APPENDIX J – IMPACT TABLES

Preferred Alternative: Nieuwe Rust Housing project on erf 182 and 184 on ±3.45ha. Area A = ±0.92ha and Area B ±2.52ha. Proposed Layout = 91 units (10m x 15m = ±150m²) A = 31 units and B = 60 units.

Water

Portions A & B will require new internal reticulation networks, which will be 90mm diameter uPVC Class 12 pipes and will connect to the existing water mains in Olyf Street (Portion A) and Arcarcia Street (Portion B). Valves and hydrants will be provided at suitable positions.

Sewer

The internal network will be 160 mm diameter class 34 uPVC pipes with 110 mm diameter erf connections.

Stormwater

Stormwater from Portion A and B will be collected and dispense of via a new piped system onto the adjacent vacant areas.

Roads

The new roads for Portions A and B will connect to the existing Olyf Street and Arcarcia Street respectively. The new internal roads will consist of a combination of premix and paved surfaces and will be 10m and 8 m wide, but not longer than 1km.

GEOGRAPHICAL AND PHYSICAL

SOIL EROSION AND DUST

Preferred Alternative:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site.**
Extent and duration of impact:	**Extent 1 & Duration 5 (permanent)**
Consequence of impact or risk:	**Clearing and excavation activities can result in erosion and dust.**
Magnitude	**2**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Completely reversible (R)**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1-Completely mitigatable (CM)**

Proposed mitigation:	• **Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the immediate construction areas only.** • **Monitor construction areas frequently for signs of erosion and if signs of erosion are detected implement repair and preventative measures immediately.** • **Undertake dust suppression as needed.** • **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.** • **Undertake storm water management measures as required.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Similar to impacts associated with construction phase.**

WATER POLLUTION

Preferred Alternative:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution.**
Nature of impact:	**Construction could result in the pollution of surface water and eventually result in ground water pollution. Storm water contamination will result in surface water pollution. Construction activities such as excavation and clearing of vegetation and or diesel and oil spills could impact surface and ground water quality.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 2 (2-5 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Magnitude	**6**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**Partly destroyed 2 (PR)**
Degree to which the impact can be reversed:	**Partly reversible 6-89% (PR)**
Indirect impacts:	**Pollution of water resources.**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation	**44 - Medium**

(e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2-Partly mitigatable (PM)**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**27 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact of operational activities on surface and underground water pollution.**
Potential impact and risk:	**Impact of operational activities on surface and underground water pollution.**
Nature of impact:	**Hazardous material spills could result in the pollution of surface water and eventually result in ground water pollution. Storm water contamination will result in surface water pollution.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 2 (2-5 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Magnitude	**6**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**Partly destroyed 2 (PR)**
Degree to which the impact can be reversed:	**Partly reversible 6-89% (PR)**
Indirect impacts:	**Pollution of water resources.**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**44 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2-Partly mitigatable (PM)**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**27 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Similar to impacts associated with construction phase.**

DISTURBANCE TO SUBSURFACE GEOLOGICAL LAYERS

Preferred Alternative:	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Construction activities can affect the underlying geological layers on site to some extent.**
Nature of impact:	**Disturbance to subsurface geological layers.**
Extent and duration of impact:	**Extent 1 & Duration 2 (2-5 years)**
Consequence of impact or risk:	**Excavation activities can disturb subsurface geological layers.**
Magnitude	**2**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**0% (IR)**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is very shallow and the integrity of the underlying ground structures will thus not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**10 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**2**
Proposed mitigation:	**Due to the nature of the impacts, not much can be done to mitigate the impact, only the severity of it can be managed. Mitigation and management for affecting geology is to ensure that removal of soil is kept to a minimum – removal of soil should only be in areas where infrastructure will be established.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**10 - Low**
OPERATIONAL PHASE	

Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Similar to impacts associated with construction phase.**

WASTE IMPACTS

Preferred Alternative:	
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Waste Impacts**
Nature of impact:	**General construction waste will be generated during the construction phase. Poor waste management practices on site may lead to dumping and windblown litter creating a negative visual impact and nuisance for adjacent landowners / users as well as impacting the natural environment.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2**
Consequence of impact or risk:	**Pollution and nuisance.**
Magnitude:	**4**
Probability of occurrence:	**3**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Reversible**
Indirect impacts:	**Impacts on ecological functioning of river. Impacts on fauna.**
Cumulative impact prior to mitigation:	**Dumping; Windblown litter causing nuisance;Pollution / degradation of the natural environment.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**24 -Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1**
Proposed mitigation:	**All waste generated on site shall be collected and disposed of at a registered landfill facility; All safe disposal certificates and waste manifests from service providers to be kept and maintained; All staff to receive training on correct waste management practices.**
Residual impacts:	**None**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**18 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Waste Impacts**

Nature of impact:	**Improved waste collection and service provision.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2**
Consequence of impact or risk:	**Pollution and nuisance.**
Probability of occurrence:	**4**
Degree to which the impact may cause irreplaceable loss of resources:	**3**
Degree to which the impact can be reversed:	**1-Resource will not be lost (R)**
Indirect impacts:	**Reversible**
Cumulative impact prior to mitigation:	**Impacts on ecology.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Dumping; Windblown litter causing nuisance; Pollution / degradation of the natural environment.**
Degree to which the impact can be avoided:	**24 -Low**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**All waste generated on site shall be collected and disposed of at a registered landfill facility; All safe disposal certificates and waste manifests from service providers to be kept and maintained; All staff to receive training on correct waste management practices.**
Residual impacts:	**None**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**18 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Similar to impacts associated with construction phase.**

NOISE

Preferred alternative	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact of noise on surrounding environment, especially the surrounding residential area.**
Nature of impact:	**Environmental noise pollution. Nuisance impacts could relate to the increase noise and disturbance associated with the proposed development, e.g. noise, traffic etc.** **Construction activities and construction personnel on the sites, and construction vehicles moving to and from the sites would cause an increase in**

	noise in the area, which may impact negatively upon the adjoining landowners.
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Magnitude	**2**
Consequence of impact or risk:	**Nuisance**
Probability of occurrence:	**3 (distinct possibly)**
Degree to which the impact may cause irreplaceable loss of resources:	**1-Resource will not be lost (R)**
Degree to which the impact can be reversed:	**Completely reversible (R) - This will not be a long-term impact nor will it have an impact on the natural processes. It is thus 100% reversible.**
Indirect impacts:	**Nuisance**
Cumulative impact prior to mitigation:	**Nuisance**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**15 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**1- Completely mitigatable (CM)**
Proposed mitigation:	• **Working hours will be restricted to normal working hours.** • **All noise and sounds generated by plant or machinery must adhere to SABS 0103 specifications for the maximum permissible noise levels.** • **All plant and machinery are to be fitted with adequate silencers.** • **No sound amplification equipment such as sirens, loud hailers or hooters may be used on site, after normal working hours, except in emergencies.** • **If work is to be undertaken outside of normal work hours, permission must be obtained from the Local Authority**
Residual impacts:	**Nuisance**
Cumulative impact post mitigation:	**Nuisance**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**15 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Not applicable to operational phase.**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Similar to impacts associated with construction phase.**

HEALTH AND NUISANCE IMPACT

Preferred Alternative:	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	

Potential impact and risk:	**The surrounding land users/ owners will be exposed to the presence of the construction machinery**
Nature of impact:	**Nuisance and air quality impacts as a result of dust and exhaust fumes**
Extent and duration of impact:	**Extent 3 & Duration 2 (2-5 years)**
Consequence of impact or risk:	**The surrounding land users/ owners will be exposed to nuisance and air quality impacts as a result of dust and exhaust fumes**
Magnitude	**2**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2 (PR)**
Degree to which the impact can be reversed:	**2 (PM)**
Indirect impacts:	
Cumulative impact prior to mitigation:	**Nuisance and air quality impacts as a result of dust and exhaust fumes**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Low**
Degree to which the impact can be mitigated:	**Low**
Proposed mitigation:	• **Proposed construction activities must be limited to development footprint site.** • **Dust must be managed and control on site.** • **All construction vehicles must be serviced to prevent access exhaust emissions and noise.**
Residual impacts:	**Health impacts**
Cumulative impact post mitigation:	**The surrounding environment will not be affected by construction activities**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**24 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Development will provide much needed housing opportunities**
Nature of impact:	**Health impacts as a result of the housing and better living conditions.**
Extent and duration of impact:	**Permanent**
Consequence of impact or risk:	**Health impacts as a result of the housing and better living conditions.**
Magnitude	**2**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2 (PR)**
Degree to which the impact can be reversed:	**2 (PM)**

Indirect impacts:	
Cumulative impact prior to mitigation:	**None**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Positive**
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	**None**
Residual impacts:	**None**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Positive impacts**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Similar to construction phase.**

IMPACT TABLES-NO-GO

GEOGRAPHICAL AND PHYSICAL

SOIL EROSION AND DUST

Preferred alternative	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Not applicable**
OPERATIONAL PHASE	
Potential impact and risk:	**Soil erosion**
Nature of impact:	**Storm water channels prone to erosion.**
Extent and duration of impact:	**Extent 2 & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Magnitude	**4 (will cause a slight impact on processes)**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**2-Resource may be partly destroyed (PR)**
Degree to which the impact can be reversed:	**Partly reversible (PR)**
Indirect impacts:	**Pollution of water resources.**
Cumulative impact prior to mitigation:	**Erosion and impact on surrounding environment.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36-Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Low**
Degree to which the impact can be mitigated:	**3**
Proposed mitigation:	**NA**
Residual impacts:	**Soil erosion.**

Cumulative impact post mitigation:	**Soil erosion.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 – Medium**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Not applicable**