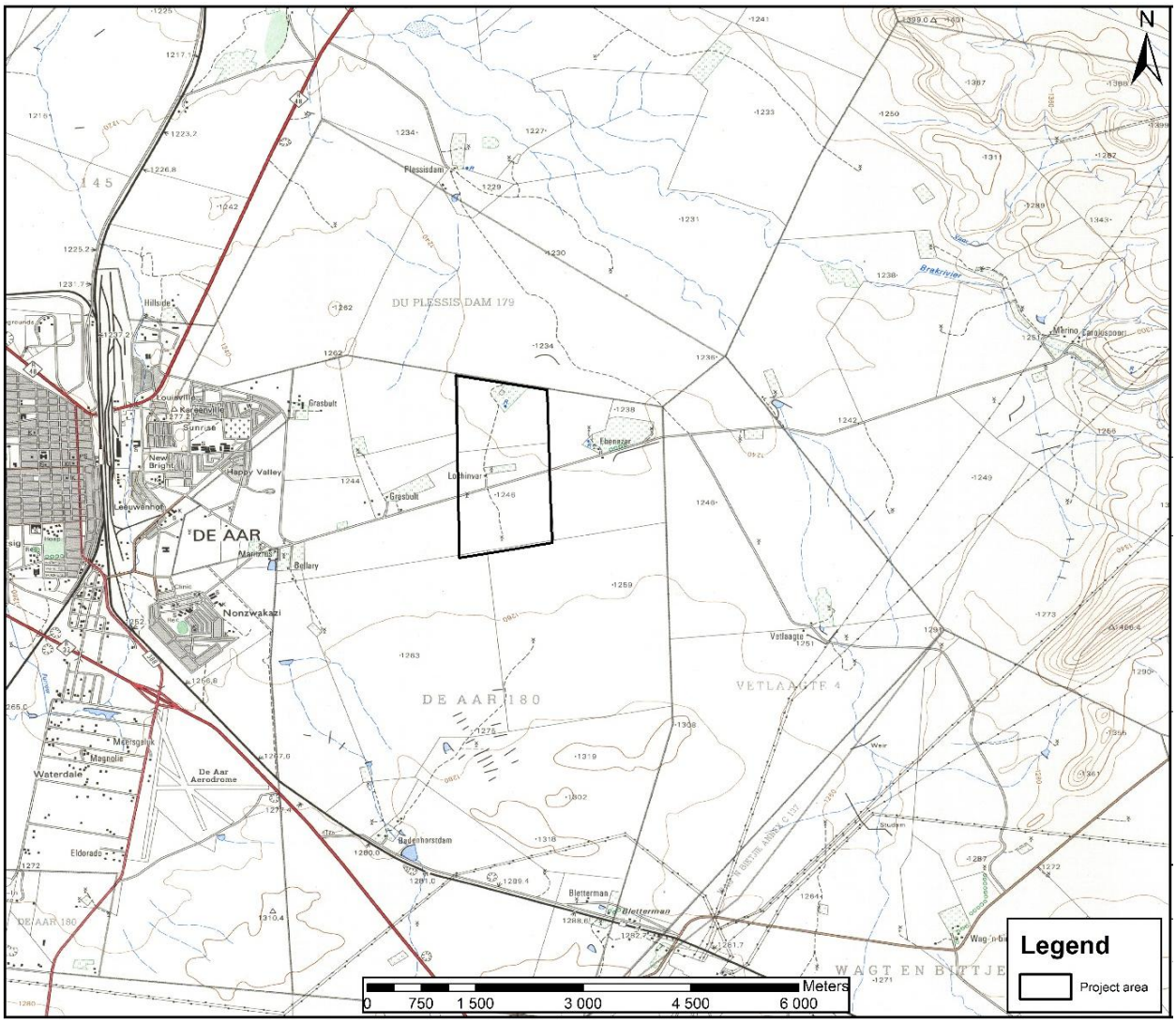
SUMMARY OF THE PROPOSED MINING OPERATION
PROJECT REFERENCE: NC 30/5/1/1/2/14671 PR

1. Project Details

The proposed application is on a Portion of Portion 5 and 6 of the farm De Aar 180, (in extent 256.4231 ha), situated in the magisterial district of Phillipstown.



The proposed area is situated directly east of the town De Aar. The area is an extension of Arend Street about 8km out of town

2. List of activities applied for

The proposed project entails the opencast, small-scale mining for the commodities Aggregate (RM), Stone Aggregate (from waste dump)(Stw), Stone Aggregate; Gravel (St).

	Total activity
	Undetermined / Unknown
	Grouped activity

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment, storage, sample storage, site office, access route etc … etc … etc E.g. For mining – excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, stormwater, control berms, roads, pipelines, power lines, conveyors etc … etc… etc.)	ARIAL EXTENT OF THE ACTIVITY HA OR M²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Total Application	**± 256.4231 ha**		
Non-invasive activities			**NEMA 2021, GNR 517, Listed 1, Activity 20:** Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the prospecting right.
Field surveys			
Geophysical surveys	± 256 ha		**NEMA 2021, GNR 517, Listed 1, Activity 20:** Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the prospecting right.

NAME OF ACTIVITY	ARIAL EXTENT OF THE ACTIVITY HA OR M²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Drilling			
Drilling	Total: 0.145 ha Per hole: 0.005 ha	X	**NEMA 2021, GNR 517, Listed 1, Activity 20:** Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the prospecting right.
Sampling	Part of drilling footprint		
Rehabilitation	0.145 ha		
Ablution facility	Total: 0.0024 ha Per site: 0.0008 ha		
Vehicle storage	Part of drilling footprint	X	**NEMA 2017, GNR 327, Listed 1, Activity 27:** The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for - (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
Chemical storage	Part of drilling footprint		
Diesel storage	Part of drilling footprint		
Domestic waste facility	Part of drilling footprint		
Access road and drill traverses	< 0.4 ha		
Geological modelling			**NEMA 2021/ GNR 517, Listed 1, Activity 20:** Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the prospecting right.
Feasibility study			

3. Typical impacts of activities

- Vegetation loss – Loss of indigenous plant species and erosion.

  The severity of impact, before mitigation, is rated as **Low**, and should all mitigations measures be implemented and adhered to the severity of the impact can have a positive impact on the vegetation loss.

- Noise disturbance – the processing plant as well as earth moving equipment will have a localised effect on noise disturbance. This will however be within the mining areas as set out and should not have an adverse effect on neighbouring farms. Again, the noise will be much localized and therefor a severity rating of **Low** with no lasting effects.

- Air quality loss – Minor dust upliftment may occur due to moving vehicles. Dust created and released into the air during excavational and hauling activities. By using biodegradable dust suppressant the dust should be limited.

- Soil pollution – Pollution with hydrocarbon fluids because of accidental breakdowns and or leakage. Ground erosion during rainfall and/or storm events

  The severity of impact, before mitigation, is rated as **Medium**, but should all mitigations measures by implemented and adhered to the severity of the impact can be reduced to an overall rating of **Low**, with no long-term effects. If rehabilitation of these areas is done correctly and timeously full recovery of the environment is possible.

- Littering pollution – Improper waste management may cause disturbance to the overall environment.

  Littering during the mining activities can happen and may have a **Medium** impact on the environment depending on the type of littering and the remediation thereof. Should all mitigations measures by implemented and adhered to the severity of the impact can be reduced to an overall rating of **Low**, with no lasting effects.

- Water pollution – Possible pollution to surface run-off water during rain events due to hydrocarbon fluid spillages. Chemical contaminated water from the storage facilities bears a risk to the environment. This impact is regarded as **Medium**, but should proper mitigation and/or remediation measures be implemented and adhered to the severity of the impact can be reduced to an overall rating of **Low**, with no long-term effects. Proper stormwater managements systems should also be in place and adhered to.

4. Duration of each activity

All of the listed activities will be occurring in phases and the time frame applied for at the Department of Mineral and Petroleum Resources is 2 years.

5. Details regarding intended operation

The Prospecting activities on the proposed project area will be in the form of Core and Reverse Circulation. The following three phases will be incorporated during the course of the said activity.

- Construction

  Drilling operations do not have a definite construction phase before commencement of the actual activities. The only prominent activities happening before commencement of the drilling is the establishment of the drilling site (± 50 m²) and chemical toilet facility (± 8 m²).

  During this phase the required no-go zones pertaining existing infrastructure and areas of environmental importance will also be demarcated.

  The main activity during the construction phase will be the following:
  - Establishment of temporary access road and drill traverses.
  - The establishment of pollution control structures.
  - The implementation of the ablution facility.
  - The removal of the growth medium over the area where drilling will commence.
  - Construction of stormwater berms around the drill hole area as part of clean and dirty water systems.
  - The registration of statutory requirements.
  - The initiation of all monitoring programmes as per commitments of the Environmental Impact Assessment / Environmental Management Programme.

Cleared vegetation will not be removed from site of clearing, but rather left scattered for natural breakdown processes and for the containment of soil to prevent erosion as far as possible.

- Operational
  - Non-Invasive Activities

    This phase entails a thirteen-month non-invasive prospecting program focused on compiling and analysing existing and new data to identify potential commodity deposits.
    - Data Compilation and Desktop Study:

      The initial work will involve:
      - Compiling data and observations from recent and historical work on neighbouring farms.
      - Acquiring aerial photographs and a high-resolution satellite image for target identification.
      - Conducting a Desktop Study and geological mapping interpretations to define and focus future prospecting activities.
      - The deliverables will be a detailed report and maps highlighting the areas with the best potential for the applied-for commodities.

    - Site Mapping and Target Verification

      This stage involves field verification and detailed mapping:
      - Site geological mapping will be undertaken to visit and verify targets identified in the Desktop Study, also ensuring the absence of cultural features.
      - Detailed field mapping of surface geology using GPS to verify and correlate geology, focusing on features like linear structures and vegetation anomalies that may indicate commodity bodies.
      - This mapping will also generate targets from satellite or aerial photo mapping that identify possible outcrops of the commodity materials.
      - Planning for the drilling survey will occur concurrently.

    - Geophysical Survey and Drill Planning

      The final non-invasive step prepares for drilling:
      - A Gravity/Magnetic survey method will be selected based on the literature review and geological mapping data.
      - This information will be used to select pre-defined survey points to demarcate the sub-outcrops of the commodity.
      - These gravity/magnetic points will be surveyed in a first phase on a 100-meter grid to determine the final drill hole positions.

    This entire process is designed to develop and refine ongoing prospecting activities by generating high-potential targets before moving to invasive techniques like drilling.

- Invasive Prospecting

  The drilling phase is designed to confirm the presence, geometry, and continuity of the target commodities identified during the preceding non-invasive surveys.

  - Drilling Plan and Scale
    - Program: A small program of 29 holes is proposed, with exact locations determined only after the geological investigations are complete. Estimated depth for calculation purposes is 20 meters, though actual depth and spacing depend on the geometry of the commodity bands and geological structures.

    - Techniques: Reverse Circulation (RC) drilling will be used from the surface to penetrate overburden. Once through the overburden, the hole will be cased, and the aggregate commodity layers will be diamond core drilled.

    - Site Footprint: Each drill site will have an approximate cleared footprint of 50 m^2 to accommodate the drill rig and related equipment.

  - Data Collection and Objectives

    The drilling aims to test, examine, and evaluate the mineral showing in the third dimension, achieving the following:
    - Determine:
      - Lithology of the host rock.
      - Profile of the mineralized zone.
      - Depth and/or vertical distribution of the deposit.
      - Continuity of the deposit.

    - Provide adequate data for the purpose of geo-modelling.

    - Logging: Drill holes will be logged every meter, recording information like hole location, depth, commodity depth, and geological structures.

    - Samples: Rock chip and core samples will be taken, stored, and safeguarded appropriately for future referencing.

  - Environmental Management and Rehabilitation

    The operation places a strong emphasis on minimizing ecological disturbance and efficient rehabilitation:
    - Equipment: Truck-mounted drilling rigs with compressors will be used to minimize environmental effect, with equivalent/appropriate equipment considered for difficult strata like thick sand.

    - Rehabilitation Schedule: Rehabilitation will commence as soon as each drilling spot is completed (simultaneous rehabilitation), ensuring it is time and cost-effective.

    - Hole Sealing: Completed holes will be rehabilitated by casing and sealing the hole, especially if a groundwater body is intersected. This involves excavating a 1 x 1 x 1 m area, constructing a 1 x 1 x 0.5 m cement slab, covering it with excavated soil, and clearly marking the site.

The drilling phase is critical for moving from geological suspicion to confirmed economic viability, providing accurate data on grade and tonnage.

- Decommissioning
  Once the prospecting activities have been completed the mine will start with the decommissioning and closure phase. During such will all infrastructure and equipment be removed and the compacted ground ripped and rehabilitated. Also, will all the roads and trampled areas be ripped, rehabilitated and inspected for vegetation regrowth.
  - Infrastructure Decommissioning and Site Clearance
    - Equipment Removal: All drilling rigs, support vehicles, temporary chemical toilets, and storage containers will be demobilized and removed from the property.

    - Waste Management: All domestic and hazardous waste generated during the operational phase will be disposed of at licensed facilities, ensuring no residual litter or contaminants remain on-site.

  - Soil Remediation and Surface Preparation
    - Decompaction: All areas subjected to heavy machinery use, including the 1,450 m² drilling footprint and temporary staging areas, will be mechanically ripped. This process relieves soil compaction to promote aeration and water infiltration.

    - Access Road Restoration: Any tracks or trampled areas created specifically for the project will be ripped and reprofiled to match the natural topography, preventing erosion and "preferential flow" paths for rainwater.

  - Rehabilitation and Vegetation Monitoring
    - Natural Re-vegetation: Following the ripping of the soil, the areas will be monitored to encourage the re-establishment of indigenous vegetation.

    - Performance Inspections: Rehabilitated zones will undergo periodic inspections to verify vegetation regrowth and soil stability. If natural recovery is insufficient, supplementary seeding with local species may be implemented.

    - Closure Certificate: These activities are conducted to meet the requirements necessary to apply for a formal Closure Certificate from the Department of Mineral and Petroleum Resources (DMPR).

    - The management of invasive plant species must be done in a sporadic manner during the life of the mining operations. Species regarded as Category 1a and 1b invasive species in terms of NEMBA (National Environmental Management: Biodiversity Act 10 of 2004) and Regulations need to be eradicated from the site.

6. Environmental Sensitive sites with their protection buffers

- Farm buildings, Cemetery: Any prospecting and/or prospecting related activities must stay at least 50 m from any farmstead fence or farm building infrastructure demarcated area.

- Storage dam and Windpumps: All water resources must be avoided and protected as stipulated by the National Water Act. A buffer zone of 50 m from the edge of the dam/structure will be implemented and the area should be avoided during any prospecting and//or prospecting related activity.

Other specific environmental features and / or infrastructure occurring within a 6 km proximity include:

- Agricultural Cropland
- De Aar town
- Eskom Powerlines and Station
- Furrow
- Main Road
- Non-perennial Dam
- Non-perennial Streams / rivers (Brakrivier)
- Railway
- Solar Farms