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**Comments, questions and objections to the FINAL SCOPING REPORT conducted in terms of Regulation 49(2) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) ("MPRDA") for the mining of tungsten ore and molybdenum ore on Portions 1, 6, 13 of the farm Namaquasfontein No. 76 and Portion 1 of Farm No. 297, Piketberg dated April 2009 (Job No. 07/11/1190, DME Ref. No. WC 30/5/1/2/2(328) EM)**

#### **A. PURPOSE OF THIS DOCUMENT**

1. We refer to the Final Scoping Report (FSR) compiled in terms of Regulation 49 of the MPRDA for the mining of tungsten and molybdenum ore on the abovementioned portions of Namaquasfontein and Farm 297, Piketberg, dated July 2009.
2. The comments, questions and objections listed below are submitted on behalf of the Verlorenvlei Coalition, a voluntary association and a broad-based coalition of labour, civic organisations, environmental groups and local residents. A full list of Coalition members at the time of writing (new members join on a daily basis) is attached as **Annexures A and B** to this document.
3. The comments below comprise:
  - a. an assessment of the FSR's compliance or non-compliance with the MPRDA and Regulations issued under the MPRDA (Government Notice R.527 in Government Gazette No. 26275, 23 April 2004) ("the Regulations") (Section C. below);
  - b. an assessment of the way in which the FSR has responded to and incorporated the comments of authorities and I&APs to the Draft Scoping Report (DSR) published in April 2009 (Section D. and E. below). This includes the revised EIA Plan of Study and the revised Terms of Reference for the Specialist Studies in the EIA (Section F. below);
  - c. comments on the additional reports provided in the FSR (Section G. below); and
  - d. details of documents to which access has been refused (Section H. below).



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## **B. SUMMARY OF THE COALITION'S COMMENTS ON THE FSR**

### Introduction

4. As it did in its response to the DSR, the Verlorenvlei Coalition reiterates its profound and unequivocal objection to any proposal of mining in the Verlorenvallei. This area is a productive, profitable and economically growing part of the Bergriver Municipality that not only provides agricultural products for the Western Cape economy and for export, but employs hundreds of people, most of whom would lose their jobs and housing if the proposed mine goes ahead.
5. Most businesses and residents in the Verlorenvallei rely on ground and surface water resources, which are at serious risk of pollution by the mine. In addition, the mine is directly upstream from the Verlorenvlei wetland, a site internationally recognised under the Ramsar Convention on Wetlands 1971 and in respect of which South Africa, as a contracting party, has an international law obligation to protect.

### Non-compliance with the MPRDA Regulations

6. As set out in detail below, the Coalition is of the view that no meaningful attempt has been made to remedy the non-compliances with Regulations 46 and 49 in the FSR.

### The FSR's response to comments of I&APs and authorities on the DSR

7. The FSR fails to comply with crucial requirements set by authorities, particularly the Department of Minerals and Energy (DME), in their response to the DSR.

### Additional reports provided in the FSR

8. Additional reports provided in the FSR raise fundamental questions about the financial viability of the proposed mine: not only does Bongani not have lawful access to the technical information required to produce the desired tungsten product, but the actual market price of this particular product (ammonium paratungstate) is far lower than presented in the reports.

## **C. NON-COMPLIANCE WITH REGULATION 49**

9. In our comments on the DSR, the Coalition pointed out that Regulation 49(1)(d) of the MPRDA Regulations requires the scoping report to:

*"identify and describe reasonable land use or development alternatives to the proposed operation, alternative means of carrying out the proposed operation, and the consequences of not proceeding with the proposed operation"*

10. There are three separate aspects to this requirement, namely:
  - a. Identification and description of *"reasonable land use or development alternatives to the proposed operation"*;
  - b. Identification and description of *"alternative means of carrying out the proposed operation"*; and
  - c. Identification and description of *"the consequences of not proceeding with the proposed operation"*.
11. We pointed out that only the second requirement had been addressed in the DSR, namely on page ii, as part of the Executive Summary, which describes alternative design alternatives for the mine.

12. The third requirement was addressed in a single line in the DSR, namely "*The no-go alternative will also be considered, in which the status quo for the area will remain, viz. that of agriculture and livestock farming*" (DSR p. ii). We pointed out that, unfortunately, it was not sufficient for compliance with Regulation 49(1)(d) to defer this description to the environmental impact assessment – Regulation 49(1)(d) specifically requires the consequences of not proceeding with the proposed operation to be identified and described in the Scoping Report.
13. We argued that land-use of the affected area was well established, with the livelihood of many existing businesses and workers dependent on existing land-use, namely agriculture. We pointed out that it was particularly problematic that alternatives to the proposed mine, and the many positive consequences of not proceeding with the mine, were not identified and described as required by the Regulations. We contended that this non-compliance with Regulation 49 taints the remainder of the DSR by ensuring inadequate and misleading representation of the facts applicable to the proposed mining area through omission of relevant information.
14. We also pointed out that Regulation 46(a) requires the Social and Labour Plan (Appendix 7 to the DSR) to contain "*a preamble which provides background information of the mine in question*". Appendix 7 contained no such preamble, and no information at all on the mine or the mining company itself, such as what other mines Bongani Minerals Pty Ltd owns.
15. It was therefore submitted that the DSR itself was non-compliant with both Regulations 46 and 49 and should be rejected on this basis alone.
16. In response, the DME required the FSR to "provide all the relevant information that allow the comparative investigation and assessment of project alternatives as required in terms of IEM and Reg. 49(1)(d) of the MPRDA" (p. 3).
17. In its comments on the DSR (Appendix 2b), the Western Cape Department of Environmental Affairs and Development Planning (DEADP) provided more detail as to what is required in the description of alternatives:
  - a. "a detailed description of all alternatives identified"
  - b. "the project alternatives must be practical and realistic", i.e. "alternatives that have the potential to be implemented should be investigated"
  - c. "the reasons for considering one of the alternatives as the 'preferred alternative' must be clearly described"

DEADP proceeds to record that "in terms of the alternatives identified in the Scoping Report, it is indicated that no activity alternatives will be investigated.... It is also critical to note that specialist advice and the concerns received from I&APs are essential in identifying and assessing alternatives". ... the Scoping Report fails to meet the requirement in terms of Regulation 49(1)(d)... Therefore, at this stage, this Department is not satisfied with the information provided on alternatives".
18. One would expect that, in response to these comments and directives, the FSR would contain a detailed assessment of alternatives to the proposed mining operation, and an addendum to the Social and Labour Plan. However, as mentioned under Key issue 5.8 above, the FSR contains:
  - a. the sentence "*The no-go alternative will also be considered, in which the status quo for the area will remain, viz. that of agriculture and livestock farming*" (which appeared in the Executive Summary of the DSR on p. ii); and
  - b. one additional paragraph to explain that "*the cumulative pros and cons of the various alternatives (including the no-go alternative) can only be evaluated and compared once all the EIA-phase specialist studies have been completed*", with reference to the Social and Economic Impact Assessment and Agriculture Land-use Study to be commissioned (p. 34-35).

19. Regulation 49(1)(d) requires a Scoping Report to “*identify and describe reasonable land use or development alternatives to the proposed operation*”. This has not been done, and the FSR simply defers all these queries to the EIA phase. The FSR certainly does not provide “all the relevant information that allow the comparative investigation and assessment of project alternatives” required by DME. The FSR therefore remains non-compliant with Regulation 49(1)(d).
20. In addition, no amendment was made to the Social and Labour Plan (Appendix 7 in the FSR) to provide the “*preamble which provides background information of the mine in question*” to ensure compliance with Regulation 46.
21. The Coalition now has no option but to record its conclusions that the FSR does not comply with Regulation 46 and 49, and to reserves all its rights to raise this in an appropriate forum at a later stage.

#### **D. FSR’S RESPONSE TO COMMENTS OF I&APS ON THE DSR**

22. The Coalition, with somewhat more limited resources than Bongani, has attempted the enormous task of comparing the FSR to its own comments and those of other I&APs, and we have pointed out all discrepancies and difficulties to the best of our abilities. However, we stand by the comments made to the DSR, and to the extent that those comments have not been incorporated in the FSR, we regard the FSR as an inadequate response.
23. Although these issues are also covered in section 8 of the FSR, p. 65, the references to key issues below use to the reference system in Table 6.

##### Key issue 1.1: Impact of proposed Mining on Ecology and Biodiversity

24. In 1.1.2, WEC suggest that there already is a “high degree of certainty on how these systems function”. This seems to be at odds with the comprehensive studies recommended by the various specialists. There is no basis at present to suggest a high degree of certainty about “the potential impacts on the surface and underground water systems of the Krom Antonies River and inflows to the Verlorenvlei”.

##### Key issue 1.2: Impact of proposed Mining on Water Resources of Verlorenvlei and surrounds

25. Firstly, on the FSR, an attempt is made for the first time to quantify the groundwater to be abstracted for the proposed mining operation:
  - a. “The total water demand for the processing plant is estimated by the metallurgist 3500m<sup>3</sup>/day’ [*sic*] (FSR p. 30)
  - b. “100m<sup>3</sup> for dust suppressants and 3500m<sup>3</sup> for minerals processing”, with no indication of period applicable (FSR p.67)
  - c. “the processing plant requires about 3500 m<sup>3</sup> per day (FSR p. 80)

Yet this figure is not substantiated as the metallurgist’s report is not provided in the FSR, and we are advised that this report will be only be available as part of the EIA. See Section H. below.

In addition, in response to Key issue 3.1 Impact on Infrastructure, Withers Environmental Consultants (WEC) note that “the total volume of water actually required will still need to be determined by how much water can be recycled.”

26. Secondly, the Krom Antonies Water User Association points out that any new application for water use must be preceded by a reserve determination for the Krom Antonies river, which has not yet been undertaken. If the reserve determination shows that there is water available for further allocations, the KAWUA will first have to make provision for allocations to people who did not, in the past, receive their fair share of water allocations in line with Department of Water Affairs policies.
27. Thirdly, as an illustration of how the proposed water use compares to the current water use, the Coalition points out that the largest dam in the KAWUA contains about 140 000m<sup>3</sup>. At an estimate, a combination of all the proposed mine's daily water requirements (concentrator plant, dust suppressants etc) this dam could conceivably be drained in 10 days, while the same dam provides water for Little Swift for an entire season.
28. WEC reject an I&AP's concern about the "acidification of the groundwater and wetlands surrounding the Mpumalanga coal mines" with the comment that "the acidification of groundwater by coal mines is very different to tungsten mining" (1.2.9). While this may true, acidification of groundwater is not unique to coal mining. In this regard, the Department of Agriculture (Appendix 2b) points out that molybdenum is a sulphide mineral which "will eventually, on exposure to air and water, begin to produce acid which will leach into run-off water to be dispersed into both ground and surface water". WEC's response is therefore inadequate.
29. Despite the undertaking in 1.2.10 that the FSR would be amended to remove all references to the Krom Antonies River being "perennial", the FSR contains three references to the river being perennial (pp. 36, 37 and 47).

#### Key issue 1.3: Impact of polluted groundwater

30. At least one Coalition member, geologist Dr. Bob Winter, argues that the floods the area suffered last year undermines the claim that contamination of ground- and surface water can be mitigated. Needless to say, even the best stormwater management programme will be hard-pressed to contain the impacts of floods such as those seen in the area.

#### Key issue 1.5: Impact of the proposed mine on river diversion

31. The Coalition would like to point out that, in Figure 5, it is clear that both the starter pit and the pit layout in the Preliminary Site Layout Plan's pit design would transect two of the largest drainage gulleys in the Moutonshoek valley (the site of the current Moutonshoek dam). Massive river diversions with all the resultant negative impact would be unavoidable.

#### Key issue 1.6: Current water use and impacts on water quality

32. In our comments on the DSR, the Coalition indicated that it regarded the lack of information in the DSR about current water use in the affected area as a non-compliance with Regulation 49(1)(d). We even indicated that such information is available from the Krom Antonies Water Users' Association.

In the FSR, no additional information is provided to address this omission – instead, the response is that a hydrocensus will be undertaken as part of the EIA. This means that the non-compliance with Regulation 49(1)(d) has not been remedied in the FSR.

#### Key issue 1.7: Impact of the Proposed Mining on Agricultural Land

33. In our comments on the DSR, the Coalition indicated that it regarded the lack of assessment of current agricultural production in the DSR as a non-compliance with Regulation 49(1)(d). In the FSR, the response is that "the physical and economic impacts of the proposed mining operation on agriculture will be assessed during the EIA before any conclusions will be drawn". Again, the non-compliance with Regulation 49(1)(d) has not been remedied in the FSR.

34. WEC's response seems to suggest that they believe that agriculture can continue on the mine lease site, i.e. in the immediate vicinity of an operational open cast tungsten mine and metals processing plant. With respect, this is a ridiculous suggestion that bears no relation to the reality of mining sites.

Key issue 1.8: Impact of noise and air pollution from Mining

35. It is easy to answer the multiple concerns about dust pollution by saying that "dust suppressants will be used". The reality is that the effectiveness of dust suppressants is questionable, and many large industrial sites struggle to control fly-away dust from dumps despite using dust suppressants.

The Coalition also notes the comment by the Western Cape Department of Agriculture that "using water to dampen dust 'down' is not sufficient, and more attention to detail regarding the aspect is requested" (Appendix 2b).

Key issue 1.11: Impact of Climate Change and Water Use on Available Water Reserves

36. WEC's response indicates that "it will be important to capture at least one year's worth of biophysical data"; how is this possible if the draft EIA Report has to be produced within the statutory 180 days? A conclusion that reports produced in 180 days would be deficient is unavoidable.

Key issue 1.13: The impact of blasting and mine design on the instability of the Piketberg Mountain to the east of the mine

37. I&APs refer to the highly likely scenario that underwater structures will be damaged by blasting, resulting in the disappearance of their underground water. For WEC to state that blasting will "hardly cause earthquakes" misses the point. Farmers with boreholes in the application area report the need to frequently service their boreholes as a result of the friable nature of the substrate that they abstract water from. Blasting may well damage their boreholes.

Key issue 1.1: Impact of the proposed mining on the Greater Cederberg Biodiversity Corridor

38. WEC's response seems to deny that the Krom Antonies River valley falls within the Greater Cederberg Biodiversity Corridor, despite this having been confirmed by two environmental NGOs (EBEDAG and WESSA) and a statutory body (Cape Nature).
39. It is not at all clear what the comment "mining occurs mostly on old agricultural areas (refer to the gold and coal mines of the old Transvaal region)" is supposed to convey – this does not address the complaint by I&APs that the proposed mine is "completely out of line" with the Greater Cederberg Biodiversity Corridor initiative.
40. WEC suggest that Namakwa Sands is a "good example of good mining practices on the West Coast". The research conducted for at least one Masters thesis found that "the gaseous emissions from the [Namakwa Sands] Mineral Separation Plant could probably have had a detrimental effect on the adjacent Succulent Karoo vegetation".<sup>1</sup>

Key issue 2.1: Alternative Development Options to be Considered

41. In our comments on the DSR, the Coalition pointed out the deferral of the no-go alternative to the EIA as a non-compliance with Regulation 49(1)(d), which inter alia requires the Scoping Report (not the EIA) to "*identify and describe reasonable land use or development alternatives to the proposed operation, alternative means of carrying out the proposed operation, and the consequences of not proceeding with the proposed operation*".

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<sup>1</sup> Lukama, Beatrice M K. 2008. "Effects of gaseous emissions from the Namakwa Sands mineral separation plant near Lützville on the adjacent succulent Karoo vegetation – a pilot study". University of Stellenbosch Masters Thesis. Available at <http://hdl.handle.net/10019/573>.

WEC's response states that "the so-called 'no go' development option is being considered. ...[agriculture] will be described in greater detail in the Final Scoping Report". However, no further information about current agricultural production is provided in the FSR.

The non-compliance with Regulation 49(1)(d) has therefore not been remedied in the FSR, and the FSR therefore remains in breach of the requirements of Regulation 49(1)(d).

#### Key issue 3.1: Impact on Infrastructure

42. See comments under Key issue 1.2: Impact of proposed Mining on Water Resources of Verlorenvlei and surrounds above.

#### Key issue 3.2: Traffic Impact of Mining on Road Infrastructure and N7 Road

43. As can clearly be seen from Figure 5, both the proposed starter pit and final pit areas will destroy district road T2172, cutting residents off from their homes higher up in the valley. The Coalition calls on Bongani to clearly indicate how they plan to provide alternative access and what the financial cost and environment impact of this road diversion will be. Also see paragraphs 112 to 114 and paragraphs 161 to 162 below.

#### Key issue 3.4: Concerns about the proposed design of the open cast mining project

44. WEC state that, "at the current tungsten prices, the proposed Riviera Tungsten mine is highly viable". As described in more detail below, as at 18 August 2009, the bid-ask rate of ammonium paratungstate (APT) varies between \$185 and \$200 per metric tonne. A rough calculation shows that, at the actual price, the proposed mine is already no longer viable. (See also the implications of not having access to proprietary information necessary for the manufacture of APT below.)
45. In June 2009, WEC was quoted in *Mining Weekly* magazine as saying that China had resolved to limit the mining and production of tungsten to help force the price of Tungsten upwards.<sup>2</sup> Thus Bongani bases the alleged viability of the proposed mine on an inflated APT price of \$250/metric tonne.
46. In addition, should the price of APT go up, many mines currently mothballed will be reopened – a practice known as "swing production". All other known tungsten mines are more viable than Riviera Tungsten. One of these more viable mines is the CanTung mine in Canada's Northwest Territories, one of the benchmark mines used by Venmyn in their Concept Study (FSR, Appendix 17). CanTung announced its temporary closure on 29 June 2009<sup>3</sup> (its previous temporary closure was in December 2003 after it reopened in January 2002).<sup>4</sup>
47. In addition, WEC state that "the results are based on very detailed exploration by Union Carbide and Anglo American" during the 1980s. Unfortunately this "very detailed exploration" has not been sufficient for the deposit to be SAMREC compliant – see the report of Dr Herman Grütter in Annexure C).

#### Key issue 3.5: Processing of Tungsten

48. WEC deflect the I&AP concerns about the lack of information on the detail on chemicals to be used and potential environmental hazards these might pose by stating that this information cannot be recorded due to "trademark secrets of processing tungsten". They neglect to mention that Bongani apparently does not have access to this information either (see Section H. below).

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<sup>2</sup> *Mining Weekly*, 12 June 2009 "R1,3bn required for 'viable' but vigorously opposed Western Cape tungsten project" available at <http://www.miningweekly.com/article/riviera-tungsten-project-2009-06-12>.

<sup>3</sup> Metal-Pages.com, 29 June 2009 "North American Tungsten to suspend CanTung mine in October" available at <http://www.metal-pages.com/news/story/40436/>.

<sup>4</sup> See article by Mining Watch, available at [http://www.miningwatch.ca/index.php?Parks/CanTung\\_Closes](http://www.miningwatch.ca/index.php?Parks/CanTung_Closes).

49. How can I&APs be expected to assess the FSR and provide meaningful input on Terms of Reference for the Specialist Studies, without this information? How can the appointed specialists draw meaningful conclusions without this information?

Key issue 4.1: Impact of Proposed Mining on Existing Jobs

50. In its response to the DSR, the Coalition made serious allegations against blatant misrepresentations made in the DSR regarding current levels of unemployment in the Piketberg area. WEC have now removed these allegations from the FSR, and has not denied the misrepresentation. It but simply states that “the data contained in the DSR was obtained from the Social and Labour Plan”. It also states that “these figures will be quantified [sic] and verified in the EIA”.

The Coalition strongly objects to the inclusion of “inaccurate, incorrect and misleading information” in the DSR within the meaning of S.98(b) of the MPRDA, which constitutes a criminal offence. The Coalition calls upon the DME to take action against those responsible for inclusion of such information in contravention of the MPRDA.

51. An almost identical proposed mine (in size and scope) in the Yukon in Canada provides only 74 jobs and not 400 (see the report of Dr Herman Grütter in Annexure C). Furthermore, local labour is trained in agriculture, and not mining. All agricultural jobs will be lost in the valley, as farming in the greater part of the valley will not be able to continue.

Key issue 4.3: Impact of Falling Tungsten Prices on Mining in Krom Antonies Valley

52. The Coalition requires information about the “financial securities” that Bongani will provide to DME “for the rehabilitation of the mine”. Without endorsing this figure at this early stage, the Coalition notes that the Western Cape Department of Agriculture has requested that the financial provision be made in the amount of R406,6 million for rehabilitation costs (Appendix 2b).

Key issue 4.4: Impact of mine on the value of affected property

53. The Coalition would like to record that there has already been an impact on property values in the valley and on top of Piketberg mountain merely as result of the mining rights application by Bongani accepted by DME (and similar claims are made as far as Elands Bay). The farm Tierhoek was sold for a quarter of its value, and Kosie van Niekerk Boerdery had a significant offer on his farm Kromvlei that was withdrawn due to the threat of the mine. Similarly, M Matzener on the Piketberg mountain had an offer to purchase withdrawn.

Key issue 4.5: Impact of Proposed mining on the Karookop school

54. In our comments on the DSR, the Coalition indicated that it regarded the omission of the fact that the proposed mine would force the closure of the Karookop Primary School as a non-compliance with Regulation 49(1)(d). We even provided WEC with contact details for the school principal.

In the FSR, no further information has been provided regarding this school. Instead, the WEC response is that “if the school is forced to close because of the close proximity to the mine, the mining company should provide another school in a more suitable locality”.

The non-compliance with Regulation 49(1)(d) is not denied, but has not been remedied in the FSR either. The FSR therefore remains in breach of the requirements of Regulation 49(1)(d).

Key issue 4.6: Vulnerable people and social development support

55. Again, the response to the Coalition’s allegation of non-compliance with Regulation 49(1)(d) is simply deferred to the socio-economic assessment in the EIA phase. The FSR remains in breach of the requirements of Regulation 49(1)(d) in that it does not “*identify and describe reasonable land use or development alternatives to the proposed operation, ... and the consequences of not proceeding with the proposed operation*”.

Key issue 4.7: Impact of proposed mine on the way of life and the sense of place

56. With respect, the WEC response that “specialist socio-economic, visual and heritage assessments will be undertaken in the EIA phase” is no answer to the Coalition and many other I&APs concerns. This is not just about a change in the way the valley looks or how people earn their living, but also about the way in which a large open-cast mine would disrupt the community, their history and their social interaction. In which study are these factors described and assessed (as it should have been in the FSR in compliance with Regulation 49(1)(d))?

Key issue 4.8: Impact of the proposed mining on housing in the district

57. As mentioned in our comments on the DSR, the non-compliance of the DSR – and now the FSR – with Regulation 49(1)(d) means that there has been no assessment of the current housing in and around the affected area, which is vital for an assessment of how the proposed mine would impact on such housing.

Key issue 4.9: Impact of Proposed Mining on Tourism

58. The WEC response that “the DSR is not supposed to address issues, but rather table them” is not accurate. In terms of Regulation 49(1)(d), the FSR needs to “*identify and describe reasonable land use or development alternatives to the proposed operation*”, which includes tourism. Again, the FSR does not comply with this statutory requirement.

Key issue 4.11: Economic Impact of Mining on agricultural economy in the valley

59. Three highly viable farms in and around the proposed mining area will definitely go out of business should the mining right application be approved, no matter what mitigation is put in place:
- a. Kosie van Niekerk Boerdery (loss of groundwater and dust);
  - b. Little Swift Investments 56 (Pty) Ltd (entire farm in application area); and
  - c. Namaquasfontein Boerdery Trust (two thirds of income will be knocked out by the removal of Little Swift).

This will result in massive job losses for workers employed on these farms.

Key issue 4.15: Visual Impact



60. In support of our pleas against the destruction of the Moutonshoek Valley, the Coalition can only include some images from our beloved valley and hope that the authorities making decisions about this application will attempt to understand the loss that approving the mining right application will cause.



61. One of the agricultural activities in the valley is the breeding and raising of racehorses. The aesthetics of the valley is an integral part of the marketing of this product. The buyers who purchase an untried, unschooled yearling racehorse purchase a dream (a dream of winning the Durban July or the J&B Met), in which the environment in which the horse was raised plays an important role. Moutonshoek farm located its stables in a position where they can maximise the natural beauty of the Moutonshoek valley when parading their yearlings to prospective buyers. The proposed open pit would fill the entire vista from this location, and would destroy the very core of their successful business plan.

Key issue 5.1: Impacts of the Previous Prospecting Right Application on the Present Mining Right Application

62. The Coalition records that, on 26 June 2009, it submitted an application to DME in terms of S.5 of the Promotion of Administrative Justice Act, 2000 (Act 3 of 2000) requesting reasons why DME accepted the mining rights application by Bongani.

63. In addition, on 23 June 2009, the Coalition wrote to DME with inter alia the following requests:

*“Despite none of its members having been consulted on any other prospecting and/or mining rights applications in the valley, the Coalition keeps hearing rumours of other such applications having been submitted to yourself (you will recall this question being posed at RMDEC, without reply). Please could you now confirm for us:*

- *whether any such applications for any property in the Moutonshoek or Verlorenvallei have been submitted to yourself; and*
- *whether DME has accepted and referred any EMPs in support of prospecting rights to the Minister in terms of Section 16(5) of the Minerals and Petroleum Resources Development Act.”*

The Coalition has received no response to these queries, and it is therefore not clear what other rights applications, if any, are pending.

#### Key issue 5.2: The Legal Process Regarding Public Participation

64. The Coalition looks forward to another public participation meeting, but demands that the date for such a meeting be provided with at least 30 days' notice. Many I&APs have to make travel and leave arrangements to be able to attend such a meeting.
65. See also the comments in paragraph 94 below.

#### Key issue 8.5.5: Lack of Contact with Authorities, especially DEA&DP and DEAT

66. The Coalition requests a copy of the correspondence sent to DEAT as alleged.

#### Key issue 5.7: Controlling Authority for Land Use

67. Presumably the last sentence in 5.7.3 should read "A temporary rezoning application to mine for a period of  $\pm$  20 years will be to the Berg River Municipality".

#### Key issue 5.8: Non-compliance with the MPRDA Regulations

68. The WEC response in 5.8.1 is misleading and inaccurate.

Firstly, WEC state that "the so called 'no-go' option was included in the DSR. In fact, this constituted one sentence in the Executive Summary of the DSR on p. ii:

*"The no-go alternative will also be considered, in which the status quo for the area will remain, viz. that of agriculture and livestock farming."*

Secondly, WEC state that "the Revised Scoping Report refers in more detail to the Alternatives to be considered". In fact, the FSR contains the same sentence as quoted above, but this time with an additional paragraph to explain that "the cumulative pros and cons of the various alternatives (including the no-go alternative) can only be evaluated and compared once all the EIA-phase specialist studies have been completed", with reference to the Social and Economic Impact Assessment and Agriculture Land-use Study to be commissioned (p. 34-35).

Regulation 49(1)(d) requires a Scoping Report to "*identify and describe reasonable land use or development alternatives to the proposed operation*". This has not been done, and the FSR remains non-compliant with Regulation 49(1)(d).

69. With regard to the WEC response at 5.8.3, with respect, approval by the DME of the Social and Labour Plan does make a non-compliant Plan compliant with Regulation 46(a). The Coalition reserves all its rights to raise this deficiency in future in the appropriate forum.

#### Key issue 6.1: Issues regarding EMP

70. Various I&APs, including the Coalition, has asked for the release of crucial information regarding the proposed mining operation, which information is already available to Bongani Minerals Pty Ltd.

This information includes:

- a. information regarding the mining process (some of this information is contained in the Venmyn Rand Concept Report);
- b. metallurgist's report, which should contain an analysis of the ore (advised that this will only be available as part of the draft EIA Report);
- c. estimated water use (an incomplete and unreliable attempt to estimate water use is described under Key issue 1.2);

- d. “a mineral resource for the properties affected, declared to SAMREC or equivalent reporting code, and clearly signed off by Competent or Qualified Persons”, or “documentation that a SAMREC-compliant mineral resource is to be declared in future, plus disclosure by the Applicant of anticipated exploration activities and related exploration budget to support a resource declaration”.

There is no basis for withholding any of this information until the draft EIA Report is released: this information is or should be available, and is crucial for I&APs to assess the financial, geological and environmental viability of the proposed mine.

The Coalition again requests DME’s intervention to ensure that this information is released to I&APs without delay.

#### Key issue 6.2: NEMA and the EIA process

71. WEC’s response to the I&AP concern raised in 6.2.3 is not sufficient. The I&AP is asking what size the Riviera Tungsten Mine project (in terms of estimated professional fees) constitutes in relation to the estimated professional fees for all other projects currently being conducted by WEC. This is directly relevant to the EAP’s independence, and the Coalition requests that this information be made available as a matter of urgency.
72. WEC state in 6.2.6 that they will ask DME for an extension of time for producing the Final EIA Report. For clarification, is it proposed that WEC will ask for a 6 month extension, considering that a number of specialists have indicated that they would need a minimum of 12 months to do adequate baseline studies and collect sufficient relevant data to make informed recommendations?
73. As at date of these comments, I&APs have not been notified that an application has been lodged for an environmental authorisation in terms of S.21 of NEMA, for the activities listed by DEADP in their letter to DME dated 5 June 2009 (Appendix 2b). The Coalition notes and supports DEADP’s comment that this NEMA EIA process should have been run in parallel with the MPRDA EIA. The fact that Bongani has chosen not to do so places an undue burden on I&APs, who have to spend funds and time out of their employment and businesses to participate in these processes.

#### Key issue 6.4: NEMA:AQA

74. With respect, the fact that no smelting is required does not mean that the metallurgical plant would not require an atmospheric emissions licence under NEM:AQA. It is recommended that WEC consult Category 4 (Metallurgical Industry) in the Draft Listed Activities and Associated Minimum Emission Standards identified in terms of S.21 of NEM:AQA (GN 1001 in Government Gazette 32434, 24 July 2009) as well as the National or Provincial Air Quality Officer before drawing conclusions about the requirements of this Act. The Coalition will be doing the same.

#### Key issue 6.7: LUPO

75. The Coalition would like to draw to WEC and DME’s attention that the Cederberg Municipality (Mayor Judy Mouton) have indicated that they want to give input into the LUPO application, as they feel the negative impact would be felt in their district as well.

#### Key issue 6.8: Ramsar

76. The Coalition notes the Western Cape Department of Agriculture’s concern in Appendix 2b that the Ramsar designation of the Verlorenvlei would be withdrawn “as one of the requirements of a Ramsar site is that is it ‘not affected by mining activities’ AND there could be significant damage done to the agricultural practices in the region.”

### Key issue 7.2: Palaeo Ecology

77. With respect, it is not within WEC's expertise to state that "the proposed mine will... not impact on the palaeo-ecology of the vleï" because it would be 35 km away from the Vlei. As pointed out by many I&APs and the DSR, the Verlorenvlei would lie directly downstream of the proposed mine, which means that any impacts on water quality would most definitely affect the palaeo-ecology of the Verlorenvlei.

The Coalition therefore reiterates other I&APs' requests for an investigation into the palaeo-ecological heritage of the Vlei, and the potential impact of the proposed mine on this heritage.

### Key issue 7.3: Rehabilitation and surety

78. As stated under Key issue 4.3 above, the Coalition requires information about the "surety payment" that will be made to DME by Bongani "to ensure rehabilitation". In particular, the Coalition wants to know how much this surety payment would be.

### The Constitution (1.4, p.3)

79. It is astonishing, to say the least, that WEC have managed to repeat the incorrect quotation of S.24 of the Constitution in the DSR, after the Coalition pointed out the fundamental error in the DSR.

<b>Section 24(b)(iii) as represented in DSR p. 2 and the FSR p. 3</b>	<b>Accurate version of Section 24(b)(iii)</b>
<p>"... every person shall have the right to the following:</p> <p>(a) An environment that is not harmful to their health nor well being; and</p> <p>(b) To have that environment protected for the benefit of present and future generations, through reasonable legislative and other measures, which:</p> <ul style="list-style-type: none"><li>• prevents pollution and ecological degradation;</li><li>• promotes conservation; and</li><li>• secures <b>justifiable economic and social development</b> and use of natural resources while promoting justifiable economic and social development."</li></ul>	<p>"Everyone has the right -</p> <p>(a) to an environment that is not harmful to their health or well-being; and</p> <p>(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -</p> <p>(i) prevent pollution and ecological degradation;</p> <p>(ii) promote conservation; and</p> <p>(iii) secure <b>ecologically sustainable development</b> and use of natural resources while promoting justifiable economic and social development."</p>

80. While in our comments on the DSR, we assumed that this was a typographical error by the authors of the DSR, is it possible to make this fundamental error twice without drawing an adverse inference? As stated in our comments on the DSR, it is hard to imagine how a twenty-year open-cast mine would "*protect the environment for the benefit of present and future generations*". Both the DSR and the FSR point out many potentially detrimental environmental impacts of the proposed mine, making it extremely unlikely (a) to constitute ecologically sustainable development and use of natural resources, and (b) to prevent pollution and ecological degradation.

### Legal process followed to date for obtaining the mining rights

81. The description of the legal process in paragraph 1.5 of the FSR is neither an accurate nor complete reflection of the events in question for example, no mention is made of the first prospecting right application that was rejected by DME, and it is not clear why WEC, as independent consultants, have chosen to portray Bongani Minerals Pty Ltd as a victim of past legal action by I&APs. In the absence of a court judgement finding that the applicants in the

application for the review of the decision to grant a prospecting right to Bongani were not entitled to the relief they sought at the time, it would be appropriate for WEC to refrain from questioning the applicants' rights to bring the review application in question.

82. The Coalition reserves its rights to place a correct and more objective version of events on the record at an appropriate time and forum in the future.

#### Access to land

83. WEC make repeated accusations in the FSR that landowners (all of whom are members of the Verlorenvlei Coalition) are resisting access to the affected properties. It is important to note that, as at date of these comments, the landowners in question have had no legal obligation to allow WEC or any of the specialist scientists on their properties.
84. Having said that, although the Verlorenvlei Coalition strongly opposes the application by Bongani for a mining right for the Riviera tungsten deposit, the Coalition has indicated its commitment to a high quality, legally compliant environmental impact assessment process as required by the MRDA. In particular, the owners and lawful occupiers of the affected properties are committed to providing such access to their land as is necessary for the EIA specialist studies to be conducted, subject thereto that such studies comply with all legal requirements set by the MPRDA and other applicable legislation.

#### Consultation with I&APs

85. Please note that the statement that the Coalition's Chairperson, Dr Bennie van der Merwe, "started a blog on the Verlorenvlei website" is not correct. A personal letter from Dr Van der Merwe was posted on this website by Vleifriend without his knowledge or consent. When it was brought to his attention by Mr Withers on 30 April 2009, he had it removed immediately.
86. The number provided for I&APs who attended the public meeting on 30 April 2009 differs on p. 63 of the FSR ("some 130") and on p. 72 of Table 6 in the FSR ("175"). The Coalition believes that more than 175 I&APs attended the meeting in question, despite very limited notice of the meeting.

#### Alignment of development needs/priorities

87. The Coalition notes that the statement that "*A need exists to align the development needs/priorities of communities with the social investment objectives of the Riviera Tungsten Project that emanate from the Local Economic Development Programme*" has not been removed (FSR p. 54) despite our comments to the DSR. In those comments, we stated that such an approach was of great concern to the Verlorenvallei Coalition, and confirmed our fears that the proposed mine would destroy the livelihoods and wellbeing of the Verlorenvallei communities. We suggested that, instead, it was the project that needs to align itself with development needs/priorities of the community.

#### Comments on the DSR ignored in the FSR

88. The Coalition is in possession of a number of submissions by I&APs to WEC complaining that their particular comments on the DSR were either completely excluded from the FSR, or were misquoted or misinterpreted. These include:
- a. The Moutonshoek Werknemers Vereniging, representing the farmworkers in the valley
  - b. Kromvlei Plaas (Kosie Van Niekerk Boerdery)
  - c. Felicity Strange;
  - d. Nick Taylor;
  - e. WESSA;

f. Agri Western Cape. Note, in their letter of 14 August 2009, their demand for the appointment of an independent expert to evaluate the application process and specialist studies and reports throughout the application process;

89. A number of critical comments made and questions posed by the Coalition in its comments on the DSR have also been ignored in the FSR. As an example, we asked for a detailed breakdown of the initial direct investment into the local Berg River economy by the Riviera Tungsten Project – alleged to be between R1,2 and R1,5 billion over the first five years of operations (DSR p 34). Instead, this statement is simply repeated in the FSR (p. 57) with no mention of our request for a breakdown of these figures.

## **E. FSR'S RESPONSE TO REQUIREMENTS FROM THE DME AND OTHER AUTHORITIES**

90. As in the case of I&APs comments, the Coalition has attempted to compare the FSR to all the comments and requirements of authorities as contained in Appendix 2b to the FSR, and we have pointed out all discrepancies and difficulties to the best of our abilities. In addition to the gaps pointed out below, to the extent that those requirements have not been incorporated in the FSR, we regard the FSR as an inadequate response to authorities' requirements.

91. Note that page 8 of the comments of DEADP in Appendix 2b is not included in the electronic or hardcopy FSR.

92. In a letter to Bongani dated 24 June 2009 (Appendix 2b to the FSR), the DME identified "key issues that require further input" in the DSR. The section below considers whether these requirements have been incorporated in the FSR.

### Consultation

93. The DME required the FSR to "provide proof that objections and concerns have been resolved and/or incorporated in the EMP. Submit the "results of consultation (i.e. written agreement/solved disagreements/or deliberated disagreements) with affected parties and the authorities" (p. 1).

The reality is that most I&APs are fundamentally opposed to the principle of mining in the Moutonshoek Valley, for a wide range of reasons, as appears from the many I&AP comments. See, for example, the statement by statutory body Cape Nature in their letter to DME dated 15 May 2009 (Appendix 2b):

*"Based on the current information available, Cape Nature believes that the proposed mining activities and the associated increase in population, which will bring with it the need for additional roads, water supply, sewage and waste disposal, poses a high level of risk to the terrestrial and aquatic ecosystems in the area and their functioning. We believe that the proposed mine is entirely inappropriate for the area and could have significant and irreversible impacts on the environment.*

*We will therefore continue to oppose any open cast mining of this magnitude in the upper catchment of the Verlorenvlei system."*

Except for a few undertakings to amend the FSR, all of these objections have been dealt with by referring to the specialist studies to be conducted in the EIA. By no means does this constitute resolving this fundamental disagreement with I&APs.

94. In addition, the FSR makes it clear that the Open Day planned for sometime later in the EIA process is only an opportunity to ask questions of specialists – WEC state that "a formal meeting will not take place" (FSR p. 117). It is not clear how WEC propose resolving objections and concerns of I&APs without even meeting with us.

95. The DME also required the FSR to deal with consultation with the local authority (p. 2) and consultation with DWAF (p. 2). No mention is made in the FSR of consultation that has taken place with the Berg River Municipality or with DWAF, and such consultation is referred to in the future tense in the FSR.

#### Project description

96. The DME required the project description in the FSR to be "explained and resource requirements from the environment must be clear and without ambiguity" (p. 2).
97. Concerns about lack of detail provided in the DSR regarding the mining process are echoed by DEADP (Appendix 2b), who specifically required more information about the power supply for the crusher plant and any aboveground storage of fuel; details of the processing operations (components of the process, equipment required, flotation, gravity concentration, thickening and water storage, volumes of waste material to be stockpiled, transport of processed materials from the site – how many tons per truck per trip, disposal of hazardous and general solid waste).
98. A comparison of DME's list of requirements for the project description and Section 4 of the FSR shows the following gaps:
- a. No mention of the size or slope of the overburden dump (the issue of location is referred to the Specialist Studies in the EIA);
  - b. No mention of the exact size, location, slope and height of the slimes dam (all these issues have been referred to the EIA Specialist Studies);
  - c. The predicted volume of slimes is provided as a cubic meter per hour figure, instead of an overall estimate;
  - d. No detailed information on the composition and chemistry of the slimes produced (again, this issue is referred to the EIA Specialist Studies);
  - e. No information about the volume and type and concentration of each chemical used and released by all the different processes in the plant (again, this issue is referred to the EIA Specialist Studies);
  - f. No mention of the volume of "all other wastes to be produced" (though an estimated amount of 94,674,061 million tonnes of waste rock is provided on p. 26 of the FSR; volumes of slimes to be produced are given at hourly rates only);
  - g. No details of the volume and method of fuel storage to be required (again referred to the EIA Specialist Studies);
  - h. No details regarding the predicted noise and dust emissions (referred to the EIA Specialist Studies);
  - i. No details of the design for a sewage plant;
  - j. No details of internal roads, conveyors and pipeline routes;
  - k. No details of the predicted volume of traffic out of and onto the valley; and
  - l. No maps drawn up by a surveyor with various crucial details of the proposed operation.
99. Many of these requirements were echoed by authorities:
- a. DEADP: "This Department is concerned about the amount of water that may be utilized by the proposed mining activity at this stage, based on the surrounding land uses that are highly dependent on the water resources";

- b. DEADP: the FSR must contain information in terms of the proposed layout (the extent of the proposed pit areas, the extent of the waste dump, the extent of the slime dam and the location of the proposed haul road).
  - c. DWAF: required detailed estimates for dewatering and include estimates of water volume, as well as a plan for dealing with the “final void”.
100. In the Coalition’s comments on the DSR, we lamented the statement in the DSR that “*little information is available*” regarding the chemical processes, and wondered at the wisdom of planning a major mining operation based on “little information”. We pointed out other information not provided in the DSR, and list below those that have still not been provided in the FSR:
- a. estimates of the volume of residual ore to be stored in tailings dams on the site;
  - b. estimates of the volume of waste water to be produced in both the mining and metals processing, the composition and quality of such waste water and treatment proposed for such waste water;
  - c. estimates of the volume of dust containing tungsten and molybdenum that would be generated by the mining process;
  - d. estimates of the volume of pyrite present in the ore. Already the exposure of pyrite to water in mines all over South Africa has led to the urgent and large-scale problems caused by acid mine drainage (see the concerns of Coalition member **Agri Wes-Kaap**); yet no mention is made in the DSR of the possibility that the Riviera mine could cause similar problems (we note that the FSR records that the ore does contain pyrite);
  - e. a comprehensive Process Flow Diagram showing inputs, outputs, byproducts and wastes (to land, water and air). It is inconceivable that Bongani Minerals Pty Ltd has not yet developed a process flow – why is this missing from the DSR?
  - f. whether Bongani Minerals Pty Ltd intends mining in the void only (starter pit area and final pit area), or the whole area demarcated as mine area?

Prospecting information

- 101. The DME required a report by a geologist to be submitted with certain specified “prospecting information”, to be used to plan the plant and compile the mine plans and specify the chemistry of waste materials.
- 102. No such geologist’s report is attached to the FSR. The only mention of a geologist is in the context of the experts who will participate in the Geotechnical Study as part of the EIA Specialist Studies (FSR p. 78).

Project alternatives

- 103. See paragraphs 9 to 21 above.

Feasibility and sensitivity assessment

- 104. The DME required a feasibility and sensitivity assessment (p. 3, Appendix 2b) with factors including tonnes of ore, grades and value of ore, capital expenditure, operating expense (blasting/m<sup>3</sup>, hauling/m<sup>3</sup>, milling/m<sup>3</sup>, extraction/m<sup>3</sup>, handle slimes/m<sup>3</sup>, remove and handle overburden/m<sup>3</sup>, salaries and rehabilitation), exchange rate, discount rate, tax and royalties. In the FSR (p. 31), WEC refer us to an “Extract of the Financial Model Base Case on the Optimised Riviera Open Pit” in Table 9 of the FSR.

105. This table does not provide any of the following:
- a. tonnes of ore (though an “unqualified Mining Inventory estimate” of 10,860,167 million tonnes of ore is provided on p. 24 of the FSR);
  - b. grades and value of ore (though an average grade of between 0.28% and 0.31% WO<sub>3</sub> is provided as part of the “unqualified Mining Inventory estimate” referred to on p. 24 of the FSR);
  - c. a detailed breakdown of operating expenditure;
  - d. exchange rate; or
  - e. tax.
106. The Coalition also wishes to point out that the tungsten price used in this table is \$250/metric tonne unit. As at 18 August 2009, the bid-ask rate of APT varies between \$185 and \$200 per metric tonne ([www.minormetals.com](http://www.minormetals.com)).
- Venmyn Rand itself points out that the project is very sensitive to particularly the commodity price (Appendix 17, D531R, p. 3):
- “Typically low tungsten grade deposits tend to be marginal under low commodity prices and very sensitive to prices. It would be important that before a decision to develop the operation, an off-take agreement should be in place. This will enable the project owners to easily access project finance and guarantee success of the project”* (Appendix 17, par. 8)
- In this context, an “off-take agreement” means an agreement with a tungsten buyer who undertakes to buy a minimum amount per period, usually at a fixed price. Venmyn therefore states that Bongani would need a guaranteed buyer of the tungsten to be viable and for raising finance, since project financiers would want to know what income guarantees there are. No indication of such a buyer or prospective buyer is provided in the FSR.
107. Using today’s APT price, a rough calculation shows that the mine is no longer profitable. In addition, this does not yet take into account the fact that Bongani has no access to the technical information required to produce APT (see paragraph 171 below).
108. Importantly, the FSR itself repeats Venmyn Rand’s conclusion that “Venmyn Rand (Pty) Ltd. determined that the Riviera Project is viable based on the open pit design. The planned mine schedule was used to calculate NPV of ZAR 1.3bn, which does take into account initial capital expenditure and does not include cost escalations, commodity prices escalations, inflation and selling costs.”
109. On the last paragraph on p. 32, WEC comment that “the confirmatory and additional core sampling exploration programme must however be carefully planned before the final investment decision is made and should systematically lead the company to the eventual preparation of a pre-feasibility or feasibility study and the confirmation and classification of SAMREC Code compliant tungsten mineral resources”.
110. From this statement, it appears that Bongani does not currently have sufficient information available to complete the feasibility study that the DME requires (including the SAMREC Code). One therefore has to ask whether this mining rights application and the environmental impact assessment, which requires significant resources from I&APs and authorities, has not been launched prematurely?

#### Socio-Economic Impact Assessment

111. See paragraph 133 and further below.

## Roads and traffic

112. DEADP required that the FSR contain “a map indicating the road infrastructure (names of the roads) that will be used by mining vehicles that will transport materials from the facility”.

No such map is provided in the FSR.

113. DEADP also required that comments are obtained from the Municipality and/or the Western Cape Department of Transport and Public Works regarding the potential traffic impacts”.

No mention is made in the FSR of consultation that has taken place with the Berg River Municipality or the Western Cape Department of Transport and Public Works in relation to traffic issues. The only comments are found on p. 31 and p. 116 of the FSR, which refers to the engineers consulting with the applicable local authorities to obtain confirmation of services available.

114. See also paragraphs 155 to 156 below.

## **F. REVISED PLAN OF STUDY IN THE FSR**

115. In this section, the Coalition points out recommendations from authorities and I&APs not incorporated in the FSR Plan of Study, including recommended specialist studies not included in the FSR Plan of Study.

### Vegetation

116. The Coalition notes the requirement for “all-year sampling”, which was recommended by the DSR in Appendix 4. Should the Specialist Study on Vegetation be completed in 180 days, the findings and conclusions would not even comply with the DSR’s own recommendations.
117. No mention is made in the TORs for this Specialist Study of Critical Biodiversity Areas, which have been recommended by Cape Nature (Appendix 2b) to be taken into account in all Specialist studies.

### Freshwater Ecosystems

118. Again, the Coalition notes the recommendation that “data should be collected on at least a three monthly basis, over a minimum period of one year”, which “assumes that water quality and flow data are collected at more frequent intervals (i.e. at least monthly)”. Reports compiled in a shorter period would therefore be deficient.
119. In our comments on the DSR, we drew attention to the specific recommendations made by Dr Day in the DSR. Insofar as these recommendations relate to other Specialist Studies (e.g. “Detailed measures for dewatering, including estimates of water volume”, and “details of proposed management / disposal of both on- and off-site sewage and other waste”), the Coalition will assume that the recommendations have been incorporated in the other Specialist Studies, or that this information has been provided to Dr Day.
120. The DSR (page iii) listed three additional “constraints” to be detailed by “specialist study”: increases in sedimentation of the Krom Antonies River system; increases in erosion within the Krom Antonies River or its associated tributaries; and encroachment into riverine buffer areas. These issues are again not included in the TORs for the Specialist Study on Freshwater Ecosystems, and should be included.

121. The Coalition also draws attention to Cape Nature's requirement (Appendix 2b) that the assessment of how the abstraction and disposal of water would affect the water quality of the freshwater ecosystems must encompass the entire Krom Antonies Valley and the Verlorenvlei catchment. The exact geographical area to be covered in this study does not seem to be adequately defined in the FSR (currently just referred to as "the vicinity of the proposed mining area").
122. DEADP (Appendix 2b) also required the following issues to be covered in this study, which issues do not appear in the Terms of Reference in the FSR:
  - § water quality changes;
  - § increase in sedimentation;
  - § increase in alien vegetation;
  - § loss of wetlands; and
  - § encroachment on riverine buffer areas.
123. No mention is made in the TORs for this Specialist Study of Critical Biodiversity Areas, which have been recommended by Cape Nature (Appendix 2b) to be taken into account in all Specialist studies.

#### Water Quality and Hydrogeology (surface and groundwater) Impact Assessment

124. In addition to the Coalition, a number of authorities have pointed to the need for "an accurate determination of the amount of water the mining activities will require and which surface and groundwater resources it will be abstracted from", as well as "an accurate determination of the volume of waste water which will need to be disposed of". This does not appear in the Terms of Reference for this study. The Coalition will regard this – and all other affected Specialist Studies – to be deficient should this information not be provided and considered in all the Studies.
125. DWAF requirements for "details on water supply and sewage disposal management" and a "detailed rehabilitation and end use plan" (Appendix 2b) are not explicitly included in the Terms of Reference for this study.
126. Cape Nature's requirement for "a precise description of how it is proposed to dispose of polluted wastewater as well as solid and chemical waste". In the Coalition's view, waste management (for solid and liquid waste) requires a separate specialist study.
127. Although not specifically mentioned, the Coalition assumes that this Study will include "a detailed stormwater management plan is needed for the site, including specific measures to reduce the rate of runoff into freshwater ecosystems, and to manage the quality of runoff (recommended on page 3 of the DSR). This is also mentioned by a number of authorities.
128. The 1:100 year flood lines of all wetlands, rivers and drainage areas in the mining area must, according to the Terms of Reference for the Specialist Study on Freshwater Ecosystems, be determined by the hydrological study (FSR p. 106). However, this does not appear in the Terms of Reference for the Water Quality and Hydrogeology Impact Assessment (FSR p. 106-109).
129. As mentioned earlier in this document, the Krom Antonies Water User Association points out that any new application for water use must be preceded by a reserve determination for the Krom Antonies river, which has not yet been done. This should be included in this Specialist Study (as pointed out by I&APs in comments on the DSR – FSR p.67), yet WEC state that this "may not be possible", without explanation.
130. Two other aspects raised by the Coalition in our comments on the DSR that are not explicitly reflected in the Terms of Reference in the FSR are:

- a. an assessment of the impacts on drinking water, such as the water supplied to the Redelinghuys community; and
- b. an intensive assessment of aquifers within at least a 150km radius from the proposed site.

Should these aspects not be covered in this Specialist Study, the Coalition will regard the EIA Report as deficient.

#### Soils and Land Capability Impact Assessment

131. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

#### Heritage and Archaeology Impact Assessments

132. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

#### Socio-Economic Impact Assessment

133. A number of issues mentioned in the DME's requirements (Appendix 7, p. 3 at paragraph 7) are not again specifically listed in the Terms of Reference described in the FSR on p.110-113), such as housing, schools, training and way of life. In addition to the specific issues raised below, the Coalition expects that at least all the issues listed by the DME and the Western Cape Department of Agriculture (Appendix 2b) be covered by this Specialist Study; if not, this Study will be regarded as deficient.
134. The issues raised by the Coalition in our comments on the DSR are not explicitly included in the proposed Terms of Reference. These include:
  - a. A detailed analysis of current employment in the Verlorenvallei (with reference to age and gender);
  - b. A detailed analysis of the skills of those currently employed in the Verlorenvallei (with reference to age and gender);
  - c. A detailed consideration of which employees would be likely to be employed by the proposed mine (with reference to age and gender);
  - d. A detailed analysis of all residents dependent on those currently employed in the Verlorenvallei, including but not limited to children, spouses and the aged;
  - e. A detailed analysis of current skills development programmes and training provided in the Verlorenvallei, including both school education and adult education; and
  - f. A detailed analysis of all social and other support services currently provided in the Verlorenvallei.
135. In addition, the Socio-Economic Impact Assessment would be incomplete without a detailed breakdown of jobs that would be lost on all farms directly and indirectly affected.
136. On p. 51 of Table 6 in the FSR, WEC undertook to consider the impact of dust and the "potential economic losses to the fruit, flower and grape (export and wine) will need to be determined against the economics of the mine (which is seen as a temporary industry 18 years) in a socio-economic impact assessment to be done in the EIA phase". However, this issue is not included in the TORs for this Specialist Study.
137. The DME specifically requested that impacts on current land use to be considered in this Specialist Study include "land values". However, this issue is not included in the TORs for this Specialist Study. Importantly, this assessment must go well beyond the proposed mining area, since land prices as far afield as on top of the Piketberg mountain have been negatively impacted. A farm in the Valley recently sold at a quarter of its value.

138. The Western Cape Department of Agriculture (Appendix 2b) requested the study to cover the links between the Verlorenvlei and the livelihoods of coastal communities. It also referred to the potential risks associated with “new resources required from government as a result of increased pressures on local small school and requirements for increased policing, labour shortages on farms as a result of the potential migration of farmworkers from their present employment”. These issues do not appear explicitly in the TORs for this Specialist Study.
139. As a general comment, the TORs for this study (to which WEC referred many I&AP comments) do not reflect the concerns of I&APs regarding the way in which a large open-cast mine would disrupt the community, their history and their social interaction.

#### Air Quality Impact Assessment

140. None of the comments by the Coalition made in response to the DSR have been incorporated in the TORs for this Specialist Study. These include:
- a. Due to the variability of winds in the Verlorenvallei, the study area for this study should be broadened to include a radius of at least 100km from the proposed site;
  - b. A weather station needs to be employed in the valley to measure wind data, air quality, temperature, rainfall and humidity. A number of dust monitoring stations will also need to be positioned at various key localities in the valley (page 44 of the DSR);
  - c. *“Baseline data needs to be collected for at least a year before mining commences. This data will need to be used for the EIA process. Prevailing wind data and dust monitoring will be important for deciding where to locate mine infrastructure and spoil areas”* (page 35 of the DSR);
  - d. Details of dust suppression methods and dust monitoring are required (page iii of the DSR).
141. As in other studies, the Coalition notes the requirement for baseline data to be collected “for at least a year” (p. 58 of the DSR and p. 35 of Table 6). Should the Specialist Study on Air Quality be completed in 180 days, the findings and conclusions would not even comply with the DSR’s own recommendations.
142. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

#### Noise Impact Assessment

143. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

#### Visual Impact Assessment

144. The issue of “light pollution” mentioned on p.68 of Table 6 in the FSR is not specifically mentioned in the TORs for this Specialist Study.
145. The 3-D terrain model recommended by the DSR (p. 39) highlighted by the Coalition in our comments on the DSR still does not appear in the TORs for this Specialist Study.
146. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

#### Geotechnical Impact Assessment

147. It is astonishing that Bongani wishes to ascertain “material properties of soils and rocks” on the affected area at this stage of the mining rights application.
148. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

### The Impact Assessment on Indigenous Fish

149. No mention is made in the TORs for this Specialist Study of Critical Biodiversity Areas, which have been recommended by Cape Nature (Appendix 2b) to be taken into account in all Specialist studies.
150. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

### Impact Assessment on Avifauna

151. No mention is made in the TORs for this Specialist Study of Critical Biodiversity Areas, which have been recommended by Cape Nature (Appendix 2b) to be taken into account in all Specialist studies.
152. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

### Impact Assessment of Weather

153. No indication has been given as to the name and qualifications of the expert/s who will conduct this Specialist Study.

### Town Planning

154. No indication has been given as to the name and qualifications of the expert/s who will complete this Report.

### Architectural Guidelines

155. No indication has been given as to the name and qualifications of the expert/s who will complete this Report.

### Civil Engineering

156. No indication has been given as to the name and qualifications of the expert/s who will complete this Report.

### Landscape Architecture

157. No indication has been given as to the name and qualifications of the expert/s who will complete this Report.

### Rehabilitation Plan

158. No indication has been given as to the name and qualifications of the expert/s who will complete this Plan.

### Land Surveying

159. No indication has been given as to the name and qualifications of the expert/s who will complete this Report.

### Missing studies

#### *Land Use*

160. In their comments on the DSR, DEADP supported a previous recommendation that “a land-use survey for the entire Verlorenvlei River catchment be undertaken using remote sensing and verification by means of a field trip and if possible communication with farmers”. This requirement is echoed by the Western Cape Department of Agriculture, which recommended a “Specialist GIS Desktop and Site Study to map which areas may be utilised for the proposed activities, and which

may not, to produce a working/site map which identifies areas where boreholes can be drilled which needs to be fully workshopped with the landowners and I&APs”.

### *Traffic Impact Assessment*

161. The DSR (page 38) recommended that a Traffic Impact Assessment be done for the area: “*The cumulative impacts of the proposed mining development will need to be assessed in terms of the current and future road infrastructure and what cumulative impacts the mining will have on the road system (wear and tare [sic]) and what impacts it would have on the agricultural community. Traffic counts would need to coincide with the harvesting of the various agricultural products produced in the valley. The recommendations of the study, applicable impacts and mitigation will be assessed during the EIA Phase of the project and will be considered by the Town Planners and Civil Engineers in their design of the project.*”
162. The FSR repeatedly refers to the Traffic Impact Assessment, but again fails to include such a Traffic Impact Assessment under the EIA Plan of Study. Considering the wide range of issues arising from traffic impacts (pollution, social impact of noise, road impact on ecosystems and animal corridors, risks of traffic accidents and injuries, the potential of increased crime, additional impacts on destinations like Saldanha), the Coalition regards such an Assessment as essential to the EIA Plan of Study (and will regard the EIA report as inadequate without such an assessment).

### *Waste Management*

163. Cape Nature’s requirement for “a precise description of how it is proposed to dispose of polluted wastewater as well as solid and chemical waste”. In the Coalition’s view, waste management requires a separate specialist study. This recommendation is echoed by the Department of Agriculture in Appendix 2b, with proposed TORs.

### *Fauna*

164. Other than the Specialist Studies on Freshwater Ecosystems, Indigenous Fish and Avifauna, the list of specialist studies in the EIA Plan of Study seems to exclude any study on fauna that occur in and around the affected area, and how this would be impacted by a large open-case mine.
165. This includes reptiles, invertebrates and mammalian species not included under Freshwater Ecosystems, Indigenous Fish and Avifauna, and includes species listed on the Threatened and Protected Species (TOPS) lists issued under the National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004) of which there have been sightings in the affected area:
- a. leopard (*Panthera pardus*) (the presence of leopard in the Verlorenvallei area was also confirmed by a 1981 survey by Stuart (in CSIR Research Rep. 431.) (listed on the TOPS list as “vulnerable”)
  - b. Armadillo Girdled Lizard (*Cordylus cataphractus*) (photograph available) (listed on the TOPS list as “protected”)
  - c. Cape clawless otter (*Aonyx capensis*) (photograph available) (listed on the TOPS list as “protected”)
  - d. Honey badger (*Mellivora capensis*) (listed on the TOPS list as “protected”)
  - e. Cape fox (*Vulpes chama*) (listed on the TOPS list as “protected”)
166. The Coalition notes WEC’s opinion that “it may however be reasonably surmised that the number and diversity of animals breeding on the properties making up the site would be minimal” (FSR p. 44). Note that this conclusion is not based on any specialist study, since neither the DSR nor the FSR contains any specialist study – desktop or otherwise – relating to fauna in and around the affected area. (Dr Boucher’s study at Appendix 4 only deals with “the botanical features of the Krom-Antonies River Valley).
167. Considering the requirements of Regulation 50, any EIA Report that does not deal with these issues would be fatally flawed.

## Ecosystems services

168. In its comments dated 1 June 2009, WESSA called for “a resource economist to make an assessment of the ecosystems services provided by the functioning Krom Antonies River and the Verlorenvlei and how this would be affected by the proposed mine”. This study, which would provide crucial quantitative information in any cost benefit analysis, has been omitted from the EIA Plan of Study.

## Palaeo-ecology

169. For the reasons set out in paragraph 77 above, an investigation into the palaeo-ecological heritage of the Vlei, and the potential impact of the proposed mine on this heritage, should be included in one of the other Specialist Studies.

## **G. ADDITIONALS REPORTS PROVIDED IN THE FSR**

### EMC Report on Riviera Tungsten Deposit Metallurgical Plant

170. This report (Report No. VMR 1a/2009, contained in Appendix 17) describes two operations to be used at the proposed metallurgical plant. The first is the Concentrator Plant which is supposed to produce molybdenum sulphide and tungsten oxide concentrates. For their comments on this operation, EMC apparently relied on 1981 Union Carbide “testwork”, supplemented by information from conferences and the internet, described as “not voluminous... but readily available” (p. 11).
171. The second operation is the Concentrates Treatment Plant, supposed to produce ammonium paratungstate (APT) through various leaching processes. The EMC report goes to great lengths to explain that information regarding the concentrates treatment process is not readily available to them or the public, because it constitutes proprietary information of members of the International Tungsten Industries Association and the China Tungsten Industry Association (p. 7). It is not at all clear how Bongani plans to access the necessary technical information to be able to implement this process. Presumably it is possible, if not likely, that this information will never be available to Bongani, so that Bongani would be limited to produce and sell only a lowgrade flotation/gravity concentrate or a leached flotation/gravity concentrate (and not APT).
172. In the Venmyn Rand Concept Report discussed below, it is specifically mentioned that if the ore is sold as a concentrate, instead of as APT, “it will attract a fraction of the ATP price”. Such limitation will therefore dramatically affect the financial viability of the project – note that Venmyn, in its calculations to support its conclusion that the deposit can be mined profitably, assumed that the ore would be sold as APT!
173. The Coalition therefore calls on Bongani urgently to provide clear evidence of its access to the proprietary technical information required to produce APT.
174. In reality, most global startup operations of this nature start up by selling concentrate. Bongani needs to provide evidence that starting up with an ATP circuit has been done elsewhere, and at what cost.

### Venmyn Rand Conceptual Open Pit Mine Design and Scheduling Report

175. In our comments on the DSR, the Coalition formally questioned the financial viability of the proposed Riviera Tungsten Mine. In particular, we requested that certain information be made available to I&APs; of the requested information, only the Venmyn Rand Conceptual Open Pit Mine Design and Scheduling Report (Report D531R, contained in Appendix 17) has been provided.

176. One of the Coalition's members, Dr Herman Grütter (Ph. D., P. Geo.),<sup>5</sup> has provided a detailed critique of the Venmyn Rand Concept Study (see Annexure C to this document). Although he comments in his personal capacity as an I&AP, in his professional capacity he advises a large multinational mining company on diamond exploration and acquisition opportunities for global projects. He routinely conducts project-scale reviews of large and often complex geological data sets in collaboration with IT, GIS and geophysics professionals and advises on effective exploration and project development strategies in existing mining camps and in greenfields environments. He operates from Vancouver, Canada. Dr Grütter comes to the following conclusions:
- a. the basic geology of the Riviera tungsten deposit continues to be poorly known;
  - b. the deposit is insufficiently explored to support declaration of a SAMREC-compliant mineral resource. It is accordingly premature to apply for a right that contemplates construction of a mine;
  - c. Report D531R contains material omissions or unexplained, fixed assumptions pertaining to the proposed open pit mining complex and contains material errors in the related analysis of financial viability. The impacts of such omissions, ranges around assumptions and errors compound to show the Riviera deposit cannot be considered viable, and would remain "marginally economic", at best;
  - d. Report D531R was compiled under an artificially narrow mandate imposed by the Applicant, under which no financial or viability comparison has been made with open pit mines in Southern Africa, nor with economically exploited global tungsten deposits. A comparison of this nature would highlight that Riviera-equivalent deposit have not been developed as mines and that Riviera compares unfavourably to global tungsten deposits in terms of grade and strip ratio.
177. In addition, the Coalition's initial comments on the Draft Report are the following:
- a. This Report is marked "Draft". Apparently the mining rights application has been initiated on no more than a Draft Conceptual Report for the proposed Riviera Tungsten Mine. (Figures 1 and 2 are also missing for the Draft Report.)
  - b. On p. 3 of the Report, Venmyn classifies the Riviera tungsten ore in the resource category "inferred" (as opposed to measured (proven) or indicated (probable)). It appears that this entire proposed mining operation is based on an inferred resource.
  - c. The Report also includes some bizarre inaccuracies, such as describing the area as producing "corn" (maize) amongst others. It also describes very inaccurately how to get to the location by road (p.3).
  - d. In the Executive Summary, it is stated that "The open pit with the highest open pit value from Whittle was used to determine an ultimate pit for design purposes" (p. i). Needless to say, Bongani must also show low-case and mid-case economic scenarios.

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<sup>5</sup> Dr. Herman Grütter (Ph. D., P. Geo.) has 20 years' experience in the diamond exploration industry and is Commodity Specialist (Diamonds) for a large multinational company. Operating from Vancouver, Canada he advises on diamond exploration and acquisition opportunities for global projects. He routinely conducts project-scale reviews of large and often complex geological data sets in collaboration with IT, GIS and geophysics professionals and advises on effective exploration and project development strategies in existing mining camps and in greenfields environments. Herman has considerable experience in targeting, selection and early-stage evaluation of primary diamond deposits in Southern Africa, Tanzania, the East European Platform, FennoScandia, Greenland, Brazil and Canada. He has undertaken academic research in geoscientific fields related to kimberlites and the upper mantle and is a recognised authority on the phase-relations of mantle rocks and alkaline magmas. These topics are covered in thirteen peer-reviewed published papers and two co-edited special publications. Herman's degrees are from the University of Cape Town (B.Sc. Hons) and Cambridge University (Ph. D.). He is registered as a Professional Geologist in British Columbia, Canada and is a standing member of the International Kimberlite Conference Advisory Committee.

- e. Also in the Executive Summary, it is stated that "Based on the discussed approach, the unqualified Mining Inventory estimate for the Riviera is 11.55 million tonnes (Mt) at an average grade of 0.31% (WO<sub>3</sub>)", and later "The confirmatory and additional bulk sampling exploration programme must be carefully planned before the final investment decision is made and should systematically lead the company to the eventual preparation of a pre-feasibility or feasibility study and the confirmation and classification of SAMREC Code compliant tungsten mineral resources."

The Coalition is advised by Dr Grütter that the current geological characterisation of the "deposit" is immature, a long way from SAMREC compliant, and cannot form the basis for claims that it could be economic. There is at least 2 to 3 years' worth of exploration to be done, at a budget that Bongani has not even contemplated, but which could come to some USD 20 million.

## **H. OUTSTANDING DOCUMENTS NOT PROVIDED WITH THE FSR**

### Metallurgist's Report

178. In our comments on the DSR, the Coalition specifically requested details of the compositional and mineralogical analysis of the ore, the leaching characteristics of the ore, and heavy metals other than tungsten and molybdenum associated with the ore. I&APs require this information to assess the potential impact on water resources and the risk of water pollution through the leaching of metals. This information should be contained in the Metallurgist's Report, and the Coalition has repeatedly requested this Report from Bongani and WEC.
179. WEC's response in the FSR (p.35, Table 6) is that this will only be made available in the EIA Report. If this is correct, it is astonishing that Bongani is prepared to take this mining rights process so far, at great expense to itself, I&APs and authorities, without having in its possession an analysis of the ore that it wishes to mine.
180. Since the DME also instructed Bongani to include information on "the chemistry of the ore and resultant tailings" in the FSR (Appendix 2b, p. 2), the Coalition is fortified in reiterating that the FSR is incomplete with such fundamental information.
181. On the other hand, on p. 79 of the FSR, WEC state that "the specialist initial metallurgical report has been made available in this Revised Scoping Report". The Coalition would be grateful if WEC could point us to the Appendix that constitutes this "specialist initial metallurgical report", since we do not see it included.

### Mining work programme

182. In our comments on the DSR, the Coalition appealed to the DME to require Bongani to make at least the mining work programme submitted to the DME in terms of Regulation 10 and 11, available to I&APs. No such information has been provided.

### SAMREC documents

183. In our comments on the DSR, the Coalition requested the following information: "a mineral resource for the properties affected, declared to SAMREC or equivalent reporting code, and clearly signed off by Competent or Qualified Persons", or "documentation that a SAMREC-compliant mineral resource is to be declared in future, plus disclosure by the Applicant of anticipated exploration activities and related exploration budget to support a resource declaration". We call on Bongani to respond to our request as a matter of urgency.
184. Kindly acknowledge receipt of this document.

## Verlorenvlei Coalition

Signed by the Chairperson

Date:

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