the federation for a sustainable environment

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SCOPING REPORT FOR THE PROPOSED WEST

WITS MINING PROJECT

Various portions of farms Glenlea 228IQ, Randglen 229IQ, Vogelstruisfontein 231IQ & 233IQ, Roodepoort 236IQ & 237IQ, Vlakfontein 238IQ, Doornkop 239IQ, Witpoortjie 245IQ, Dobsonville 386IQ, Soweto 387IQ, 641IQ, 649IQ, 663IQ, 677IQ, 710IQ, Gauteng

Name of applicant: West Wits MLI (Proprietary) Limited

The following preliminary comments are submitted on behalf of the Federation for Sustainable Environment (FSE) in anticipation of the public participation meeting on the 31st of May, 2018 pertaining to the above-mentioned application.

The FSE is a federation of community based civil society organisations committed to the realisation of the constitutional right to an environment that is not harmful to health or well-being, and to having the environment sustainably managed and protected for future generations. Their mission is specifically focussed on addressing the adverse impacts of mining and industrial activities on the lives and livelihoods of vulnerable and disadvantaged communities who live and work near South Africa's mines and industries.

PREFATORY

Prefatory to our comments, we consider it relevant to once again refer to the example of the West Rand gold mining company, Mintails Mining (Pty) Ltd ("Mintails"), of which Mr Eddie Milne was the Chief Financial Officer until recently. Mintails made the same claims as West Wits MLI (Pty) Ltd ("West Wits MLI") namely that its activities will allow for the rehabilitation of historically impacted land and the closure of access points for informal miners. Conversely, Mintails has abandoned its operations leaving in its wake numerous clusters of open pits of 30 – 40 meters deep, which have neither been stabilised, backfilled nor rehabilitated - without access control; partially reclaimed dumps and tailings storage facilities (TSFs) with no erosion control, storm water- and dust management, vegetation, functioning toe paddocks; un-rehabilitated footprints of reclaimed dumps and TSFs; radioactive and toxic dams such as Lancaster Dam and Tudor Dam; spillages which had profound impacts on eco-systems and wetlands; etc. Mintails' rehabilitation liabilities,

according to its February 2016 *"Closure Plan and Associated Closure Costs for Mintails Mining South Africa (Pty) Ltd Three Mining Rights Areas (GP133MR, GP132MR and GP206MR) Report*" (Report Number: 1417897) amount to R336 million. It has a rehabilitation trust fund of R25 million. Mintails is currently in business rescue and its life of mine is stated as ending in 2020.

The evidential value of such testimony of dereliction of duty conceivably strengthens a doubt of the ecological sustainability and economic viability of West Wits ML's operations.

We appeal to the decision making authorities to consider the above example in its decision making. We cannot allow a perpetuation of the above situation. Furthermore, the State should have gained enough experience from the Acid Mine Drainage- and the derelict and abandoned mines' catastrophes to justify the application of precautionary principles in its consideration of granting an environmental authorisation to West Wits ML.

COMMENTS ON THE SCOPING REPORT

In terms of the Scoping Report (with the FSE's comments in red typography):

1. One of the non-executive directors of West Wits MLI, it is stated, is Hulme Scholes.
   We were informed that West Wits MLI (Pty) Ltd (West Wits) appointed Malan Scholes Consulting (Pty) Ltd (MSC) to facilitate the necessary regulatory processes that are required to form part of two (2) Mining Permit Applications and one (1) Mining Right Application. Please clarify the relationship of Hulme Scholes to Malan Scholes Consulting and whether there may be a conflict of interest.

2. Hazardous waste and waste management facilities, ore stockpiles and waste rock dumps will be stored on surface.
   Will the footprints of the ore stockpiles and waste rock dumps be lined to prevent acid rock drainage and will the footprints be rehabilitated to a sustainable future land use since the secondary source of contaminants remain in the soil after a rock dump has been removed?

   It should also be noted that there may be residual radioactivity in the footprints after the rock dumps have been removed since the gold ore co-occurs with uranium.

3. The open pits and underground workings will be backfilled with waste rock and construction rubble.
   The open pits and underground workings will be exposed to the inflow of extraneous water. Waste rocks have very large inventories of fine pyritic material and waste rock is permeable to oxygen. Backfilling the open pits with waste rock containing acid

producing minerals and metals will result in the formation of Acid Rock/Mine Drainage (AMD).

It is widely accepted that the waste from gold mines constitutes the largest single source of waste and pollution in South Africa. AMD is responsible for the most costly environmental and socio-economic impacts. Production of AMD may continue for many years after mines are closed and tailings dams decommissioned. AMD is not only associated with surface and groundwater pollution, degradation of soil quality, for harming aquatic sediments and fauna, and for allowing heavy metals to seep into the environment but long-term exposure to AMD polluted drinking water may lead to increased rates of cancer, decreased cognitive function and appearance of skin lesions. Heavy metals in drinking water could compromise the neural development of the fetus, which can result in mental retardation.

In view of the aforesaid, it is necessary for the Applicant to determine the status of the geo-hydrological regime, the extent of contamination, preferential pathways and predictions regarding long term migration in order to manage and mitigate the containment/rehabilitation of contaminated groundwater.

The potential impact on the groundwater from other surface contaminant sources such as the metallurgical plants, domestic and industrial waste sites must be described and assessed.

4. The activity will involve open pit mining. Five open pits of approximately 30 – 40 meters deep.
Gold mines are characterized in terms of the DWS' Mine Water Management Policy as "Category A" mines because of their acid producing potential.

The numerous open pits in the West Rand Goldfield have been identified as a source of ingress, by a study commissioned by the mining industry estimating that they contribute approximately 30% of the total ingress of acid mine water. (Ref. DME. RMCS for the West Rand Goldfield. 2008)

It can logically be inferred that these proposed open pits will generate acid mine water in the short, medium and long term.

It is necessary for the Applicant to demonstrate the adequacy of its financial provision to, in terms of the 2015 *Regulations pertaining to the Financial Provisions for Prospecting, Exploration, Mining or Production operations*, remedy and manage its operations' **latent and residual environmental impacts which will become known in the future including the pumping and treatment of polluted or extraneous water**.

It is necessary for the Applicant to determine the treatment it proposes for polluted water in the short, medium and long term (and disclose it in its EMPR) since there is the near certainty that the water will be acidic with high sulphate values, and a broad spectrum of metals in toxic concentrations, including radioactive metals such as uranium.

In terms of the proposed *Regulations pertaining to the Financial Provisions for Prospecting, Exploration, Mining or Production Operations* a financial guarantee cannot be used for residual impacts. Progressive or concurrent rehabilitation must take place and such rehabilitation must be funded from the operational budget.

5. The target commodities will include uranium.
   Since it common cause that the deposits, which will be mined include uranium, the following facts have relevance:

   - Uranium is both chemically toxic and radioactive.

   - There is the near certainty that the open pit- and underground mining will introduce risks not only limited to the physical dangers inherent to mining sites but risks of:
     - ✓ direct external gamma radiation,
     - ✓ inhalation and ingestion of radionuclides and chemotoxic metals

   - The major primary pathways by which contamination can enter the environment from a mine site have been identified[1]:
     - ✓ **the airborne pathway, where radon gas and windblown dust disperse outwards from mine sites**,
     - ✓ the waterborne pathway, either via ground or surface water or due to direct access, where people are contaminated,
     - ✓ or externally irradiated after unauthorized entry to a mine site,
     - ✓ by living in settlements directly adjacent to mines or in some cases, living in settlements on the contaminated footprints of abandoned mines.

[1]References: Land-Use after Mine Closure – Risk Assessment of Gold and Uranium Mine Residue Deposits on the Eastern Witwatersrand, South Africa. M. W. Sutton. Mine Closure. 2008; Gauteng Department of Agriculture and Rural Development: Feasibility Study on Reclamation of mine Residue Areas for Development Purposes: Phase II Strategy and Implementation Plan . 2011

These findings are supported by the National Nuclear Regulator. According to the National Nuclear Regulator significant radiation exposure can occur in the surroundings of mining legacies, due to:

- Inhalation of Rn-222 daughter nuclides from radon emissions of desiccated water storage dams and slimes dams.
- The inhalation of contaminated dust generated by wind erosion from these objects, and
- The contamination of agricultural crop (pasture, vegetables) by the deposition of radioactive dust particles, which can cause considerable dose contributions via ingestion.[2]

There is the near certainty that West Wits Mining's operations will resulted in an increase in dustfall[3].

We call for a high confidence and independent health assessment to determine the above risks on the nearby communities who are characterised by wide spread poverty, acute and chronic malnutrition and high HIV/Aids percentages.

6. Underground mining at a depth of 100m to 4 kilometers during a period of 6 to 30 years will involve drill and blasting.

   The impact of the blasting on the structural integrity of low cost and informal housing and on the "wellbeing"[4] (nuisance factor) of the communities must be determined and disclosed to the affected communities.

7. The operations will include dewatering of the open pits and underground workings. The dewatering and subsequent re-watering may result in the acceleration of sinkholes and seismicity. The project is in very close proximity to densely populated residential townships, such as Sol Plaatjies and Bram Fischerville.

[2] Reference: NNR Report – TR-RRD-07-0006 – "Radiological Impacts of the Mining Activities to the Public in the Wonderfonteinspruit Catchment Area." 12 July 2007

[3] Small dust particles are carried by the inhaled air stream all the way into the alveoli. Here the particles can remain for periods from weeks up to years depending on their solubility. Highly insoluble uranium compounds may remain in the alveoli, whereas soluble uranium compounds may dissolve and pass across the alveolar membranes into the bloodstream, where they may exert systemic toxic effects. In some cases, insoluble particles are absorbed into the body from the alveoli by phagocytosis into the associated lymph nodes. "Insoluble" particles may reside in the lungs for years, causing chronic radiotoxicity to be expressed in the alveoli. Reference: WRC 2014/1/06

[4] Section 24 of the Constitution: "Every person has the right to an environment that is not harmful to health and well-being…"

The subsequent re-watering will result in the flooding of the underground workings and acid mine drainage. The impacts will increase when mining operations cease. Proper quantitative assessments must be conducted to assess these impacts as well as the extent of contaminant plumes.

8. The operations will involve the removal of peat soils.
   If the project is authorised, we appeal to the authorities to write a biodiversity offset into the environmental authorisation regarding this impact.

9. The water treatment may result in brine.
   How will the brine be disposed of?

10. The three infrastructure complexes will have perimeter fencing.
    In terms of the *Regulations on Use of Water for Mining an Related Activities aimed at the Protection of Water Resources* (GN704 of 4 June 1999): *"Every person in control of a mine or activity must cause any impoundment or dam containing poisonous, toxic or injurious substance to be effectively fenced-off so as to restrict access thereto, and must erect warning notice boards at prominent locations so as to warn persons of the hazardous contents thereof"*. Fencing of the infrastructure complexes does not comply with the above regulations and merely protects the interests of the Applicant. It does not ensure the safety of nearby communities, in particular vulnerable persons such as the children.

11. The operations fall within Critical Biodiversity Areas and Ecological Support Areas.

    The operations fall within the Klip River, a National Freshwater Ecosystem Priority Area and large portions of the project fall within areas classified as being critically endangered and vulnerable.

    The need and desirability of the project is argued on the basis that it will allow for the rehabilitation of historically impacted land within the project footprints; proposed housing developments and closure of access points for informal miners.

    In terms of the principles of the National Environmental Management Act (107 of 1998) (NEMA), it is necessary for the Applicant to argue whether the project is the Best Practicable Environmental Option (BPEO).

    According to the Mining and Biodiversity Guideline the importance of the biodiversity features in these areas and the associated ecosystem services is sufficiently high to prohibit mining in these areas. Given the very high biodiversity importance, the Guideline states that an EIA conducted in respect of such an area should include the strategic assessment of optimum, sustainable land-use for a

particular area which should determine the significance of the impact on biodiversity. The EIA must take into account the environmental sensitivity of the area, the overall environmental and socio-economic costs and benefits of mining as well as the potential strategic importance of the minerals to the country.

The Guideline states that the EIA *"needs to identify whether mining is the optimal land use, whether it is in the national interest for that deposit to the mined in that area and whether the significance of unavoidable impacts on biodiversity are justified. It is important that a risk averse and cautious approach is adopted. This implies strongly avoiding these biodiversity priority areas, given the importance of the receiving environment and the probability that the proposed activity would have significant negative impacts"*.

When considering mining these biodiversity priority areas, the Guideline prescribes a set of filters that should be sequentially applied and "*mining should only be considered if:*

a. It can be clearly shown that the biodiversity priority area coincides with mineral or petroleum reserves that are strategically in the national interest to exploit.
b. ***There are no alternative deposits or reserves that could be exploited in areas that are not biodiversity priority areas or less environmentally sensitive areas****.*
c. It can be demonstrated that they are spatial options in the landscape that could provide substitute areas of the same habitat conservation, to ensure that biodiversity targets would be met.
d. A full economic evaluation of mining compared with other reasonable/feasible alternative land uses, undertaken as a necessary component of the EIA, shows that mining would be the optimum sustainable land use in the proposed area.
e. A detailed assessment and evaluation of the potential direct, indirect and cumulative impacts of mining on biodiversity and ecosystem services shows that there would be no irreplaceable loss or irreversible deterioration, and that minimising, rehabilitating, and offsetting or fully compensating for probable residual impacts would be feasible and assured, taking into account associated risks and time lags.
f. A risk averse and cautious approach, taking into account the limits of current knowledge about the consequences of decisions and actions, can be demonstrated both in the assessment and evaluation of environmental impacts, and in the design of proposed mitigation and management measures."

(Emphasis added.)

The Guideline states further that:
"The above filters should form the basis for deciding on whether or not, and how and where, to permit mining. This means that based on the significance of the impact,

some authorisations may well not be granted. If granted, authorisation may set limits on allowed activities and impacts, and may specify biodiversity offsets that would be written into licence agreements and/or authorisations".

The EIA/EMP must be compiled so as to give effect to the Guideline and the decision makers must consider the Guideline in deciding whether or not to grant environmental authorisation.

This includes an assessment of the opportunity costs, e.g.:

o Understanding the value of the foregone opportunity;
o The achievement of the desired aim/goal for the specific area;
o Optimising of positive impacts;
o Minimising of negative impacts;
o Equitable distribution of impacts; and
o The maintenance of ecological integrity and environmental quality.

Applying the "opportunity cost" principle would change the question being asked, namely, by placing a positive duty upon the decision maker to consider if the proposed development will constitute the best use of the resources (i.e. the best practicable environmental option).

It is our submission that the BPEO for the area is not for open pit or underground mining but for the responsible reclamation of the historic tailings storage facilities (TSFs), the consolidation of the waste in a lined engineered regional tailing storage facility and the rehabilitation of the footprints of the reclaimed TSFs in order to reduce the risks and hazards to the nearby communities and to future generations.

We furthermore do not understand the economic viability of the project since major gold mining companies are closing or are in decline or are not profitable.

12. The project area includes 3 flat wetlands, a depression wetland, a channelled valley bottom wetland and numerous seep wetlands.

It is widely accepted that mining has profound often irreversible impacts on ecosystems.

The rivers draining gold mining areas and the associated wetlands are an area of significant concern. Elements of concern are Al, Cr, Cu, Bi, Sr, Sb, Au, Hg, Pb, and U.

The proposed project will impact upon the said wetlands and it is necessary to assess the cumulative impacts of the historic gold mining activities and the proposed project on the Klip River and the numerous wetlands.

The functionality of these wetlands to adsorb metals may be compromised/exceeded by the added contaminant load from the proposed project. It may well result in the mobilisation (and solubilisation of metals if the water becomes acidic) of metals which are currently adsorbed in the sediment of the wetlands.

The above foreseeable impacts must be assessed. We furthermore request that the authorities specify wetland offsets that should be written into the environmental authorisation, if the project is authorised.

13. The project area contains dolomitic compartments.

The de-watering and re-watering envisioned by the project may accelerate sinkhole formations and seismicity.

AMD is an additional risk since it may result in the increased dissolution of dolomite which could lead to land subsidence in the area, which is densely populated.

The impact of the de-watering and re-watering on the ground stability and structural integrity of the houses of nearby communities must be assessed.

14. A network of pipelines will be established.

The failure of pipelines carrying polluted water and potentially radioactive and toxic slurry is a significant risk since these pipelines traverse wetlands and are in close proximity to the Klip River and densely populated communities.

Pipeline spillages must be prevented. The pipeline integrity and design must be in accordance with the ASME B31.4 code. See attached expert opinion from Paterson and Cooke Consulting Engineers regarding Best Practices of Pipeline Wetland Crossings.

We call upon the decision makers to impose these best practices upon the Applicant if the application is authorised.

CONCLUSION

We request that our comments be included – unabridged – in the Comments and Response Report and that our comments will be meaningfully and intelligently responded too.

We furthermore reserve our rights to augment or refine our comments.

SUBMITTED BY:

Mariette Liefferink.

CEO: FEDERATION FOR A SUSTAINABLE ENVIRONMENT.
29 May 2018.