IN THE WATER TRIBUNAL

IN THE APPEAL OF:

THE TRUSTEES FOR THE TIME BEING OF THE GLOBAL ENVIRONMENTAL TRUST	**FIRST APPELLANT**
MFOLOZI COMMUNITY ENVIRONMENTAL JUSTICE ORGANISATION	**SECOND APPELLANT**
and	
DIRECTOR-GENERAL (ACTING), DEPARTMENT OF WATER AND SANITATION	**FIRST RESPONDENT**
TENDELE COAL MINING (PTY) LTD	**SECOND RESPONDENT**

NOTICE OF APPEAL IN TERMS OF SECTION 148(1) OF THE NATIONAL WATER ACT, 1998 (ACT NO.36 OF 1998)

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1. TAKE NOTICE THAT the Appellants intend appealing at a date, time and place determined by the Tribunal Officer against the decision of the First Respondent to issue an integrated water use licence to the Second Respondent for its current and proposed expansion to its open cast coal mine situated in the Magisterial District of Mtubatuba in the KwaZulu-Natal Province.

2. The appeal is based on the following grounds:

2.1. On account of the First Respondent authorising a water use licence to the Second Respondent despite material defects in the water use licence application (WULA):

2.1.1. The application which was accepted by the Department of Water and Sanitation despite not containing landowner consent as is required by the Water Use Licence Application and Appeals Regulation, 2017 **(GROUND 1)**;

2.1.2. The public participation process that was conducted for the water use licence application but not compliant with the requirements prescribed by the Water Use Licence Application and Appeals Regulations, 2017 and guided by the applicable Section 2 principles of the National Environmental Management Act, 1998 **(GROUND 2)**; and

2.1.3. The Integrated Water and Waste Management Plan and other mandatory technical reports, the requirements for which are prescribed by the Water Use Licence Application and Appeals Regulations, 2017 **(GROUND 3)**.

2.2. On account of the First Respondent not considering, alternatively not considering adequately, the following mandatory factors as required under Section 27(1) of the National Water Act, 1998, specifically:

2.2.1. the efficient and beneficial use of water in the public interest as required by section 27(1)(c) **(GROUND 4)**;

2.2.2. the socio-economic impact of the water uses, as required in terms of section 27(1)(d) **(GROUND 5)**;

2.2.3. the possible effects of the water use on water resources and water users, as required in terms of section 27(1)(f) **(GROUND 6)**.

2.3. On account of the First Respondent failing to exercise its discretion without a valid reason to demand of Tendele to provide security as part of its application for its water

use licence on account of its non-compliance with its water use licences and the National Water Act, 1998, as well as its possible premature closure **(GROUND 7)**.

2.4. The failure of the First Respondent to apply, alternatively adequately apply, the precautionary principle set out in section 2 of the National Environmental Management Act, 1998 **(GROUND 8)**.

2.5. On account of the vested interest of the IWULA consultants and lack of credibility of the technical documents that comprise the Water Use Licence Application **(GROUND 9)**.

2.6. On account of the ambiguity and / or inconsistencies in the IWUL issued by the First Respondent **(GROUND 10)**.

2.7. On account of the First Respondent failing to give effect to the current National Water Resource Strategy which provides the framework for sustainable, equitable and secure water for a better life and environment for all **(GROUND 11)**.

2.8. On account of the First Respondent failing to uphold its role as public trustee of the nation's water resources to ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner; and that it is allocated equitably and used beneficially in the public interest, while promoting environmental values as is required by Section 3 of the National Water Act, 1998 **(GROUND 12)**.

3. TAKE NOTICE THAT the Appellants appoint ALL RISE Attorneys for Climate and Environmental Justice as their representative in this matter.

4. TAKE FURTHER NOTICE THAT the Appellants will accept service of all documents in the above matter at the offices of their representative at 2nd Floor, 290 South, 7 Umsinsi Junction, Dube City, Dube Trade Port, La Mercy, KwaZulu-Natal or electronically, via email to kyouens@alrise.org.za.

SIGNED AT DATED AT **DUBE CITY** ON THIS **03RD** DAY OF **NOVEMBER** 2021.

APPELLANTS' ATTORNEYS
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INTRODUCTION

1. This is an appeal to the Water Tribunal in terms of section 148(1) of the National Water Act, 1998 ("the NWA") against the decision of the Director-General (Acting) of the Department of Water and Sanitation ("DWS") on 9 July 2020 to authorise 142 water uses within an Integrated Water Use Licence (Licence Number 11/W23A/ABCGIJ/9751) ("IWUL") to Tendele Coal Mining (Pty) Ltd ("Tendele") in terms of section 41 of the NWA for its Somkhele open cast coal mine situated in the Magisterial District of Mtubatuba, KwaZulu-Natal.

2. Notably, of the 142 water uses that have been authorised by the IWUL, more than half (i.e. 83) fall within or are in support of three new mining sites proposed at Ophondweni, Emalahleni and Mahujini where no mining or preparation activities have commenced, and landowner consent is outstanding. Further, these mining sites fall

under a mining right which is currently being challenged in the High Court of South Africa, Gauteng Division, Pretoria[1].

3. The Appellants' comments on the Integrated Water and Waste Management Plan of 21 March 2019, inclusive of appendices made publicly available at this time ("IWWMP") and objections to the IWUL application ("IWULA") were submitted on 27 May 2019. A copy of the objection is attached hereto at "**A1**". GCS responded on 19 June 2019. A copy is attached marked **"A2".**

4. Subsequent to the 60-day public comment period between 23 March and 27 May 2019, it came to the Appellants' attention that the Applicant had, via its consultants, GCS, submitted additional information to DWS as part of its IWULA process.

5. On 10 and 17 June 2020, the Appellants requested copies of this documentation, as well as confirmation as to whether any other additional documents had been submitted to DWS that had not been part of the IWULA public participation process. While no such confirmation was given, GCS provided a copy of the Civil Design Report dated 14 February 2020 to the Appellants' Attorneys. Notably, this report which presumably informed the First Respondent's decision to grant the IWUL was not subject to any public participation. The chain of email correspondence is attached hereto marked **"A3"**.

6. Further, the IWUL cites seven other documents dated February 2020 and March 2020[2] that form part of the licence conditions that GCS failed to provide to the

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[1] Case Number: 82865/18. At the time of lodging this appeal, the parties were awaiting dates to be allocated for the hearing.

[2] Pages 19 to 22 (items 1.2 (b), (c), (d), (e), (g), (nn) and (oo)) and pages 36 to 38 (items 1.2 (b), (c), (d), (e), (f), (g) and (oo)) of the IWUL.

Appellants' Attorneys when they submitted their request for such documents in June 2020. The procedural defect of these reports not being subject to public participation is discussed in more detail under **Ground 2** of this Appeal.

7. Dr. Digby Gold of Copperleaf Consulting reviewed the IWWMP at the request of the Appellants and his expert opinion supports the content of this Appeal. His report, dated 9 September 2020, is attached hereto marked **"A4".**

8. Notice of the IWUL was only received on 4 August 2020 (attached marked **"A5"**). On 12 August **("A6"**) the Appellants requested reasons for the decisions and followed this up with emails dated 18 August 2020 (**"A7"**), 25 August 2020 (**"A8"**), 1 September 2020 (**"A9"**) and a further letter dated 24 March 2021 (attached **"A10"** respectively"). Still having received no response from the Department, a further letter requesting reasons was sent on 23 July 2021 ("**A11**"). The Department did respond on 27 July but only to apologise for the delay and to give the undertaking that it would revert in due course ("**A12**").

9. Despite these repeated requests the Appellants have not yet received said reasons as required in terms of section 42 of the NWA and section 5 of the Promotion of Administrative Justice Act, 2000.

10. We are therefore submitting this appeal without having received written reasons and reserve the right to supplement this appeal in the event that the Director-General complies with the request. We undertake to do so within 30 days of receiving reasons.

11. The First Appellant in this matter is **THE TRUSTEES FOR THE TIME BEING OF THE GLOBAL ENVIRONMENTAL TRUST ("GET")**, a trust duly registered in terms of the

Trust Property Control Act 57 of 1988, which has the general object of pursuing and supporting environmental causes and it has the power to bring legal proceedings to advance its objects.

12. The Second Appellant is the **MFOLOZI COMMUNITY ENVIRONMENTAL JUSTICE ORGANISATION ("MCEJO")**, an association of more than 3000 members which operates in the Fuleni and Somkhele areas in the Magisterial District of Mtubatuba, KwaZulu-Natal.

TENDELE COAL MINE

13. Tendele commenced mining at its Somkhele Coal Mine in 2007.

14. Tendele presently holds the following mining rights :-

14.1. The 2007 Mining Right (dated 22 June 2007) granted in terms of Section 23 of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) in respect of coal mining for 27 years until 21st June 2034 in respect of **Area 1 on Reserve No 3 (Somkele) No. 15822 measuring 660.5321 hectares.**

14.2. The 2011 Converted Mining Right (dated 30 March 2011) converted in terms of Item 7 of Schedule II of the MPRDA in respect of coal mining for 20 years up to 29th February 2031 in respect of **Areas 2 and 3 on Reserve No. 3 (Somkele) No. 15822 Measuring 779.8719 hectares.**

14.3. The 2013 Amendment of a Mining Right (dated 8th March 2013) converted in terms of Section 102 of the MPRDA in respect of coal mining which added to the 2011 Right

the **Areas of KwaQubuka and Luhlanga areas on Reserve No. 3 No 15822 measuring 706.0166 hectares.** This extends Areas 2 and 3 to 1485.8885 hectares.

14.4. The 2016 Mining Right (dated 26th October 2016) granted in terms of Section 23 of the MPRDA in respect of coal mining for 30 years until 25th October 2046, in respect of **One part of the Remainder of Reserve No. 3 No. 15822 in Extent 21 233.0525 hectares.**

15. The 2016 Mining Right is subject to a review application in the High Court of South Africa, Gauteng Division, Pretoria which was instituted in 2018 and set down for hearing on 10 to 12 November 2021.

16. All the Mining Rights together cover almost the entire area of Reserve No. 3 of 15822 shown on the map attached (Annexure **"A13**").

17. Mining has not commenced in Mining Areas 4 and 5 that fall under the 2016 Mining Right. In early 2021, Tendele undertook to abandon most of the area under this mining right except for Ophondweni, Emalahleni and Mahujini totalling 17.66 km^2. Further, Tendele has applied for a prospecting right for the remainder of Area 5 for which an EIA will be required. (Attached marked **"A14"** is a map provided by Tendele in recent court papers showing its latest mining right areas as well as a map submitted by Tendele to the DMR as part of a Section 102 amendment application "**A15**"). It should be noted, that although Tendele lodged a Section 102 application under the MPRDA to abandon the said majority portion of its 2016 Mining Right, this was only done on 31 July 2021 and the DMR is yet to grant its approval.

PREVIOUS WATER USE LICENCES

18. Prior to the granting of the current IWUL on 9 July 2020 under Licence number 11/W23A/ABCGIJ/9751, two other water use licences were held by Tendele previously, namely:

18.1. WUL under reference 16/2/7/W23D/1/1 issued on the 10 September 2010 for the Section 21 (a) water use - abstraction of water from the Mfolozi River ("2010 WUL"). The licensed volume was 750,000m^3 pa. Importantly, in terms of the 2010 WUL, this volume could be reduced on review[3] and required daily monitoring during periods of low flow[4], limiting the abstraction to half the "normal rate" if domestic users downstream suffered shortages during these periods. (*A similar condition was not carried through to the current IWUL of 2020, the significance of which is discussed under* ***Ground 4***).

18.2. IWUL under reference 06/W23A/BCGIJ/2549 issued on 9 August 2014 for 38 water uses ("IWUL 2014") including:

18.2.1. Section 21(b) water uses: the storing of clean water in the River Dam (total volume 735,720 m^3/pa; capacity 3,000 m^3) and the Myenge Dam 2 (total volume 735,720 m^3/pa; capacity 50,000 m^3);

18.2.2. Section 21 (c) and (i) water uses: five haul road stream crossings within and between Areas 1, 2, 8 and 9;

18.2.3. Section 21 (g) water uses: dust suppression on haul roads (using clean water and water from dewatering of the pits), five run-of-mine (ROM) stockpiles, a

[3] Condition 6.1.4 of the 2010 WUL.
[4] Condition 6.1.9 of the 2010 WUL.

product stockpile, a discard dump, fifteen pollution control facilities (including pollution control dams (PCDs), return water dams (RWDs) and settling ponds) and four conservancy tanks; and

18.2.4. Section 21 (j) water uses: dewatering of the workings in three areas – North Pit A (Area 1), Pit A and Pit BDE (Area 2).

19. In total, 39 water uses were authorised by WUL 2010 and IWUL 2014 for Mining Areas 1, 2, 8 (Luhlanga) and 9 (KwaQubuka).

CURRENT INTEGRATED WATER USE LICENCE

20. The WUL 2010 and the IWUL 2014 have been superseded by the current IWUL 2020 which is the subject of this appeal. IWUL 2020 authorises a total of 142 water uses, including the 39 previously authorised water uses, some of which have been amended.

21. The application for the IWUL 2020 is recorded in the IWWMP[5] as having been made for two reasons:

21.1. Firstly, to update the existing IWWMP as per the IWUL 06/W23A/BCGIJ/2549 conditions[6] to consolidate the water uses for the two licences into one; and

21.2. Secondly, to include additional water uses for all mining areas – current and future mining operations.

[5] Page 2 of the IWWMP.

[6] IWUL Appendix IV Condition 9.1 – required the update of the IWWMP to have been submitted by 9 August 2015.

22. The consolidated and additional 142 water uses in the current 2020 IWUL include:

22.1. Section 21(a) water uses (7):

22.1.1. abstraction of water from the seven alluvial boreholes (considered to be subsurface flow of the river water) that were drilled in 2016, as an alternative to abstraction from the Mfolozi River in periods of low flow. The total abstraction volume authorised is 523 193 m^3 pa[7]. (Notably, no abstraction rate has been prescribed in the IWUL 2020 nor has there been a condition included in the IWUL to reduce the rate during periods of low flow should domestic users downstream suffer shortage as a result of low river flow, as there had been in the WUL 2010. (*The significance of this omitted condition is discussed under* ***Ground 4***).

22.2. Section 21(b) water uses (6):

22.2.1. Storing of clean water from the Mfolozi River in the River Dam[8] to capacity of 3,000 m^3.

22.2.2. Storing of water in Myenge Dam 2 to capacity of 200,000m^3 (the previous licensed capacity for Myenge 2 Dam was 50,000m^3[9)].

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7 While the total permissible abstraction of water has been reduced by 30% to that authorised in the 2010 WUL (i.e. from 750 000 m^3 pa to 523 193 m^3 pa), there is no additional restriction under low flow conditions as per the previous 2010 WUL which stipulated that the flow requires daily monitoring during periods of low flow and limits the abstraction to half the "normal rate" if domestic users downstream suffer shortages during these periods. Half the normal rate under the 2010 WUL would have been based on an abstraction value of 375 000 m^3 pa, which is considerably lower than the constant 523 193 m^3 pa in the 2020 WUL.

8 Notably this dam was constructed without Tendele having a water use license to do so (see Appendix 25 of IWWMP – minutes if meeting held with DWS on 10 November 2016).

9 Notably the capacity of the dam was increased without Tendele having a water use license to do so (see Appendix 25 of IWWMP – minutes if meeting held with DWS on 10 November 2016).

22.2.3. Storage of stormwater attenuation for mining Area 8 (Luhlanga – one dam) and proposed mining Area 5 (Mahujini – three dams)[10].

22.3. Sections 21(c) and (i) water uses (55):

22.3.1. Five stream and river crossings to service the existing mining areas (Areas 1, 2, 8 and 9).

22.3.2. Destruction of two drainage lines in Area 8 (Luhlanga Box Cut Zero).

22.3.3. Impacting on two wetlands in Areas 1 and 8.

22.3.4. Destruction and in-filling of 19 drainage lines and three wetlands (Ophondweni) and the construction of 23 drainage line crossings for the proposed mining activities in Ophondweni, Emalahleni and Mahujini (Areas 4 and 5) including associated infrastructure (opencast pits, PCDs, waste rock dumps and haul roads).

22.3.5. Wetland offset (clearing of alien vegetation) south of Area 1.

22.3.6. Notably, what is not authorised under Section 21(c) and (i) are the community dams at Ophondweni and Mahujini. The failure to identify these dams is discussed in more detail under Ground 3, specifically 3.3.

22.4. Section 21(g) water uses (66):

22.4.1. These include 35 water uses in the current mining areas (Areas 1, 2, 8 and 9) and 31 water uses in the three proposed mining areas Ophondweni, Emalahleni and Mahujini (Areas 4 and 5) for dirty water dams, settling ponds, dust suppression, stockpiles, slurry pits, discard dumps, conservancy tanks, waste rock dumps, hard parks, and PCDs.

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[10] Notably, the designs for clean water (stormwater attenuation) in these areas were not included in Appendix 10 (Civil designs) for the purpose of public participation. This was discussed in more detail under **Ground 2**.

22.5. Section 21(j) water uses (8):

22.5.1. Dewatering of the five pits of the current operations in Areas 1, 2, 8 and 9.

22.5.2. Dewatering of the three proposed pits in Areas 4 and 5 (Ophondweni, Emalahleni and Mahujini).

23. The IWUL also grants exemption from Regulation 4(a) and (c) of GN704 which specifically prohibits the:

23.1. location or placement 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;'

23.2. placement or disposal of any residue or substance which causes or is likely to cause pollution of a water resource, in the workings of any opencast mine excavation.

24. Read with the list of contained in the IWWMP[11], the exemptions from Regulation 4(a) include the following:

24.1. Area 8 mining infrastructure encroaching within the 100m buffer of the watercourse (KwaLuhlanga stream) at Luhlanga Pit.

24.2. Ophondweni Pit and waste rock dump within the flood line exclusion zone of the Mnyaba River and tributaries.

24.3. Emalahleni Pit and waste rock within the flood line exclusion zone of the Mcakwane Stream.

[11] Page 45 to 46 of the IWWMP.

24.4. Mahujini waste rock dump is located within flood line exclusion zone of the Nyalazi River.

24.5. Ophondweni, Emalahleni and Mahujini, mining infrastructure (e.g. PCDs) encroaching within the 100m buffer of watercourses/drainage lines.

24.6. Infilling of wetlands at Ophondweni.

25. Read with the list of contained in the IWWMP[12], the exemptions from Regulation 4(c) include the following:

25.1. Co-disposal of slurry and discard into KwaQubuka Pit.

25.2. Co-disposal of slurry and discard into Pit BDE[13].

26. Notably the 2020 IWUL does not grant exemption from Regulation 4(b) which is prohibits opencast mining within the 1:50 year flood-line or within a horizontal distance of 100 metres from any watercourse or estuary. In terms of the IWULA/ IWMMP, the activities which are thus prohibited (in absence of an exemption) are:

26.1. Destruction of non-perennial streams in Area 8 for the construction of Luhlanga Box Cut Zero.

26.2. Destruction of non-perennial streams in Ophondweni for opencast mining activities.

26.3. Destruction of non-perennial streams in Emalahleni for opencast mining activities.

26.4. Destruction of non-perennial streams in Mahujini for opencast mining activities.

[12] Page 45 to 46 of the IWWMP.

[13] Notably this exclusion does not include Pit A.

GROUNDS OF APPEAL

GROUND 1: ACCEPTANCE OF IWULA WITHOUT LANDOWNER CONSENT

27. In terms of Regulation 4(2) of the WULA Regulations, the responsible authority shall only consider a water use licence application upon receipt of the relevant documents required in terms of these Regulations.

28. The relevant documents and minimum information requirements that are required in terms of the WULA Regulations are specified in:

28.1. *APPENDIX B: FORMS AND REPORTS TO BE COMPLETED IN RESPECT OF A PARTICULAR WATER USE APPLICATION*;

28.2. *APPENDIX C:* CHECKLIST FOR EVALUATION OF APPLICATION PRIOR TO ACCEPTANCE;

28.3. *APPENDIX D: TABLE OF CONTENTS OF TECHNICAL REPORTS FOR MINIMUM INFORMATION REQUIREMENTS TO BE SUBMITTED.*

29. In relation to landowner consent, the documents required in these three appendices are described as:

29.1. **"***Certified Copy of Title Deeds Document and/or Permission to Occupy***";**

29.2. "*Letter of Consent if the Applicant is not the Property Owner (Compulsory)*"; and

29.3. "*Permission to occupy (PTO), Title Deed, Lease Agreement, Community Resolution*".

30. As Tendele is not the property owner of the land over which it applied for 142 water uses, it was required to have provided these documents as part of its application. It did not.

31. The documents that Tendele did submit fall short of these requirements as evidenced by the following:

31.1. Appendix 3 of WULA contains an incomplete lease agreement with the Ingonyama Trust Board (ITB) - not all the annexures are provided. Further, this lease only pertains to Area 2 (defined to as “the Premises”) and fails to include Areas 1, 3, 4, 5, 8 and 9 in which the majority of the water uses applied for are located.

31.2. GCS, in its response to the Appellants’ objection raised to the IWWMP, confirmed that Tendele only has a draft lease agreement with the ITB regarding the future mining areas and the lease cannot be finalised with the ITB until “directly affected homesteads have all signed relocation contracts.”

31.3. Given that the process of relocating families in Ophondweni and Emalahleni (Area 5) is currently part of an ongoing mediation process which arose out of an urgent application brought by Tendele in May 2020 against 24 families who had at the time not agreed to move, and the fact that Tendele has yet to engage with the families it has identified (or is to identify) for relocation in Mahujini, the lease pertaining to the “future mining areas” affected by this IWUL is unlikely to be finalised any time soon.

31.4. It is also important to recognise that for ITB to be able to provide consent, it has to be with the consent of the whole community and not just the families that

Tendele has identified as needing to move. Tendele did not provide a community resolution as part of its application. Further, landowner consent would need to come from all the affected family landowners, over and above the ITB.

31.5. While Tendele did provide a letter from the Mpukunyoni Traditional Authority in Appendix 3 of the IWWMP, this letter cannot be accepted as landowner consent. It is simply a letter from the iNkosi of the Traditional Authority for the area confirming that he has been informed of the WULA; has no objections to the WULA; that Tendele has access to the property and may continue with its application. Further it is not supported by a community resolution or any evidence of consent.

32. Despite not including all these prescribed documents for landowner consent in the WULA, GCS incorrectly stated on page xi of the IWWMP ("Evaluation of Licence" Procedural Checklist") that they were all included in Appendix 7 of the IWWMP.

33. It is further evident that the Department was somewhat cognisant of this gap in the IWULA because as late as 17 February 2020[14], it requested that Tendele to provide "[a] *commitment in terms of the timeframes related to resettling the people currently living in the proposed mining areas*". Despite Tendele having done so on 2 March 2020[15], a commitment can never be accepted as actual landowner consent.

34. Also, the community is not limited to the households that Tendele has identified as having to relocate to make way for mining operations but includes the thousands more

[14] The Appellants' Attorneys first had sight of this correspondence when they were provided a copy of this correspondence by Tendele's attorneys on 5 October 2021 in response to a query regarding the layout of the Emalahleni mining operations, specifically Waste Rock Dump 1.

[15] *Ibid*.

people who remain and are / will also be affected by the mine and its water uses. Thus, even if all the individual household agreements were to be signed, this still would not constitute all the necessary landowner consent, especially in respect of the communal land affected.

35. Thus, the Department erred in accepting the IWULA despite Tendele not complying with the mandatory application requirements in terms of Regulation 4(2) read with Appendices B, C and D of the WULA Regulations.

36. Even worse, is that DWS then proceeded to consider the IWULA and grant the WUL despite there not being landowner consent in place. It did not even check whether Tendele had met the timeframes it had committed to for Ophondweni and Emalahleni (i.e. the conclusion of "the individual contracts" by end March 2020 and relocation by June 2020) when it issued the IWUL to Tendele on 9 July 2020. (As already noted in paragraph 2 above, the relocation agreements for the proposed new mining areas have still not all been concluded. Further, the individual negotiations have not yet even commenced in Mahujini despite Tendele's commitment made to DWS on 2 March 2020 that this would be finalised by September 2020).

37. Either misled by GCS and/or Tendele, and/or due to its own failure to check the documents submitted, DWS erred in accepting and considering Tendele's application and granting the IWUL in the absence of Tendele having provided the mandatory landowner consent documentation.

38. *It should be noted that at the time of submitting this appeal, there was still no landowner consent in place*.

GROUND 2: MATERIAL DEFECTS IN THE PUBLIC PARTICIPATION PROCESS

39. Tendele's procedure for public participation does not comply with the legal requirements prescribed by Regulation 17 of the Water Use Licence Application and Appeals Regulations, 2017 (WULA Regulations) read with Section 41(4) and Section 162 of the NWA as well as the Section 2 principles of NEMA that must be applied to a decision affecting the environment, for the reasons presented below.

40. Public participation by affected communities in the WUL decision-making process is acknowledged as a fundamental principle under the relevant statutory and policy framework.[16] Public input with a view to pro-active and informed decision-making ensures that the costs of environmental impacts of the water use are not passed over to the community. The responsible authority must be satisfied that the interests of any other person having an interest on the land will not be adversely affected[17].

41. Public participation processes cannot be approached as "one size fits all". The extent of public participation should correspond to the threat posed to the natural environment, the significance of potential impacts on people's well-being, and the magnitude and lifespan of the proposed project.[18]

42. Environmental justice demands that people have the opportunity to be heard in a meaningful manner before environmental decisions are taken.[19] While the right to

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[16] See section 2(4)(f), (g) and (k) of the National Environmental Management Act, 107 of 1998 ("*NEMA*"); sections 33 and 195 of the Constitution of the Republic of South Africa, 1996 (the "*Constitution*"); section 4(1) of the Promotion of Administrative Justice Act, 3 of 2000 ("*PAJA*") and section 41 of the NWA.

[17] Section 41(4)(c) of the NWA.

[18] Further additional factors include locality of project; nature of activity; sensitivity of biophysical environment; cultural/historical value of setting and particular social-economic conditions. See Department of Environmental Affairs, 2014, Environmental Impact Assessment and Management Strategy *EIAMS*at page 209.

[19] Kidd, *Environmental Law* (2nd edition) ("*Kidd*") at 304.

participate is the first step in the process of effective public participation, the mere recognition of the right to make comment is an empty formality unless it is taken into account in the decision-making process

43. In Earthlife Africa (Cape Town) v Director-General Department of Environmental Affairs and Tourism and Another 2005 (3) SA 156 (C) ("*Earthlife Africa case*"), the court held that the approach to procedural fairness in respect of public participation should be "generous" and not legalistic.

44. On the face of it, the IWWMP describes what appears to be a comprehensive and legally compliant process that comprises four rounds of newspaper advertisements (3 February 2017; 23 May 2017; 13 July 2018 and 26 & 27 November 2018); two sets of site notices[20] (10 May 2017 and another date not provided); three background information documents (June 2017; July 2018 and January 2019); and five public meetings (21 May 2018 (Mtubatuba); 11 December 2018 (Mtubatuba); 26 January 2019 (KwaLuhlanga); 10 April 2019 (Mtubatuba); and 11 May 2019 (Mpukunyoni Traditional Authority offices, Somkhele).

45. We note in Sections 2.1 and 2.2 of the draft Comments and Response report that the application was rejected on 12 October 2018, and that "[a] new application was [only] submitted to the Department and acknowledged on 9 May 2019", well after the IWWMP was made available for public comment on 22 March 2019 and long after the public participation process was initiated in 2017. Thus, in terms of the public participation requirements of Regulation 17, we cannot be certain that all public participation activities to date have notified I&APs fully of all water uses and the

[20] Referred to as "written notice boards" in Regulation 17(3)(a) of the WULA Regulations.

associated technical information contained in the current IWULA, and therefore, the applicant's reliance on these past public participation activities is highly questionable.

46. Further, when one examines each of these activities on its own merits, it is obvious that the public participation has been far from comprehensive and that the consultant has been somewhat misleading in many aspects, particularly with regard to I&AP notification and the necessary disclosure of information at the public meetings:

46.1. There is no mention or proof thereof that any or all occupiers of the site where the water uses are or are to be undertaken; or occupiers of land adjacent to the site where the water uses are or are to be undertaken, were given written notice served by hand delivery or any accepted means to such persons or a responsible individual at their place of residence as is required in the circumstances in terms of Regulation 17 (3)(b)(ii) and (iii) of the WULA Regulations and Section 162 of the NWA.

46.2. Although there were site notices placed in the area, these were not placed at all the sites where the water uses to which the WULA relates, are or are to be undertaken, as is required in terms of Regulation 17(3)(a). We have mapped the co-ordinates given for the locations of the site notices in Appendix D1 of the IWWMP (Annexure **"A16"**). It is evident from this map that there were no notices placed in the villages of Dubelenkunzi (Area 1), or Mahujini, Ophondweni and Emalahleni (Areas 4 and 5).

46.3. There is also no evidence that reasonable alternative methods were used to provide people who are functionally illiterate in English with adequate opportunity to participate meaningfully in the WULA process. We submit that in the affected region, there is a high level of illiteracy and isiZulu is the main home language of local residents. Thus, the applicant and its consultants should have also provided alternative methods for notifying local residents where necessary. Also, the IWWMP,

not even a summary thereof, was not provided in isiZulu, the home language of the majority of local residents affected by the water uses (current and future).

46.4. Importantly, not all water uses had been applied for at that date and that the application to which the IWWMP pertains was only submitted and acknowledged by DWS on 9 May 2019.

46.5. It is noted that the background information document was sent to all key stakeholders and authorities via email and thereafter to all I&APs on request. It is also noted that the background information document was revised in January 2019 and sent to all I&APs on request. Despite being an I&AP in the process we have no record of being sent this document. There is also no proof in the Comments and Response report of I&APs being sent these documents.

46.6. The Appellants' attorneys also became recently

Public Meetings

47. It would appear from Appendix 25 of the IWWMP that the public participation process for the WULA was tacked onto the public participation process undertaken as part of the environmental impact assessment (EIA) for the application for environmental authorisation for the extension of the Luhlanga opencast pit. Blackrock Environmental was appointed by Tendele as the Environmental Assessment Practitioner (EAP) to undertake this application process which began in November 2018. An email headed "Somkhele Pit extension and waste licence application" sent to Ms. Sheila Berry of the Global Environmental Trust on 26 November 2018 stated :

"Somkhele intend to extend its Luhlanga opencast pit. The extension triggers a listed activity and subsequently an EIA process needs to be conducted. Waste licence is

also being applied for to dispose Slurry and discard material into the mined out voids. These processes are being run in parallel but are two separate applications."

48. While it was not evident from the covering email, the Background Information Document accompanying the email referred to the IWULA process. The email and the BID are attached hereto marked "**A17.1"** and **"A17.2".**

49. An email dated 28 November 2019 headed "Draft Scoping Report": was emailed to Ms. Berry, GET, with a Draft Scoping Report for Luhlanga Boxcut Zero extension attached and notice of a public meeting to be held at Mtubatuba on 11 December 2018. There was no evidence that such meeting had anything to do with an IWULA.

50. Attorneys for the Appellants attended the meeting held on 11 December in Mtubatuba. The focus of the meeting was clearly the environmental authorisation process for the proposed Luhlanga Boxcut Zero extension although GCS was present. The Global Environmental Trust arranged for a small group of MCEJO members to attend as they would not have been in a financial position to do so otherwise. In this meeting several water-related issues were raised by MCEJO members from the community, as per the GCS memo[21] of the meeting:

50.1. The community members disagreed that the mine provides drinking water to them and stated further that they cannot drink the rainwater as it is polluted by the coal dust.

50.2. The following areas are the worst affected by lack of water: Dubelenkunzi; Luhlanga; Machibini; Esiyembeni; Ophondweni; Mahujini; and Somkhele.

[21] Appendix G2 of Appendix 25 of IWWMP.

50.3. One community member stated that although the mine initiates plans to assist the community, such as starting to supply the community with water, it does not follow through with the plans and remain consistent. As a result, many community members have not had access to water for a long time. A mine representative responded that uMkhanyakude District Municipality is the registered water services provider for the Mpukunyoni area, however having said that Tendele assists the Municipality with boreholes, supplying the area with drinking water.

50.4. Mr. Wright (EAP) explained that while the mine may abstract higher volumes of water when there is very high flow in the Mfolozi River and stored, less water will be abstracted when the river is lower, and the stored water will then be used during low flow scenarios.

50.5. There was much disagreement among community members about the availability of water to the community – some say there are no water tankers and there is no access to the community borehole; however, mine employees who live in the community disagree and say there is access and tankers are frequently in the area.

50.6. It was brought to attention that the meeting venue was not seen to be appropriate by representatives of the community as the majority members have no means of getting there, or transport costs were too expensive.

50.7. It was also mentioned that the meeting was not adequately advertised, as most residents cannot afford to purchase a newspaper in which the advertisement was placed.

50.8. It was concluded that a second meeting should be held on Monday, 17th December 2018 at a location close to Luhlanga so that more members of the community could attend.

50.9. It was also requested that a translator be present to ensure the community is well enough informed, and a summary of the Draft Scoping Report[22] be provided in isiZulu.

51. On 13 December 2018, Mr. Sabelo Dladla (a MCEJO member at the time) sent correspondence to Mr. Wright (attached hereto marked "**A18"**) in which he confirmed the issues raised in the meeting on 11 December 2018 those being that:

51.1. the meeting on 11 December cannot be considered as a public meeting as the venue was not ideal for the community members to attend.

51.2. a public meeting be held in the community on 17 December 2018 and that Black Rock Environmental consultant arrange transport for people coming from other affected villages.

51.3. notices for the proposed Monday meeting should not only placed to Luhlanga but in all areas where Tendele mine operates as well as future mining areas because the project in question affects them all.

52. In a response dated 14 December, Mr. Wright requested a postponement of the meeting to 26 January 2019 despite the Appellants' reluctance for such delay (expressed in letter dated 14 December 2018 attached hereto marked "**A19**").

[22] It should be noted that this Draft Scoping Report was part of the EIA process for environmental authorisation for the Luhlanga extension, not the IWULA.

53. The meeting held in Luhlanga on 26 January 2019 focussed on the EIA for the environmental authorisation process for the proposed Luhlanga Boxcut Zero extension. Notably, the IWULA consultants were not even present at this meeting[23]. Further, the explanation of the IWULA provided by the EAP was very sparse. As recorded in the minutes of this meeting, "*Projects Explain* [sic] *with the aid of posters. (Posters **Annexure B**)*". If one looks at the one-page poster provided in Annexure B[24], it contains very little information about the IWULA process and provides only a few photos of only 8 of the 142 water uses, most of which are without any geographical reference. Thus, the meeting of 26 January 2019 can hardly be accepted as *bona fide* public participation opportunity for the IWULA.

54. A further public "meeting" was held on 11 May 2019. In response to the notification provided for this public open day for the water use license application and application for environmental authorisation for the Luhlanga Boxcut Zero extension, the Appellants' attorneys addressed a letter to GCS and Black Rock Consulting on 30 April 2019 ("30 April letter" attached hereto marked "**A20"**) in which following was requested:

54.1. confirmation that the combined open day on Saturday, 11 May 2019 between 9 am and 12 was, in fact for both applications and not a scheduling error; and

54.2. an explanation as to how GCS and Black Rock considered that a mere three hours was anywhere near sufficient for interested and affected parties to meaningfully engage with multiple specialists for not one, but two applications,

[23] This is confirmed by the attendance register contained in Appendix G3 of Appendix 25 to the IWWMP.

[24] "Annexure B" is part of Appendix G3 of Appendix 25 of the IWWMP.

which will also require the explanation and translation of highly technical information in isiZulu.

55. The letter of 30 April 2019 also referred to the Appellants' request for a two-day workshop with specialists in their submission of 31 January 2019 in response to the to the Luhlanga Boxcut Zero Scoping Report. The Appellants had particularly requested this because the Boxcut Zero EIA process and the IWULA/Waste Licence application process were running together resulting in voluminous amounts of information. This request was ignored.

56. Black Rock and GCS both responded in letters dated 2 and 3 May 2019 (attached hereto marked "**A21 and "A22"**) that:

The primary objective of the meeting from Black Rock Environmental is to provide <u>information on the Luhlanga Boxcut EIA</u> [emphasis added].

57. Black Rock further stated that:

As there are overlaps in the authorization process GCS requested if they could also be part of the meeting. GCS advised that there is no legal commitment for them to be part of the meeting but wanted to afford the public an opportunity to engage with them.

While GCS stated that:

As there are overlaps in the authorization process with the information on the IWULA, it will also be presented by GCS.

58. While there might have been no explicit legal requirement for GCS to be at the same public open day scheduled as part of the EIA process for the proposed Luhlanga Box Cut Zero Extension, there certainly was a requirement for GCS to adequately consult with the affected communities as part of the IWULA. This they failed to do.

59. In the 30 April letter the Appellants also stated that the three hours that had been allocated for the public participation activity was nowhere near sufficient for interested and affected parties to meaningfully engage with multiple specialists for two application processes in isiZulu. The responses from GCS and Black Rock were that:

An open day is planned where all the specialists present will be provided with a translator and a scribe which will assist with noting comments and questions that can be responded to formally as part of the Comments and Response report. A weekend was selected to ensure that those that work could attend and the venue of the Mpukunyoni Tribal Council was selected as it is centrally located and on a transportation route.

It was deemed that 3 hours is sufficient in enabling people to talk to various specialists regarding the project. The time scheduled to 12h00 will be extended on the day should more time be required – this will depend on the interest of the public. Should the volumes of people attending exceed expectations then additional sessions can be arranged.

All technical information can be explained by the specialists in laymen's terms to those that attend and the translators will be able to assist for those who require communication in IsiZulu.

60. What actually transpired on 11 May 2019 was that the first part of the meeting (approximately 3 hours) was mostly taken up with formalities and (dis)agreement on process, and thus engagement on water and other environmental issues only properly commenced **just before 13h00.** While the public open day was extended to 15h00, the IWULA consultants (and water specialists) left to catch a flight at approximately **13h15**. Therefore, there was only 15 minutes of consultation time for the WULA.

61. It was made clear by the members of MCEJO at the end of the meeting that there was insufficient engagement with the specialists and that not everyone had raised their comments. A request was made that a task team be established and educated on the various components of the EIA and WULA processes before educating community members on the same issues. It was also mentioned that there were many people

who were not present at the meeting and of those who were present, many were hearing about the project for the first time.

62. This feedback on what transpired at the public open day and our request for further engagement was provided to GCS in a letter dated 19 May 2019 (attached hereto marked "**A23"**). Although GCS responded on 24 May 2019 (attached hereto marked "**A24"**), it did not contest that there was only approximately 15 minutes of engagement on water-related issues. In response to the insufficiency of the public participation that had been conducted to date and request for further consultation, GCS responded as follows:

Consultation with the public in regard to the WULA commenced in February 2017 and had taken place on a continual basis. The requirements for public participation as described in section 17 in terms of the regulations regarding the procedural requirements for Water Use License Applications and Appeals (GNR 267, 24 March 2017) has been applied for the Somkhele WULA.

and

Three public meetings and one stakeholder meeting have been held up to date to provide information to the public about the WULA. Thus, ample opportunity has been provided to the public to ask questions or provide comment on the WULA process. Further comments from MCEJO and its members are welcomed up until the end of the comment period (27 May 2019). <u>However, based on comments received thus far, which has been general grievances, it is deemed that additional sessions would not add additional information regarding the WULA</u>.

63. Clearly it was therefore never the intention of the consultants to use the 26 January nor the 11 May 2019 meetings for the purposes of the WULA/IWWMP public participation process. Of the five of the public meetings that Tendele use in support of the public participation process for this IWUL, none were adequate and/or even related to the IWMMP and three of the five were not even held in the community, or close by.

64. The decision-maker was thus given inaccurate and misleading information regarding the public participation process that took place for the IWULA. Tendele failed to follow a public participation process for the purposes of adequately informing other water users and the general public of the IWULA.

65. Members of MCEJO and others in the community were not informed of the impact of the licenced water uses on their lives. They have not been informed of the effects of diversion of water courses, destruction and/or deprivation of access to community dams and other water sources, or dewatering of aquifers, and potential leaching of contaminants into their water systems. They have not had the benefit of being given maps, with their houses plotted onto them to explain what this IWUL means to them and their lives going forward. Their traditional knowledge has not been sought including the presence of perennial springs even in times of drought, nor have they been asked to share their ordinary knowledge, such as the water resources on which they rely, including groundwater.

66. Appendix 25 (Public Participation) to the IWWMP was not part of the technical report made available for public comment on 22 March 2019. Upon request, the Appellants were provided a copy of the draft report “Somkhele Mine Integrated Water and Waste Management Plan: Comments and Response report” of 21 May 2019 (Version – draft). Notably, this report is not comprehensive as it is missing a number of records of I&AP notification.

67. While we accept that public participation activities undertaken after that date could only have been included in the final report, we consider it to be a serious omission for the records of the public participation process undertaken prior to 21 March 2019 (as referred to Section 5.6 of the IWWMP) not to be included as part of the IWULA

documentation distributed for public comment, particularly the records of meetings for I&AP verification.

68. On 18 May 2019, the Appellants requested that GCS provide an electronic copy of Appendix 25. Although the document was requested by close of business on 20 May 2019, to provide time to review it before the IWULA submissions were due on 27 May 2019, an incomplete copy of Annexure 25 was only received in the late afternoon on Tuesday, 21 May 2019.

69. In paragraph 4.2 of GCS' letter dated 24 May 2019, it is stated that the report provided is a "draft report with the evidence of the public notifications completed up to date" i.e., up to 21 March 2019.

70. The Appellants' submitted their objections to the IMMMP on 27 May 2019 (attached hereto marked "**A1"**). It was placed it on record that the minutes recorded for the public meeting held on 11 May 2019 were not a true reflection of what transpired at this meeting, specifically the issues we raised in the letter of 19 May 2019.

71. The period for commenting on the IWWMP ended at the end of May 2019. In June 2020 we became aware of additional documents that were submitted to DWS in February 2020 <u>without being made available during the public participation process</u>. We brought this to the attention of GCS in an email dated 10 June 2020 and requested copies. These were provided to the appellants' attorneys on 17 June 2020 and included:

71.1. Civil Design report, February 2020.

71.2. Annexure A: Facility service timelines (Emalahleni, KwaQubuka slurry, Mahujini and Ophondweni).

71.3. Annexure B: Site layout maps (Area 1, 2, 8 and 9; Ophondweni, Mahujini and Emalahleni).

71.4. Annexure C: Site security, access control, infrastructure, and 1: 100 year floodline map.

71.5. Annexure D: Section 21 (c) and (i) (Proposed Diversion of Storm Water Around Enlarged Luhlanga Boxcut Zero (Area 9) Design Report for WULA by Inqubeko Consulting Engineers, dated February 2020; Proposed New Haul Road to Mahujini and Emalahleni Pit Design Report by Ilifa Africa Engineers (Pty) Lts, dated February 2020).

71.6. Annexure E: Area 8 and 9 Stormwater Waste Management Plan, dated 14 March 2019.

71.7. Annexure F: Ophondweni, Emalahleni and Mahujini Stormwater Waste Management Plan, dated 6 March 2019.

71.8. Annexure G: PCD designs.

71.9. Annexure H: Waste design (17-0394-KWA-D01-1: KwaQubuka Pit Backfill Rehabilitation /Closure Plan, May 2018).

71.10. Annexure I: Water Treatment Facilities (Preliminary AMD Treatment Systems and Business Plan for the Somkhele Anthracite Mine, 3 December 2019).

71.11. Annexure J: Sewage management (Sewage Management: Sanitech permit 2019 – 2020 and Sanitech SLA).

72. On receipt of GCS's email of 17 June 2020, the Appellants' Attorneys asked if any other documents had been submitted to DWS in support of Tendele's IWULA. Although GCS responded on 22 June, it simply ignored this request (attached hereto marked "**A3**")

73. The IWUL however refers to a number of other documents that had been submitted by GCS to DWS in February and March 2020, but which GCS refused to account for in its email correspondence to the Appellants' Attorneys. These documents include:

73.1. Integrated Water and Waste Management Plan by GCS - 30-day letter response, dated February 2020;

73.2. Integrated Water and Waste Management Plan by GCS- 14-day letter response, dated March 2020;

73.3. Integrated Water and Waste Management Plan by GCS- 7-day letter response, dated March 2020;

73.4. An analysis of the expenditure related to moving the open cast pits out of the drainage lines as per DWS request, by Tendele Coal Mining (Pty) Ltd;

73.5. Wetland Assessment Offset Plan for the Ophondweni Wetland and Boxcut 0 Drainage Areas by GCS dated March 2020.

74. None of these documents submitted to DWS in early 2020 were subjected to public participation despite them containing material information on project layout, design and mitigation measures that informed DWS' decision to grant the IWUL.

75. Further, we know from recent engagement with Tendele on 5 October 2021 as part of the current litigation described in paragraphs 2, 15 and 17 and in response to a query regarding Waste Rock Dump 1 at Emalahleni, that the layout that Tendele is proceeding with at Emalahleni is the one contained in its submission to DWS on 3 March 2020 – a report that was never made available to interested and affected parties, most notably local residents.

76. We also have become aware of a new Section 21 (c) and (i) water use that was only applied for on 2 March 2020 (the application forms are attached hereto marked "**A25.1** and **"A25.2"**) and therefore, not subjected to any public participation process. Further, we note that despite this procedural flaw, this water use has been authorised in the IWUL[25].

77. Clearly Tendele and GCS thought that the abovementioned specialist plans, reports and other documentation did not require input from the very people affected by the associated water uses.

78. The public participation process has been an affront to our clients' rights to participate in a process that will not only fundamentally affect their lives but could very well ruin them. The consultants' attitude in the process has shown a lack of respect and concern for the people who will be most affected by the authorisation of the WUL and a bias towards making this IWULA work for Tendele.

79. The IWULA public participation process is certainly not in keeping with the need to promote the participation of all interested and affected parties in environmental governance and has not ensured the participation by vulnerable and disadvantaged persons[26]. It has denied the affected communities the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation[27]. Also, it is evident that community wellbeing and empowerment was not promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience or other appropriate means[28].

[25] Page 19 of the IWUL.
[26] Section 2(4)(f) of NEMA.
[27] *Ibid*.
[28] Section 2(4)(h) of NEMA.

As a result, it cannot be that the decision to grant the IWULA has taken into account the interests, needs and values of all interested and affected parties[29].

80. A project of this magnitude requires considerable time for preparation and public participation. The fact that the application was done in hurry cannot be used as a reason to prejudice our clients' rights in the IWULA process. All the required information must be shared and explained properly and timeously. In this instance all the necessary information is not included in the report, the people who will be directly affected by the registration of the water use have not been properly informed and consulted and the applicant has a history of non-compliance. In view of the above, and GCS' commitment to additional sessions (which never took place), this IWUL should not have been issued.

GROUND 3: MATERIAL DEFECTS IN THE IWWMP AND OTHER TECHNICAL REPORTS OF THE WULA

81. As already stated in Ground 1 above, in terms of Regulation 4(2) of the WULA Regulations, the responsible authority may only consider a water use licence application upon receipt of the relevant documents required in terms of these Regulations.

82. The requisite technical documents and their contents are prescribed "*ANNEXURE D: "TABLE OF CONTENTS OF TECHNICAL REPORTS FOR MINIMUM INFORMATION REQUIREMENTS TO BE SUBMITTED*".

83. These documents for mining operations include:

[29] Section 2(4)(g) of NEMA.

83.1. Item 4: Integrated water and wastewater management plan (IWWMP).

83.2. Item 5: Geohydrological report.

83.3. Item 9: Civil design (minimum information requirements).

84. Under this ground of appeal, we refer to a number of mandatory sections in these prescribed technical reports which have found to be either missing completely, defective or inadequate in Tendele's WULA.

3.1 Lack of description of socio-economic environment

85. Despite being required to provide a description of the socio-economic environment[30], the description that Tendele provided in Section 4.5 of the IWWMP is limited to two and a half pages that provide only high level statistics for the population size, and demographic and socio-economic profiles at district and local municipal level drawn from the uMkhanyakude District Municipality's and Mtubatuba Local Municipality's 2016 Integrated Development Plans, part of which rely on outdated Census data from 2011.

86. There is no information on the numerous villages and thousands of residents who depend on the local water resources for their health, well-being and their livelihoods which are highly reliant on subsidence agriculture (cultivation and livestock), and who are and will be significantly affected by Tendele's 142 water uses.

[30] WULA Regulations: Annexure D: Number 4: Integrated Water and Wastewater Management Report, 3.18 Socio-economic environment

87. Despite statements made in the IWWMP that the local aquifer system, the Mfolozi River and the non-perennial streams will be the receptors of likely pollution[31]; that non-perennial streams will be mined out[32]; and that water for human consumption and agricultural purposes within the proposed mining areas are either obtained from some of the ephemeral streams or other water supply systems (i.e. hand pumps or municipal water trucks)[33], there is no attempt to identify, quantify and assess the potential impacts on the residents as a result of water pollution or disruption or destruction of water supply. The IWWMP is written as if these people do not exist.

88. Having conducted a site visit on 3 August 2017[34], and/or having seen the satellite images in the various reports, DWS should have realised this glaring omission in the WULA. Instead, DWS glibly accepted GCS's assurance at the bottom of page xi of the IWWMP ("Evaluation of Licence: Substantive Checklist") that "*the socio-economic circumstances of the area*" were adequately described in Section 4.

89. Apart from not complying with the reporting requirements prescribed by the WULA Regulations, the significance of this omission is that the risk to the local residents posed by Tendele's water uses could not have been properly identified nor could DWS have made a fully informed decision, particularly taking into account the factors prescribed by Section 27 of the NWA, particularly subsections (1)(d) and (f). These defects in the WULA and the decision made to grant the WUL, are explained further (see **Ground 3.2** and **Grounds 5 and 6**).

[31] See subsection *4.3.2.1 Potential Pollution* Source Identification (pages 122 to 124 of the IWWMP)
[32] See subsection *4.3.2.1 Potential Pollution* Source Identification (pages 122 to 124 of the IWWMP)
[33] See subsection *4.3.3.1 Hydrocensus* (pages 124 to 128 of the IWWMP)
[34] Appendix 25 of the IWWMP.

3.2 Lack of assessment of socio-economic impacts and risks

90. A further reporting requirement prescribed by the WULA Regulation is the "Risk assessment / Best Practice Assessment". Again, GCS in its "Evaluation of Licence: Substantive Checklist" incorrectly affirms to DWS that the "*socio-economic impacts of the water use*" have been included in the WULA, specifically in Section 5.5, Section 7.3 and Appendix 31 of the IWWMP[35].

91. However, when one looks at Section 5.5, there is no mention at all of socio-economic impacts arising from the 142 water uses in Tendele's IWULA. Further, Section 7.3, deals with the factors that DWS is required to evaluate in terms of Section 27 of the NWA, and while subsection 7.3.4 purports to deal with socio-economic impact of the water uses, it only describes job creation and avoids any mention of what the adverse impacts of these water uses, especially for the thousands more people (current and future generations) who won't get employment but will suffer from loss of access to water resources for themselves and for their livelihoods and won't even be able to rely on rain water harvesting as this is too polluted from fugitive coal dust to drink.

92. Appendix 31 is equally lacking in describing the socio-economic impacts of the water uses as it is a "Section 27 motivation report" for Luhlanga only. This only speaks to 13 out of the 142 water uses authorised in the IWUL. Furthermore, Appendix 31 focusses only on job creation and SLP projects and completely ignores the impacts on historically disadvantaged and vulnerable persons who will be directly or indirectly deprived of the water resources on which they rely.

[35] Page xii of the IWWMP.

93. The Mpukunyoni Traditional Authority area supports traditional rural communities, including thousands of subsistence farmers. It is a water scarce area, and more so since mining started in 2007. And yet no socio-economic impact assessment has been done.

94. The omission of a socio-economic impact assessment was raised in the Appellants' comments on the IWWMP as part of their objections to the IWUL application submitted in May 2019. In response, GCS stated that "[t]*he socio-economic impact of the application was address* [sic] *within Section 21(1)(d): Socio-Economic Impact of Water Use in the IWWMP*".[36] However, this is untrue as no socio-economic impact assessment was done, either in the body of the IWWMP or in any of the annexures attached thereto.

95. The Second Appellant, MCEJO, has a membership of over 3000 people in the Mpukunyoni area. Of that number, more than 1000 live in Ophondweni, Emalahleni and Mahujini where mining is yet to commence. The rest live in the catchment area of the Nyalazi River and/or use the Nyalazi River, its tributaries and /or the Mfolozi River as a source of water. Many of our clients have difficulty finding enough and/or clean water for themselves or their livestock to use. Thousands more people (who are not members of MCEJO) live in the areas that are the subject of this mining right and will suffer the consequences of the water uses now and for generations to come.

96. There is no aspect of the IWWMP that deals with the socio-economic effect on the local community. This is despite the IWWMP confirming that a number of small

[36] See Annexure "A2"

tributaries will be impacted by the construction of the 3 new pits; and due to the locality of the pits being situated on hill crests, the tributaries are the headwaters."[37]

97. Land-based livelihoods, including livestock, arable agriculture and wild harvesting are a central component of life in rural KwaZulu-Natal, with most rural households deriving livelihoods from these activities. Land-based livelihood strategies are widely used for direct consumption (i.e., subsistence use) and cash generation.

98. Almost all households in the areas to which IWUL applies are involved in some, if not a substantial degree, of cultivation. Most people also own cattle, goats and chickens.

99. Given the high rate of unemployment and job losses in the formal sector and the fact that few households have members that are employed, land-based livelihoods play a vital role in sustaining the residents of the community in which these water uses are authorised. While Tendele is an employer in the area it has repeatedly stated that the future mining areas (Areas 4 and 5 – specifically Ophondweni, Emalahleni and Mahujini) will not employ more people than are currently employed. Therefore, the water system is to be fundamentally changed for generations to come in at least three rural villages for no employment for the affected people at all. This is not reasonable or sustainable.

100. A holistic assessment of the economic value of land-based livelihoods on customary land helps us[38] to understand why access to natural capital or customary land supports livelihoods and acts as a safety-net or final resort. It also highlights the

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[37] Area 4 & 5 floodlines document

[38] Land-based livelihoods matter in Makhasaneni by Shannon Herd-Hoare, Ramabina Mahapa & Ncedo Mngqibisa 2021 Land and Accountability Research Centre: https://www.customcontested.co.za/wp-content/uploads/2021/05/Makhasaneni-Research-Report-LARC.pdf

interconnections between multiple categories of the system. For example, wild products could be gathered during agricultural and livestock activities and used as inputs to agriculture (tool handles and fencing), or the income from the sale of wild product crafts (such as grass mats) could be reinvested in crop inputs or livestock.

101. The people of Mpukunyoni rely on multiple land-based livelihood sectors to survive. The failure to assess the socio-economic impact of the water uses on the surrounding community means that this section of the NWA has not been complied with.

102. A recent report released on 27 May 2021 by LARC[39] on land-based livelihoods in the rural community of Makhasaneni in northern Zululand valued land-based livelihoods at R96 000 per household per year. The research shows that land-based livelihood strategies were typically used in combination with each other and included (a) home garden and field cultivation; (b) livestock ownership, (c) use of wild resources (such as firewood, poles or medicinal plants), and (d) small-scale forestry. Overall, wild resources were the most participated in sector (all households), while arable agriculture contributed the highest economic value to the household.

103. The same land-based livelihood strategies are used in Mpukunyoni and although it is acknowledged that each rural area may differ in how much the land-based livelihoods provide to the households, the fact that the areas are similar and rely on the same livelihood strategies makes it a good comparison for the Mpukunyoni (specifically Ophondweni, Emalahleni and Mahujini) area.

[39] Land and Accountability Research Centre: https://www.customcontested.co.za/wpcontent/uploads/2021/05/Makhasaneni-Research-Report-LARC.pdf

104. None of these land-based livelihood strategies are possible without access to enough unpolluted water.

105. The National Water Resource Strategy's first two objectives are that "Water supports development and the elimination of poverty and inequality" and "[w]ater contributes to the economy and job creation."[40] While the multitude of water uses in the IWULA are linked to the sustaining of current jobs (which Tendele repeatedly relies on for its arguments), the fact that no effort has been made to assess the potential socio-economic impact of the effects of the water uses on the thousands of rural farmers and downstream users, and yet the WUL has been granted, flies in the face of just administrative action.

106. In the LARC report "land-based livelihood activities were not just strategies of survival or self-sufficiency in the economic sense, but also related to issues of cultural identity. The continual investment into and development of what were described as 'traditional activities', such as the purchase or sale of livestock, the change of land-use categories from grazing land to outgrower forestry, and investment of time and labour into cultivated plots, etc., suggested a deep dependence on the land which was essential to their agrarian identity - an important element of being a rural inhabitant."[41]

107. In the Zulu community, the home, as so strikingly put by the Constitutional Court in Mathale v Linda: "*means more than just having somewhere to shelter your body. There is a cloth of dignity in calling a place your home as it is inextricably linked to one's self-worth, esteem and dignity*".[42]

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[40] NWRS, p 12

[41] Summary of Key Finds

[42] 2016 (2) BCLR 226 (CC) at para [36].

108. In a study done in the Eastern Cape, Masterson (2016)[43] focused on place meaning within the landscape and found that a large part of people's attachment to home was related to its agricultural character and the perceived independence that it offers. This is certainly the case in the Zulu culture – the Zulu people value the land for its ability to produce and the independence it provides.

109. The LARC report found that "[F]*or many the landscape provides a home. Home was referred to interchangeably as one's specific residential site and the entire landscape. The latter was formed through the day-to-day processes of emplacement within both the physical and social environments*." In exploring the relationship that migrants have with 'home', Njwambe et al. (2019),[44] found that childhood experiences in nature, especially rivers and forests, and the sensory and spiritual dimensions of home remain key to their attachment.

110. The landscape units that residents derived land-based livelihood functions from do not exist as separate but rather integrated entities. Together they contribute to and shape the landscape which not only provides resources for local livelihoods but form a culturally significant landscape which promotes a sense of place and identity.[45]

111. In authorising these water uses is ultimately to deprive or limit thousands of people of water; depriving them their ability to live off the land, to grow crops and sustain themselves and their livestock. It will deprive the people of this irreplaceable tangible connection to their land and homes; their self-worth, esteem and dignity. This we know

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[43] Masterson, V.2016. Sense of place and culture in the landscape at home: Understanding socio-ecological dynamics on the Wild Coase, South Africa. Ph.D thesis, Stockholm University

[44] Njwambe, A., Cocks, M., and Vetter, S. 2019. Ekhayeni: Rural-urban migration, belonging, and landscapes of home in South Africa. Journal of Southern African Studies 45(2): 413-431.

[45] Le Maitre et al., 2007; Voora and Barg, 2008; Brown and Neil, 2011

because many of the MCEJO members are suffering this loss already as a result of Tendele's current and historical water uses.

112. The use of opencast pits for processing waste means that the overburden that would have been used to fill the final voids are likely to be left as "waste rock dumps" on the landscape. No mention is made of this or how the "waste rock dumps" are going to be dealt with in the IWWMP. In addition, the final profile and levels of the pits used for the processing waste will be "box-shaped" at elevations above the pre-mining landscape. This has an impact on surface water drainage.

113. The long-term land use for this area is not stipulated in the IWWMP; however, the closure objective in terms of the EIA[46] is to return the land to grazing capability. In addition, *"[t]he rehabilitation of all areas disturbed by the Somkhele Extension and associated infrastructure must ultimately achieve the objective of returning the land as close to the pre-mining land use as possible*".[47] According to Dr. Gold, the planned mining practices will eliminate the land from long-term use by the community.

114. Not only is the lack of socio-economic impact assessment contrary to the WULA Regulations, but it also makes it impossible for the First Respondent to have considered the socio-economic implications of granting the IWUL.

3.3 Lack of assessment of impacts and risks on wetlands and dams

115. Although it is evident from certain sections in the IWWMP that the three wetland units at Ophondweni will be destroyed to make way for the mining pits, this impact is not assessed in Section 5.5 of the IWWMP.

[46] Appendix 11 Page 319
[47] Appendix 11 Page 320

116. Further the Preliminary Wetland Impact Assessment Report of 6 May 2014[48] that identified wetlands in Areas 4 and 5, looked at much smaller mining areas (inclusive of waste rock dumps and other ancillary infrastructure) at Mahujini and Emalahleni than proposed by Tendele in its IWULA and recent Section 102 application to the DMR to amend its 2016 Mining Right (the same mining right that is being challenged before the High Court). Thus, it is very possible that there are wetlands at these two mining areas that have not been identified as part of the IWULA and therefore, not authorised as part of the WUL.

117. There are also at least three community dams that fall within the future mining sites in Areas 4 and 5 that have also not been mentioned or applied for in the IWULA as Section 21(c) and (i) water uses. These include the community dams in Ophondweni[49], Emalahleni[50] and Mahujini[51]. As a result, there is no mention of the impacts on the local residents depending on these dams, who are not necessarily the families who Tendele has identified for relocation. Again, these dams and the associated impacts should have also been included in the description of socio-economic circumstances and assessment of impacts and risks to local residents as part of the IWWMP. They were not.

3.4 Technical inaccuracies and reporting gaps

118. According to the expert report by Dr D Gold commissioned by the Appellants (**Annexure "A4"**), there are serious flaws in *inter alia*, the groundwater modelling, the structural geology, surface water and hydrological assessments as well as

[48] Appendix 14 of the IWWMP: Wetland Studies
[49] 28°15'58.62"S; 32° 9'1.51"E
[50] 28°18'59.74"S; 32° 6'40.30"E
[51] 28°17'14.59"S; 32° 4'30.91"E

inconsistencies and missing information in the water balance and storm water management. (*The failure of DWS to apply the principle in terms of section 2 of NEMA requiring a risk-adverse and cautious approach, which takes into account the limits of current knowledge about the consequences of decisions and actions*[52] *is discussed in more detailed under* ***Ground 8***).

119. Dr. Gold has summarised the information gaps highlighted in the IWWMP as being:

119.1. Surface water – there is no monitoring in Areas 8 and 9 as the rivers are non-perennial and/or dry, and there has been no monitoring in Areas 4 and 5 since 2013.

119.2. Groundwater – GCS states that there is sufficient baseline information however, geological structures (through geophysical survey) and additional aquifer test boreholes for groundwater flow parameters are required. It is acknowledged[53] that "limited field work took place due to the urgency of the project" resulting in study limitations. This highlights the need for project authorisation over maintaining environmental integrity through proper and appropriate risk and impact assessment. In Dr. Gold's expert opinion, recommendations in the IWWMP to improve the knowledge prior to mining are not enforceable and will not prevent, mitigate or manage environmental degradation. Licence conditions relate to the monitoring and reporting and provide water quality limits that shall not be exceeded.[54] These limits were already exceeded in the water monitoring data submitted to the Department in support of the IWWMP application.

[52] Section 2(4)(a)(vii)
[53] Section 5.7.2 Page 62 [actually 207]
[54] Table 6 on page 40.

119.3. Geochemical data – 10 years' worth of data for Areas 1, 2, 8 and 9 was used to extrapolate a baseline for Areas 4 and 5. These areas are far apart, and this is a data gap that should not be condoned.

119.4. Wetlands – it is stated that the final mine infrastructure layout should take account of the delineated wetlands[55] which suggests that all the work in the IWWMP has been done without a final mine layout plan. The IWWMP recommends that the proposed pit location be segmented to preserve the streams and wetland units whilst maintaining a 30m buffer. However, Dr. Gold points out that recommendations are not cast in stone and, importantly, segmented mining creates long-term management risks around surface and groundwater pollution which have not been addressed. No segmentation is provided for in the IWUL and three wetlands in Ophondweni are authorised for destruction by the IWUL.[56]

119.5. Hydropedology – although a field survey was undertaken in January 2019, the soil classification could not be completed, and further surveys are required prior to mining.

120. It is important to note that "the **level of confidence** with regards to the information presented in [the IWWMP] for [the above information gaps] is **low**".[57]

121. The purpose of the IWWMP is stated to include:

"Compilation of a site-specific, implementable, management plan addressing all the identified water uses and waste management related aspects of a specific activity, in order to meet set goals and objectives in accordance with Integrated Water Resource Management (IWRM) principles".[58]

[55] Page ix
[56] Page 14 of the IWUL
[57] Section 5.8 Page 63 [actually 208]
[58] Point 1, Page 5

122. Dr. Gold notes that, despite this statement, the IWWMP does not present a logical summary of the key background and site-specific aspects from the specialist reports and there is very little to no discussion of presented facts and how they relate to water use, potential site-specific impacts, and management within the area. In addition, the associated specialist reports do not discuss the findings (especially information from monitoring) effectively and how these may impact on the risks and associated mitigation and long-term rehabilitation measures. It is therefore left to the reader to assess and/or interpret the facts for themselves.

123. Dr. Gold states that the IWWMP should contain a discussion summary of the key facts and points from the specialist reports that will allow the reader (and decision makers) to reach a conclusion about the known facts, impacts, possible mitigation measures and costs, and the associated risk of allowing the operation to be licensed.

124. The impacts identified for the mine plan amendments include:[59]

124.1. Pollution of water resources;

124.2. Habitat modification of wetlands; and

124.3. Deterioration of water quality in wetland habitats.

125. However, according to Dr. Gold's review, activities resulting in potential impacts appear to be assessed for certain areas only and there are shortfalls in the information provided:[60]

[59] Section 5.5.2 Page 53 [actually 198 as page numbers jump back to 10 after Page 155]

[60] Table 5-10 / 5-25 Page 55 to 58 [actually 200 to 203]

125.1. The construction and use of PCDs in Areas 4 and 5 could result in groundwater contamination from leaching of dirty water if unlined (high impact) or surface water contamination if incorrectly designed (medium impact).

125.2. The deposition of discard and slurry in the KwaQubuka Pit (Area 9) could result in decant and potential acid mine drainage (AMD) into the groundwater (low impact). The mitigation measure referenced is to "[d]*ispose all coal waste or overburden material below the pre-mining groundwater levels*" (maintaining a low impact). According to the review of the IWWMP by Dr. Gold, the efficacy of this measure is questionable as it is not followed through to the designs and the premise upon which this is based appears scientifically flawed.[61] Also, no mention is made of the impacts from Pits A and BDE as Area 2 is not deemed to be part of this IWUL, even though co-disposal into Pit BDE does not appear to have been licensed / exempted for co-disposal.

125.3. Dewatering of opencast pits in Areas 4 and 5 may result in contamination of groundwater resources through seepage (medium impact) or surface water resources through runoff (medium impact). The mitigation measures referenced are the "implementation of approved [/ adequate] stormwater management plan", adherence to GNR704, and groundwater monitoring to reduce the impact to low. However, according to Dr. Gold, these impacts relate more to the construction of opencast pits than to the specific activity of dewatering of the pits. In addition, no mention is made of the potential to reduce groundwater levels in the area through pit dewatering during operations. The IWUL conditions relate to monitoring only.[62]

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[61] See points 1.2 (especially the discussion under Point 1.2.4 and 1.2.6) and 2 (Hydrogeological Assessment Review) in Dr. Gold's review attached.

[62] Page 44 and 45

125.4. Sedimentation, pollution and degradation of wetlands during construction and opencast operations (moderate to low impacts). According to Dr. Gold, standard mitigation measures are referenced relating to effective stormwater management, reducing access, prompt rehabilitation of exposed areas, and monitoring.

125.5. The impacts regarding to the "reinstating and rehabilitation of wetlands and drainage lines" post-mining[63] in Areas 4, 5 and 8 relate to the infilling of drainage lines with groundwater contamination (quality) and quantity reduction impacts (low to medium) and a fractional decline in surface water runoff and runoff contamination (medium to low impacts). The mitigation measures referenced include the updating of groundwater models annually with quarterly monitoring and implementing the stormwater management plan (clean-dirty water separation with dirty water capture for reuse in the plant and free drainage) reducing the impacts to low. Dr. Gold points out that modelling and monitoring are management measures and not mitigation measures – i.e., they are not in themselves actions that minimise / reduce the impacts but are tools used to predict and determine potential and occurring impacts.

126. Importantly, the actual assessment parameters, although mentioned generally, are not specifically provided for each potential impact identified in the IWWMP. Therefore, calculations for the impact levels are uncertain and cannot be checked.

127. The various Hydrogeological Reports do not introduce sufficient background information and the reviewer must constantly look for information spread throughout the voluminous documents.

128. There are several inconsistencies in nomenclature used in the various reports.

[63] Page 54 [actually 199]

129. The Executive Summary[64] states: "*No mining impact is noted on the Umfolozi River or other drainage streams in the area*". Dr. Gold finds this to be a bold statement concerning the impacts of Areas 8 and 9, especially considering the complexity of the geology and simplified groundwater modelling in this area. Further to this, mining in the Mahujini, Emalahleni and Ophondweni areas is going to take place through a number water courses which are all tributaries to the Nyalazi River which flows into the Mfolozi River and the iSimangaliso Wetland Park.

130. In contrast to the abovementioned statement, the photograph below depicts the close proximity of the mining in Area 2 in relation to the Mfolozi River.

131. Dr. Gold raises a concern that the hydrogeology reports give no information on the depths of the pits and if the mining operations are going to be similar to that in Area 1, then the pits are going to be significantly deep. However, the reported static water level ranges from 10 to 32 metres below ground level (2A) and 2 to 36 metres below ground level (2C). This means that groundwater will flow into the mine pits and will

[64] 2B (Page ix)

fill them up to a level where the water level in the pits is equal to that of the static water level and this would have to be dewatered.

132. According to Dr. Gold, the IWWMP action plan[65] contains fairly standard management measures. The management of activities that could potentially impact on groundwater resources include[66]:

132.1. Annual update of predictive tools such as the groundwater models by a geohydrologist. This should improve understanding and prediction of long-term pollution potential.

132.2. On-going visual verification of groundwater inflow into opencast workings and subsequent flow monitoring by an environmental specialist – it's uncertain if this is an internal or external position. Dr. Gold notes that in terms of the organisational structure[67] the "environmental officer" is placed below the Engineering & HSE Manager, making the task of environmental compliance difficult as the position is one without much authority.

132.3. On-going "[e]ncapsulation of potentially acid forming (PAF) materials through selective placement; co-disposal of coal residue and disposal under pre-mining saturated conditions (to reduce oxygen ingress)" and implementation of Class C containment by the Mine Manager. The statement "under pre-mining saturated conditions" suggests interpretation by the compiler of the IWWMP that below the "pre-mining" static water level everything is saturated which is not the case. This is possibly, but not necessarily, true for the weathered zone; however static water level

[65] Summarised in Table 6-3 / 6-8 Section 6.6 page 78 to 82 [actually 223 to 227]
[66] Page 80 [225 actually]
[67] Figure 5-10 / Table 5-16 Page 38 [actually 183]

as measured in boreholes is an indication of a balance in pressure (air, aquifer and host-rock).

133. Throughout the report tables and figures are incorrectly referenced making it confusing to the reader. Section 2.3 which gives a background of the mining and product jumps around between areas and information, is repetitive, and has no logical flow.

134. Accordingly, the report as a whole it is flawed as it is missing vital information for the vast areas and a substantial number more water uses for which the application is being made. The terms of reference are limited to extent that the render this study useless for the licence granted.

135. It is unacceptable that the IWULA fails to acknowledge that the proposed project is highly likely to exacerbate the current and future water constraints in the Mfolozi catchment and lead to adverse impacts on other water users.

136. Detailed concerns regarding the failure to adequately assess the impact of the water uses on other water users are now dealt with in detail below.

3.5 Inadequacies and uncertainties re processing of waste in pits

137. Disposal of the processing waste, which would ordinarily require a lined facility, has been taking place into unlined mined out opencast pits since 2009. This is an activity that has the potential to result in pollution of the groundwater and any linked surface water sources and therefore should be licensed. A GN704 exemption was applied for and granted for slurry, as included in the 2014 IWUL. Therefore, this process and management practice was unregulated for 5 years (we have had no sight of the exemption motivation). The risks of groundwater pollution from this source are high,

and the subsequent impact on water quality within groundwater abstraction boreholes and surface water sources that are linked to the pollution zone is considered high. Once the water is contaminated this reduces the available water for domestic consumption and use without prior treatment.

138. The processing waste is said to be saline rather than acid generating. This means that high salt loads with pH levels above or around 7 are expected. It should be noted however, that saline (high-salt load) water may be alkaline (>7 pH) or acidic (<7 pH) depending on the elements in solution; however acidic water is often saline as acid water leaches minerals ("salts") from surrounding rock material into solution. Even if acid is not generated, increasing the salt loads in surface or groundwater creates a problem for long-term water use as the removal of salts from the water to an acceptable level requires treatment that is site-specific, with a long-term management commitment, and is often difficult and costly.

139. The in-pit co-disposal of processing waste has been taking place since 2017.[68] However, no approval of the recommended design process is evident and in addition, Tendele have not followed the recommended design to minimise pollution potential. Although there are reports, studies have not been finalised and there is no accepted long-term mitigation and rehabilitation plan for this pollution source. Essentially this is a known pollution source that is being operated under approval from the DWS without the long-term risks and impacts being thoroughly assessed, mitigated and costed. The "no pollution" clause in the NWA (Section 19), as well as NEMA (Section 28 "duty of care"), is being flouted by both the mining company and the department/s.

[68] According to Waste Disposal Schedule in the IWWMP, Table 2-5 / Table 2-7 Page 13

140. Currently the main area of concern is Area 2 where the processing plants and pits being used for processing waste disposal are located. However, the application for co-disposal exemption for an additional pit in Area 9 and the planned use of a pit in Area 8 means that the area of long-term pollution management is increased and made more complex. This is especially relevant as the land tenure is communal (Ingonyama Trust).

141. The Slurry Management Plan for Pit A[69] states that pit excavation commenced in 2007 and was completed in 2009. Fine coal discard in the form of slurry was deposited between 2010 and 2017, with floculant being added in 2016 and 2017. In 2019, the applicant decided to comply with the law and regulate this activity. Despite the document being on a GCS letterhead, Inqubeko Consulting Engineers did the deposition investigation study on Pit A and the report is attached to the letter. The report confirms that "the test work done on the samples collected should be followed up by field testing in tails deposits such as Pit A." There is no evidence of the field testing having been done.

142. Dr. Gold points out that the co-disposal of waste into the opencast pits has been taking place at Tendele long before it was authorised by the current IWUL, and the activity was not assessed nor was it part of the original IWULs. Co-disposal is briefly discussed under Section 2.3.5.[70] of the IWWMP. While the investigation of various waste co-disposal scenarios is mentioned, a report of the outcomes of the co-disposal is not referenced.

143. Appendix 10[71] of the IWWMP indicates that geochemical testing suggests that co-

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69 Annexure 33 dated 14 February 2019

70 Page 14

71 Page 5

disposal of slurry with the coarse discard may reduce the potential of poor-quality seepage and improve waste stabilisation.

144. The coarse discard is trucked to the disposal pit whilst the slurry is pumped via a system of 6" surface pipelines[72] in what would appear to be an integrated discard system. There is no discussion in the IWWMP on how the areas with these pipelines are being treated i.e., whether they dirty water areas, whether there is monitoring of these pipelines for leakages, or what pollution prevention measures to protect the surrounding environment for accidental spillages are in place.

145. Pits A and BDE are unlined, so the discard has direct access to the surrounding rock and potential aquifers. The total and leachable concentrations from two samples (slurry and discard) classify the waste as Type 3 requiring a Class C containment barrier (i.e., includes a geomembrane / HDPE liner in the barrier).[73]

146. The Slurry Management Plan[74] by GCS contains a 2018 report that looks at the physical and geochemical properties of the slurry from Pit A.[75] The focus of the report is the "management" of slurry into Pit A. GCS[76] indicates that slurry "can be deposited up to 1,5m under the lowest decant point (approximately 77 to 78.4 mamsl) on the lip of the pit" however no reference is made to the source of this value and how it was derived. More specifically there is no reference to the geology and potential aquifers in the area.

147. In addition, mention is made of the "capping design," however specifics and detail of

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72 Page 29
73 Page 9 of Appendix B of Appendix 10 of the IWWMP and Appendix 29
74 Appendix 33
75 From 5 samples taken between November 2017
76 In Section 3.1 Page 3

the material and actual design and/or civil drawings are not provided. Section 3.5.[77] states "[i]n the unlikely event that seepage from Pit A occurs" monitoring boreholes will be changed to "pump-and-treat" boreholes with several treatment options provided. Dr. Gold states that this downplays the potential for groundwater contamination from this source as well as presupposes a long-term management commitment in the event of contamination.

148. It is mentioned under Section 2.6.3.1[78] that "[a] "rock" drain was installed in the bottom of Pit BDE prior to the placing of discard material in the pits to collect water draining from the discard material." However, no mention is made of Pit A. The rock drain is supposed to collect water from the discarded material for re-use in the operations and also to prevent ingress of the water into the soil and groundwater. The water "decanting"[79] from Pit BDE is pumped to four settling ponds for use in the processing plant, with the overflow from these ponds flowing into the Myenge Dam 1 PCD. Settling ponds 3 and 4 are lined, whilst settling ponds 1 and 2 were apparently in the process of being lined at the time of the IWWMP compilation. We have no knowledge as to whether this has been done.

149. A long-term proposal to either cap or line and cap the pits has been provided in the "Somkhele Coal Mine - Conceptual Design Report for the PIT BDE, Area 2 for Waste Deposition Purposes by GCS"[80] with the recommendation of intermediate lining at the pre-mining groundwater levels (i.e., static water level) and capping the pits to minimise the pollution risk from the discard between the liner and the cap.[81] Dr. Gold is unable

[77] Appendix 33 GCS Memo Page 5
[78] Page 30
[79] Page 30
[80] Version – Final, 13 June 2016, Appendix 10 GCS
[81] The results of this study are included in Section 6.5.7, pages 74 and 75 [219 and 220 actually as page numbers jump back to 10 after Page 155] of the IWWMP.

to ascertain why the liner is proposed to be at the pre-mining static water levels as this level often lies within the weathered zone and therefore water / fluids below this level within the pit are free to interchange with the surrounding groundwater in this zone.

150. In conflict with this, "The philosophy for groundwater management"[82] includes disposing "all coal waste or overburden material at least 2-5 m below the pre-mining groundwater levels" as "[d]isposing the material underneath the pre-mining water level will reduce the likelihood of the formation of a positive hydraulic head". It is not clear which will be applied.

151. A further conflict it evident in the EIA[83] which states that management and mitigation measures for seepage from waste disposal in pits include preventing this practice from occurring, but if this practice does go ahead then waste backfilling "must be stopped at least 5m below the static groundwater level, well compacted and lime added".

152. The understanding of groundwater dynamics is flawed as it is not linked with geology and/or hydrogeology. Dr. Gold recommends that as a minimum the lining should be at the contact of the weathered zone with the competent rock (but ideally should be below this level).

153. In addition, the impact on secondary (fractured) aquifers is ignored. Deposition of flocculent treated slurry in 0.5m layers on top of coarse discard paddocks, and then compacting when dry was also proposed to reduce permeability.

154. Dr. Gold raises the important fact that, as there are coal fines in the slurry, dewatering

[82] Section 6.1.3 Page 64 [209 actually]

[83] Appendix 11 Section 7.9.5 Page 261

of the slurry allowing air spaces, could result in spontaneous combustion. This is a risk that has not been mentioned nor has this been discounted as a risk in the IWWMP.

155. The final conceptual design creates a more uniform "boxed" surface profile averaging about 20m above that of the pre-mining landscape.[84] In addition, further stormwater control measures to prevent surface water ingress are also proposed. Under the identification of impacts for "Topography", "Surface Water" and "Visual Aspects" in the EIA by GCS,[85] no assessment of the decommissioning / closure impacts of this change in landscape is undertaken or discussed. While it states that post-mining dirty water collected in the "rock" / subsurface drains will be treated prior to discharge to the nearby stream the risks and impacts of this are not discussed anywhere in the IWWMP.

156. In addition, in terms of the 2016 report, the decant risks for the pits has not been assessed.

157. Kinetic column leach tests indicate that the slurry and coarse discard are more likely to produce saline rather than acid drainage.[86] The actual test information, discussion, and series samples from 2015-2016 are not provided.

158. The "Proposed KwaQubuka Pit Rehabilitation and Closure Plan" memo by GCS[87] indicates that the recommended co-disposal of slurry and coarse discard in Pit BDE was not taking place. Slurry was being deposited in thicker layers and was also still being disposed of in Pit A. However, a study was undertaken to determine the stability

[84] Appendix A of Appendix 10 – Conceptual design drawings
[85] Appendix 11 Section 7.2 Page 213, Section 7.8 Page 251 and Section 7.13 Page 270 respectively
[86] Appendix 10, Page 3
[87] Dated March 2019 is included in Appendix 10 of the IWWMP

of the slurry. No further mention is made of Pits A and BDE, with the conclusion of the memo indicating a proposed design for Area 9 (KwaQubuka). Although no detail of the studies are provided, the memo indicates that the slurry could act as a permeability barrier (liner) even though it is not a Class 3 barrier as, owing to the high angle of the highwall (70º), a geomembrane cannot be installed in the pits. This restriction would be the same for the highwall of all opencast operations and therefore was surely known at the time of the 2016 study.

159. This is a potential pollution source that requires a long-term solution, for the existing as well as the planned disposal. Dr. Gold reiterates that the 2016 recommendations have not been applied, i.e., that even though the solution was created in consultation with Somkhele, implementation to reduce the pollution potential has not taken place. Under the circumstances, the IWUL should not have been issued.

160. Dr. Gold notes that the motivation for exemption from GNR704 of co-disposal in the pits within Areas 8 and 9 is that after closure water monitoring with long-term interception, storage in a PCD and treatment of groundwater ("if found necessary") will take place.[88] This presupposes long-term management and financial commitment that does not appear to have been costed or included.

161. In a letter sent on behalf of the Appellants to the consultants on 29 July 2019 (attached hereto marked "**A26")** in response to the draft Scoping Report for the Integrated Waste Management license the Appellants refer to the listed activities[4] that are said to be triggered but do not correlate with the rest of the draft Scoping Report in so far as it relates to waste classification, waste assessment, guidance and reference

[88] Appendix 28 GN704 Motivation Report for in-Pit Disposal of Coal Waste Material for Somkhele Mining Area 9 and Area 8 For IWULA Supplement, Version – Final Rev 1, 15 February 2019; Page 17

material, and assumptions and limitations. The Appellants requested clarity on whether the waste streams generated classified as hazardous. Black Rock's letter of response dated 12 August 2019 (attached hereto marked "**A27")** stated:

"The Slurry and Discard is not classified as hazardous. Hazardous waste streams are the hydrocarbons utilized in the workshops. The quantities of hazardous material generated by Somkhele is below the threshold requiring a waste license."

162. This is conflict with the IWWMP which confirms that total and leachable concentrations from two samples (slurry and discard) classify the waste as Type 3 requiring a Class C containment barrier.[89]

3.6 Geology: Inadequacies and Inconsistencies

163. No Geological maps are presented in any of the three reports (2A, 2B or 2C). Furthermore, the lack of a structural geology map is a serious omission as this is needed to help understand the complexities faced in trying to achieve an understanding of the groundwater flows. Without this understanding it is considered impossible to fully grasp the nature of the groundwater flow and how plumes generated by mining activities would impact the local water resources.

164. According to Dr. Gold the geology of the area is complex and is made up of layers of rock (strata), which are described in the various hydrogeological reports. These layers were once horizontal (when they were formed) but have now been tilted by up to as much as 30^{O} towards the east and the southeast. Furthermore, there are numerous large-scale sub-vertical faults which cut through the area and displace the strata (including the coal seams) by as much as 5km. The area is further complicated

[89] Page 9 of Appendix B of Appendix 10 of the IWWMP and Appendix 29

by the intrusion of a significant amount of dolerite – which is found as both sills and dykes. The dolerite has had a major impact on coal qualities and has compromised (burnt) the qualities in many of the areas where exploration has been carried out. The result of this very complex geological assemblage of rocks is that the groundwater is also very complex and groundwater flows will be heterogeneous.

165. These complexities are not contemplated in the IWWMP.

166. Dr Gold reports that four borehole logs are presented in report 2C however none of report any water strikes. No borehole logs are given in report 2A. The absence of borehole logs in 2A means that the report is technically incomplete. Geological logs, with water strikes, are required not only for the modelling but also for assessment during groundwater monitoring.

167. The IWWMP[90] indicates that the coal seams in the area are usually associated with carbonaceous shale and overlain by coarse-grained sandstone. Reference is made to an SRK report (2014). According to Dr Gold this will have implications for acid rock drainage potential.

168. Geochemical testing of the rock, coal, discard, and slurry has taken place for Areas 1, 2, 8 and 9 with 56 samples being analysed between 2004 and 2018.[91] Results indicate that, although the neutralisation potential in the slurry is enough to offset acid generation, the Net Acid Generation (NAG) results suggest that not all this neutralisation potential is readily available. No testing of the rock within Areas 4 and 5 appears to have been undertaken.

[90] Page 10
[91] Page 37 [actually 182] of the IWWMP). Acid-Base Accounting (ABA)

3.7 Structural Geology: Inadequacies and Inconsistencies

169. The absence of a geological map in any of these hydrogeological reports is a major shortfall.

170. The modeller has found that some dolerite dykes are perpendicular to their assumed groundwater flow directions. The assumption has been made that these structures are now an impediment to groundwater flows. According to Dr. Gold, this statement is technically incorrect. The presence of dykes at these orientations is more likely to result in groundwater flows following the fractured contacts of these structures – i.e., with groundwater now flowing at right angles to the assumed flow directions. This has not been factored into any of the modelling or in any subsequent interpretation and this geological phenomenon is not discussed at all.

171. The section on structural geology in the hydrogeological reports does not give any tangible information on the structure of the area. There is nothing on the nature of the faulting or fracturing in the area and the geology of the dolerite intrusions is glossed over. Furthermore, there is nothing given on the relationship on the relatively steep dip (~30^{O}) of the strata in the area and the complex relationship with faults and dolerite. These relationships have a major influence, and largely control the movement of groundwater in the zone below the superficial weathered zone. This is a gap in the reports as structure and lithology (rock type) are the two main controls on the storage and flow of groundwater in the Somkhele / Mpukunyoni area.

172. The hydrogeological reports do state that the mining of coal within this succession is complicated by the steeply dipping strata and the block faulting which disrupts the continuity of the coal zone.[92] However, according to Dr Gold, the question that then

[92] Section 2.4.1

needs to be asked is why the disruption seen in the coal mining has not also been applied to the groundwater aquifers?

173. This is work that should have been done before the Mining Right was approved. The groundwater impact could be substantial and long lasting. The impact is not limited to the natural environment, but also implicates local inhabitants' health and livelihoods. It is therefore important that the effects are understood up front and not merely post facto.

174. Dr. Gold's review starkly illustrates how easy it is to hide a complex, poorly understood concept, such as structural controls on groundwater movement, under the rubric that the assessment is merely "*a baseline investigation*" and that important technicalities (such as structural geology) can be assessed and considered later. As Dr. Gold explains, the structure of the area is the most important control on groundwater movement/flow and cannot simply be ignored.

175. While Dr. Gold acknowledges the basic principle that reports are produced based on information available at the time, he notes that the authors of the reports themselves acknowledged that further investigations are required. Because the assessment did not include sufficient field investigation of the site-specific conditions in relation to the proposed mining activities and design, the assessment cannot serve as a basis for informed decision-making in a IWULA application.

176. While there are always more studies that can be done to improve understanding, at an impact assessment stage the specialist reports should be based on site detail (natural as well as the planned project) and not be for a general scoping type baseline. This is the crux of the need to appeal this IWUL.

3.8 Aquifer Characteristics: Inadequacies and Inconsistencies

177. Dr. Gold's review finds that the various reports[93] largely exclude any discussion on primary aquifers which utilise the pore spaces within lithological units. Further to this, in respect of preferential flow paths,[94] the report is patently flawed. It is stated that "*the strike of the dykes in this area are both parallel and perpendicular to the direction of groundwater flow and therefore act as noflow and preferential flow boundaries*". This is incorrect and, according to Dr. Gold, non-sensical. Simply because a dolerite dyke is perpendicular to the modelled groundwater flow does not make it a "noflow" zone but rather means that if there is a fractured contact on these dolerites, then the groundwater will flow along this contact – i.e., it will flow perpendicular to that which the model predicts.

178. Dr. Gold states that Figure 4-1 of 2A and 2B is a gross simplification and inaccurate, providing a false representation of the groundwater conditions that misleads the reader. It shows a "water level" which is sub-parallel with the surface topography and confusingly shows a "dry fracture" located below the "water level". To Dr. Gold it clearly demonstrates a poor understanding or a failure to accurately explain the groundwater conditions of the various aquifer types found in the area.

179. Another patent flaw in the report is that it states that "from the calibrated models, it is noted that groundwater flow is predominantly from east to west across the study area".[95] According to Dr. Gold this is impossible as the strata have a prominent dip (up to 35^{o}) to the east / southeast so the groundwater would actually be expected to flow west to east.

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93 Section 4.2 2A and 2B. Primary groundwater occurrence

94 In Section 4.1 Preferential flow paths (2A & 2C, see also Section 3.2 Page 32 of 2B)

95 The executive summary 2C (Page xiv)

3.9 Conceptual Hydrogeological Model: Inadequacies and Inconsistencies

180. Dr. Gold's review of the "Closure philosophy"[96] finds that there is no reasoning or logic behind the use of "2 to 5 m below the pre-mining water level" and does not appear to be linked to any geological feature or to a defined aquifer. It also presupposes a detailed knowledge of the pre-mining static water levels across the specific site. Without this information the efficacy of this pollution mitigation measure proposed in the disposal plan cannot be adequately assessed.

3.10 Numerical Groundwater Model: Inadequacies and Inconsistencies

181. The report itself states that, in respect of the model calibration and output visualization process, "[t]hese guidelines are not intended to be used for environmental compliance and are used only as a benchmark value, to contextualise the results".[97]

182. The Assumptions and Limitations section[98] completely omits to mention that the modelled groundwater flows and regimes have significantly simplified the geology and have not mentioned the affects that the faults in the area have on groundwater flow dynamics. As mentioned previously, Dr. Gold confirms that the only mention of these structures in the report is again, a completely nonsensical statement that "[*t]he strike of the dykes in this area are both parallel and perpendicular to the direction of groundwater flow and therefore act as noflow and preferential flow boundaries*".

183. Dr. Gold identifies this as a major flaw in the modelling process in that it makes no mention of and therefore fails to factor in the steeply dipping stratigraphy, phreatic

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96 Section 7.1 2A
97 Section 8.3 (Page 64)
98 Section 8.4

divides or vertical structures that transcend beyond catchments and/or topographic highs. The modelling parameters applied by the modellers in this case are relevant only for the weathered zone aquifer. Mining is, however, going to be occurring at depths significantly below the weathered zone and fractured aquifers developed at depth will be intersected. The hydrogeological reports[99] fail to note that the barriers for groundwater basins and the surface river catchments are only the same when one is dealing with the weathered zone aquifer.

184. For the deeper secondary aquifer, these basin (catchment) divides are very different and are called phreatic divides. This means that groundwater below one river catchment can flow through to under the next catchment area without being influenced by the surface topography. Groundwater will utilise flow paths created by faults, fractures and lithological contacts – and these commonly extend over distances which pass from under one river catchment to the next.

185. Another major flaw in the Report is that there is no information on how deep the pits are going to be however, most of the mining will take place at depths below the static water level (which has a range of between 2 and 36 metres below ground level).

186. According to Dr. Gold, the modelling carried out in the hydrogeological reports does not give any description of how the geological structures have influenced the flow and storage of groundwater. The model[100] has been built around the assumption that there are 5 layers which are all presented as being sub-horizontal and sub-parallel[101]. The steep dip of the strata is ignored and as such the zone modelled cuts right across

[99] Section 8.7.2 Boundary conditions.
[100] Vertical discretisation (Section 8.7.3)
[101] Section 8.7.3. and Figure 8.2

geological strata, as are structural complexities which are found to have many different orientations.

187. It is clear in the way that the geology that has been modelled it is assumed to be homogeneous (the same in all directions) as the plumes and drawdowns modelled are largely concentric and/or radial zones applied at progressively further distances from the pit over time.[102] However, a look at the aerial photos presented in the given Figures[103] show that there is a very prominent strata strike NE and a structural lineament to the NW – both of which are ignored / not taken into account by the modelling.

188. A further major flaw in the report is that the groundwater modelling has not taken the two main controls on flow and storage into consideration. This omission raises the question as to whether the authors understand or appreciate the geology of the area under discussion and how it influences groundwater flow and dynamics.

189. Dr. Gold confirms in his review that the modelled groundwater flow directions do not in any way follow the regional geology (which includes strike-and-dip of strata, major faults and dolerite intrusions) of the area and groundwater is predicted to be perpendicular to the regional geology features, rather than along major structures. Flow is also predicted to flow across major faults, rather than along them. The failure to consider the regional geology renders the geohydrological modelling obsolete.

[102] Section 8.12.3, Figures 8-9, 8-10 and 8-11, Pages 79-81 2A

[103] 2-3, 3-1, 8-9, 8-10, 8-11, 10-1, 10-4 (all of 2A, see also several similar Figures in 2B and 2C)

190. Furthermore, no detail is given on water strikes encountered in the boreholes – e.g., at what depths was water intersected by the borehole, how many strikes were there, what type of aquifer was intersected.

191. As mentioned above, that there are several significant geological influences on the flow and storage of groundwater that have not been factored into the modelling and it is possible that significant volumes of water may be transported along these structures for significant distances. The only way this can be checked is by carrying out additional investigative studies. The population density around the mine suggests that many people, and their livelihoods (viz. cattle farming), would be affected should the regional aquifers be contaminated through the flow of groundwater along these major (regional) geological structures.

192. There is also confirmation that insufficient detailed information on planned mining activities was available to enable the preparation of a comprehensive storm water management plan "which is essential for the whole mining operation to minimise hydrological impacts".

3.11 Wetlands: Inadequacies and Inconsistencies

193. The Wetland Study in Appendix 14 is limited by terms of reference to wetland systems within Area 1, Area 2 and the Luhlanga / KwaQubuka areas. Given that mining has already taken place in these areas, it is too late to be assessing the impact on the wetlands. The "Preliminary Wetland Assessment" done in 2014 by GCS was only a desktop review to "provide a preliminary indication of the anticipated extent, state and importance of the wetland units within the project area". It is noted that GCS confirms in this document that "*all the sites proposed for mining drain into the Nyalazi River and its associated floodplain wetland system, which ultimately drains into Lake St*

Lucia within the iSimangaliso Wetland Park, one of the most important wetland systems in Southern Africa".

194. In an attempt to improve on the above, a subsequent Wetland Assessment was done for ONE area within Area 4 and 5; that being Ophondweni (done by GCS), dated February 2019. This confirms that the "several moderate risks were identified" the "most notable" being related to "stripping and stockpiling / transporting of topsoil and the removal of vegetation and excavations required for the proposed 120m pit location. It is not understood how this kind of activity can be described as a "moderate impact" on the wetland. Ophondweni is 5.5km2 in size. No other areas in the mining right areas were assessed in 2019, specifically Mahujini and Emalahleni.

3.12 Hydrocensus: Inadequacies

195. The hydrocensus in 2A makes the following statement: "From the hydrocensus conducted, it is clear that water for human consumption and agricultural purposes within the proposed mining areas are either obtained from some of the ephemeral streams or other water supply systems (i.e. hand pumps or municipal water trucks)".

196. Unfortunately, the hydrocensus in 2C fails to give any detail on the number of inhabitants who live or farm in the immediate vicinity of the area. However, people do live nearby and cultivate small plots land. There are also many heads of livestock. These people and their livestock are most likely going to be dependent on the streams, local springs (if there are any as none are mentioned in the hydrocensus), and boreholes and on state water supply programmes.

197. No coordinates (elevations) are provided for the hydrocensus boreholes in Table 3-1 2A. No information is given to the infrastructure available (i.e. pumps / handpumps

installed, condition of the casing, whether the borehole is capped, no photographs of each borehole an what the borehole is being used for).

3.13 Surface Water: Inadequacies and Inconsistencies

198. The mining area falls within Water Management Area 4: Pongola to Mtamvuna (WMA 4) in quaternary catchments W23A and W32G; Areas 1, 2, 8 and 9 fall within W23A,[104] and Areas 4 and 5 fall within W32G.

199. Mining operations in the quaternary catchment W23A impact two sub catchments of the lower Mfolozi River, draining into the Mfolozi River directly and into Mbukwini Dam. The non-perennial and perennial watercourses within this area are considered hydrologically sensitive as they are associated with riparian habitats.[105]

200. Mining operations in the quaternary catchment W32G impacts six sub catchments draining into the Nyalazi River in the south and the Mnyaba River in the North. These are relatively large river systems and are classified as nationally important Freshwater Ecosystem Priority Areas. These river systems are in a fairly good condition within the Ophondweni area (medium-high ecological importance and sensitivity (EIS) rating);[106] Emalahleni area (medium EIS rating);[107] and Mahujini area (fair EIS rating).[108] However, the IWWMP states that the smaller ephemeral streams are considered to be of a low ecological importance.

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[104] Figure 4-3 / 4-5 (Page 71)
[105] Section 4.2.2 Page 72
[106] Section 4.2.2 Page 72
[107] Section 4.2.2 Page 73
[108] Section 4.2.2 Page 74

201. The IWWMP recognises that these smaller drainage networks are “potential conduits for pollutants/sediment which could affect more important downstream resources”.[109] The Figures provided on Pages 73 to 75 indicate proposed mining pits within the respective mining areas. These pits mine through streams of low to very low importance (adjacent to streams / rivers of medium importance) in the Ophondweni and Mahujini areas, but mine through streams / rivers of medium importance in the Emalahleni area.

202. The extent and locations of these “proposed pits” are only assessed from an environmental perspective. It should be noted that the pits cross flow paths i.e., separate up and downstream units within the Emalahleni area. There is no specific impact risk / assessment undertaken on this factor and the rehabilitation measures are not discussed. The long-term rehabilitation plan for these pits and the “reestablishment” or not of the pre-mining drainage lines / flow paths is therefore unknown.

203. The EIA[110] does not assess the impact of opencast mining through water courses / drainage lines nor the impact that backfilling and stormwater management measures may have on these drainage lines and the landscape as a whole.

204. The planned mining pits within Area 4 and 5 all have portions falling within the 1:100-year floodlines and the exclusion zones.[111]

[109] Page 74

[110] Appendix 11 Section 7.8 Pages 251-258

[111] Defined by the 100m buffer line from the centre of the river in these instances; Figures 4-11 to 4-16 / Tables 4-13 to 4-18 Pages 81 to 86

205. Surface water quality information in Section 4.2.4 of the IWWMP is taken from the Annual Water Monitoring Report[112] and the Hydrogeological Report.[113] Very little specific information is provided in this section, which does not provide sufficient information and a logical summary and discussion of the surface water qualities and trends.

206. Surface water monitoring takes place quarterly:

206.1. Area 1: There are five surface water monitoring points in this area, with two additional surface water dams (a recycled water dam and a borehole water transfer dam) that are monitored internally by the mine).[114] The results between December 2015 and September 2018 from the Mfolozi River indicate that sulphate concentrations are relatively constant and well below limits with iron concentrations varying but are mainly within limits (apart from June 2016).[115] Results from a single sample for these monitoring points (the season of collection is unknown) in 2018 highlight that all samples are slightly alkaline with the A1S1 sample (natural dam) having a number of parameters that fall outside the SANS241 drinking water standards and the DWA 1996 domestic use limits, and all samples having parameters falling outside the IWUL objectives.[116]

206.2. Area 2: There are seven surface water monitoring points in this area, however no results are provided for monitoring. Four of the monitoring points have been recorded as dry between 2011 and 2017, and the remaining three monitoring points are noted as having high-sulphate concentrations above the SANS241 limits

[112] GCS, 2018; included under Appendix 23
[113] Appendix 17 of the IWWMP
[114] Section 5.4.1 Page 42 [actually 187 as page numbers jump back to 10 after Page 155
[115] Table 4-19 Page 87
[116] Table 4-23 Page 94

although pH levels are stated to be "neutral".[117] Two of these points are pollution control / dirty water facilities and one of these monitoring points is Myenge Dam 2, which is licensed as a freshwater storage dam. There is a remediation plan in place to reduce the sulphate concentrations through overflow from the plant infrastructure and dust transfer (dirty water area) to the dam to within specified limits. Surface water quality results for this area from 2018 are supposedly provided in Table 4-24,[118] however this table appears to be related to groundwater monitoring points. This section of the IWWMP is confusing and does not provide sufficient information and a logical summary and discussion of the surface water qualities and trends.

206.3. Areas 4 and 5: three samples were collected as part of the hydrocensus in 2013 with no monitoring having commenced.[119] This means that there is no seasonal or comprehensive baseline information for this area pre-mining. The reliance on a single sample taken 6 or so years ago for the baseline is unscientific. It is indicated that monitoring will commence prior to mining, however no timeframes or period prior to mining is presented. This makes it difficult to determine the true impact from mining during operations.

206.4. Areas 8 and 9: these areas are adjacent to Area 2 and have no surface monitoring points owing to the non-perennial nature of the streams. Water quality is taken internally by the mine for the RWD in Area 8.[120]

206.5. Under Section 4.2.4 "Surface Water Quality" there are two paragraphs relating to the water quality objectives for groundwater set in the IWUL as being unrealistic and unachievable as they show better required qualities than the groundwater

[117] Page 88
[118] Page 95
[119] Section 5.4.1 Page 42 [actually 187]
[120] Section 5.4.1 Page 42 [actually 187]

baseline.[121] These paragraphs may be valid but are out of place, highlighting a cut-and-paste exercise without providing summaries of reports to highlight a specific aspect within a logical flow of information.

3.14 Hydrological Assessment: Inadequacies and Inconsistencies

207. Tendele asserts that it was perfectly adequate to conduct "*baseline*" investigations for the "*entire area*", to be supplemented in due course. However, Dr. Gold states that this begs the question: how can one accurately determine a pre-mining baseline and the associated impacts and risks of mining without site-specific details on both the natural environment and the proposed mine plan / design?

208. While mine plans can change over time due to changes in social, economic and / or environmental aspects, a detailed design is however required for specialists to effectively review the impacts of an activity at a specific location. Absent such a detailed design, one is merely dealing with the *generic impacts* of coal mining in a *generic environment*.

209. It is evident that the objective of the reports, as specified by the authors, is to establish a generic "*baseline*" and associated "*risk assessment*", not for the detailed assessment of site-specific environmental impacts of the proposed mining operations. It is the latter that is required in an EIA context.

210. An EIA is a mechanism to determine the severity of potential impacts and whether mitigation measures can limit these impacts to acceptable levels. This information

[121] Background water; Page 93

was simply not available to the DMR decision-makers and precluded any informed and equitable decision-making under the MRDA.

211. While Tendele states that no increase in abstraction volumes would be required, no mention is made if there would be any changes to the abstraction locality.

212. The generic nature of the Conceptual Stormwater Management Plan (and other aspects of the report) merely highlights the limitations of the report as to mine design details, which should form an integral part of an environmental impact assessment.

213. Although the IWULA requires a more detailed focus on water pollution, mitigation and design measures than required under an EIA of a mining right application, the information used for these applications is integrally linked. In this regard, it falls to be emphasised that the EIA/EMPr for the mining right application has been submitted as part of the IWULA, which creates a false narrative that the environmental implications of the proposed mine and mitigation measures have been adequately assessed and reviewed – when in fact they have not.

214. Dr. Gold's conclusion is that the assessment was undertaken on insufficient information, thus precluding a proper identification of impacts and adequate mitigation measures.

215. When assessing site-specific environmental impacts, it is inappropriate to rely upon reports which are expressly intended to inform a "broad", as opposed to a site-specific, "understanding" of the area.

3.15 Groundwater: Inadequacies and Inconsistencies

216. The groundwater quality has been combined and discussed under the Hydrogeological Assessment Review.

217. Potential groundwater pollution sources have been identified in the IWWMP as follows:[122]

217.1. Area 1: The opencast workings and rock dumps. The Mfolozi River (surface water) is expected to be the main impacted water resource.

217.2. Area 2: Pits A and BDE used for processing waste (slurry and coarse discard) are considered the most significant potential pollution sources. Other sources in this area include the old discard dump and the processing area. The Myenge Dam 2 (clean water storage) and non-perennial streams are also expected to be impacted.

217.3. Areas 4 and 5: The opencast workings and rock dumps (although the sources of pollution are not specifically mentioned; Page 123). It is however indicated that "[t]here are limited groundwater users downstream", apart from one borehole (OPBH2) located about 140m from the pit high wall and equipped with a handpump which is utilised by the community for domestic use. It is acknowledged that poor-quality groundwater seepage could enter the non-perennial surface water system in this area.

217.4. Area 8: Co-disposal of processing waste (however it is stated on Page 123 that the Luhlanga Pit "will most likely be backfilled with overburden" which is in conflict with other sections of the IWWMP and the waste schedule), opencast workings

[122] Page 122 – note that surface and groundwater are referenced interchangeably in this section and throughout the document which creates confusion as to what is being presented under the respective headings.

and rock dumps. This is expected to impact the surface water resources and there is no mention of groundwater users being impacted. Only water users in the immediate vicinity of any operation are considered as "receivers", and this does not take account of the interconnectivity of groundwater systems through faulting and fracturing. Nor does this take account of future land use and possible future groundwater requirements within the area most notably as a result of increases in the local population.

217.5. Area 9: Co-disposal of processing waste, opencast workings and rock dumps. This is expected to impact the surface water resources. There is no mention of groundwater users being impacted.

218. Modelling of groundwater is discussed under the Hydrogeological Assessment Review. It should however be noted that a numerical groundwater water model and sulphate plume (zone of influence) were undertaken for Areas 4 and 5 and Areas 8 and 9 in two separate reports (Appendix 17). In addition, a pollution mitigation scenario (capping of backfilled pits with a plastic liner or compaction to reduce infiltration) was assessed. Modelling was based on backfilling and sloping to pre-mining topography; however, this is not the proposed design for pits being used for co-disposal.

219. It is stated that the model outcome for Areas 1, 2, 8 and 9 indicates that "[g]enerally, aquifer flow is limited within the Somkhele region with low to very low hydraulic conductivities and secondary porosity for the shallow and deeper fractured rock aquifer. Migration of sulphate tends to be very slow and normally isolated to the identified sources.[123] Without mitigation "[o]nly the plume from Luhlanga Pit is likely to

[123] Section 4.3.4 Page 131

intercept the non-perennial stream downstream of the pit. The plume likely to be generated by KwaQubuka Pit remains localised to the pit, with little change from closure to the 100Y plume".[124] The modelling presented uses "averages" and assumes homogeneity without discussing the effect of fracturing and faulting.

220. It is stated that the model outcome for Areas 4 and 5 shows "groundwater flow velocities ranging from 0.01 (min) to 0.13 (max) m/day, indicating very slow-moving groundwater in the study area".[125] No outcomes from the mitigation scenario are provided in the IWWMP. Again, there is no discussion on the influence of fractures or faults.

221. These outcomes are based on how the model has been setup and calibrated and there are concerns around the site-specific information used and the ability of the model as presented to account for the complex geology in the area.

222. It is mentioned that "Somkhele can be described as a dry mine, with little to no groundwater seepage observed on exposed high walls or footwall areas of existing mine workings. No groundwater ingress data is available and groundwater seepage into the pits is only noted during high precipitation events".[126] In addition, it is stated that "limited active pit de-watering is required". The water balance[127] uses the groundwater ingress values of 16,425 m3/a for Luhlanga, KwaQubuka and Mahujini Pits, and 32,850m3/a for Emalahleni and Ophondweni Pits. The seepage following high rainfall events is significant enough to warrant the removal of this seepage from the operational pits via pumping to ensure that mining can continue, however, no actual pit dewatering values after these events are provided.

[124] Section 4.3.4 Page 136
[125] Section 4.3.4 Page 140
[126] Section 5.2.3 Page 34 [179 actually as page numbers jump back to 10 after Page 155]
[127] Table 5-3 Page 10 [156 actually]

223. The recommendation under Decant Assessment[128] is that "disposal [backfilling of pits] takes place below the demarcated decant elevation" as "if disposal of backfill material is above the demarcated zones, a positive hydraulic head may form in the pits, which could lead to decant". The decant elevations provided in Tables 5-4 / 5-14 and 5-5 / 5-15[129] are in metres above mean sea-level (mamsl) without reference to where this is in relation to the geology and topography of the area, or the pit design. However, it is acknowledged that decant is not necessarily a point source discharge but "can occur from the pit via the weathered aquifer or vadose zone (i.e. as baseflow seepage)".

224. Appendix 34 provides a map of decant points for Areas 1, 2, 8 and 9, but nothing for Areas 4 and 5. In addition, on Page 5 of Appendix 34 it states that Tendele is investigating the use of North Pit 1 and South Pit (Area 1) as future water supply pit lakes as "[f]or these pits decant is only likely to occur if the in-pit water levels are not managed and kept below the identified decant elevations." This suggests that if in-pit water levels are not managed then decant will take place long-term (post-mining). This pre-supposes a long-term water management commitment.

225. Potential groundwater pollution sources:[130] There is no mention as to whether PCDs will be lined or not. However, it is noted that the civil designs of planned PCDs[131] for areas 4 & 5 during mining do include liners. Considering that all three of the pits presented in 2A will decant directly into water courses / stream channels, the long-term post-mining water pollution potential needs to be addressed.

[128] Section 5.2.3.1 Page 34 [179 actually]
[129] Page 35 [180 actually]
[130] Section 7.2
[131] Appendix 22 of the IWWMP

226. Receivers in the local area:[132] According to the IWWMP, "there are limited groundwater users downstream of the proposed Mahujini, Emalahleni and Ophondweni pit areas". However, groundwater is not always linked with surface water flow directions ("downstream"), especially in an area with complex geological structure such as that of the Tendele mining operations. Communities that rely on groundwater may be impacted if the boreholes that they are using tap into aquifers that are interconnected with those compromised by the mining activities.

227. The IWWMP confirms that "… *portions of these non-perennial streams will be mined out*"[133] i.e., mining will take place through water courses. Further to this it states that "*considering the above mentioned, the identified receivers of likely pollution are users of the local aquifer system. Poor quality groundwater seepage may enter non-perennial streams situated close to the pits as baseflow. However, due to the ephemeral nature of the streams baseflow can be regarded as low to insignificant (unmeasurable due to dry conditions*)". According to Dr. Gold this is a broad statement which sweeps an important issue under the carpet, that being that there is a very good chance (in fact a probability) that decant will occur from the Mahujini & Emalahleni pits through the weathered zone into the stream channels.

228. The hydrogeological report states that because there is little or no surface flow in the stream that the water is "unmeasurable" and that "baseflow can be considered as insignificant". Dr. Gold considers this to be a naïve statement as flow within these streams usually also occurs within the sandy bed of the stream. Water flows here can be significant and are often utilised by animals for drinking and local inhabitants can even sink shallow wells into stream beds to access this water.

[132] Section 7.2.1
[133] Refer to Figure 2-3 and Figure 7-6 to Figure 7-8 2A

229. Mine flooding:[134] "*From a theoretical point of view, the opencast workings have to flood at some stage, after mining ceases in the area. This is due to the pits being situated underneath the regional groundwater table. It should also be noted that groundwater seepage into the opencast pits (Area 1, 2, 8 and 9) is noted after intense precipitation in the area, and excess groundwater is removed via pumping methods*". Although the "theoretical point of view" is flawed, the important point above is that groundwater flows from the side walls of the mined-out area into the pits following periods of high rainfall. This suggests that the permeability of the aquifers is high as there is groundwater seepage soon after rainfall event.

230. The IWWMP states that "[*o]nly infiltration from rainfall has been used in calculating the rate at which the old workings will flood. No groundwater infiltration has been considered. It is anticipated that the groundwater will contribute only a small fraction of the total recharge directly into the pit (evident form limited to no pit inflows during mining). Groundwater inflow is estimated to be in the order of approx. 90 m³/day, if aquifer layers are intercepted*". However, the conceptual model given in Figure 7-5[135] shows that they are expecting groundwater inflows into the pits. This is the reason why they have estimates of many years (70 to 110) before decant occurs. This all contradicts the assertion that mining will occur "below the pre-mining water table".[136]

231. Probability of decant:[137] Decant may occur through the weathered zone and enter aquifers through this zone. It can also enter streams through baseflow from the weathered zone. Weathering has been reported as ranging between 10 and 20m below surface[138] i.e., decant from the pits will probably not occur at surface and may

[134] Section 7.4
[135] Page 58 2A and Page 59 2C
[136] Section 2.3 and 7.1 2A.
[137] Section 7.5.1 Page 57 2A
[138] Section 4 Page 35 2A

occur at depths which cannot be seen with the naked eye. Furthermore, decant from the pit along preferential flow paths created by faults, fractures and dolerite-contact zones has been ignored. The IWWMP states that mining will take place through stream beds – these areas will create significant zones of infiltration into the backfilled pits following rainfall and flow in these stream channels. It therefore calls into question the long timeframes presented in the reports of flooding being achieved in 70 to 110 years.

232. Decant assessment:[139] The Mahujini & Emalahleni pits are expected to decant directly into a stream as shown in Figures 7-6 & 7-7. While at Ophondweni decant is probably going to occur immediately adjacent to a stream. However, this not mentioned in the report. Furthermore, it is not mentioned what mitigation is required to prevent decant from flowing directly into the stream – nor how Tendele proposes to manage this.

233. Decant quantity and quality:[140] Decant from Mahujini is considered to be low probability, while Emalahleni and Ophondweni are considered to be high probability. It is important to note that decant at all of these sites will be either directly or immediately adjacent to stream beds.

234. Conceptual hydrogeological model:[141] Modelling of the groundwater indicates that decant is likely to take place in some areas (impact surface water); however, this section does not discuss migration of the potentially polluted water into the surrounding groundwater system. It has been stated above that the main flow paths for groundwater will be through the faults and fractures – which are very common in the area. This means that the groundwater which will accumulate in the pit post-

[139] Section 7.5, Figures 7-6 & 7-7
[140] Table 7-1
[141] Section 7.5 2A

closure may connect with other regional groundwater within a few years of mining operations ceasing. Although reference is made to water flowing into the pits, there is no discussion regarding water flowing out from the pits into groundwater aquifers.

235. Hydrochemistry[142] and Groundwater quality: "*The data suggest that groundwater encountered in the area is of old age (i.e. have been underground for an extensive period) and that significant ion-exchange reactions between the host rock and groundwater have taken place*". If the water is "old" then this means that recovery of the groundwater will also take a long time and that any impacts by mining activities on the groundwater sources will be long lasting.

236. The hydrocensus water quality and levels are presented in Section 4.3.3 of the IWWMP[143] as taken from the respective hydrogeological reports (2A, 2C). The following are noted:

236.1. Area 1: Limited water supply boreholes occur within the area owing to poor natural groundwater quality. This may be true of the specific spatial extent defined as "Area 1"; however, the location of boreholes during the 2013 hydrocensus (including the GRIP database) indicate that there are many boreholes in the surrounding area (although the status of these boreholes is unknown).[144] No groundwater levels are reported for this area.

236.2. Area 2: Limited water supply boreholes occur within the area owing to poor natural groundwater quality. This may be true of the specific spatial extent defined as "Area 2"; however, the location of boreholes during the 2013 hydrocensus (including the GRIP database) indicate that there are many

[142] Section 5, 2A & 2C
[143] Page 124 to 130
[144] Figure 4-31 / Table 4-48 Page 125

boreholes in the surrounding area (although the status of these boreholes is unknown).[145] Groundwater levels[146] range from 2 to 30 mbgl in this area.

236.3. Areas 4 & 5: It is inferred that there are a limited number of water supply boreholes (fitted with handpumps as part of community water supply) within the area. A total of 28 boreholes were identified from the hydrocensus in 2013 and 2019, as well as the GRIP (2016) and National Groundwater Database (2018) within a 1 to 2.5km radius of the proposed opencast areas (i.e. Ophondweni, Emalahleni and Mahujini). However, it is indicated that the "majority of the boreholes discovered are exploration boreholes drilled by Tendele and the remainder are fitted with handpumps".[147] The exact number of water supply boreholes has not been provided in this section of the IWWMP and Table 3-1[148] does not provide any further clarification. Groundwater levels[149] range from 10 to 32 mbgl in this area.[150]

236.4. Area 8: It is inferred that there are a limited number of water supply boreholes (fitted with handpumps as part of community water supply) within the area. A total of 43 boreholes were identified from the hydrocensus in 2008 and 2017, as well as the GRIP (2016) and National Groundwater Database (2018) within a 5km. However, it is indicated that the "majority of the boreholes discovered are exploration boreholes".[151] The exact number of water supply boreholes has not been provided in this section of the IWWMP; but Table 3-1 (Page 30 2C) lists five

[145] Figure 4-31 / Table 4-48 Page 125
[146] Based on 2018 / 2019 reports and available data from 2002 to 2018
[147] Page 128 of the IWWMP; see Figure 4-33 / Table 4-50 Page 127
[148] Page 33 2A
[149] Based on 2018 / 2019 reports and available data from 2002 to 2018
[150] Ophondweni 17 to 25 mbgl; Emalahleni 11 to 32 mbgl and Mahujini 10 to 26 mbgl
[151] Page 124 of the IWWMP; see Figure 4-32 / Table 4-49 Page 126

of the 43 boreholes identified as being equipped with handpumps. Groundwater levels[152] range from 1 to 36 mbgl in this area.

236.5. Area 9: It is inferred that there are a limited number of water supply boreholes (fitted with handpumps as part of community water supply) within the area. A total of 43 boreholes were identified from the hydrocensus in 2008 and 2017, as well as the GRIP (2016) and National Groundwater Database (2018) within a 5km. However, it is indicated that the "majority of the boreholes discovered are exploration boreholes".[153] The exact number of water supply boreholes has not been provided in this section of the IWWMP; but Table 3-1[154] lists five of the 43 boreholes identified as being equipped with handpumps. Groundwater levels[155] range from 9 to 15 mbgl in this area.

236.6. It is stated that "[*t]he data suggest that the groundwater table mimics the topography, and that groundwater levels haven't changed much from historical hydrocensus carried out in 2008 and 2013*".[156] What is measured in the boreholes is static water level – i.e., a balance between aquifer pressure, host-rock pressure and air pressure. It is therefore expected that groundwater within the weathered aquifer would mimic topography.

236.7. It is indicated that groundwater quality is monitored quarterly; however, the information presented in the IWWM[157] from the Annual Report[158] is for 2018 only. Monitoring of water quality is important not only to determine compliance with standards (SANS241 or the IWUL), but also for trend analysis – i.e., seasonal

[152] Based on 2018 / 2019 reports and available data from 2002 to 2018
[153] Page 124 of the IWWMP; see Figure 4-32 / Table 4-49 Page 126
[154] Page 30 2C
[155] Based on 2018 / 2019 reports and available data from 2002 to 2018
[156] Page 128 of the IWWMP
[157] Section 4.3.2
[158] January to December 2018; Appendix 23

variations and changes over time. Although a single annual report may show once off seasonal changes, the long-term trends are not evident. This is especially important for groundwater as water quality may be within the specified limits for a single sample, however over time there may be a trend of increasing concentrations of a specific parameter that indicates a pollution problem. As the mine has been operating for more than ten years, the baseline compared with the monitored trend data over this period is important.

236.8. Area 1: There are 10 monitoring boreholes in this area. Over the period of review it is stated that the static water levels remained "fairly stable", apart from SBH3 located west of North Pits 1 and 2 that show a sharp decrease in static water level. No discussion or possible reason for the decline is provided. In addition, elevated sulphate levels were exhibited in the boreholes northwest of North Pit.[159] No discussion or possible reason for these elevated levels is provided in the IWWMP. The graphs provided as Figure 4-24 / Table 4-36 and Figure 4-25 / Table 4-37[160] do provide sulphate trends for boreholes in the vicinity of South Pit and North Pit from 2013 to 2018, respectively. Although there is no discussion of these graphs, they do indicate that in the vicinity of South Pit, SHB12 exhibits a sharp elevation in sulphate concentrations to above the SANS241 lower limit between March and November 2017, then decreased to July 2018, with a spike in levels in about September 2018 and a decrease to below the SANS241 lower limit in November 2018. In addition, in the vicinity of North Pit since March 2017 SBH3 and SBH13 exhibit trends of increasing sulphate levels. This is something that should have been highlighted and discussed it the IWWMP.[161]

[159] SBH3, SBH7 and SBH13; see Figure 5-11 / Table 5-20 Page 46 [actually 191] of the IWWMP
[160] Page 111 of the IWWMP
[161] A review of Appendix 23 highlights that this is pointed out on Page 10

236.9. Table 4-43[162] highlights that in 2018 the general water quality in the boreholes in the vicinity of Area 1 is poor with electrical conductivity (EC), sodium (Na) and chloride (Cl) concentrations above the limits for drinking water (SANS241); calcium (Ca), magnesium (Mg) and manganese (Mn) concentrations above the DWA 1996 domestic use limits; and potassium (K) concentrations above the IWUL objective levels in most boreholes. Therefore, although the groundwater generally has a neutral pH, the "salt" load is high (all major cations are elevated). The groundwater in this area is therefore not suitable for community use.

236.10. There are 13 monitoring boreholes in this area 2.[163] Pit A: over the period of review, it is stated that the static water levels decreased "slightly" and there has been a decrease in sulphate concentration levels around the pit, apart from SWX1 which has elevated sulphate concentrations above the SANS241 upper (acute) limit. The explanation for this high sulphate concentration is that this borehole represents the pit water quality and not that of the "seeping groundwater" quality.[164] It should be noted that this unlined pit is being used for slurry disposal. If one looks at the groundwater level data for 2018[165] is "stable" at about 7.7mbgl. However, the level of the slurry within the pit, as well as the depth of weathering in the area surrounding the pit is unknown. This information is required to assess the potential and long-term risk of this poor-quality water entering the weathered zone aquifer.

236.11. Pit BDE: over the period of review, it is stated that the static water levels have remained stable; with sulphate concentration levels around the pit fluctuating[166] and iron concentrations remaining stable. There is no explanation provided for

[162] Page 116 of the IWWMP
[163] Figure 5-12 / Table 5-21 Page 47 [actually 192] of the IWWMP
[164] Page 112 of the IWWMP
[165] Table 8-7, Appendix C of the Annual Monitoring Report, Appendix 23
[166] GCBH4 and SMA2-BH11 sulphate concentrations above the SANS241 upper (acute) limit; Appendix 23

the high sulphate concentration. GCBH4 is located on the southwest boundary of the pit and SMA2-BH11 is located about 500m east-northeast of the northern pit boundary near a non-perennial stream. The groundwater levels of these boreholes for 2018 are referenced as “decreasing” but are around 14m and 2mbgl respectively.[167] SMA2-BH11 has a trend of increased sulphate concentrations to above the SANS241 acute limit since monitoring started in March 2013. Based on the location of this borehole in relation to the geology (along strike and down dip) contamination of the groundwater from the pit is probable i.e., a sulphate plume is developing. It should be noted that this unlined pit is being used for coarse discard and slurry disposal, but water is currently being collected and removed for use in the plant. The level of the discard in the pit, in relation to the depth of weathering in the area surrounding the pit is unknown.

236.12. Processing plant and rehabilitated discard area: over the period of review the static water level for SWX3 is increasing and SMA2-BH12 is decreasing.[168] Sulphate concentration levels are above the SANS241 upper (acute) limit for both boreholes, with no further information or discussion being provided in the IWWMP. Appendix 23 of the IWWMP[169] however indicates that although the sulphate levels are elevated, SWX3 displays a decreasing trend and SMA2-BH12 an increasing trend in concentration for 2018. The overall elevated sulphate levels are attributed to ”poor-quality seepage” from the processing plant and old discard area into the “shallow aquifer” (weathered zone aquifer). SWX3 is located about 300m east of the northern boundary of Pit BDE, southwest of the plant area and SMA2-BH12 is located about 300m northeast

[167] Table 8-7, Appendix C of the Annual Monitoring Report, Appendix 23
[168] Table 8-7, Appendix C of the Annual Monitoring Report, Appendix 23
[169] Page 13

of the northern boundary of Pit BDE within the plant area. The groundwater levels of these boreholes for 2018 are referenced as "stable" for SWX3 at around 4.5mbgl and "decreasing" for SWA2-BH12 at around 4mbgl to 5mbgl.[170]

236.13. Table 4-44[171] highlights that in 2018 the general water quality in the boreholes in the vicinity of Area 2 is poor with EC, Na, Cl, and sulphate (SO4) concentrations above the limits for drinking water (SANS241); Ca, Mg and Mn concentrations above the DWA 1996 domestic use limits; and K concentrations above the IWUL objective levels in virtually all boreholes. Therefore, although the groundwater generally has a neutral pH, the "salt" load is high (all major cations are elevated). The groundwater in this area is therefore not suitable for community use.

236.14. Area 4 and 5: The pre-mining hydrocensus boreholes provide a water quality baseline (as at 2013). No further monitoring of these boreholes has taken place. It is also indicated in Section 5.4.2[172] of the IWWMP that some of the exploration boreholes can be refurbished to become preliminary groundwater boreholes making a total of 10 proposed monitoring boreholes.[173] Table 4-47[174] provides an "average" water quality for the area using 2001 to 2013 data. This highlights that in general the baseline water quality in the vicinity of Areas 4 and 5 is poor with EC, Na and Cl concentrations above the limits for drinking water (SANS241); Ca, Mg and Mn concentrations above the DWA 1996 domestic use limits; and K concentrations above the current IWUL objective levels in virtually all boreholes. Therefore, based on the information provided in the IWWMP, the

[170] Table 8-7, Appendix C of the Annual Monitoring Report, Appendix 23
[171] Page 118 of the IWWMP
[172] Page 44 [actually 189]
[173] See Figure 5-13 / Table 5-23 Page 48 [actually 193] of the IWWMP)
[174] Page 122 of the IWWMP

baseline (pre-mining) groundwater generally has a "salt" load that is high (all major cations are elevated) and it is therefore not suitable for community use.

236.15. Area 8: There are 6 monitoring boreholes in this area.[175] Over the period of review it is stated that the static water levels have "decreased" around the operational pit, with low sulphate levels being exhibited. The graphs provided as Figure 4-29 / Table 4-41[176] do provide sulphate trends for boreholes in the area from 2015 to 2018. Although there is no discussion of these graphs, they do indicate that the sulphate concentrations are variable, with borehole KQP76, and possibly KQP51, exhibiting definite increasing sulphate trends. KQP76 also had a pH of 5.9 (acid water) which is outside the DWAF 1996 limits.[177] The location of these boreholes is south of the pit, and they are clustered with boreholes not exhibiting a trend. This area is still being mined so without information provided on the borehole (i.e., drilling depth, geology, strikes etc.) it is difficult to suggest a reason for the increasing sulphate concentrations.

236.16. Table 4-45[178] highlights that in 2018 the general water quality in the boreholes in the vicinity of Area 8 is poor with EC, Na and Cl concentrations above the limits for drinking water (SANS241); Ca and Mg concentrations above the DWA 1996 domestic use limits; and K and SO4 concentrations above the IWUL objective levels in most boreholes. Therefore, although the groundwater generally has a neutral pH, the "salt" load is high (all major cations are elevated). The groundwater in this area is therefore not suitable for community use.

[175] See Figure 5-12 / Table 5-21 Page 47 [actually 192]
[176] Page 114
[177] Page 15 Appendix 23
[178] Page 120 of the IWWMP

236.17. Area 9: There are 5 monitoring boreholes in this area with one having been destroyed though site clearing operations.[179] Over the period of review it is stated in the IWWMP that the static water levels have "increased", with low sulphate levels being exhibited. However, Appendix 23[180] states that the water levels are stable, apart from SPX10 (located immediately south adjacent to the pit southern boundary) where the static water level has decreased dramatically probably as a result of pit dewatering. This discrepancy highlights poor quality summarising and transcribing of information between the specialist reports and the IWWMP – much of the IWWMP appears to be cut-and-paste without exhibiting logical flow and understanding of the subject matter. Boreholes A9.BH1 and QHP-019 exhibit elevated nitrates that may be due to the use of explosives.[181] Mining commenced in this area in 2017. Table 4-46[182] highlights that in 2018 the general water quality in the boreholes in the vicinity of Area 9 is poor with EC, Na and Cl concentrations above the limits for drinking water (SANS241); Ca, Mg and Mn concentrations above the DWA 1996 domestic use limits; and K and SO4 concentrations above the IWUL objective levels in most boreholes. Therefore, although the groundwater generally has a neutral pH, the "salt" load is high (all major cations are elevated). The groundwater in this area is therefore not suitable for community use.

3.16 Fragmented mining

237. The mining right covers an area that has been divided spatially into adjacent areas and within these areas there are specific pits that have been assessed and approved

[179] Page 114; see Figure 5-12 / Table 5-21 Page 47 [actually 192]
[180] Page 16
[181] Page 114
[182] Page 121 of the IWWMP

for mining.

238. Within the IWWMP it is stated that ”[t]he extension [of Luhlanga Pit – Box Cut Zero] falls within the existing MR area and has been assessed during the MR application process in 2012”;[183] however the MR application process includes an EIA process that requires site-specific assessment of the planned mining. Therefore, although a mining right has been granted over an area this does not mean that mining may take place outside the defined mining operation boundaries as defined in the application (as submitted) without additional assessment and environmental review.

239. The fragmentation of the areas approved for mining appears to be based originally on geology (structure such as fracturing) and hydrology (drainage lines). This fragmentation makes long-term pollution control from the operations complex and assessment of the interconnectivity of these areas in relation to surface and groundwater is required.

240. Depending on the interconnectivity of the areas, there is an increased risk of the extent of groundwater pollution potential and the impact that this may have on the surrounding community.

3.17 Landscape changes

241. The use of opencast pits for processing waste means that the overburden that would have been used to fill the final voids are likely to be left as “waste rock dumps” on the landscape. No mention is made of this or how the “waste rock dumps” are going to be dealt with in the IWWMP. In addition, the final profile and levels of the pits used

[183] Section 2.5 Page 17

for the processing waste will be “box-shaped” at elevations above the pre-mining landscape. This has an impact on surface water drainage.

3.18 Decant: Inadequacies and Inconsistencies

242. The Record of Decision in granting the mining right for area 4 and 5 specifically required that the mine areas for Emalahleni and Ophondweni be redrawn to avoid decant. The table on page 7 of the Management Plan states that the likelihood for decant in Emalahleni and Ophondweni is HIGH.

243. According to Dr. Gold polluted decant into the weathered zone and non-perennial streams is likely. This will have an impact on the water quality of groundwater and surface water, thereby restricting the available water for communal and/or domestic use without appropriate treatment.

244. Insufficient consideration has been given to the risks in water supply related to the already widely fluctuating water flows, as a result of drought and flooding for example, and water availability in the region. These flows are predicted to be exacerbated by the effects of the climate crisis in future, which could significantly influence this variability.

245. The Decant Management Plan[184] prepared by GCS, begins by referring to the mine as “a dry mine, with little to no groundwater seepage observed on exposed high walls or footwall areas of existing mine workings. No groundwater ingress data is available and groundwater seepage into the pits is only noted during high precipitation events. To date, no decant has been observed at the SAM and limited active pit de-watering was required, it is fair to classify the SAM pits as unlikely decant pits.”

[184] Annexure 34

246. However, according to Dr. Gold's review, there is a very good chance (in fact a probability) that decant will occur from the Mahujini & Emalahleni pits through the weathered zone into the stream channels. The hydrogeological report states that because there is little or no surface flow in the stream that the water is *"unmeasurable"* and that *"baseflow can be considered as insignificant"*. This is a naïve statement as flow within these streams commonly (usually) also occurs within the sandy bed of the stream. Water flows here can be significant and are often utilised by animals for drinking and local inhabitants can even sink shallow wells into stream beds to access this water.

247. Decant may occur through the weathered zone and enter aquifers through this zone. It can also enter streams through baseflow from the weathered zone. Weathering has been reported as ranging between 10 and 20m below surface[185] i.e., decant from the pits will probably not occur at surface and may occur at depths which cannot be seen with the naked eye.

248. Furthermore, decant from the pit along preferential flow paths created by faults, fractures and dolerite-contact zones has been ignored. The report states that mining will take place through stream beds – these areas will create significant zones of infiltration into the backfilled pits following rainfall and flow in these stream channels. It therefore calls into question the long timeframes presented in the reports of flooding being achieved in 70 to 110 years.

249. With reference to the decant assessment[186] Dr. Gold notes that the Mahujini & Emalahleni (Area 4) pits are expected to decant directly into a stream as shown in Figures 7-6 & 7-7. While at Ophondweni decant is probably going to occur

[185] Section 4 Page 35 **2A**
[186] Section 7.5, Figures 7-6 & 7-7

immediately adjacent to a stream. This is however not mentioned in the report. Furthermore, it is not mentioned what mitigation is required to prevent decant from flowing directly into the stream – nor how SAM proposes to manage this (See 2.8.5 above).

250. Decant from Mahujini is considered to be low probability, while Emalahleni and Ophondweni are considered to be high probability. It is important to note that decant at all of these sites will be either directly or immediately adjacent to stream beds.

251. With reference to the conceptual hydrogeological model[187] Dr Gold notes that modelling of the groundwater indicates that decant is likely to take place in some areas (impact surface water); however, this section does not discuss migration of the potentially polluted water into the surrounding groundwater system. The main flow paths for groundwater will be through the faults and fractures – which are very common in the area. This means that the groundwater which will accumulate in the pit post-closure may connect with other regional groundwater within a few years of mining operations ceasing. Although reference is made to water flowing into the pits, there is no discussion regarding water flowing out from the pits into groundwater aquifers.

252. Although this has been mentioned previously, it is relevant to note here that the deposition of discard and slurry in the KwaQubuka Pit could result in decant and potential acid mine drainage (AMD) into the groundwater. The mitigation measure referenced is to "[d]ispose all coal waste or overburden material below the pre-mining groundwater levels" (maintaining a low impact). The efficacy of this measure is

[187] Section 7.5 **2A**

questionable as this is not followed through to the designs and the premise upon which this is based appears scientifically flawed.

253. Appendix 33[188] states "*[i]n the unlikely event that seepage from Pit A occurs*" monitoring boreholes will be changed to "pump-and-treat" boreholes with a number of treatment options provided. This downplays the potential for groundwater contamination from this source as well as presupposes a long-term management commitment in the event of contamination.

254. Contrary to the "dry mine" statement, it is mentioned under Section 2.6.3.1[189] that *"[a] "rock" drain was installed in the bottom of Pit BDE prior to the placing of discard material in the pits to collect water draining from the discard material.*" The water "decanting" (Page 30) from Pit BDE is pumped to four settling ponds for use in the processing plant, with the overflow from these ponds flowing into the Myenge Dam 1 PCD.

255. In terms of the 2016 report the decant risks for the pits still needs to be assessed.

256. The recommendation under Section 5.2.3.1[190] is that "*disposal* [backfilling of pits] *takes place below the demarcated decant elevation*" as "*if disposal of backfill material is above the demarcated zones, a positive hydraulic head may form in the pits, which could lead to decant*". The decant elevations provided in Tables 5-4 / 5-14 and 5-5 / 5-15[191] are in metres above mean sea-level (mamsl) without reference to where this is in relation to the geology and topography of the area, or the pit design. However, it is acknowledged that decant is not necessarily a point source discharge but "*can*

[188] Section 3.5.2, GCS Memo Page 5
[189] Page 30
[190] Decant Assessment Page 34 [179 actually]
[191] Page 35 [180 actually]

occur from the pit via the weathered aquifer or vadose zone (i.e. as baseflow seepage)".

257. Appendix 34 provides a map of decant points for Areas 1, 2, 8 and 9, but nothing for Areas 4 and 5. In addition, on Page 5 of Appendix 34 it is state that Somkhele are investigating the use of North Pit 1 and South Pit (Area 1) as future water supply pit lakes (presumably for the processing plants) as "*[f]or these pits decant is only likely to occur if the in-pit water levels are not managed and kept below the identified decant elevations*." This suggests that if in-pit water levels are not managed then decant will take place long-term (post-mining).

258. From the above it is evident that the information provided in the IWWMP is inadequate and/or inaccurate. As a result, it was impossible for the DG to adequately take into account the likely effect of the water uses on the quality of the water resources and impacts on other water users, particularly with regard to the decant of contaminated water.

3.19 Stormwater Management: Inadequacies and Inconsistencies

259. Of utmost significance is the lack of information in the Stormwater Management Plan for Areas 4 and 5 as set out in the GCS report in Annexure 21. Ophondweni, Emalahleni and Mahujini are situated in Quaternary Catchments W32G and Water Management Area 6. Due to "time constraints on the project", the proposed site visits to the three sites were cancelled and all information was obtained from the client via electronic communications. Limited information was available, discrepancies were picked up in the information obtained from the applicant and geotechnical data was limited.

260. GCS' response to this was: "detailed geotechnical studies should be carried out prior to the implementation of the SWMP to ensure that all gaps identified have been sufficiently addressed and a final design can be carried out".

261. Ophondweni and Mahujini are to include topsoil and waste rock stockpiles with stormwater management, four ROM stockpiles (two at each) and six PCDs (two at Ophondweni and 4 at Mahujini), as well as offices, hardparks and temporary ablutions.[192] The location of the PCDs, stormwater control measures and other infrastructure are not provided.

262. It is possible that such update was done and provided to the DG prior to the IWUL being issued, however, we have not had sight of this and if the Stormwater Management Plan was updated, it was not subject to any public participation.

3.20 Lack of consistency in technical information

263. There are a number of inconsistencies in technical information presented within the IWULA as well as between the IWULA and EIA:

263.1. Area 2 – mining of this area has been completed leaving two opencast pit voids (Pit A and Pit BDE) as well as a discard facility that has reportedly been rehabilitated. This area houses the office buildings, storage and workshops, and has three active processing plants with a total throughput capacity of 800 tph[193] that operate 24 hours a day seven days a week processing the ROM from Areas 1, 8 and 9; with the remaining voids of old opencast pits (Pit A and Pit BDE) being used for the disposal of slurry and the co-disposal of slurry and discard from these

[192] Page 23 and Table 3-5 Page 58
[193] Table 2-4 / 2-3 Page 11

plants respectively.[194] It is uncertain if the disposal of slurry and/or discard is being mixed with the stockpiled overburden (waste rock) before "backfilling" of the void; however, the discussion of the waste streams[195] would suggest that only processing waste is being discarded in the pits. Only slurry (fine discard) was assessed during the original EMPR and is specifically referenced as a GN704 exemption in terms of IWUL 06/W23A/BCGIJ/2549.[196] The IWWMP states that "Pit BDE is licensed (via GN704 approval) for discard and slurry". In the EIA submitted with the IWWMP dated 2014[197] no co-disposal of processing waste is indicated until 2022 when the Luhlanga Pit in Area 8 is proposed.

263.2. Importantly, Dr. Gold points out that Pit BDE was originally defined as three separate pits owing to geology but is now one big pit that is being used for co-disposal of processing waste. This was not accounted for in the EIA as submitted with the IWWMP.

263.3. It is indicated that about 40% of the ROM is discard material[198] which is made up of poor quality coal, carbonaceous shale and "waste rock"[199], with a further 10% of the ROM making up the slurry.[200] Therefore, a high volume (50%) of the ROM is considered to be waste requiring disposal, and as this discard is potentially acid generating it requires appropriate disposal. This is dealt with in more detail below.

263.4. Emalahleni in Area 5 is earmarked for "future mining" to include topsoil and waste rock (overburden) stockpiles with stormwater management, two ROM stockpiles and three PCDs[201] as well as offices, hardpark and temporary ablutions. The

[194] Figure 2-3 / Table 2-8 Page 15
[195] Page 29
[196] Appendix IV Condition 10.1.1
[197] Appendix 11
[198] Approximately 1.7Mt pa
[199] Page 12
[200] Page 29
[201] Pages 7 and 31

location of the PCDs, stormwater control measures, offices and hardpark are not provided. The final layout for Emalahleni[202] provides for in-pit ROM and hardpark areas. Civil designs, with locations, are provided for three PCDs linked directly to the two "waste rock" stockpiles.[203] Mining is dependent on the relocation of 60 families and life of operations is 36 months.

263.5. Ophondweni and Mahujini are earmarked for "future mining" to include topsoil and waste rock stockpiles with stormwater management, four ROM stockpiles (two at each) and six PCDs (two at Ophondweni and 4 at Mahujini), as well as offices, hardparks and temporary ablutions.[204] The location of the PCDs, stormwater control measures and other infrastructure are not provided. The final layout for Ophondweni and Mahujini[205] provides for in-pit ROM and hardpark areas. Civil designs, with locations, are provided for four PCDs linked directly to the three "waste rock" stockpiles at Mahujini but no layout or designs are provided for Ophondweni.[206] In addition, these designs indicate two of the topsoil stockpiles are located within defined dirty water areas at Mahujini, however it is assumed that these areas will not be treated as dirty whilst the topsoil is being stockpiled (topsoil should always be kept away from dirty water areas to prevent soil contamination). Mining in this area is dependent on the relocation of 111 families.[207] Life of operations is 36 months and 175 months for Ophondweni and Mahujini respectively.[208]

263.6. Area 8 (Luhlanga) is opencast mining with a RWD and hardpark. There is no mention of a ROM stockpile, so it is assumed that coal loaded in pit is transported

[202] As presented on Page 70
[203] Appendix 22
[204] Page 23 and Table 3-5 Page 58
[205] As presented on Page 70
[206] Appendix 22
[207] Page 10
[208] Page 16

directly to the processing plant. A proposed extension to the mining of this area using Luhlanga Box Cut Zero is planned, and since the IWUL application was made, mining has commenced. This area is not evident on the locality map for Somkhele mining areas,[209] and appears to be merged with Area 9.[210] Dr. Gold notes that, according to the waste disposal schedule in the IWWMP, it is planned to use this pit for co-disposal of the processing waste during 2022 and 2023[211] however, this does not form part of the current IWWMP and application. Life of operations is 5 or 26 months.

263.7. Area 9 (also referred to as KwaQubuka) is for opencast mining. There is no mention of a ROM stockpile, so it is assumed that coal loaded in pit is transported directly to the processing plant. It is proposed that once mining commences in Areas 4 and 5, the slurry and solid discard (co-disposal) from the processing of this waste would be disposed of in the open pits of Area 9. However, on Page 30 of the IWWMP it is stated that based on the waste production rates co-disposal in this pit will commence in 2019. The proposed management plan for the co-disposal has not been finalised or approved[212] Dr. Gold further notes that the IWUL states under Condition 1.2 Appendix V that the "Licensee must carry out and complete all the activities according to a number of listed documents that includes those in Appendix 10, however the 2019 GCS Memo is not listed. Life of operations is 10 months.

[209] Figure 1-1 / Table 1-2
[210] Figure 2-1 / Table 2-3
[211] Table 2-5 / 2-7 Page 13
[212] Appendix 10

GROUND 4: FAILURE TO CONSIDER, ALTERNATIVELY ADEQUATELY CONSIDER, THE EFFICIENT AND BENEFICIAL USE OF WATER IN THE PUBLIC INTEREST AS REQUIRED BY SECTION 27(1)(c)

264. South Africa has 22 water sources areas which are the source of our five major river systems and which support approximately 60% of South Africa's population. The Mfolozi Headwaters are one of these areas with the Black Mfolozi, Pongola and Lenjane rivers being the main rivers which flow from Mfolozi Headwaters. It feeds a number of free-flowing rivers including the Mkuze, Nsonge, Ndonweni, Ngogo, Mfule and Nyalazi. Three Ramsar Sites: Kosi Bay, Lake Sibaya and St Lucia system fall within this water source area. [213]

265. The St Lucia Estuary is one of the main components of the iSimangaliso Wetland Park, a UNESCO World Heritage Site. The estuary is by nature dynamic. It is driven, at any given point in time, by five rivers and sea water inflows through an estuarine mouth. Of the rivers, the Mfolozi is the largest. The Wetland Park supports a range of plant, bird, fish, and animal species.

266. The IWWMP confirms that Ophondweni is one of the largest mining blocks that is drained by the Nyalazi River in the south and the Mnyaba River in the north. Both rivers are relatively large systems and classified as nationally important Freshwater Ecosystem Priority Areas (FEPAs). [214] It further confirms that the Mnyaba River which traverses the mining area in the north, is associated with a relatively broad riparian zone vegetated with dense riverine thicket vegetation. This river system has a "Medium-High" Ecological Importance and Sensitivity (EIS) rating.

[213] http://awsassets.wwf.org.za/downloads/wwf_sa_watersource_area10_lo.pdf
[214] IWWMP, p72

267. The Emalahleni mining area drains into the Nyalazi River, which is classified as a FEPA[215] and is in a relatively good condition and has been rated Medium in terms of EIS. This system associated with a fairly broad riparian zone compromising generally intact riverine thicket vegetation.

268. The Mahujini mining area also drains into the Nyalazi River High EIS and associated with a broad zone of riparian vegetation compromising patches of relatively good condition riverine forest habitat which is considered ecologically important and sensitive to disturbance.[216]

269. In Emalahleni, the smaller drainage network is ecologically important as the drainage lines and streams maintain connectivity to the Nyalazi River and are therefore potential conduits for pollutants/ sediment that could affect more important downstream resources.

270. Mining in the new areas of Mahujini, Emalahleni and Ophondweni is going to take place through a number water courses which are all tributaries to the Nyalazi River. The Nyalazi River, among many others in the area, feeds the St Lucia System – a Ramsar Site. This alone is of paramount public interest. Any impact on the water resources of the Mfolozi catchment and the Mfolozi River cannot be seen to be a beneficial and sustainable use of water in the public interest.

271. For the water uses to be assured to be in the public interest it is fundamental to adequately assess the sustainability of the water uses. One vital aspect in assessing sustainability would be an assessment of the impacts that climate change will have on the necessary water required for the project's operation and the ways in which

[215] IWWMP, p73
[216] Ibid, p74

Tendele, with its significant water consumption and water requirements, will hinder the surrounding area's climate change resilience.

272. South Africa's National Climate Change Adaption Strategy, 2019 was approved in August 2020. It identifies:

272.1. Access to freshwater, which is already a major challenge in the areas subject to this IWUL, is predicted to become a much bigger problem as the climate crisis intensifies, with potentially devastating effects on sectors such as agriculture, human livelihoods, and the industrial and mining sectors.

272.2. South Africa is to experience drier conditions overall with a higher water demand and deteriorating water quality in river systems, water storage reservoirs and groundwater. Current water usage already exceeds reliable yield.

272.3. In most climate crisis scenarios projected for South Africa, future water supply availability will worsen considerably by 2050.

272.4. Decreased availability of water in rivers is a result of the net effect of increased temperatures and increased evaporation, combined with shifts in the timing and amount of rainfall; changes in the timing of high and low flows due to changes in rainfall patterns; a higher incidence of floods as heavy rainfall events increase.

272.5. Increased risk of water pollution and decreased water quality will arise from erosion and high rainfall events (which elevate the amount of nutrient runoff, sediments, and dissolved organic carbon) and increased temperatures (which promote algal blooms).

273. In the event of future water shortages, meeting the reserve (i.e. water quality and quantity needed to satisfy basic human needs and protect aquatic ecosystems to

ensure ecologically sustainable development) must take priority over water uses in the mining sector. If basic human and environmental needs are not given precedence, as required, this could have significant impacts for the environmental and human health – resulting in breaches of fundamental constitutional rights to a healthy environment and the right of access to sufficient food and water.

274. Even from a job perspective it cannot be said that licencing Tendele would be in the public or community interest. The negative impact of the authorisation on the wider community of Mpukunyoni of more than 158 000 people and the public interest in the climate crisis scenario, the Hluhluwe-iMfolozi Park and the iSimangaliso World Heritage Site far outweighs any positive impact that approximately 1000 employees may gain on a relatively short-term basis.

275. Based on the above, licensing Tendele would simply mean adding unnecessary additional coal, with high water requirements (not to mention its other negative impacts), to our energy mix. There would be little economic benefit, and no benefit to our limited water resources, from the project, particularly when the electricity demands that Tendele seeks to meet can be met by renewable energy (which would require much less water). This IWUL is therefore certainly not sustainable or in the public interest.

276. Freshwater ecosystems, including rivers and wetlands, are particularly vulnerable to coal mining and related activities that can often result in irreversible damage or longer-term gradual, cumulative impacts. Coal mining will result in significantly reduced water quality due to acidification and ferric sulphate (which kills fish and other aquatic fauna), hydrocarbons, coal dust and nitrate deposition, together with high turbidity.

277. The importance of the water use is specifically ignored in the GN704 exemption[217] dated March 2019 for the open cast pits proposed in Emalahleni, Mahujini and Ophondweni. The application states that the proposed infrastructure falls within the exclusion zones of the flood lines and drainage lines. Given the nature of the operations (a waste dump "that cannot be moved"; and waste rock dumps) proposed to take place in the exclusion zones and the high potential for the pollution of a strategic water resources, this application is a flagrant disregard of the section 27(1)(i). To simply state that "the Mine could not comply with the Regulations" is not an acceptable factor to be considered and this exemption should not have been issued.

278. GCS' response is simply that "*the location of mining activities it limited to where the coal reserve is present… the locality of mining infrastructure such as topsoil stockpiles, ROM coal stockpiles, hard park areas were placed outside drainage lines or exclusions zones, where possible*."

279. The licencing of the in-pit disposal of waste in Pit BDE and Pit A is of particular concern. Pits A and BDE are unlined, so the discard has direct access to the surrounding rock and potential aquifers. The total and leachable concentrations from two samples (slurry and discard) classify the waste as Type 3 requiring a Class C containment barrier[218].

280. The licencing of this activity shows complete disregard for the importance of the catchment area and the potential for pollution of the groundwater, the Mfolozi River

[217] Annexure 28 of the IWWMP
[218] Page 9 of Appendix B of Appendix 10 of the IWWMP and Appendix 29)

and the St Lucia Estuary. With the assistance of Dr. Gold's input, this has already been discussed in more detail under **Ground 3**.

281. In GCS' responses to the Appellants objections to the IWWMP, they repeatedly state that "Somkhele has not applied for an increase in water abstraction of 750 000m^3 per annum". Be that as it may, the abstraction is from the Mfolozi River and/or boreholes just below the surface thereof. The IWUL no longer includes the clause that requires Tendele to *limit the abstraction to half the "normal rate" if domestic users downstream suffer shortages during these periods* and therefore consideration of the impact on the other water users has been deleted.

282. Of more concern is the large volumes of water that have been licenced in Appendix VI in terms of section 21(j) of the Act – removing, discharging, or disposing of water found underground if it is necessary for the efficient continuation of the activity.

282.1. North Pit A – 421 720 m3 per annum;

282.2. Pit A – 1 123 634 m3 per annum;

282.3. Pit BDE – 136 920 m3 per annum;

282.4. Luhlanga Pit – 30 360 m3 per annum;

282.5. KwaQubuka Pit – 15 960 m3 per annum;

282.6. Ophondweni Pit – 485 766.4 m3 per annum;

282.7. Emalahleni Pit – 131 160 m3 per annum; and

282.8. Mahujini Pit – 141 569 m3 per annum.

283. The dewatering of these eight pits amounts to a total of 2.5 million m^3 per annum. Dewatering from a mine during operation to ensure a safe working environment is

treated as a Section 21(j) licence. While it understood that dewatering may only take place during operations, if there is "dewatering" taking place that is not to allow for safe mining to take place then this should be included under abstraction. Regardless of where the water is being taken from all abstraction and dewatering volumes should be included in the water balance and metered / monitored to ensure compliance.

284. According to the IWUL, Tendele is entitled to dewater **up to** about 2.5 million m^3/a from the pits. This volume should only be **from operational pits** as set out in Table 7 of the WUL and should be based on the modelled potential inflow of water into the pit during mining. Therefore if the pits are not in operation then this volume should not be included. It is important to look at the water balance to see the actual volume of water required for processing as if this far exceeds the licenced abstraction volume then there may be an issue.

285. This is where matters become unclear. To properly understand whether the actual volume being abstracted is the amount of 750 000 m^3 per annum repeatedly referred to in the IWWMP (as compared to the amounts allocated to dewatering) it was necessary to obtain expert advice on the water balance. To this end, Copperleaf Consulting reviewed the Tendele IWWMP water balance as set out in Appendix 19 of the IWUL Application. The review focused on the processing area water flows and balance as the new areas (Mahujini, Ophondweni and Emalahleni Pits) are indicated to be in balance at the operational area and are not providing water to other areas for consumption (e.g. the processing area). The expert review is attached hereto marked "**A28".**

286. The upshot of the expert assessment of the water balance is as follows:

286.1. Runoff was assumed to be 10% mean annual precipitation (MAP) from stockpiles, 25% MAP in the pits, and 30% MAP from hardpark areas[219]. No values for the catchment area of the various dams were provided to enable a recreation of the runoff calculations. In addition, runoff and rainfall are often provided as a combined value in the water balance.

286.2. Evaporation was assumed to account for 15-20% of rainfall.[220] No values for the various dam surface areas were provided to enable a recreation of the evaporation calculations. Similarly, the direct rainfall values onto the dam surface areas cannot be checked.

286.3. In Table 6-1[221] the Stockpile calculation balances rainfall and evaporation. This is unusual as rainfall and evaporation do not take place at the same time and stockpiles require a PCD to capture runoff prior to evaporation.

286.4. It should be noted that according to the expert review, the evaporation values appear suspicious. In an area where potential evaporation is greater than rainfall the values appear very low. For open water surfaces such as dams the evaporation will depend on the surface area. Evaporation can be low in some cases where dams are run dry i.e. as much water is taken out for use (consumption) as is put into the dam.

286.5. Evaporation for Pit A however is extremely high and unlikely depending on the surface area of Pit A and whether this is backfilling or discharge at elevations above-ground level.

[219] Page 9.
[220] Page 9.
[221] Page 10.

286.6. Groundwater ingress data is unknown. Groundwater would ingress into open pits during operation – these have not been included in the flow diagram in Figure 1.

286.7. Once a pit is “closed” / backfilled with slurry then depending on the geology and water pressures, seepage both into and out from the pit boundary is likely. An estimation of these values should be included for Pits A and BDE as they are unlined and not all the water will be captured into a return water dam (RWD).

286.8. Although slurry is placed in Pits A and BDE in the water balance, no information on the percentage water to solids in the slurry mix is provided. This makes it difficult to accurately recreate the water balance. The assumption then must be that the slurry value as provided is the water value.

286.9. The slurry discharge to Pit A according to the WUL is 1,123,634m^3/a. The amount indicated in the water balance is 858,129m^3/a (76% of the IWUL value). The reviewers note that this is the input value for Pit A. However the output value from the Plant to Pit A is recorded as 584,323m^3/a in the water balance. The value from the Pit A calculation is used to try and balance the water balance as provided in the IWWMP submission.

286.10. The slurry discharge to Pit BDE according to the WUL is 7,889,1614m^3/a. The amount indicated in the water balance is 40,681m^3/a. These do not align at all.

286.11. The combined Pit A and Pit BDE slurry according to the WUL is 9,012,795m^3/a.

286.12. The reviewer notes that the IWUL provides for discharge of slurry at 1,814,400m^3/a into the KwaQubuka Pit which is not included in the water balance.

286.13. Average yearly, monthly and daily water balance values have been provided[222] however this assumes a uniform water flow through the year. Usually, a water balance would be undertaken for the wet and dry seasons separately as a daily value and annual value calculation. The average annual water balance calculation would be determined from the combined wet and dry season information. There are unverifiable values and inconsistencies between Figure 1 and 2.[223]

287. The review found that there is insufficient information provided in the water balance report to verify the values from first principles.

288. Initially the experts were of the opinion that the information in Appendix B of Appendix 17 of the IWWMP (water meter data for 2018) could be used to recalculate the water balance. However there is not enough data on the metering points and it is uncertain what flow exactly has been measured. Although this data was used to generate the existing water balance, further flow and interaction information is required. The reviewers therefore could not reconcile the meter data with some of the values used in the water balance, specifically River Dam, the North Pit RWD (Area1), Myenge Dam 1 and the Plant Header Dam. In addition, some of the components such as the Settling Dams and Myenge Dam 2 have not been included in the meter values.

[222] Table 6-1 to 6-3, p10, p13, p16
[223] Page 4

289. Having reviewed the Water Balance Report, some of the values may be inaccurate. The information as it appears in Table 6-1 does not balance even though the individual components have been made to balance. In addition, the WUL and some of the water balance information does not appear to align.

290. The reviewers therefore have very little confidence in the information from the Water Balance Report, especially as it is not easily verifiable.

291. Read with the Section F below "Failure to give effect to the precautionary principle" and the factors set out in "OTHER" below, including the vested interest of the IWULA consultant, Tendele's current and historical non-compliance, the ambiguity and inconsistencies in the IWUL and the EMPr, the water uses authorised in this WUL cannot be seen to be in the public interest.

292. The environmental injustice which may result from the approval of a water use licence to mine coal and affect significant quantities of groundwater in an area which is almost wholly dependent on groundwater, and which is already water stressed, can hardly be gainsaid. The Groundwater Management Plan does not provide for any response or adaptive measures to avoid or adequately mitigate negative trends in water levels and water quality.

293. It is submitted that the decision-maker failed to consider whether authorising the water uses was sustainable and in the public interest, considering the basic needs of future generations. The state holds all water in trust for all persons in South Africa and the decision-maker acts as custodian and public trustee of water.[224] The decision-maker did not fully consider sustainable water use. Not only did the application before the

[224] Section 3 of the National Water Act Bo. 36 of 1998

DG fail to consider whether the water use was beneficial in the public interest, but we will further show that the application is technically deficient.

GROUND 5: FAILURE TO CONSIDER, ALTERNATIVELY ADEQUATELY CONSIDER, THE SOCIO-ECONOMIC IMPACT OF THE WATER USES, AS REQUIRED IN TERMS OF SECTION 27(1)(d)

294. For the reasons set out under Ground 3, in particular, 3.1, 3.2 and 3.3, the IWWMP failed to identify or assess the socio-economic impacts as is required in terms of the WULA Regulations.

295. As this vital information was erroneously omitted from the IWWMP, and thus the WULA, it was impossible for the First Respondent to have considered, or adequately considered the socio-economic impacts of the 142 water uses applied for, when making the decision to grant the WUL.

GROUND 6: FAILURE TO CONSIDER, ALTERNATIVELY ADEQUATELY CONSIDER, THE POSSIBLE EFFECTS OF THE WATER USE ON WATER RESOURCES AND WATER USERS, AS REQUIRED IN TERMS OF SECTION 27(1)(f)

296. It is submitted that the IWULA fails to show the likely effect of the proposed water uses on the water resource in the area and on other water users. This is a factor which must, in terms of section 27(1)(f) NWA, be taken into account by the decision maker

in considering an IWULA. If these factors are not adequately set out or addressed in an IWULA, then they cannot be considered by the competent authority in exercising the necessary discretion in terms of section 27 of NWA.

297. As already mentioned, the IWUL applies to a water scarce area that supports thousands of subsistence farmers and downstream users as well as the Hluhluwe-iMfolozi Park and the St Lucia Ramsar Site within the iSimangaliso World Heritage Site. The dramatic and negative effect of the water uses on the surrounding community, as well as downstream users will be explained fully, with reliance on the review of the IWWMP prepared by Dr Gold.

298. Tendele attempted to address the social impact of the water uses in the IWWMP on other water users by referring to Tendele's Social and Labour Plan. This irrationality was raised in our objection to the IWWMP. GCS's response was the irrational statement that "Somkhele's SLP is mandated by the regulatory authority DMR".[225] Of course, we are aware that a SLP is mandatory however, that is not the point of the objection. The point is that the SLP is a separate instrument with a different purpose. It is not a social impact assessment and certainly does not come anywhere close to assessing the impact of the water uses on the other water users.

299. The IWUL fails to acknowledge that the proposed project is highly likely to exacerbate the current and future water constraints in the Mfolozi catchment and lead to adverse impacts on other water users.

300. There is a very real threat to the surrounding community and downstream users that streams and rivers will show decreased flow or run dry as a result of the dewatering required for the mining operations. In Mahujini the dewatering zone of influence

[225] Page 33, GCS Response Letter dated 19 June 2019, attached marked "A2"

extends over a large area, and it is likely that the non-perennial streams will show reduced flow. The licence simply states at clause 5[226] that the Licensee must attempt to prevent adverse effects on other water users.

301. Potential pollution from NO_2 leaching into the aquifers, sulphate, acid drainage, PCDs, overburden and oil and fuel spills included in the report fails to address the potential impact on the community's use of water.

302. We submit that the likely effect of the proposed water uses has not been adequately considered because:

302.1. important and relevant information is missing from the IWULA documents and/or has not been taken into account;

302.2. information is misleading and/or difficult to read; and

302.3. the data included in the IWULA, and on which it is based, are outdated.

303. The information gaps summarised on pages viii, ix and x of the IWWMP are substantial. In spite of this GCS states that "should the identified information gaps be addressed through additional studies, as required, and should the proposed management measures and monitoring programmed outlined in this IWWMP be implemented, GCS does not see foresee any environmental fatal flaws in the authorisation of the water uses". This in itself is a fatal flaw as GCS has not been in a position to adequately assess the effects of the water use if the gaps in information are substantial. Without adequate information it is impossible to propose effective management and monitoring measures.

[226] Page 29

GROUND 7: FAILURE BY THE RESPONSIBLE AUTHORITY TO EXERCISE ITS DISCRETION WITHOUT A VALID REASON TO DEMAND THAT TENDELE PROVIDE FINANCIAL SECURITY

304. In terms of Section 30 of the NWA, a responsible authority may, if it is necessary for the protection of the water resource or property, require the applicant to give security in respect of any obligation or potential obligation arising from a WUL.

305. If deemed necessary, the responsible authority must determine the type, extent and duration of any security required.

306. The WULA Regulations state that if required, security shall be valid for a period of at least 5 years after water use licence activities have lapsed.

307. Given that Tendele has a record of non-compliance with its previous IWULA and has been issued a directive in the past, there is already doubt regarding Tendele's ability and/or willingness to comply with its WUL.

308. Tendele by its own admission had been using water unlawfully and the IWULA was made to licence previously unlicenced but active water uses. These previously unauthorised water uses are located in Areas 1, 2, 8 and 9 (current mining areas), include but are not limited to:

308.1. Significantly increasing the capacity of Myenge Dam 2 beyond what was authorised before it was authorised.

308.2. The siting of mining infrastructure within 500 m of wetlands in Areas 1, 8 and 9.

308.3. The use of water for dust suppression at Areas 8 and 9.

308.4. Co-disposal of slurry and discard in KwaQubuka Pit, Area 9.

308.5. Dewatering of the current open cast mining pits in Areas 8 and 9.

309. Tendele also has a history of not complying with a number of material conditions of its previous WULs.

310. Lack of compliance with the NWA and water licences suggests that issuing the WULA to the applicant was not in the public interest, especially without having first insisting that Tendele was 100% compliant with its previous WULs for 39 water uses before granting it new WUL for a much larger area and considerably more water uses (142).

311. Further, the 2018 annual external audit report in Annexure 32 of the IWWMP identifies a number of non-compliances with the applicant's current water use license, including:

311.1. Settling Dam 1, Settling Dam 2, Myenge 1 and other return dams are still unlined (repeat non-conformance);

311.2. River crossing at Luhlanga needs to be rehabilitated (repeat non-conformance);

311.3. Exceedances of groundwater quality objectives (repeat non-conformance);

311.4. Monitoring of groundwater level with dip metre or install data loggers in key boreholes and should be monitored monthly as opposed to quarterly (repeat non-conformance);

311.5. Nkolokotho River crossing damaged;

311.6. Stockpiles exceed 2.5m (repeated non-conformance);

311.7. Unauthorised construction of the new Umfolozi River Dam.

312. According to the responses received by GCS, some of these non-compliances have been closed out, namely, the Nkolokotho River Crossing and the Umfolozi River Dam. However, without sight of the subsequent audit reports, this cannot be confirmed.

Further, any audit reports by GCS should not be trusted due to the consultancy's vested financial interest in providing continued services to Tendele. (*This is explained in more detail under* ***Ground 9***).

313. Further, from Dr Gold's expert report, it is apparent that there are long-term water treatment measures that will likely be required but which have not been identified adequately or provided for in the technical documents submitted as part of the IWULA.

314. In Appendix 26 of the IWWMP, Ms J Steyn, Tendele's Chief Operating officer assures DWS, with specific reference to Section 30 of NWA, that financial provisions have already been made for mining operations as required under the MPRDA.

315. However, it would appear that Tendele has misled the Department in respect of financial provision for the new mining operations. In respect of Emalahleni, Ophondweni and Mahujini, Tendele has only made financial provision to date for Emalahleni but not Ophondweni and Mahujini.

316. Also, at the time provision was made for Emalahleni as part of the EIA and EMPR for the mining right application for the new mining Areas 4 and 5 in 2014, there were no layout plans in place. Thus, it is doubtful that the provision made for Emalahleni in 2014 includes all the infrastructure and same layout as has been applied for in the WULA.

317. Also, Tendele has in recent court papers admitted that it is R700 million in debt which it can only repay if it can proceed to mine the areas of Emalahleni, Ophondweni and Mahujini. It will need to incur a further debt to the value of approximately R150 million to do so.

318. We know that the relocation process in Emalahleni and Ophondweni, even if compensation agreements were to be concluded by end of the 2021, will have taken

up to 5 years to complete. To our knowledge, Tendele is yet to commence compensation negotiations with the residents of Mahujini. Although negotiations did commence, they were stopped due to community resistance[227]. Also, Tendele have increased the mining area of Mahujini by approximately 500% since initial consultation in 2013 and the final layouts and increased mining area have not been disclosed to residents.

319. Thus, there is a strong possibility that when Tendele has finished mining at Emalahleni and Ophondweni (if and after starting mining operations in June 2022), that it will not be ready to start mining at Mahujini. This must have implications for repayments of loans and cash flow, which is why, in absence of any financial provision under the MPRDA, and its record of past non-compliance, the DWS should have demanded conditional security and guarantee for the water uses authorised in the IWUL, for the new mining areas of Ophondweni and Mahujini. DWS should also have examined the current financial provision for Emalahleni to ensure it is adequate as well as the financial provision for the existing mining areas, especially where new water uses have been added subsequent to the determining of the financial provisioning under the MPRDA.

[227] This is evident in various annexures to Tendele's court application papers of May 2020 in which it sought an order from the court to determine compensation for 24 families in Ophondweni and Emalahleni who had not agreed to relocate. Tendele subsequently withdrew the matter from the roll and initiated a mediation process which was still underway at the time of submitting this appeal.

GROUND 8: FAILURE TO GIVE EFFECT TO THE PRECAUTIONARY PRINCIPLE

320. Our regulatory regime explicitly acknowledges "scientific uncertainty" by enshrining the precautionary principle as a binding principle in section 2 of NEMA.[228] This includes decisions made by DWS on IWULAs[229].

321. In essence, the precautionary principle provides guidance in the development and application of environmental law when there is scientific uncertainty.[230] Not only does it require a risk-averse and cautious approach when investigating the potential impact of a proposed development or activity in the face of scientific uncertainty,[231] but it also requires authorities to "insist on adequate precautionary measures to safeguard against [potential adverse impacts]".[232]

322. In WWF South Africa v Minister of Agriculture, Forestry and Fisheries and Others 2019 (2) SA 403 (WCC) "WWF"),[233] Rogers J set out a useful overview of this principle as it has developed in international customary law.[33] In particular, Rogers J cited with approval the application of the principle by the New South Wales Land and

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[228] Section 2(4)(a)(vii) provides that: "Sustainable development requires the consideration of all relevant factors including…that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions…". The original formulation of the principle is to be found in Principle 15 of the 1992 Rio Declaration on Environment and Development (the "*Rio Declaration*") stating the principle thus: "[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation"; see Principle 15 of the Rio Declaration, U.N. Conference on Environment and Development, AnnexI, principle 15, UN Doc A/Conf.151/26(1992); see also Glazewski at1-25.

[229] Section 2(1)(c) of NEMA: The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and …. serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment.

[230] Glazewski at 1-25, citing with approval with approval Sands, *Principle of International Environmental Law* (2nd ed 2003)("*Sands: 2003*") at 208.

[231] See Fuel Retailers Association of Southern Africa vs. the DirectorGeneral, Environmental Management, Department of Agriculture Conservation and Environment, Mpumalanga and others 2007(6), SA4(CC) per NcgoboCJ ("*Fuel Retailers*"), at para 81 ("[P]recautionary principle required…authorities to insist on adequate precautionary measures to safeguard against…contamination of underground water…principle…applicable where due to unavailable scientific knowledge there is uncertainty as to the future impact of the proposed development. Water is a precious commodity; it is a natural resource that must be protected for the benefit of the present and future generations.") See also HTF Developments Pty (Ltd) and the Minister of Environmental Affairs and Tourism and Others 2006 (5) SA 512 (T).

[232] See Fuel Retailers supra at para 81 (holding that authorities were obliged to insist on adequate precautionary measures to safeguard against contamination of underground water).

[233] [2006] NSW LEC 133 at 208.

Environment Court in Telstra Corporation Limited v Hornsby Shire Council[34] as follows:

> "[The principle is triggered] where two conditions are satisfied, namely that the proposed activity poses a 'threat of serious or irreversible environmental damage' and the 'existence of scientific uncertainty as to the environmental damage'. If the conditions are met, the principle is activated and there is a' shifting of an evidentiary burden of showing that this threat does not, in fact, exist or is negligible'. Furthermore, prudence suggests that 'some margin for error should be retained' until all consequences of the activity are known. Potential errors are 'weighted in favour of environmental protection', the object being 'to safeguard the ecological space or environmental room for manoeuvre'".[234]

323. The DWS' 2008 Impact Prediction Guideline defines the precautionary principle as follows: "in the absence of actual data to demonstrate an alternative conclusion, the most conservative assumption will be made, and precautionary management measures will need to be applied".[235]

324. In the analysis of individual impacts demonstrated under **Ground 3** above, it is demonstrated that the licensed water uses pose threats of serious or irreversible environmental damage.

325. According to the expert report commissioned by the Appellants, there are serious flaws in *inter alia*, the groundwater modelling, the structural geology, surface water and hydrological assessments as well as inconsistencies and missing information in the water balance and storm water management. This, read with the submissions under **Ground 2** (lack of public participation) is damning but combined with there being no socio-economic assessment, the granting of the IWUL was not guided by the principles in section 2 of NEMA requiring a risk-adverse and cautious approach, which takes into account the limits of current knowledge about the consequences of decisions and actions.[236] To the extent there was scientific uncertainty regarding

[234] WWF supra at para 104.
[235] At xii
[236] Section 2(4)(a)(vii)

resulting environmental damage and socio-economic risk, the precautionary principle required DWS to refuse the mining right application. Instead, DWS granted a WUL which we submit should be set aside for the reasons provided herein.

GROUND 9: VESTED INTEREST OF IWULA CONSULTANT AND LACK OF CREDIBILITY OF WULA TECHNICAL DOCUMENTS

326. The Appellants raised in their objection to the IWWMP that GCS has a vested interest in the outcome of the IWULA as they stand to significantly benefit financially as a result of the high probability that they will continue to be appointed by the applicant to undertake future water sampling, monitoring, and auditing, specialist studies, and other advisory work should the water use license be granted.

327. There are numerous references in the IWWMP to the enormous volume of work that GCS has been appointed by Tendele to undertake since 2008, including the quarterly groundwater monitoring; being on hand to deal with emergencies; "independent" external annual audits of the water use licences; specialist studies for the IWULA and the various applications for environmental authorisation and mining rights which extend back further than 2008. The "independent external" annual audit report on the Water Use Licences is contained in Annexure 32.

328. GCS itself deems its consultants to be independent referring to GCS in the IWWMP[237] as follows:

*Tendele appointed GCS Water and Environment (Pty) Ltd (hereafter referred to as 'GCS') as **an independent Environmental Assessment Practitioner** (EAP) to*

[237] Pages iv and 1 of the IWWMP.

prepare a comprehensive Integrated Water and Waste Management Plan (IWWMP) for submission to the regional Department of Water and Sanitation (DWS) as one consolidated Integrated Water Use License (IWUL) for all the water uses at Somkhele.

329. We question GCS' ability to be independent in view of the fact that it drafted all the initial reports, prepared the management plans, including recommendations and undertakes the water quality monitoring in fulfilment of the WUL requirements. Clearly, GCS cannot be an external auditor of its own plans and reports. We thus submit that an independent annual audit needs to be redone for 2018, and any other years as is necessary, by a truly independent specialist as well as all annual audits going forward.

330. There is nothing to suggest that GCS will not continue providing its services to the applicant, and for this reason we submit that the IWWMP cannot be considered to be objective.

331. The fact that the "independent expert" is using information solely provided by the applicant, who by the expert's own admission, is in a hurry to move onto the proposed site, is unethical and contrary to the degree independence that is required. Thus, DWS should not have accepted the technical reports and granted the IWUL without at least having these assessed by an independent expert.

332. Notably, Section 41(2)(a)(ii) of the NWA allows for a responsible authority to the extent that it is reasonable to do so, to require an applicant, at the applicant's expense, to obtain an independent review of the assessment by a person acceptable to the responsible authority. We submit in the circumstances as described above regarding GCS' vested financial interest in the WULA, that DWS should have exercised its discretion to request an independent review. This would have been the reasonable thing to do under the circumstances so described. Based on the independent expert's

report commissioned by the Appellants (Annexures **"A4"** and **"A28"**), it is evident that the assessment performed by GCS is severely lacking. For these reasons, we submit that the IWUL should not have been granted on the reports prepared by GCS as it cannot be considered independent.

GROUND 10: AMBIGUITY AND / OR INCONSISTENCIES IN THE IWUL

333. Tendele's latest publicly available mine layout contemplates that the open cast mining pits and associated infrastructure in the Ophondweni and Emalahleni mining areas will encroach upon buffer and exclusion zones provided for in the EMPr.

334. The EMPr states that "the mining area will avoid wetlands" and provides *inter alia* for the following buffer zones: a 50m buffer from riverine areas to preserve vegetation corridors; a 30m buffer for smaller ephemeral streams with low sensitivity rating and a generic 100m buffer around NFEPA Rivers (National Freshwater Ecosystem Priority Rivers).

335. The watercourses in the Ophondweni site are-

335.1. Four wetlands; and

335.2. The Mnyaba river (a designated NFEPA river), traversing the mining area to the north, as well as a dense network of small streams and minor rivers that feed into the two major river systems, viz. the Nyalazi river and the Mnyaba river.

336. The proposed Emalahleni mine site contains a small ephemeral river system and associated riparian zone that runs across the centre of the mining block. These

streams feed into a minor river system that drains in a north-easterly direction into the Nyalazi River, a classified Freshwater Ecosystem Priority Area ("FEPA").

337. During the course of the public participation process under the IWULA in 2019, Tendele for the first time disclosed detailed mining layouts for the 2016 mining right areas[238]. The aerial maps depicting the 2019 lay-out of the open cast mining pits and associated infrastructure at Emalahleni and Ophondweni appear at pages 24 - 25 of the IWWMP dated 21 March 2019.

338. A comparison of the aforesaid mining layouts and maps evidence the following encroachments at the Ophondweni mining site –

338.1. As to wetlands, the whole of unit 20 and smaller portions of units 21 - 23 fall within the opencast footprint.

338.2. As to the ephemeral river stream network, no buffer or exclusion zones are provided for these streams.

338.3. A comparison of the aforesaid mining layouts and maps evidence that no buffer or exclusion zones are provided for in respect of the streams at the Emalahleni mine site.

339. Yet, the IWUL was issued.

340. Insofar as the aforesaid riparian zones, rivers and wetlands are concerned, the WUL is granted on the basis that Tendele carries out activities as specified in the various reports that formed part of the IWULA. These include the Wetland Impact Assessments and Wetland Assessment Offset Plans, as well as the maps that formed

[238] As noted under **Ground 2** however it would appear that Tendele revised its layout plans again in early 2020 which were subsequently approved in the IWUL, without these revised plans being subject to public participation.

part of these (including the infringement on the wetlands). However, the licence goes on to state that Tendele must ensure that the working area is reduced while working on wetlands, as per recommendations from approved EMPr, and Wetland and Functional Assessment report.

341. Therefore, the conditions of approval of the EMPr and Mining Right in 2016 are ambiguous. On one hand, the DMR recorded in the EMPr that it was unconcerned about gaps and uncertainties regarding the aquatic impact because Tendele had committed to staying out of the sensitive areas, including that “the mining area will avoid wetlands”. On the other hand, the EMPr is approved on preliminary findings that leave the outcomes potentially open-ended. In this case, when the gaps were closed by way of the IWULA, the outcome is that mining will take place in sensitive areas, including the wetlands specifically cited in the EMPr.

342. It therefore appears that the WUL has been granted contrary to the conditions stipulated in the EMPr. The extent of the water use that has now been approved by DWS illustrates the danger of ambiguous, open-ended and contradictory conditions in an EMPr. All the assurances given to IA&Ps in the EIA process regarding proposed mitigation measures to protect the watercourses and wetlands at the Emalahleni and Ophondweni sites have effectively come to nought.

343. The EMPr requires that “the mining area will avoid wetlands”. However, the EIA itself states that if the avoidance of wetlands “is not possible for substantiated reasons”, then the wetlands must be “formally delineated, assessed and offset”.

344. This is a stark demonstration of the dangers of opaque and inherently contradictory language in an EMPr. It allows for a situation like the present, where the IA&Ps were

placated by assurances during the EIA process that the EMPr would require that wetlands be avoided, only for Tendele to rely upon contradictory wording elsewhere in the EIA/EMPr permitting them to mine within this exclusion zone “for substantiated reasons”.

345. The First Respondent grants Tendele authorisation to mine across the wetland but fails to consider what its “substantiated reasons” are.

346. Further, we know from recent engagement with Tendele on 5 October 2021 as part of the current litigation described in paragraphs 2, 15 and 17 and in response to a query regarding Waste Rock Dump 1 at Emalahleni, that the layout that Tendele is proceeding with at Emalahleni is the one contained in its submission to DWS on 3 March 2020 – a report that was never made available to interested and affected parties, most notably local residents.

347. However, we note that despite Tendele claiming that it will no longer be locating Waste Rock Dump 1 outside of the area authorised by the approved Mining Right of 2016, it is in any event authorised in the IWUL[239]. It is thus possible that there are also other water uses that have been authorised in the IWUL based on co-ordinates provided in the initial application and IWWMP but which are not consistent with the latest plans that Tendele submitted to DWS in February and March 2020.

348. Thus, in addition to lack of public participation on material changes to mining pit layouts (and associated infrastructure) as discussed under **Ground 2**, the First Respondent also erred by issuing a IWUL that is ambiguous and/or inconsistent and/or incorrect in terms of the water uses it has in fact authorised.

[239] See pages 16 and 35 of the IWUL.

GROUND 11: FAILURE TO GIVE EFFECT TO THE CURRENT NATIONAL WATER RESOURCE STRATEGY

349. Section 5 of the NWA requires that the water resources of the Republic must be protected, used, developed, conserved, managed and controlled in accordance with the national water resource strategy (NWRS).

350. Further, in terms of Section 7, the Minister, the Director-General, an organ of state and a water management institution must give effect to the NRWS when exercising any power or performing any duty in terms of the NWA. This includes the decision to grant a WUL.

351. The current NWRS acknowledges that "water is the primary medium through which the impact of climate change is going to be felt in South Africa."[240] It further notes that the National Development Strategy recognises that the climate impacts will be felt substantially in the water arena and reflects the need to build economic sustainability and resilience to "enhance the resilience of people and the economy to climate change."

352. The NWRS sets out a number of principles to guide a climate resilient approach to water:

352.1. A sound scientific foundation is the basis of all recommendations and actions;

352.2. A balanced approached between preparedness and over reaction must be maintained;

[240] Page 75 of the NRWS.

352.3. There is integration of potential climate change impacts into water resources and water services planning and supply at all levels;

352.4. Leadership is provided by the DWA with strategic partners to drive appropriate strategic responses to minimise the impacts of climate change;

352.5. Existing initiatives and institutions are aligned to improve the effectiveness of the national response;

352.6. Climate and water are elevated onto appropriate agendas to ensure that this relatively new field is incorporated into the national agenda and managed adequately.;

352.7. Knowledge of the climate-water relationship and how this will impact on society is improved;

352.8. Critical natural infrastructure (ecosystems) is protected and enhanced; and

352.9. Physical infrastructure is planned for a changing future using a no- regrets/low regrets approach.

353. The NWRS acknowledges that it is necessary to build resilience and reduce vulnerability and that the poor, particularly the rural poor, are the most vulnerable to climate change and therefore there is a particular imperative on water institutions to ensure the protection of the poor in relation to water.[241]

354. It is acknowledged that the strategic actions set out in the NWRS have not yet been implemented however, that does not absolve the decision-maker from taking the principles into account when making decisions. This is particularly important when

[241] Para 10.4.1.5, page 78

such decision pertains to rural South Africans and when such decision may have the effect of protecting the poor in relation to water.

355. South Africa's National Climate Change Adaption Strategy, 2019 was adopted on 18 August 2020. It identifies:

355.1. Access to freshwater, which is already a major challenge in Mpukunyoni, is predicted to become a much bigger problem as the climate crisis intensifies, with potentially devastating effects on sectors such as agriculture, human livelihoods, and the industrial and mining sectors.

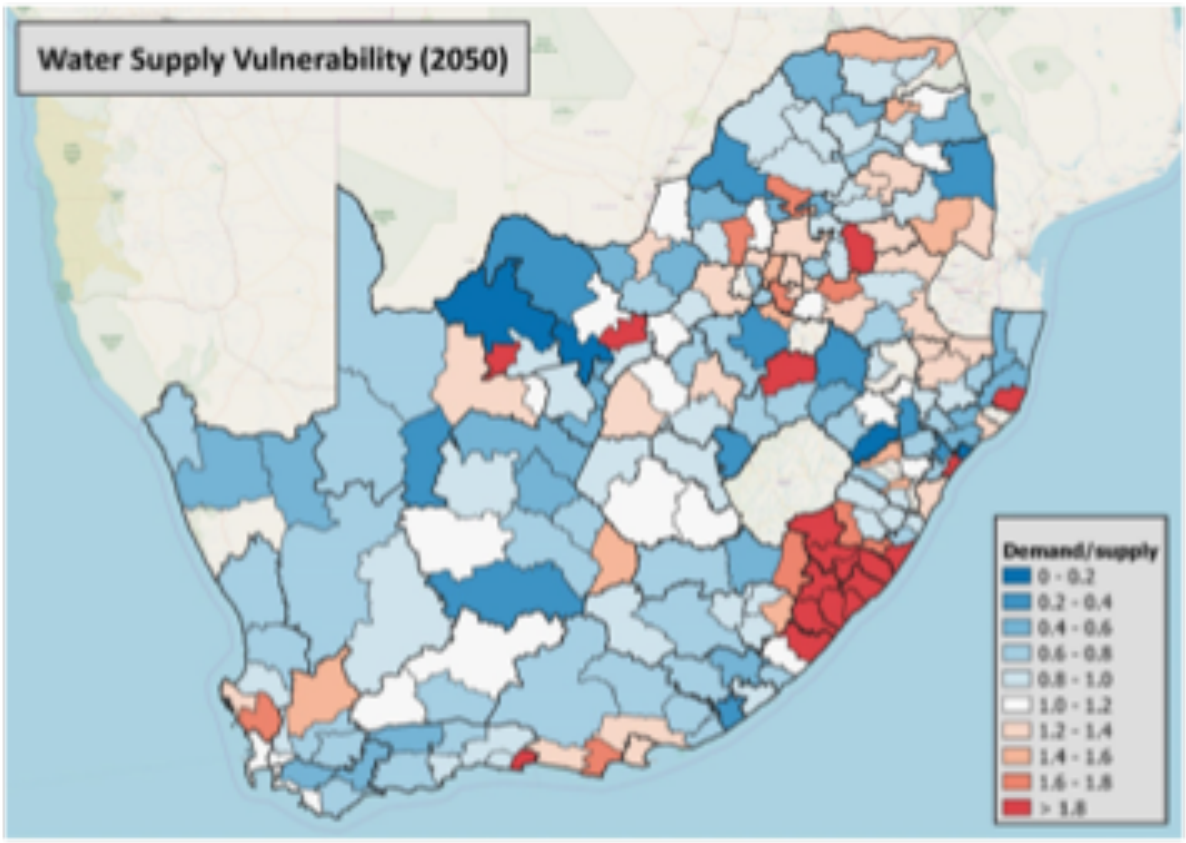
355.2. South Africa is to experience drier conditions overall with a higher water demand and deteriorating water quality in river systems, water storage reservoirs and groundwater. Current water usage already exceeds reliable yield.

355.3. In most climate crisis scenarios projected for South Africa, future water supply availability will worsen considerably by 2050.

355.4. Decreased availability of water in rivers is a result of the net effect of increased temperatures and increased evaporation, combined with shifts in the timing and amount of rainfall; changes in the timing of high and low flows due to changes in rainfall patterns; a higher incidence of floods as heavy rainfall events increase.

355.5. Increased risk of water pollution and decreased water quality will arise from erosion and high rainfall events (which elevate the amount of nutrient runoff, sediments, and dissolved organic carbon) and increased temperatures (which promote algal blooms).

356. The National Climate Change Adaption Strategy, 2019 also contains the following map in Section 2.4 which presents the estimated future water supply vulnerability (2050) for local municipalities[242].



357. It is evident from this map that the Mtubatuba Local Municipality, within which the Somkhele Mine and its 142 waters fall, is coded red, which is associated with the highest level of vulnerability in terms of water demand and supply.

358. In the event of future water shortages, meeting the reserve (i.e., water quality and quantity needed to satisfy basic human needs and protect aquatic ecosystems to

[242] Page 17 of the South Africa's National Climate Change Adaption Strategy, 2019.

ensure ecologically sustainable development) must take priority over water allocations. If basic human and environmental needs are not given precedence, as required, this could have significant impacts for the environmental and human health – resulting in breaches of fundamental constitutional rights to a healthy environment and the right of access to sufficient food and water.

359. Tendele has not done an assessment of the impacts that the water uses will have on the water requirements of the community, and how the water uses will hinder the surrounding area's climate change resilience and water security.

360. The negative impact of the water uses on the wider community of Mpukunyoni of more than 20 000 people and the public interest in the climate crisis scenario, the Hluhluwe-iMfolozi Park and the iSimangaliso World Heritage Site is likely to be considerable. However, this cannot be confirmed without a proper assessment.

361. The decision-maker erred in issuing a WUL without the WULA containing a climate impact assessment or considering climate-related impacts when making the decision to grant the WUL.

GROUND 12: SECOND RESPONDENT'S FAILURE TO UPHOLD ITS ROLE AS PUBLIC TRUSTEE OF WATER TO ENSURE THAT WATER RESOURCES ARE PROTECTED AND USED SUSTAINABLY AND IN AN EQUITABLE MANNER

362. According to section 3(1) of the NWA, as the public trustee of the nation's water resources the National Government, acting through the Minister, must ensure that water is protected, used, developed, conserved, managed and controlled in a

sustainable and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate. The Minister is ultimately responsible to ensure that water is allocated equitably and used beneficially in the public interest, while promoting environmental values.

363. The Minister, the Director-General, an organ of state and a water management institution must give effect to the national water resource strategy when exercising any power or performing any duty in terms of this Act.

364. In granting the WUL, the decision-maker failed to fulfil his constitutional mandate in that:

364.1. The National Water Resource Strategy (2013, 2nd edition) was not applied, particularly in so far as it relates to climate change (chapter 10) (See **Ground 11** above for further explanation);

364.2. There was insufficient and/or incorrect information in the IWULA;

364.3. Insufficient conditions were included in the WUL to protect the water resources and water users.

365. Water is a critical asset and plays a vital role in the context of sustainability. The NWA requires the Director-General and the Water Tribunal, when considering whether a water use is beneficial in the public interest to consider, not only the interests of all South Africans, but also those of future generations and the reserve.

366. For all the reasons submitted under grounds 1 to 12, the Minister and his Department have failed in their duty as public trustee of the water resources in the Somkhele area

that will be adversely and significantly affected by the water uses authorised in the IWUL and therefore, the IWUL should be set aside.

CONCLUSION

367. The appellants therefore request the Tribunal to uphold the appeal and set aside the granting of the IWUL on the grounds that:

367.1. The First Respondent authorised a water use licence to the Second Respondent despite material defects in the water use licence application (WULA) namely:

367.1.1. The absence of landowner consent as is required by the Water Use Licence Application and Appeals Regulation, 2017 **(GROUND 1)**;

367.1.2. The failure to properly consult with interested and affected parties, and in particular with the rural subsistence farmers in the area who rely on water to sustain their land-based livelihoods giving rise to an inadequate public participation process that was not compliant with the requirements prescribed by the Water Use Licence Application and Appeals Regulations, 2017 and the Section 2 principles of the National Environmental Management Act, 1998 **(GROUND 2)**;

367.1.3. The omissions, inaccuracies and inconsistencies in the Integrated Water and Waste Management Plan and other mandatory technical reports, as prescribed by the Water Use Licence Application and Appeals Regulations, 2017 **(GROUND 3)**.

367.2. The First Respondent did not consider, alternatively did not consider adequately, the following mandatory factors as required under Section 27(1) of the National Water Act, 1998, specifically:

367.2.1. the efficient and beneficial use of water in the public interest as required by section 27(1)(c) **(GROUND 4)**;

367.2.2. the socio-economic impact of the water uses, in particular the effects on people living in the area, including the rural subsistence farmers who rely on water to sustain their land-based livelihoods, as required in terms of section 27(1)(d) **(GROUND 5)**;

367.2.3. the possible effects of the water use on water resources and water users, as required in terms of section 27(1)(f) **(GROUND 6)**.

367.3. The First Respondent failed to exercise its discretion without a valid reason to demand of Tendele to provide security as part of its application for its water use licence on account of its non-compliance with its water use licences and the National Water Act, 1998, as well as its possible premature closure **(GROUND 7)**.

367.4. The First Respondent failed to apply, alternatively failed to adequately apply, the precautionary principle set out in section 2 of the National Environmental Management Act, 1998 **(GROUND 8)**.

367.5. The vested interest of the IWULA consultants and lack of credibility of the technical documents that comprise the Water Use Licence Application **(GROUND 9)**.

367.6. The ambiguity and / or inconsistencies in the IWUL issued by the First Respondent **(GROUND 10)**.

367.7. The First Respondent failed to give effect to the current National Water Resource Strategy which provides the framework for sustainable, equitable and secure water for a better life and environment for all **(GROUND 11)**.

367.8. The First Respondent failed to uphold its role as public trustee of the nation's water resources to ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner; and that it is allocated equitably and used beneficially in the public interest, while promoting environmental values as is required by Section 3 of the National Water Act, 1998 **(GROUND 12)**.

SIGNED AT DATED AT **DUBE CITY** ON THIS **03RD** DAY OF **NOVEMBER** 2021

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