

BACKGROUND INFORMATION DOCUMENT

Ballengeich Colliery

Rehabilitation & Passive AMD Treatment

Water Use Licence Application | DWS Ref: WU33839 | Kangra Coal (Pty) Ltd

Newcastle Local Municipality, KwaZulu-Natal Province | June 2026

DWS Reference

WU33839

Applicant

Kangra Coal (Pty) Ltd

Consultant

M2 Environmental Connections

Date

June 2026

Introduction & Background

The Site

Defunct coal mine located approximately 15 km south of Newcastle, KwaZulu-Natal.

Situated at the confluence of the Horn River (V31F; NFEPA) and Ngagane River (V31K; FEPA) within the Pongola-Mtamvuna Water Management Area (WMA 4).

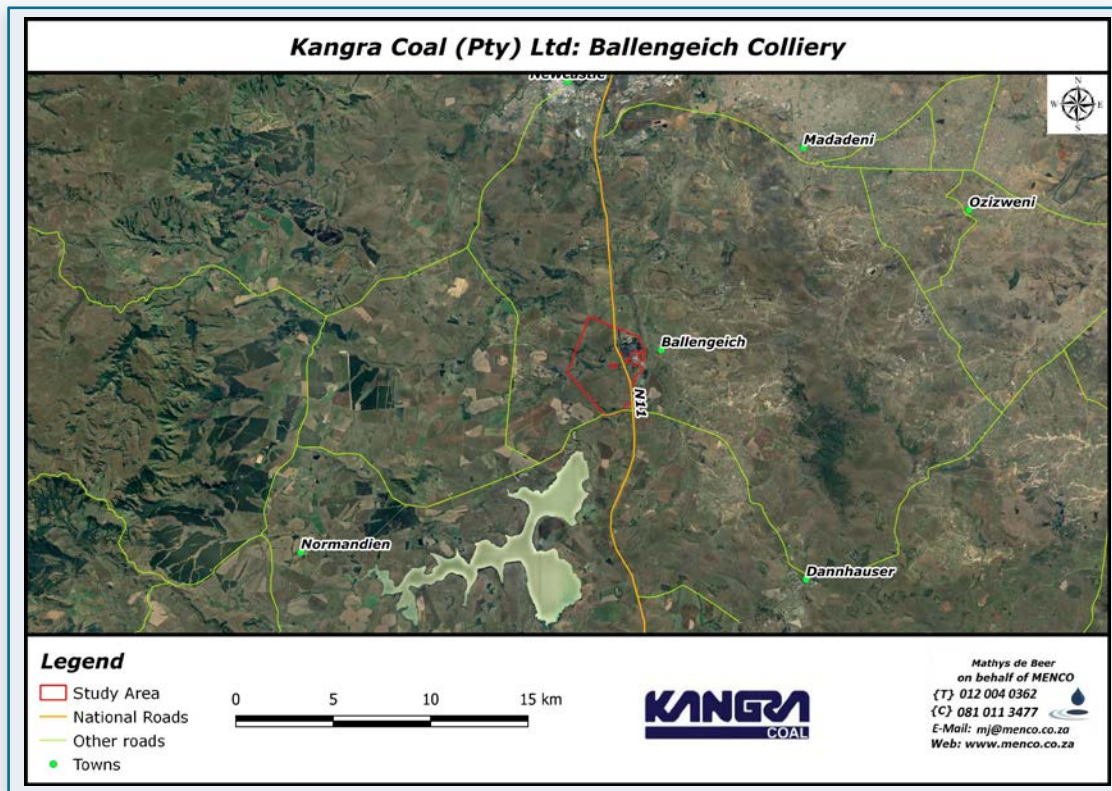
Mining ceased in the early 1990s without formal closure. Since then, uncontrolled Acid Mine Drainage (AMD) has progressively degraded water quality in the Horn River system.

A Section 19 Directive (Ref: 16/2/7/V301/A/1) was issued by DWS in August 2013 directing Kangra Coal to prevent and remedy water pollution from the site. The Directive remains in force.

What is Proposed

- Passive AMD treatment system (ALD → SAPS → Oxidation Pond → Aerobic Wetlands) treating 1,000 m³/day of AMD
- Rehabilitation of the existing discard dump (14 ha; 55 m height)
- Upgrading and lining of 4 Pollution Control Dams (PCDs 3, 4, 7, 8) + new Quantum PCD (8,600 m³)
- Comprehensive stormwater management system — clean/dirty water separation
- Flood protection berm along Horn and Ngagane Rivers (1:100-year design)
- Ballengeich Siding — 15-year operational life at 95,000 t/month

Project Location



Location Details

Province:	KwaZulu-Natal
Municipality:	Amajuba District / Newcastle Local
WMA:	Pongola-Mtamvuna (WMA 4)
Quaternary:	V31F / V31K
Coordinates:	27°53'24"S 29°58'16"E
Farm:	Ballengeich 3299 HS (Portions 10,11,14,19,25)
Mining Right:	Historic 10433MR

The AMD Problem at Ballengeich

Underground Workings

~30%

Artesian AMD decant at Horn River bank
pH <4.5 | SO₄ >4,000 mg/L
Fe 189 mg/L | Mn 4.0 mg/L
~1,000 m³/day continuous flow

Opencast Spoils

~55%

Pyrite-bearing spoils leaching AMD
pH ~2.5 | SO₄ up to 8,000 mg/L
Two spoil blocks (~34 ha and ~45 ha)
Dominant pollution source by volume

Discard Dump

~15%

14 ha dump; max height 55 m
Active spontaneous combustion
Confirmed on northern face
Direct AMD leaching to groundwater

COMBINED IMPACT → Horn River Health Class D/E | 100% ostracod mortality at decant point | Toxicity Class IV

Regulatory Trigger

A Section 19 Directive (Ref: 16/2/7/V301/A/1) was issued by DWS in August 2013, directing Kangra Coal to take all reasonable measures to prevent, control, abate and remedy water pollution at the site. A previous WULA (phytoremediation approach, 2015) was declined by DWS on 29 April 2019. The current application (Ref: WU33839) represents the most comprehensive and technically robust submission to date.

Proposed Solution — Passive AMD Treatment

1

**West Decant
Pollution Control Dam
(PCD)**

Interim AMD
containment
pending treatment

2

**Anoxic
Limestone
Drain (ALD)**

420m + 230m
14-hr retention
Sub-surface buried

3

**Successive Alkaline
Producing System
(SAPS)**

Min. 18,900 m²
Compost + limestone
97% Fe removal

4

**Oxidation
Pond**

670 m²
24-hr retention
2 cells in series

5

**Aerobic
Wetlands**

1.3 ha + 4.4 ha
Reed planted
Discharge to Horn River.

Design Specifications

- Design flow: 1,000 m³/day
- Design life: >30 years (aerobic wetlands)
- No grid electricity required
- Two treatment areas: western (underground AMD) + eastern (opencast seepage cut-off)
- Civil design: GFK Consulting Engineers, March 2026

Section 21 Water Uses Applied For

60 definitive water use entries across 5 Section 21 categories

S21(c) & (i)

30 entries

Impeding or diverting flow; altering the bed, banks, course or characteristics of a watercourse. Covers all passive treatment infrastructure, PCDs, stormwater channels, flood berms, siding operations.

S21(d)

1 entry

Streamflow Reduction Activity — new 3.57 ha Eucalyptus plantation established adjacent to the West Decant Sump as part of the AMD mitigation programme. Existing plantation decommissioned to make space for passive wetland infrastructure; felled material composted for use as SAPS organic carbon layer.

S21(f)

3 entries

Discharging treated AMD to the Horn River after confirming pH ≥ 5.5 and Fe ≤ 10 mg/L. Full GN 1873 RQO compliance required within 12 months of commissioning.

S21(g)

23 entries

Disposing of waste impacting water resources — PCDs, discard dump, underground workings, Quantum operations, siding, wash bay, and diesel storage.

S21(j)

1 entry

Removing water found underground — subsoil seepage collected at the discard dump toe, pumped to lined PCDs 3 and 4. Scenario 1 (dump rehabilitated) only.

Specialist Studies Completed

Wetland Delineation & Assessment

MENCO, March 2025

Two artificial wetland units confirmed. 500m wetland buffer and 100m NFEPA river buffer triggered.

Hydrology Assessment

EWS, April 2025

MAP 739 mm/yr. Site within 1:100-yr floodline. AMD decant $\approx$ 200 L/min. GN 704 exemption required.

Geohydrology Assessment

EWS, April 2025

Three aquifer systems. SO₄ plume: 4,000 mg/L at source. Losing rivers confirmed. Stress index: 0.00.

Assimilative Capacity Study

MENCO, February 2025

Sufficient assimilative capacity confirmed in the Ngagane River. 41% improvement predicted with treatment.

Hydropedology Assessment

EWS, April 2025

No measurable impact on hydropedological flow functions. Treatment footprint <0.5% of sub-catchment.

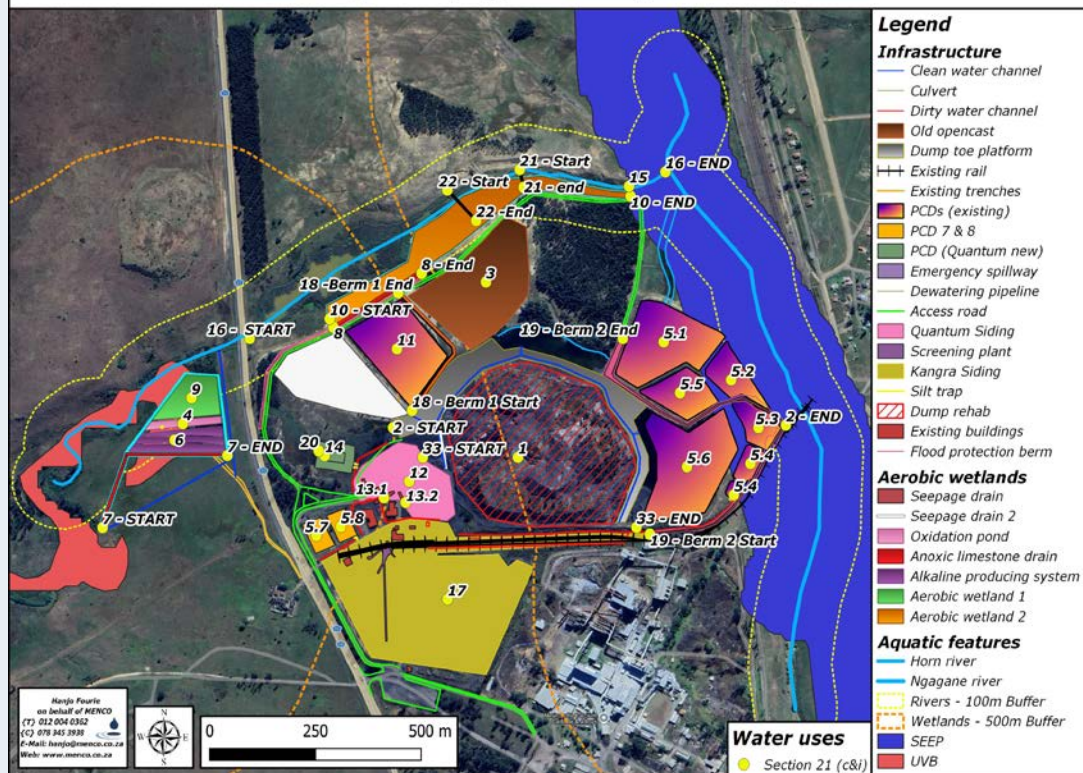
Aquatic Ecological Assessment

MENCO, November 2023

Horn River Health Class D/E. 100% ostracod mortality at decant. Toxicity Class IV. Urgent treatment required.

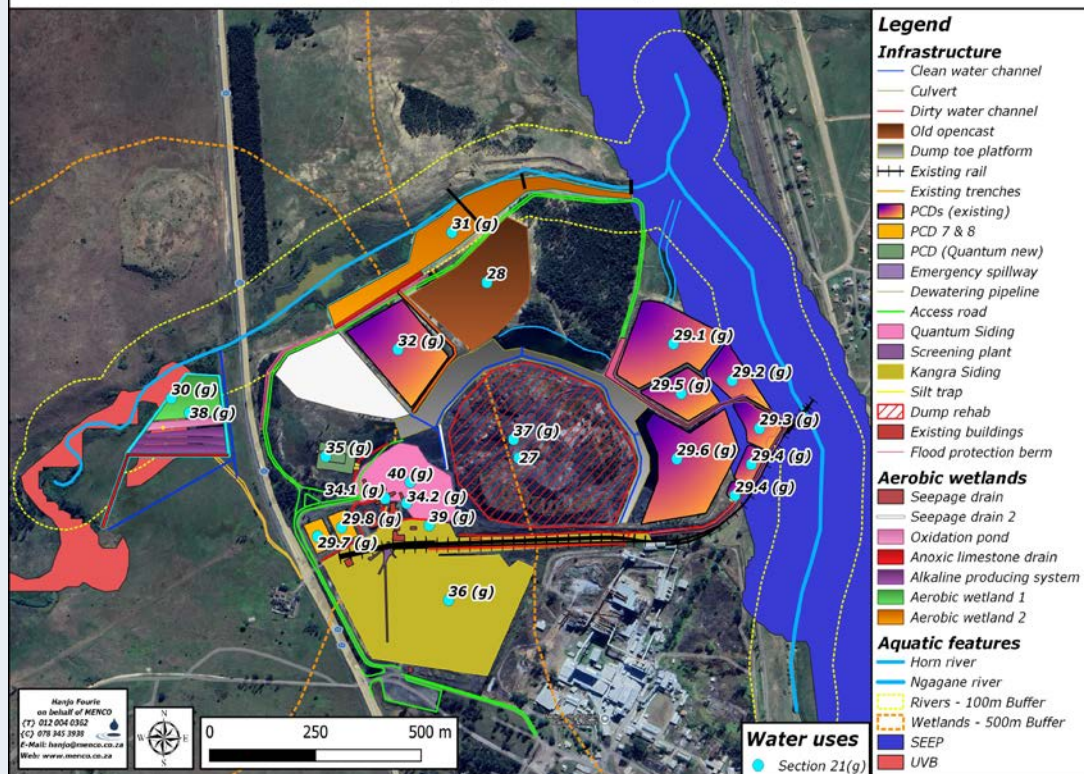
Section 21 Water Use Map

Kangra Coal (Pty) Ltd: Ballengeich Colliery



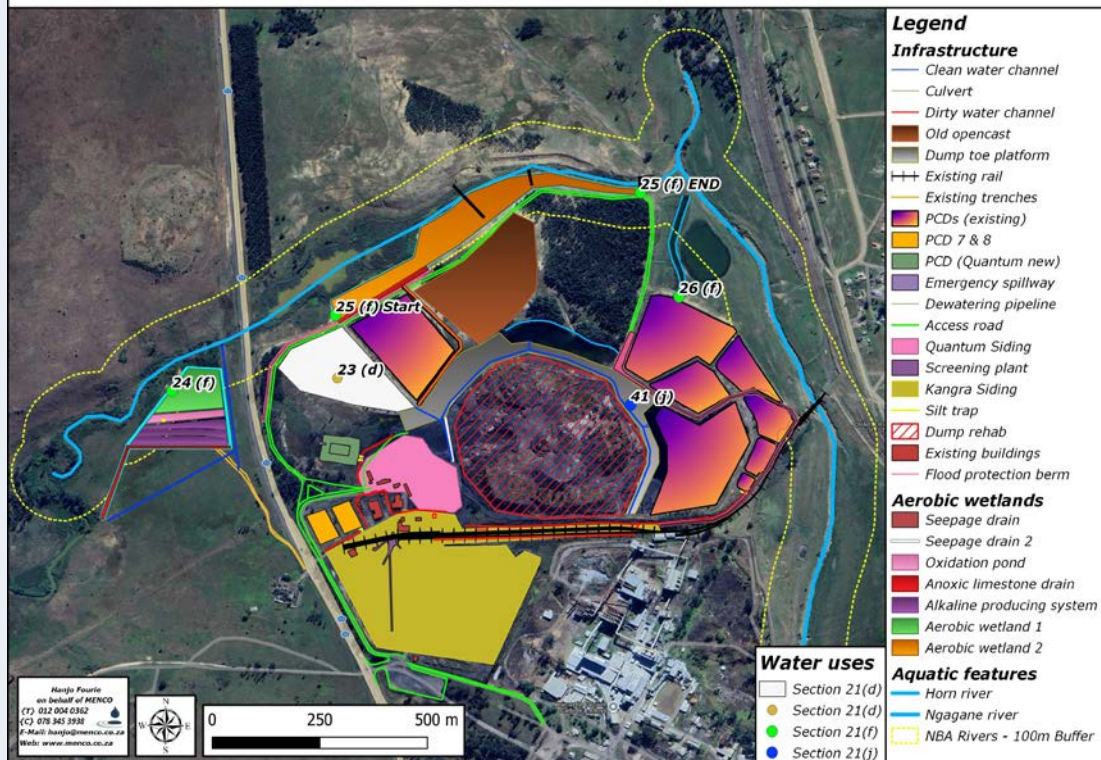
Section 21 Water Use Map

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Section 21 Water Use Map

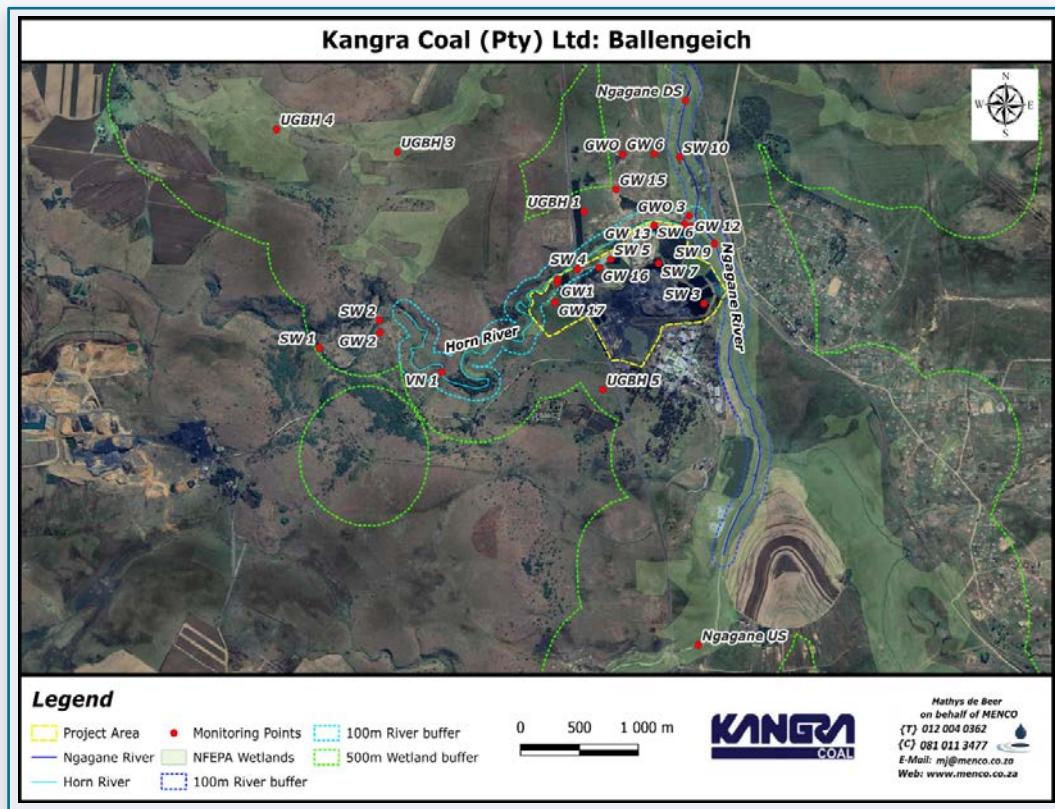
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Map Layers

- S21(c)&(i) — Treatment infrastructure
- S21(d) — Eucalyptus plantation
- S21(f) — Discharge points
- S21(g) — Waste disposal areas
- S21(j) — Underground water removal
- Site boundary
- AMD sources
- Horn & Ngagane Rivers (NFEPA)

Environmental Monitoring Programme



Monitoring Parameters

Surface Water

Monthly

pH, EC, TDS, SO₄, Fe, Mn, Al, Ca, Mg, Na, turbidity

Groundwater

Quarterly

Water levels; pH, EC, SO₄, Fe at all UGBH and GW boreholes

Biomonitoring (SASS5)

Semi-annual

Macroinvertebrate scoring at Horn DS1, Horn DS2, and Ngagane SW10

Discharge Quality

*Weekly
(commissioning)*

pH, Fe total — 3 consecutive samples required before any discharge permitted

Passive Treatment Performance

Monthly

Inflow/outflow quality; metal removal efficiency; sludge accumulation rates

Legislative Framework

National Water Act, 1998 (Act 36 of 1998)

Primary legislation. S19 Directive; S21 water uses; S40 WULA; GN 704; GN 1873 RQOs; GN 267 WULA Regulations; GN 4167 RAM.

National Environmental Management Act, 1998 (Act 107 of 1998)

NEMA EIA Regulations (GN 326, 325, 327). Basic Assessment process for Environmental Authorisation. Section 28 duty of care.

NEMA: Biodiversity Act (Act 10 of 2004)

GN 320 — Monitoring of Water Uses. KZN C-Plan: Critical Biodiversity Area 2 (CBA2) — listing activities triggered under GN 324.

NEMA: Waste Act, 2008 (Act 59 of 2008)

GNR 634, 635, 636 — waste classification, landfill disposal norms, Class C liner specifications for PCDs.

Mineral Petroleum Resources Development Act, 2002 (Act 28 of 2002)

Mining Right 10433MR; Section 43 rehabilitation obligations; mine closure certificate requirements.

Mine Health and Safety Act, 1996 (Act 29 of 1996)

Safety requirements for all activities on mine property including discard dump earthworks.

Project Summary & Expected Benefits

1,000

m³/day

AMD Treatment Capacity

60

water uses

S21 Entries (5 categories)

20

year WUL

15yr operational + 5yr monitoring

41%

improvement

Predicted watercourse quality gain

Environmental Benefits

- Predicted improvement of Horn River PES from Class D/E toward Class C within 5 years of commissioning
- Elimination of uncontrolled AMD discharge (~365,000 m³/yr) at decant point
- Protection of Newcastle Water Treatment Plant potable supply (220 ML/day abstraction)
- Progressive aquatic biodiversity recovery — SASS5 scores predicted to improve at Horn DS1
- New 3.57 ha Eucalyptus plantation established as AMD mitigation measure; existing plantation decommissioned to make space for passive wetland infrastructure

Regulatory Compliance

- Discharges the Section 19 Directive obligations (Ref: 16/2/7/V301/A/1, August 2013)
- Achieves GN 1873 (March 2022) RQOs for the V31K catchment
- Achieves GN 704 compliance for all lined PCDs and stormwater infrastructure
- DWS approved the passive wetland approach (August 2023 correspondence)
- All specialist assessors recommend authorisation of the proposed activities

Public Participation Process

This PPP is conducted in terms of the National Water Act, 1998 (Act 36 of 1998) independently from the NEMA Environmental Authorisation process.

1

Publication of Notice

Notice published in local newspaper
(Newcastillion News)
Site notices erected at project site and surrounding community areas

2

Register as IAP

Contact Menco to register as an Interested & Affected Party (IAP) and request a copy of the BID or other project documents

3

Submit Comments

Written comments submitted within 30 days of publication
Comments must be submitted by the closing date

4

Comments & Response

All comments received will be recorded and responded to in a Comments and Response Report (CRR)

5

WUL Submission

Final WULA package submitted to DWS KZN Regional Office for review and determination
(DWS Ref: WU33839)

Contact Details

For further information or to register as an Interested and Affected Party:

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Environmental Consultant — WULA PPP

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Kangra Coal (Pty) Ltd

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Comments must be submitted within 60 days of publication | DWS Ref: WU33839 | Closing date: [31 August 2026]
PPP Documentation available at Newcastle Library, Menco website and upon request