APPENDIX D: DETAILED ASSESSMENT OF POTENTIAL IMPACTS

Detailed assessment of potential impacts

Decommissioning and rehabilitation of each drill site was undertaken once drilling of each site was completed (as outlined in Section 3.2). This assessment therefore focusses on potential residual impacts/risks as a result of the rehabilitation phase only. Potential environmental and socio-economic residual impacts/risks have been identified by SLR. The sequence in which these issues are listed are in no order of priority or importance. The criteria used to rate each impact is outlined in Section 7.6.

The potential impacts/risks have been assessed against the Inkosi Greater prospecting right closure objective which is to return any areas disturbed by prospecting activities to the pre-project state. It should be noted that there are there are third party land uses such granite quarrying at the drill sites as well as within the broader prospecting right area (Section 7.4.1). The environmental impacts of this land use remain the responsibility of the quarry operators and landowner. Therefore, these impacts have not been taken into account as part of the assessment.

A summary of the impact assessment is provided in Section 11.1 of the main report. The assessment of the unmitigated scenario takes into account that decommissioning and rehabilitation activities have already been implemented in line with the management measures outlined in the approved prospecting EMPr. The mitigated scenario is where additional mitigation measures are deemed necessary.

ISSUE: LOSS OF FLORA AND FAUNA THROUGH LACK OF OR POOR REHABILITATION

Description of impact

A lack of or poor rehabilitation at the drill sites would result in the loss of flora and fauna at the drill sites. This could cause a proliferation of alien invasive species and have edging effects on surrounding areas.

Assessment of impact

The prospecting activities disturbed relatively small pieces of land (less than 0.04 ha per drill site). Rehabilitation activities have been undertaken at all drill sites, the sites have been cleared of waste and contaminated soils and the soils were prepared for re-vegetation. Vegetation and related habitat and faunal species at the drill sites have been influenced to varying degrees by livestock grazing and cultivation by third party land uses which are similar to land uses prior to prospecting activities.

According to the 2014 and 2016 EMPr performance assessments, drill sites completed prior to 2013 were fully re-vegetated and no further maintenance or aftercare activities were deemed necessary. The re-establishment of vegetation at 4 drill sites (completed in between 2013 and 2014) was still in progress at the time of the 2016 EMPr performance assessments and required maintenance and aftercare. Considering the uniformity of the baseline conditions within the prospecting right area, and given that the area experienced average rainfall since 2014 (which would have assisted with re-vegetation of the drill sites), it is therefore assumed that re-vegetation at these drill sites has been successful with no further maintenance or monitoring required. It is also possible that post-drilling third party land uses (such as livestock grazing) may have influenced the status of the vegetation at these drill sites, and this was noted during the Final EMPr Performance Assessment undertaken in support of this closure application. These land uses are aligned with pre-prospecting land uses.

A site verification undertaken at 4 drill sites within the prospecting right area in January 2020, concluded that the vegetation had re-established to a satisfactory level. There was a proliferation of alien invasive species at some drill sites, however, this was not unique to the drill sites, and was also observed throughout the prospecting right area. At all drill sites, a standpipe and/or concrete beacon marks the location of the drilled borehole. This is to allow for easy identification. During the 2020 site visit, it was not possible to verify the status of re-vegetation at 34 of the drill sites. This was mainly due to difficulties in locating standpipes within the drill sites (these had been either stolen or destroyed as they conflict with current land uses such as crop cultivation, granite mining etc.). In some instances, drill sites could not be accessed as access tracks have successfully re-vegetated and are therefore already fully rehabilitated.

Therefore, the loss of flora and fauna through a lack of or poor rehabilitation is considered to be of **VERY LOW** significance even without mitigation (see table below).

Mitigation and monitoring

No additional mitigation or monitoring is deemed necessary.

TABLE: IMPACT/RISK SUMMARY – FLORA AND FAUNA

Issue: Loss of flora and fauna through lack of or poor rehabilitation		
Phases: Closure		
Criteria	**Without Mitigation**	**With Mitigation**
Intensity	Low change or disturbance (L)	-
Duration	Short term (L)	-
Extent	A part of the site (VL)	-
Consequence	Low	-
Probability	Conceivable (L)	-
Significance	Very Low	-
Nature of cumulative impacts	Ongoing livestock grazing and cultivation within the prospecting right area would contribute to cumulative impacts on the flora and fauna.	
Degree to which impact can be reversed	Over time, with controlled livestock grazing and cultivation any potential impacts could be reversed.	
Degree to which impact may cause irreplaceable loss of resources	Very Low	
Degree to which impact can be mitigated	Possible	
Residual impacts	None expected.	

ISSUE: LOSS OF PRE-PROSPECTING LAND USES THROUGH LACK OF OR POOR REHABILITATION

Description of impact

A lack of or poor rehabilitation at the drill sites would result in the loss of pre-prospecting land uses. This could affect the livelihoods of communities who rely on the land for subsistence purposes. In addition, this could result in on-going dust emissions from exposed areas which could cause a nuisance to surrounding land uses.

Assessment of impact

The current post-prospecting land uses within the prospecting right area include natural bushveld, livestock grazing, granite quarrying and cultivation. Prospecting activities disturbed relatively small pieces of land (less than 0.04 ha per drill site). Rehabilitation activities have been undertaken at all drill sites, the sites have been cleared of waste and contaminated soils and the soils were prepared for re-vegetation. At all drill sites, a standpipe and/or concrete beacon marks the location of the drilled borehole. This is to allow for easy identification of the site as a prospecting drill site.

The pre-prospecting land uses within the prospecting right area were a mixture of natural bushveld, cultivation, degraded grassland as well as granite quarrying (which was scattered throughout the prospecting right area). Similar land uses post-prospecting still occur at the drill sites and within the broader prospecting right area, however, the extent and intensity of these land uses may have increased in recent years subsequent to the completion of exploration drilling.

The environmental impacts and liabilities for these land uses remains the responsibility of quarry operators and landowners/land users. Therefore, this assessment focuses only on the impacts associated with loss of pre-prospecting land uses as a result of prospecting.

According to the 2014 and 2016 EMPr performance assessments, drill sites completed prior to 2013 were fully re-vegetated and no further maintenance or aftercare activities were deemed necessary. The re-establishment of vegetation at drill sites (completed in between 2013 and 2014) was still in progress and required maintenance and aftercare. Considering the uniformity of the baseline conditions within the prospecting right area, and given that the area experienced average rainfall since 2014 (which would have assisted with re-vegetation of the drill sites), it is therefore assumed that re-vegetation at these drill sites has been successful with no further maintenance or monitoring required. It is however possible that post-drilling third party land uses (such as livestock grazing) may have influenced the status of the vegetation at these drill sites, and this was noted during the Final EMPr Performance Assessment undertaken in support of this closure application. At the time of the 2020 site visit there was also the proliferation of alien invasive species on some of the drill sites, however, this was seen throughout the broader area.

As the drill sites have re-vegetated successfully, the pre-prospecting land uses on and surrounding the drill sites can continue. Therefore, the loss of pre-prospecting land uses through a lack of or poor rehabilitation is considered to be of **VERY LOW** significance even without mitigation (see table below).

Mitigation and monitoring

No additional mitigation or monitoring is deemed necessary.

TABLE: IMPACT/RISK SUMMARY – LAND USE

Issue: Loss of pre-prospecting land use through lack of or poor rehabilitation		
Phases: Closure		
Criteria	**Without Mitigation**	**With Mitigation**
Intensity	Low change or disturbance (L)	-
Duration	Short term (L)	-
Extent	A part of the site (VL)	-
Consequence	Low	-
Probability	Conceivable (L)	-
Significance	Very Low	-
Nature of cumulative impacts	Ongoing livestock grazing, and cultivations within the drill site areas would contribute to cumulative impacts on land uses.	
Degree to which impact can be reversed	Over time, with controlled livestock grazing and cultivation, pre-mining land uses could continue indefinitely.	
Degree to which impact may cause irreplaceable loss of resources	Very Low	
Degree to which impact can be mitigated	Possible	
Residual impacts	None expected.	

ISSUE: CHANGE IN THE VISUAL LANDSCAPE OF THE AREA

Description of impact

A lack of or poor rehabilitation could alter the natural visual landscape and result in scaring.

Assessment of impact

The landscape is semi-urban in nature and dominated by livestock grazing and cultivation. Rehabilitation activities have been undertaken at all drill sites, the sites were cleared of any waste or contaminated soils and the soils prepared for re-vegetation. At all drill sites, a standpipe and/or concrete beacon marks the location of the drill hole. This is to allow for easy identification of the site as a prospecting drill site.

According to the 2014 and 2016 EMPr performance assessments, drill sites completed prior to 2013 were fully re-vegetated and no further maintenance or aftercare activities were deemed necessary. The re-establishment of vegetation at 4 drill sites (completed in between 2013 and 2014) was still in progress at the time of assessments and required maintenance and aftercare. Considering the uniformity of the baseline conditions within the prospecting right area, and given that the area experienced average rainfall since 2014 (which would have assisted with re-vegetation of the drill sites), it is therefore assumed that re-vegetation at these drill sites has been successful with no further maintenance or monitoring required. With the re-vegetation of the drill sites, the visual landscape would return to a pre-prospecting state.

During a drive through the prospecting right area in January 2020, prospecting drill sites were not obvious in the landscape and no visible scaring was noted. Therefore, the change in the landscape is considered to be **INSIGNIFICANT** even without mitigation (see table below).

Mitigation and monitoring

No additional mitigation or monitoring is deemed necessary.

TABLE: IMPACT/RISK SUMMARY – VISUAL LANDSCAPE

Issue: Change in the visual landscape of the prospecting right area		
Phases: Closure		
Criteria	**Without Mitigation**	**With Mitigation**
Intensity	Negligible change or disturbance (VL)	-
Duration	Very short term (VL)	-
Extent	A part of the site (VL)	-
Consequence	Very Low	-
Probability	Unlikely (VL)	-
Significance	Insignificant	-
Nature of cumulative impacts	Ongoing livestock grazing, and cultivation within the drill site areas would contribute to have cumulative impacts on landscape.	
Degree to which impact can be reversed	With adequate controlled livestock grazing and cultivation, the pre-prospecting landscape could continue indefinitely.	
Degree to which impact may cause irreplaceable loss of resources	Not applicable.	
Degree to which impact can be mitigated	Not required.	
Residual impacts	None expected.	

ISSUE: NEGATIVE AND POSITIVE SOCIO-ECONOMIC IMPACTS

Description of impact

Closure of the Inkosi Greater prospecting right has the potential to result in both negative and positive socio-economic impacts.

Assessment of impact

The closure of the Inkosi Greater prospecting right would prevent Inkosi from undertaking any further prospecting activities. As the nature of prospecting activities is to determine the presence of exploitable mineral resources and is not associated with generating a revenue, social related benefits are thus not applicable. With Inkosi abandoning and exiting from the prospecting project, the mineral resource becomes available for third party applications. Given that the prospecting activities ceased in 2014, the loss of income for contractors which would have resulted in loss of temporary employment opportunities for the communities is considered to be insignificant. This is mainly because, there has not been any income generated as contractors have not been on site for 5 years. Moreover, given the scope and scale of prospecting activities, it is expected that such loss in income would be limited.

When considering the potential negative socio-economic impacts together with the opportunity that is created for third party applicants the overall impact is considered to be of **VERY LOW** significance even without mitigation (see table below).

Mitigation and monitoring

No additional mitigation or monitoring is deemed necessary.

TABLE: IMPACT/RISK SUMMARY – SOCIO-ECONOMIC

Issue: Negative and positive socio-economic impacts in the prospecting right area		
Phases: Closure		
Criteria	**Without Mitigation**	**With Mitigation**
Intensity	Negligible change or disturbance (VL)	-
Duration	Short term (L)	-
Extent	Affecting immediate neighbours (M)	-
Consequence	Low	-
Probability	Conceivable (L)	-
Significance	Very Low	-
Nature of cumulative impacts	No cumulative impacts expected.	
Degree to which impact can be reversed	With adequate communication structures negative impacts can be controlled and positive impacts can be enhanced.	
Degree to which impact may cause irreplaceable loss of resources	Not applicable.	
Degree to which impact can be mitigated	Possible.	
Residual impacts	None expected.	