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ADDRESSED TO:

Directors of Monte Cristo Commercial Park

21 April 2021

RESPONSE TO I&AP MEETING HELD ON 2021-04-17 WITH REGARDS TO MINING AND REHABILITATION PROGRESS FOR THE MINING RIGHT APPLICATION FS 30/5/1/2/2/10048MR ON THE FARM GOOSEBAY, FREE STATE PROVINCE.

1 INTRODUCTION

- i. An Interested and Affected Party (I&AP) meeting was held on 2021-04-17 via zoom, and at the same time a physical meeting at Eden Manor, to present the mining right application FS 30/5/1/2/2/10048MR on the farm Goosebay (Portion 3 of Woodlands 407, Remaining Extent of Portion 1 of Woodlands 407 & Remaining Extent of Woodlands 407). The meeting also gave I&APs the opportunity to respond and raise their concerns.
- ii. This report provides a follow-up response that specifically addresses the comments and concerns raised by I&APs at the beforementioned meeting.

2 SUMMARY OF I&AP QUESTIONS AND CONCERNS

- i. The following summarised questions and concerns were raised by the I&APs at the PPP meeting:
- ii. Mitigation measures during rehabilitation specifically relating to the following:
 1. Topsoil management;
 2. Dust management specifically during rehabilitation to prevent disturbed / areas in recovery;
 3. Visual mitigation during mining and rehabilitation;
 4. Safety of livestock during mining and rehabilitation; and
 5. List of the species to be used during rehabilitation.

3 TOPSOIL MANAGEMENT

- i. The conservation of the topsoil layer, or cover soil, is essential for the long-term rehabilitation of disturbed areas. Topsoil is generally considered the top 300-500mm of the pre-mined surface material, unless otherwise determined on site. It serves as a suitable growth medium that sustains the existing plant growth and provides a habitat for macro- and micro-organisms. This layer is distinguished from the deeper horizons by the presence of organic material, air, roots and rhizomes, and provide a condition in which biological soil activity occurs.
- ii. Long- and short-term storage of topsoil will be required. The topsoil that will be stripped from the plant area, haul roads or other permanent/semi-permanent infrastructure shall be stockpiled for use at the end-of-life of the mine. Short-term stockpiling in the mining area may be required to improve the mining sequence. although a roll-over mining method will limit this.
- iii. The topsoil or A horizon is considered the top 300-500mm layer of the pre-mining soils. This layer normally consists of higher contents of organic matter, a seed bank and rhizomes of the native plant species.
- iv. It is paramount that the stripping of the topsoil is done precisely to avoid mixing it with the plaster sand below the A horizon. This can be determined with a hand auger by drilling sampling holes at a sufficient grid density over the area that will be stripped.
- v. In this particular context, the A horizon in the sand deposit areas is considered a homogenous sandy/clay material of the Clovelly soil form and can be easily stripped with a dozer and pushed onto a stockpile or transported. Minimal stockpiling of the A horizon is expected if roll-over mining is implemented correctly. There is however a need for stockpiling of the first phase mining as illustrated in Figure 2 & Figure 3 to be placed at the last phase. Other areas that should be stripped and stockpiled are the processing plant footprint as well as new roads.
- vi. The A horizon of the aggregate areas are typically of the Oakleaf or Glenrosa soil forms. Stripping with a dozer is the optimal way of clearing an area before mining occurs. According to roll-over mining principles, topsoil will be spread directly unto the previous year's mining area as part of concurrent rehabilitation. As discussed above, some stockpiling is expected to occur from the first phase to be applied to a later phase.
- vii. Topsoil stockpiles shall be kept to a maximum height of 2m and a maximum flat surface area, consistent with the available storage area. A greater number of low mounds are preferred, as oppose to a larger and higher dump. Long-term stockpiling, i.e. exceeding 1 year, shall be revegetated to minimise soil loss and retain quality. Caution should be taken not to unnecessarily compact the topsoil stockpile by driving over it with heavy machinery. Final shaping should rather be done with tlb or excavator instead of a dozer.

- viii. Topsoil stockpiles should adhere to an s-profile slope configuration (Figure 1) in order to minimise erosion and support a resilient vegetation cover.
- ix. Topsoil stockpiles shall be marked with a signpost for easy identification and to avoid accidental disturbance or contamination with other materials.

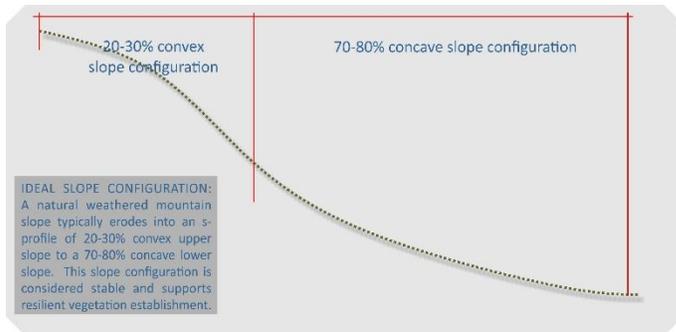


Figure 1: Embankment profile

4 DUST MANAGEMENT OF AREAS IN PROCESS OF BEING REHABILITATED

- i. Timing of soil rehabilitation is very important, considering that dry and windy conditions are usually encountered from July to September when wind erosion potential is at its peak. Stripping and placement of topsoil should preferably not occur during this period. Ideally, this practice is considered most effective from October until March.
- ii. Skets Architects and Planning was involved with the rehabilitation of the mining permit areas and gained first-hand experience in the handling of topsoil for rehabilitation purposes. One of the first aspects that was noted, was that the existing grass cover that is growing on the mining areas, are a valuable source of biomass and seeds and should be cut and collected prior to the stripping of the topsoil. This can be raked together and baled for later use as described below.
- iii. From the rehabilitation of the mining permits, it was often noticed that agricultural lime had to be added as well as organic material. This is where the grass cuttings from the pre-mining areas, are extremely valuable. By spreading the grass cuttings over the newly laid topsoil, it benefits in the following ways:
 - It covers the exposed topsoil and limits wind erosion and rain splash erosion of the surface particles, especially on the slopes;
 - It retains moisture levels by limiting evaporation, thereby supporting vegetation growth;
 - It adds organic matter to the top layer that will decompose over time, releasing nutrients and stimulating micro-organism activity in the soil layer; and
 - It provides a protective mulch that regulates temperature fluctuations in the surface which also protects the seeds and enhances germination.

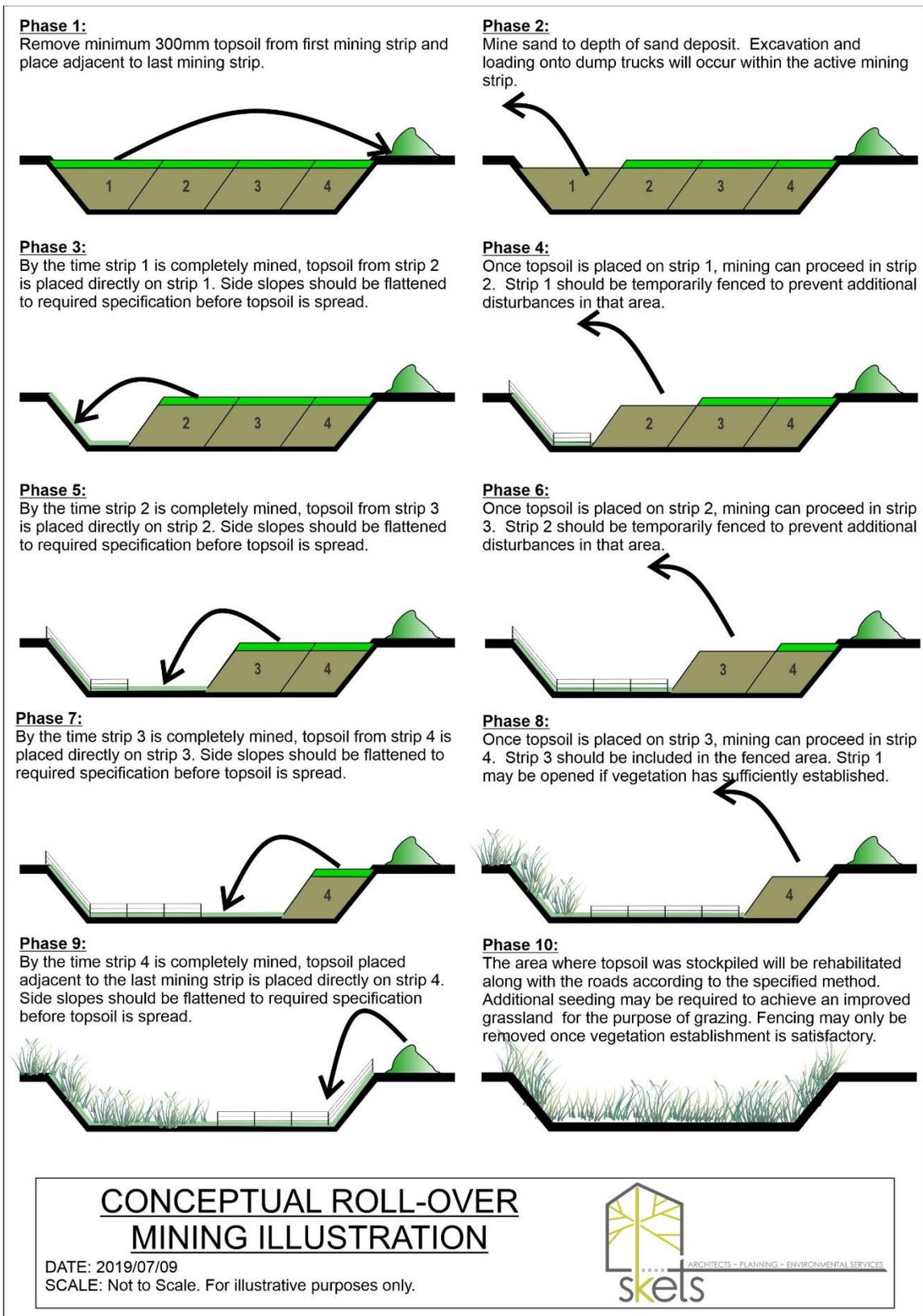
- iv. If the grass cuttings are not enough to cover the entire area, it can be laid in windrows, perpendicular to the prevailing wind direction to act as windbreaks. This will minimise wind erosion and provide a stable soil environment for vegetation establishment.
- v. A geofabric for example SoilSaver® can also be used on steeper slopes and fulfils a similar function as described above.

5 VISUAL MITIGATION DURING REHABILITATION

- i. Visual impacts are identified as an environmental impact. The sources of impact being the activities and infrastructure associated with the mining process, as well as the potential for dust plumes which can cause visual intrusion.
- ii. The mitigation measures that will be implemented during the rehabilitation goes hand-in-hand with the concurrent rehabilitation strategy. This is further motivated by the roll-over mining method which maintains an actively mining area at 5ha for sand and 4ha for aggregate at any given time.
- iii. By following this strategy, a limited area will be actively mined thereby maintaining a relatively small source of impact. Mining will also commence in areas that are furthest away from the visual receptors or in areas that is well screened. This provides the applicant the opportunity to streamline the mining sequence in parallel to concurrent rehabilitation efforts in order to optimise mining procedures, before reaching the areas closest to the visual receptors.
- iv. The roll-over mining strategy also creates the opportunity to commence with rehabilitation as soon as possible, thereby minimise environmental risks and limiting areas of disturbance. A continuous maintenance & monitoring procedure will also ensure successful recovery of the disturbed areas.

6 SAFETY OF LIVESTOCK DURING MINING AND REHABILITATION

- i. It was noted during the rehabilitation of the mining permits that some game congregated in the rehabilitated areas to graze the new growth. This caused severe damage to the young seedlings and prolonged vegetation establishment. It is recommended that the areas under rehabilitation are enclosed with a temporary fence to keep out the larger game from the area until sufficient vegetation establishment is achieved. It should remain closed for at least two growing seasons or when the vegetation coverage is 60% or more.
- ii. This is also considered a safety measure for humans and animals.



CONCEPTUAL ROLL-OVER MINING ILLUSTRATION

DATE: 2019/07/09
SCALE: Not to Scale. For illustrative purposes only.



Figure 2: Roll over mining (1)

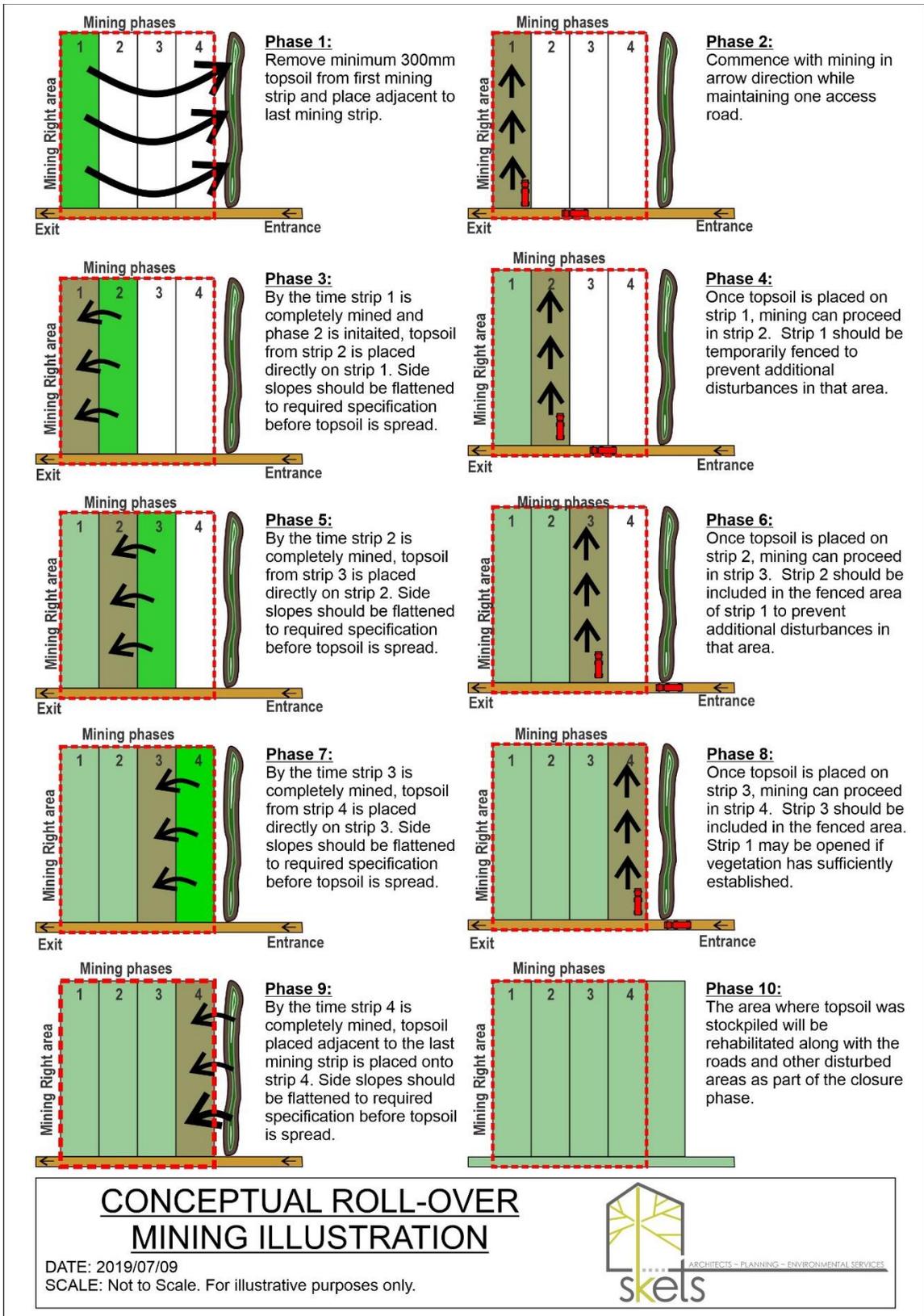


Figure 3: Roll over mining (2)

7 LIST OF SPECIES TO BE USED FOR REHABILITATION

- i. It is recommended to establish a higher concentration of creeping grass, such as *Cynodon dactylon*¹, on the side slopes. Creeping grass is normally less favourable for grazing and will limit animal traffic on the side slopes, thereby minimising erosion due to trampling. A creeping grass' spreading growth habit is considered a good soil binding property.
- ii. Timing is crucial when attempting vegetation establishment. The growing season for indigenous grasses is between September and March. Outside of this window, only *Avena sativa*², an annual exotic grass species, can be established with supplemental irrigation. This is considered an erosion control strategy to establish a vegetation cover during winter in order to combat wind erosion during the dry and windy months of July to September.
- iii. Two species suggested by the Terrestrial study are *Eragrostis pallens* and *Elephantorrhiza burkei*. These species can be relocated from other parts of the farm or can be grown from seeds, the species should not be limited to these two species. It is crucial that the correct species should be planted for the area and the soil. A specialist company (e.g. Mayford <http://mayford.co.za/veld-grass/>) should be consulted for the correct seed mix and after care of the seedlings;
- iv. A seed mixture that was used during the rehabilitation of the mining permits consisted of:
 - a. *Eragrostis teff*;
 - b. *Eragrostis curvula*;
 - c. *Digitaria eriantha*;
 - d. *Anthephora pubescens*; and
 - e. *Chloris gayana*.
- v. Some trees and shrubs may also be considered to be established in certain areas namely:
 - a. *Combretum erythrophyllum*;
 - b. *Celtis Africana*;
 - c. *Buddleja salviifolia*;
 - d. *Acacia karoo*; and
 - e. *Ziziphus mucronate*.
- vi. These lists should not be seen as exhausted and adaptive management & monitoring will commence in which accumulated knowledge and best practice research

¹ Couch grass

² Wheat grass

influences the following phases of the mine. Regular data sourcing should feed back into the active rehabilitation efforts and mining operations.