the in-stream or riparian habitat as recommended by the investigation contemplated in sub-regulation (1) within the time period that the Minister may specify.	X			Kangra Coal (Pty) Ltd has committed itself to the environment by employing professional service providers to manage and implement all activities surrounding invasive control and site rehabilitation. However, if any further Directives are received, Kangra Coal (Pty) Ltd will deal with the matter accordingly, by approaching specialists within the appropriate fields.
(5)	The Minister may in writing direct any person in control of a mine or activity to implement a compliance	Noted			A newly reinstated and comprehensive monitoring programme is in place as stated in

Reg No	Description	C	NC	PC	Motivation
	monitoring network to monitor the programme of implementation contemplated in sub-regulation (4), through establishing, operating and maintaining monitoring installations of a type, at the locations and in the manner specified by the Minister and to submit the monitoring information and results to the Minister for evaluation.				Regulation 12: (3).
(6)	Subject to Chapter 4 of the Act, any person in control of a mine or activity must submit plans, specifications and design reports approved by a professional engineer to the Minister, not later than 60 days prior to commencement of activities relating to-				Plans have been completed. Following approval from DWS, these plans will be implemented accordingly.
(a)	the construction of any surface dam for the purpose of impounding waste, water containing waste or slurry, so as to prevent the pollution of a water resource;				
(b)	the implementation of any pollution control measures at any residue deposit or stockpile, so as to prevent the pollution of a water resource; and				
(c)	the implementation of any water control measures at any residue deposit or stockpile, so as to prevent the pollution of a water resource.				
Regulation 13: General					
	The person in control of a mine or activity must provide the manager with the means and afford him or her every facility required to enable the manager to comply with the provisions of these regulations.	X			Regular mine management meetings are scheduled.
Regulation 14: Offences and Penalties					
(1)	Any person who contravenes or, subject to regulation 3, fails to comply with regulation 2, 4, 5, 6, 7, 8, 9, 10, 11, 12 or 13 is guilty of an offence and liable on conviction to a fine or to imprisonment for a period not exceeding five years.				Even though defunct mining activities pre-dates the legislations, all reasonable steps are taken to comply.
(2)	Whenever an act or omission by a manager or employee of a mine or activity-				

Reg No	Description	C	NC	PC	Motivation
(a)	constitutes an offence in terms of these regulations, and takes place with the express or implied permission of the person in control of a mine or activity, that person is, in addition to the manager or employee, liable to conviction for that offence; or	Noted			
(b)	would constitute an offence by the person in control of a mine or activity in terms of these regulations that manager or employee is, in addition to that person, liable to conviction for that offence.	Noted			

3 ALTERNATIVE PROPOSAL

As can be seen from the GNR 704 audit conducted at Ballengeich Colliery, there are several contraventions that have manifested within the footprint of the regulatory area. This is due to the fact that the mining facility has commenced with its operation prior to the promulgation of the IWWMP requirements. The GNR 704 regulations in itself were promulgated with the emphasis on water resource to ensure that mining activities comply with the set conditions of their issued authorisations.

Regulation 4: Restrictions on location

As Ballengeich Colliery was operational since the early 1960's it pre-dates the requirements as stipulated in GNR 704. As the mining operations have ceased in 1990 without closure, several matters of concern were raised that relates to prevention of pollution causing degradation of the receiving environment. As the historic mining infrastructure cannot be changed, the layout of the mine in relation to the Horn River necessitates the application for Exemption from Regulation 4. In this instance a Feasibility Analysis was conducted to determine to assist with decision making (refer **Table 3**).

Table 3: Feasibility Analysis for Ballengeich

Alternative / Option	Impact
Containment on site	Water recirculates with increased deterioration in water quality, increased risk of decanting and acidification, additional cost for appropriate infrastructure (HDPE lined PCD)
Treatment	RO Plant cost – (250m ³ /day): • Own and Operate • R 30 000 000 – Capex • R 15/m³ – Opex • Outsourced • R 25/m³

Alternative / Option	Impact
No Go	Kangra already invested several R Million into the project, operating at a loss currently. Obligated to adhere to Directive
Limestone Trench and constructed wetlands	Limestone trench effective for 15 years Capex – R 2 500 000 Need 4-6 hectares of wetland to treat 1MI of AMD discharge (retention time – 90 days)

Due to several practical implications such as lack of electricity to the site, access control and fencing and no active mining in the area, it was opted to implement a passive treatment system. **Table 4** reflects the various options considered and based on the efficiency of the passive treatment; a combination of passive treatments systems was selected. The selected system will be a combination of aerobic and anaerobic wetlands, Successive Alkaline Producing System (SAPS) and an Anoxic Limestone Drain (ALD).

Table 4: Passive Treatment Options

Treatment Type	Before	After	Efficiency
Aerobic Wetlands	pH 2.9 CaCO ₃ 445 mg/l Fe 45 mg/l Al 24 mg/l	pH 3.2 CaCO ₃ 254 mg/l Fe 22.5 mg/l Al 4 mg/l	↑ 43% 50% 83%
Anaerobic wetlands (limestone bed)	pH 3.0	pH 7.0	↑ Effective for small volume AMD treatment
Anoxic Limestone Drains	pH < 5.0 CaCO ₃ 2200 mg/l Fe 60 mg/l Al 5 mg/l Mn 10 mg/l	pH > 6.0 CaCO ₃ 170 mg/l Fe 50 mg/l Al <1mg/l Mn 5 mg/l	↑ 50 – 80% 20% 80% 50%
Successive Alkalinity Producing Systems (SAPS)	pH 4.0 CaCO ₃ 320 mg/l Fe 60 mg/l Mn 10 mg/l Al 5 mg/l	pH 5.9 CaCO ₃ 93 mg/l Fe 3 mg/l Mn 5 mg/l Al < 1mg/l	↑ 70% 95% 50% 80%
Limestone ponds	Recommended for low DO water		
Open Limestone Channels	pH 2.7 CaCO ₃ 1290 mg/l Fe 622 mg/l Mn 49 mg/l Al 158 mg/l	pH 2.9 CaCO ₃ 884 mg/l Fe 210 mg/l Mn 42 mg/l Al 103 mg/l	→ 31% 66% 14% 35%
Bioremediation	pH 6.0 CaCO ₃ 1500 mg/l Fe 18 mg/l	pH 8.0 CaCO ₃ 1160 mg/l Fe < 1 mg/l	↑ 20% 95%
Limestone and Sand	pH 6.0	pH >6.0	↑

In terms of Regulation 5 *“No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource.”*

The anaerobic wetland system requires an organic layer which needed to be incorporated into the system for the removal of metal hydroxides. Organic matter will be harvested from the Eucalyptus trees on site. The construction of stormwater berms as well as wetland ponds is likely to be done with the material available at the mine.

4 IMPACT ASSESSMENT OF PROPOSED ALTERNATIVE

The compiled IWWMP (MENCO, 2025) contained a complete Environmental Impact Assessment on all activities related to the rehabilitation measures to be implemented. **Table 5** contains the risk impact assessment

Regulation 4: Restrictions on location

The alternative proposal basically entails that all AMD decant water that discharges towards the Horn River be managed and treated on site and adjacent to the water resource in line with the proposed passive treatment system (i.e. SAPS, ALD, aerobic and anaerobic constructed wetlands).

As illustrated in **Table 5**, certain impacts related to this proposed activity are considered low and could be implemented in accordance with the specifications as contemplated in Appendix A of GN 4167 of 8 December 2023. As the AMD on site primarily contains pollutants such as low pH, high salinity, sulphates and mobilised metals, (i.e. Al, Fe, Mn), degradation of the receiving environment could occur. The civil engineering design report describes the proposed passive treatment infrastructure to be constructed. In the IWWMP report, design specifications are given for the Successive Alkaline Producing System, Anoxic Limestone Drain as well as the aerobic and anaerobic wetland ponds. This infrastructure is mainly located within the riparian zone of the Horn River as well as a delineated floodplain wetland. As the design requires the construction of the passive treatment system at the area where AMD contamination is occurring, it is essential that exemption be granted from Regulation 4 to allow the construction of the treatment system within the floodplain of the Horn River.

The proposed passive treatment system has been sized to provide sufficient capacity for adequate retention time to stabilize and neutralize the acidic decant prior to discharge to the Horn River. The passive treatment system will be designed to cater for incoming flow of 1,000m³/day. Suitable material will be selected on site, constructed to the required 600 mm

clay base layer with a 2mm HPPE geotextile lining complying with SANS 10409 and A4 geotextile.

The aerobic wetland ponds will also be provided with a minimum freeboard of 600 mm and will be provided with a total surface area of 670 m². The design is based on a 24-hour retention time at the design flow of 1,00m³/d. Flow distributing inlets will be included with scour valves for desludging. The HDPE lining will be to the same detail as mentioned above.

The use of “natural systems” is proposed due to their simplicity of operation and low maintenance requirements. The implementation of various passive treatment systems in series enhances the treatment capacity of natural treatment to acceptable quality according to (BPG H4: Water treatment). The advantages and disadvantages of natural treatment systems are listed below.

Advantages:

- Civil works limited to earthworks and HDPE linings, no major structures required.
- Totally natural system, no external energy input required.
- No electricity required for operation.
- Limited chemicals required for operation – only disinfectant required.
- Very low maintenance costs, no mechanical or electrical equipment required.
- Very low operational costs, limited supervision and operator input required.
- Will continue working even if severely neglected.
- Provides a good quality effluent that complies with General Limit values if not overloaded.
- Scenically attractive and provides a good habitat for birds.
- Long life expectancy, in excess of 30 years

Disadvantages:

- Large footprint, significantly more land required than for conventional type plants
- Sensitive to effective pre-treatment, requires good screening and primary settlement to avoid solids blocking the reed bed growth media or primary ponds filling up with solids.
- Reeds need to be cut and harvested on an annual basis
- Requires expert design and construction.
- Sensitive to toxins entering the plant with wastewater, plants and active bacteria may die.
- Odours can be problematic due to anaerobic nature of some ponds, exude hydrogen sulphide.
- Requires secure fencing as deep ponds pose a risk for drowning if open to the public.

- Primary anaerobic ponds need to be desludged once every 5 to 7 years due to accumulation of non-biodegradable solids on pond floor over time.
- Initial capital costs higher than for conventional systems of same capacity due to large footprint.

Regulation 5: Restrictions on use of material

As mentioned before, the proposed alternative would be to grant Ballengeich Colliery exemption to allow for the reworking of the discard and overburden material. The only potential impact of such a practice would be sedimentation in increased waste load of water found in the PCD. Ultimately sediment and pollutants are allowed to settle out prior to seepage water being neutralised by the constructed ALD below the level of the seepage zone at the PCD complex. The seep water will move through the ALD and report to the constructed aerobic wetland resulting in an acceptable level of neutralised AMD prior to discharge to the Horn River. In addition, the already mentioned passive water treatment system will also reduce the toxic metal load to the receiving environment.

Table 5: Risk Assessment Matrix for Section 21 (c) and (i) Water Use activities - Version 2.1.1

Immediate Section 19 Activities								
No	Phase	Activity	Impact	Mitigation Measures		WOM	WM	
1	P&C	Installation of WQ monitoring stations at strategic points	Minor disturbance during installation; Obtain WQ data on Horn & Ngagane River	Hand Installation Methods; Work during low flow periods; Minimal footprint disturbance and completion on the same day	Intensity: (Max = 10)	4	2	
					Spatial: (max = 5)	1	1	
					Duration: (max = 5)	1	1	
					Severity: (max = 20)	6	4	
					Importance: (max = 5)	4	4	
					Consequence: (max =100)	24	16	
					Likelihood: (0 – 100%)	40	40	
					Significance: (max = 100)	9,6	6,4	
					Risk Rating:	Low	Low	
2	P&C	Rehabilitation of erosion areas	Riparian and riverbank channels have been significantly disturbed by river diversion as well as erosion over an extended time period.	Rehabilitation measures for river banks such as brush mattresses and revegetation of native trees, shrubs and grasses. Sustainable soil management actions will also reduce erosion while soil removal also encourages along the river banks before re-establishments activities could commence.	Intensity: (Max = 10)	8	6	
					Spatial: (max = 5)	4	4	
					Duration: (max = 5)	4	4	
					Severity: (max = 20)	16	14	
					Importance: (max = 5)	4	4	
					Consequence: (max =100)	64	56	
					Likelihood: (0 – 100%)	80%	80%	
					Significance: (max = 100)	51,2	44,8	
					Risk Rating:	Moderate	Moderate	
3	C	Implementation of Bio-monitoring points	Impacts from defunct decant as well as leaching from the PCD's as well as sumps on-site have physio-chemical impacts on the aquatic macro invertebrate diversity of the Horn River which could also have potential further downstream impacts on the Ngagane River.	Site based specific ecological indices are used to quantify on-site impacts effect on aquatic macro invertebrates by comparing upstream and downstream bio-monitoring data. Bio-monitoring is also considered as an accurate index to assess changes in the overall PES and could relate specific changes in aquatic assemblages to changes in habitat and water quality on a more specific site related basis.	Intensity: (Max = 10)	4	4	
					Spatial: (max = 5)	1	1	
					Duration: (max = 5)	2	2	
					Severity: (max = 20)	7	7	
					Importance: (max = 5)	4	4	
					Consequence: (max =100)	28	28	

Your Management, Monitoring and Environmental Connection

Immediate Section 19 Activities							
No	Phase	Activity	Impact	Mitigation Measures		WOM	WM
					Likelihood: (0 – 100%)	60%	40%
					Significance: (max = 100)	16,8	11,2
					Risk Rating:	Low	Low
4	C	Emergency maintenance of existing berms and channels on site and along the Horn River	Temporary sediment release. Significant erosion channels have formed downstream of Ballengeich infrastructure which drains into the Horn River.	Work during dry periods; Implement sediment control measures	Intensity: (Max = 10)	8	4
					Spatial: (max = 5)	2	2
					Duration: (max = 5)	1	1
					Severity: (max = 20)	11	7
					Importance: (max = 5)	4	4
					Consequence: (max =100)	44	28
					Likelihood: (0 – 100%)	100	60%
					Significance: (max = 100)	44	16,8
					Risk Rating:	Moderate	Low
Construction Activities							
5	C	Instream weir rehabilitation	The current flow regime, AMD and sedimentation within the Horn River is exacerbated by the presence of weir systems. Weirs can cause sediment to accumulate upstream, reducing the sediment load downstream This can lead to erosion and habitat degradation downstream	Mitigation measures such as sediment bypass systems, sediment traps, sediment stabilisation methods as well as continual sediment and water quality monitoring should be implemented.	Intensity: (Max = 10)	8	6
					Spatial: (max = 5)	2	2
					Duration: (max = 5)	2	2
					Severity: (max = 20)	12	10
					Importance: (max = 5)	5	4
					Consequence: (max =100)	60	40
					Likelihood: (0 – 100%)	60%	60%
					Significance: (max = 100)	36	24
					Risk Rating:	Moderate	Low
6	C	Construction of passive wetland system	Proper design and placement are crucial for the success of a passive treatment system; It needs to mimic natural wetland conditions as closely as possible	Hydrological management could be improved to mimic wetland conditions while the wetlands will serve as an important buffer zone to AMD. The degraded areas will also be restored to reference natural ecological state.	Intensity: (Max = 10)	10	-8
					Spatial: (max = 5)	3	3
					Duration: (max = 5)	4	4
					Severity: (max = 20)	17	-15

Your Management, Monitoring and Environmental Connection

Immediate Section 19 Activities							
No	Phase	Activity	Impact	Mitigation Measures		WOM	WM
					Importance: (max = 5)	5	4
					Consequence: (max =100)	85	-60
					Likelihood: (0 – 100%)	80%	60%
					Significance: (max = 100)	68	-36
					Risk Rating:	High -	High +
7	C	Dust suppression of remediation activities	Particles can settle on surface water bodies leading to increased sedimentation. Utilisation of water of impaired quality contributes towards increased diffuse pollution. This can smother aquatic habitats, reduce light penetration and disrupt growth of aquatic plants	Dust monitoring should be implemented on a monthly basis in order to establish dust fallout extent on receiving environment. PCD water could be used in the form of dust suppression on the haul roads as well as other infrastructure.	Intensity: (Max = 10)	6	4
					Spatial: (max = 5)	2	2
					Duration: (max = 5)	4	4
					Severity: (max = 20)	12	10
					Importance: (max = 5)	4	4
					Consequence: (max =100)	48	40
					Likelihood: (0 – 100%)	60%	60%
					Significance: (max = 100)	28,8	24
					Risk Rating:	Low	Low
8	C	Stormwater management	Dirty water run-off from mining activities is not controlled in all areas on-site and as a result mine waste water is entering the Horn River system on an uncontrolled basis.	Additional diversion berms and canals could be implemented as well as establishing additional vegetative buffers. Regular maintenance should also be conducted as part of this process.	Intensity: (Max = 10)	10	8
					Spatial: (max = 5)	2	2
					Duration: (max = 5)	4	4
					Severity: (max = 20)	16	14
					Importance: (max = 5)	5	4
					Consequence: (max =100)	80	56
					Likelihood: (0 – 100%)	100%	60%
					Significance: (max = 100)	80	33,6
					Risk Rating:	High	Moderate
Operational Phase							
9	O	Decommissioning of eucalyptus trees for implementation of passive wetland	Initial disturbances could lead to increased erosion as well as soil disturbances. Long term impacts could improve soil stabilisation and	Gradual removal of trees should be implemented while also ensuring that the removed trees are replaced with native vegetation. Ensure proper	Intensity: (Max = 10)	4	-4
					Spatial: (max = 5)	2	2

Your Management, Monitoring and Environmental Connection

Immediate Section 19 Activities								
No	Phase	Activity	Impact	Mitigation Measures		WOM	WM	
		system	could also lead to biodiversity enhancements. Materials will be used as mulch materials as part of the passive wetland.	water management practices are in place to support the wetland ecosystem.	Duration: (max = 5)	2	2	
					Severity: (max = 20)	8	8	
					Importance: (max = 5)	3	3	
					Consequence: (max =100)	24	24	
					Likelihood: (0 – 100%)	100%	60%	
					Significance: (max = 100)	24	14,4	
					Risk Rating:	Low	High +	
					Intensity: (Max = 10)	10	8	
10	O	Old discard dump rehabilitation and/or removal	Materials of old discard dump such as heavy metals and sulphides are leaching into Old Horn River as well as surrounding PCD's which further deteriorates the water quality of these surface water sources.	The material could be removed and disposed of at a regulated waste disposal facility. Alternatively planting native vegetation on the discard dumps to stabilize the soil, reduce erosion, and improve aesthetics.	Spatial: (max = 5)	3	3	
					Duration: (max = 5)	4	4	
					Severity: (max = 20)	17	15	
					Importance: (max = 5)	5	4	
					Consequence: (max =100)	85	60	
					Likelihood: (0 – 100%)	100%	60%	
					Significance: (max = 100)	85	36	
					Risk Rating:	High	Moderate	
11	O	Improving dongas and erosion channels on roads and access infrastructure	Infrastructure and access roads are significantly impacted by dongas intersecting these areas and also creates additional steeper surface water run-off channels which further leads to flooding and erosion activities.	These areas should be filled up with soil while applying mitigation measures such as contour ploughing, terracing as well as mulching to ensure an additional protection layer for future erosion and exposed soil events.	Intensity: (Max = 10)	6	6	
					Spatial: (max = 5)	2	2	
					Duration: (max = 5)	3	3	
					Severity: (max = 20)	11	11	
					Importance: (max = 5)	5	4	
					Consequence: (max =100)	55	44	
					Likelihood: (0 – 100%)	80%	40%	
					Significance: (max = 100)	44	17,6	
12	O	Continual bi-annual	Impacts from defunct decant as well	Aquatic ecological assessments should	Risk Rating:	Moderate	Low	
					Intensity:	4	4	

Your Management, Monitoring and Environmental Connection

Immediate Section 19 Activities							
No	Phase	Activity	Impact	Mitigation Measures		WOM	WM
		aquatic ecological assessments	as leaching from the PCD's as well as sumps on-site have physio-chemical impacts on the aquatic macro invertebrate diversity of the Horn River which could also have potential further downstream impacts on the Ngagane River.	be conducted on a bi-annual basis. Once during the wet season and once during the dry season to take seasonable variability into account. Continual assessments will also help to establish a baseline to make more accurate comparisons in terms of changes in specific environmental indices.	(Max = 10) Spatial: (max = 5) Duration: (max = 5) Severity: (max = 20) Importance: (max = 5) Consequence: (max = 100) Likelihood: (0 – 100%) Significance: (max = 100) Risk Rating:	3 3 10 4 40 40% 16	3 3 10 4 40 40% 16
13	O	Surface water monitoring program	Water quality data upstream and downstream within the Horn and Ngagane River should be obtained as well as any mine related surface water infrastructure which impacts these aquatic ecosystems. Mine waste water, AMD as well as the decant are all site-specific sources which contribute towards the need for surface water monitoring.	A monitoring programme should be established to include surface water points upstream and downstream of the Colliery and should also monitor the water quality of the surface water infrastructure on-site. Monthly surface water monitoring should be conducted on a continual basis.	Intensity: (Max = 10) Spatial: (max = 5) Duration: (max = 5) Severity: (max = 20) Importance: (max = 5) Consequence: (max = 100) Likelihood: (0 – 100%) Significance: (max = 100) Risk Rating:	8 3 2 13 5 65 80% 52	6 3 2 11 4 44 40% 17,6
Decommissioning Phase							
14	D	Rehabilitation and post closure plan	An important WUL condition will be to ensure that continual rehabilitation is being done with each change/completion of any mining activity. It is important to ensure that the impacted habitat is restored to its natural state when mine closure activities are in effect.	It is recommended that continual progressive rehabilitation activities are conducted. It is important to ensure that soil stabilisation activities are being implemented while impacted areas are also being revegetated.	Intensity: (Max = 10) Spatial: (max = 5) Duration: (max = 5) Severity: (max = 20) Importance: (max = 5) Consequence: (max = 100) Likelihood: (0 – 100%)	10 3 5 18 5 90 80%	8 3 3 14 3 42 60%

Your Management, Monitoring and Environmental Connection

Immediate Section 19 Activities							
No	Phase	Activity	Impact	Mitigation Measures		WOM	WM
					Significance: (max = 100)	72	25,2
					Risk Rating:	High	Low
15	D	Habitat restoration	All habitat within the mining footprint on-site as well as close to the river systems have to be restored to its original state to ensure environmental sustainability.	Longterm solutions should be put in place to ensure the minimisation of erosion and habitat degradation. Revegetation and soil stabilisation measures should be initiated while continual monitoring of surface water should be prioritised.	Intensity: (Max = 10)	8	6
					Spatial: (max = 5)	3	3
					Duration: (max = 5)	5	3
					Severity: (max = 20)	16	12
					Importance: (max = 5)	5	4
					Consequence: (max =100)	80	48
					Likelihood: (0 – 100%)	80%	60%
					Significance: (max = 100)	64	28,8
					Risk Rating:	High	Low
					Intensity: (Max = 10)	8	8
16	D	Stream/river channel restoration	The continual impact of mining over a prolonged period has resulted in stream diversions taking place (particularly the Horn River). The natural geomorphological characteristics associated with the new stream channel is in a deprived state when being compared to reference conditions.	Re-establishing the natural channel form, function, and processes of the stream. This may involve reshaping the channel, adding meanders, and creating riffles and pools. Using techniques like bioengineering, riprap, and vegetative buffers to stabilize stream banks and prevent erosion	Spatial: (max = 5)	3	3
					Duration: (max = 5)	3	3
					Severity: (max = 20)	14	14
					Importance: (max = 5)	5	4
					Consequence: (max =100)	70	56
					Likelihood: (0 – 100%)	80%	60%
					Significance: (max = 100)	56	33,6
					Risk Rating:	Moderate	Moderate

5. MANAGEMENT PLAN OF PROPOSED ALTERNATIVE

Ballengeich Colliery must implement the Integrated Waste Water Management Plan (IWWMP) within the next six months following issuance of a Water Use License. The rehabilitation plan inclusive of the updated stormwater management plan (JFK, 2025) should take into consideration all regulations stipulated in the GNR 704 Audit. Waste water management infrastructure should also undergo regular monitoring and maintenance. The IWWMP includes an Action Plan that is to be implemented and updated on an as and when needed basis. These actions are aligned with both regulation for which exemption is required.

6 PERFORMANCE ASSESSMENT AND MONITORING

As detailed in the IWWMP the applicant shall be responsible for the implementation of a comprehensive Aquatic Ecological Monitoring Program to assess the performance of the passive waste treatment plant on a pilot scale. The program should include but not be limited to the following:

- Monitoring according to Wet-Health (Level 2);
- Surface water monitoring (monthly) to ensure compliance with set RQO's;
- Continuous monitoring for selected parameters (EC, TDS, pH, SO₄, Al, Fe, Mn) during periods of discharge
- SASS5 on a biannual basis;
- DEEEP Toxicology of sediments on an annual basis;
- Annual update of the IWWMP

It is further recommended that the applicant perform as part of their internal audit a performance audit on compliance with GNR 704 Regulations in order to monitor progress with stormwater management measures.

7 CONCLUSIONS

The project site has several wetland units that needs to be protected in terms of environmental legislation. However, based on the wetland soils and vegetation present within the wetland areas a review of historical imagery indicates that the delineated wetland units within the study area are in fact artificial in origin. The pan feature (Eco-Pulse Unit DP-01) was artificially excavated in the past as part of the establishment and operation of the mine and as such is a relict pollution control dam feature. Unit CVB-01 was created by the diversion and impoundment of the old Horn River channel that resulted in back flooding and the occurrence of permanently saturated soil conditions over a number of years.

The habitat associated with both of the wetland units is severely degraded with limited wetland vegetation cover. The limited vegetation cover present comprises secondary, sparsely vegetated pioneer wetland vegetation. The reasons for the severe degeneration appear to be a result of intense overgrazing and possibly a high level of soil contamination exacerbated by seepage from the PCD complex into the riparian vegetation zone of the Horn River.

Furthermore, based on observations at site, it is clear that the ecological importance and biodiversity maintenance value of the delineated wetland areas is low. In terms of regulating and supporting ecosystem services it is speculated, based on the hydro-geomorphic setting, that the depression could provide some flood attenuation services as it is a depression located on a terrace that could provide flood storage, as well as some water quality enhancement services associated with the capturing of floods and/or seepage from the upstream PCDs. In terms of direct services, the depression appears to be providing moderately important winter (drought) grazing for local livestock. In light of this, reinstating the depression wetland as a PCD would likely not cause significant impacts to the ecological value and regulating and supporting services supplied by the depression. However, such a reinstatement would result in the loss of grazing area / food for livestock.

Insofar it relates to the introduction of artificial constructed passive wetland systems within the delineated area of the flood plain wetland, the function of the natural wetland will not be compromised. The passive constructed wetland treatment system will enhance the ecoservices rendered by the flood plain wetland in terms of:

- Flood attenuation;
- Flow modification;
- Water quality improvement;
- Sediment trapping;
- Toxicant removal;
- Nitrate removal;
- Erosion control;
- Maintenance of biodiversity

It is a requirement of the Department of Water and Sanitation (DWS) that the rehabilitation interventions within the protective buffer zones of delineated wetlands are subject to Departmental approval. In this instance an application in terms of Regulation 3 of GNR 704 is requested for an exemption in terms of Regulation 3 for the following:

- Exemption of Regulation 4: Restriction on Location is also required;
- Exemption of Regulation 5: Restrictions on use of material.

The motivation for these exemptions is that the sections (4 and 5) were not in the original licensing and the mining process has been conducted for many years (existing lawful use means any lawful use authorised at any time during the period from 1 October 1996-30th September 1998) without the sections in use. The location of the mining area itself cannot be moved and the structure that is used was constructed before the sections were relevant and therefore the mine should be exempted from these regulations. For the reason that the mining infrastructure cannot move, there are no alternatives considered.

In order to comply with the GNR 704 regulation, Ballengeich Colliery has submitted a Rehabilitation Plan, Engineering Design Report for Constructed Wetlands, Stormwater Management Plan in support of a Water Use License as well as specialist supporting studies in the following fields:

- Aquatic Ecology;
- Waste Load Allocation;
- Geohydrological Assessment;
- Wetland Delineation;
- Hydrology

These studies make provision for the implementation of the proposed constructed passive treatment system infrastructure which will significantly reduce the severity of potential impacts on the receiving environment. These designs incorporate existing infrastructure and the use of mining material to reduce overall costs of the proposed rehabilitation measures. The successful implementation of the mitigatory measures will reduce the waste load to the Horn River. The mitigatory measures are also covered in the IWWMP that forms the technical supporting document for the Water Use License Application dealing with the rehabilitation measures. It is thus recommended that the DWS approves of the Exemption as required in terms of this report.