

BACKGROUND INFORMATION DOCUMENT (BID):

**Proposed Prospecting Right
to inform the expansion of a recently utilised hard rock quarry
On Farm Gamohaam 438 Portion 1
in the Kuruman Magisterial District**

May 2013

DMR ref: NC 30/5/1/1/2/10736PR

Our ref: 2678

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1 Purpose of document:

The aim of this document is to serve as background to allow informed public participation / comment in a recently lodged prospecting right application. This document is the first step in a public participation process which will continue for the next 6 months.

The Prospecting Right application has been made in terms of Section 16 of the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA). A prospecting right is restricted to a lifespan of 5 years.

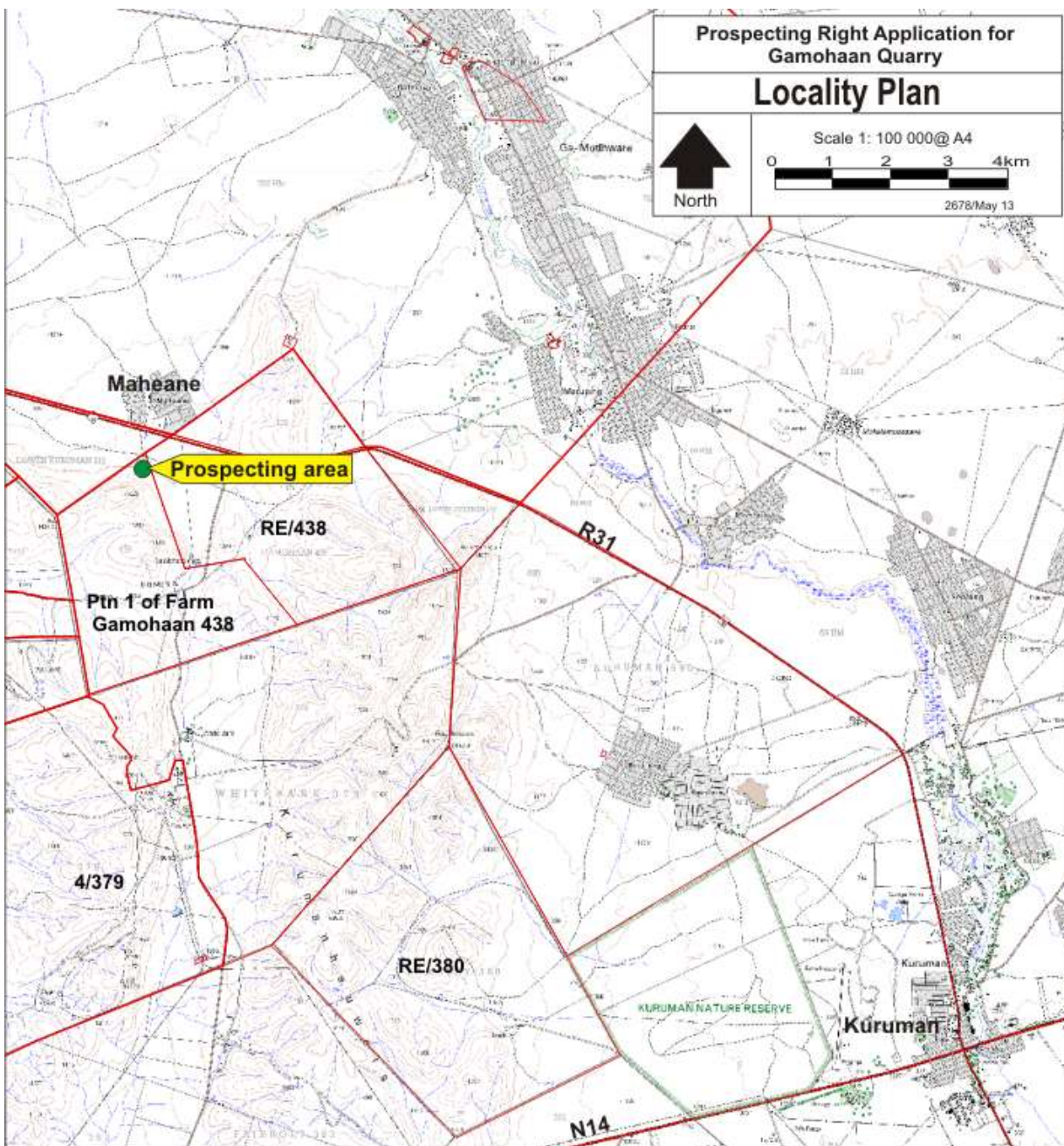


Figure 1: Locality Plan

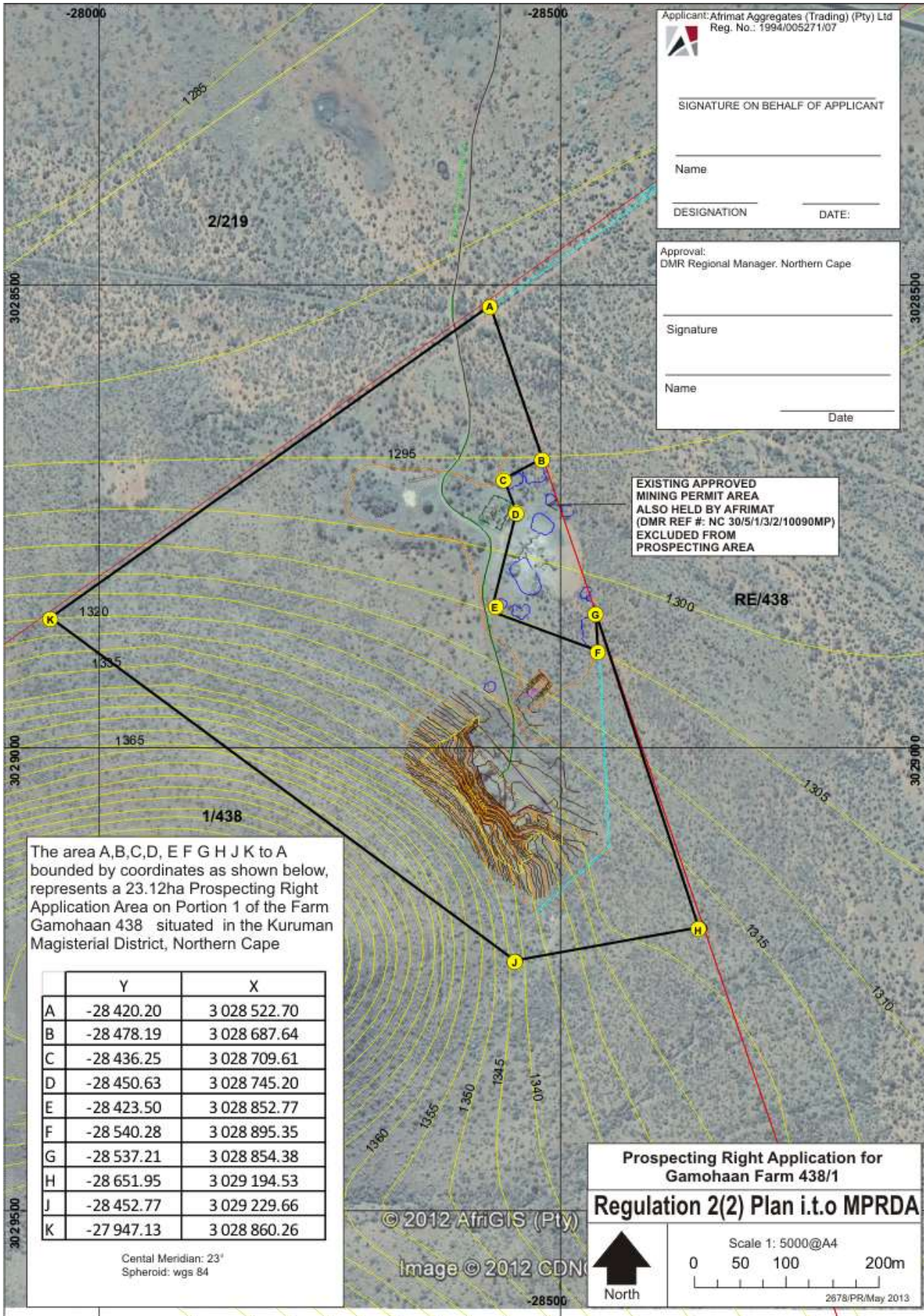


Figure 2: Detail Locality Plan and Regulation 2(2) drawing

2 Structure of this document:

The remainder of this document consists of the following sections:

- Background to this application
- General information regarding the application process with specific reference to where public participation takes place in the process.
- Brief project description
- *Brief* description of existing environment, anticipated impacts and impact attenuation (reduction) measures.
- Specific requests of I&AP's
- Way forward and Request to register as I&AP

3 Background to this Application:

The site was previously quarried by others and then during 2011 Afrimat re-established a quarry on the site under a Mining Permit held by a third party, which Mining Permit was unfortunately deemed to be illegally obtained. The quarrying had to be abandoned before the true nature of the rock was fully established, but a 20m high face had been developed, giving Afrimat some understanding of the future promise which the site held as a commercial quarry (refer photo 1 below showing the site as it currently exists, as seen from the R31).



Photo 1: Existing Gamohaan Quarry at time of 2012 un-timeous administrative cessation of quarrying

During such mining in 2011 and early 2012, Afrimat did however establish that significant merits appeared to exist for proving good quality material below the floor of the quarry while the production from the upper benches appeared to yield rock best suited for the lower grade aggregates such as sub-base and gravel road wearing course.

However, despite these indications it was deemed to be prudent that a fully-fledged prospecting programme should rather precede a Mining Right Application requiring full investment and avoiding high risk exposure of the Community Joint Venture Partners in the absence of a Proven Reserve in Prospecting.

Based on the evidence gleaned to date Site Plan Consulting's Geologist Mr Stephen van der Westhuizen concurs with the Afrimat opinion that the site geology substantiates the minerals (rock) to be prospected but that proving of the reserve is required for Afrimat to enter the full aggregate market including high-quality products such as rail ballast, road-stone (surfacing stone) and G1 base-course to the National Road SANRAL specifications.

Meeting such specifications can however not be proven by core-drilling sampling alone as the suitability of the rock is determined by both:

- The rock's characteristics as they present technically in laboratory tests and can be mapped geologically, and
- The material characteristics of the product resulting from the crushing and screening process and balance of the equipment used in such process.

Given the above, proving of the reserve will require Prospecting through a combination of:

- i) Bulk sample drill and blasting of selected cuts in the faces and floors of the existing quarry and of the geological mapping projection of the horizontal strike of that bulk sample result, complemented by;
- ii) Drilling in the projected resource area to prove the continuity of the material quality proven by the bulk sample cuts.

Fortunately the consistent horizontal rock bedding facilitates the correlation of bulk sample cuts and distant drilling.

4 Prospecting Right Application Process:

The process to be followed by an applicant for a Prospecting Right is legislated in terms of the MPRDA.

1. The first step in the process is the lodging of the application by the applicant. The actual lodging is conducted without consultation so that the applicants rights as first applicant are protected.
2. Within 14 days¹ the DMR either accepts the application and instruct the applicant to continue with the process, or rejects the application. This application has been accepted and the process continues as follows:

¹ Note that all applications are now conducted electronically and the applicant is advised immediately whether the application has been accepted.

- a. The applicant prepares a (BID) Background Information Documentation (this document) which accompanies all initial written and personal communication. This document is initially sent to all identified I&AP's which include the landowner, surrounding landowners, Land Claims Commissioner, Municipality and Provincial department responsible for environment, etc.
- b. Broader public participation will also take place and this takes the form of at the very least a newspaper advert in the local publication. A notice can also be placed at the entrance to the affected farm or application area.
- c. The initial contact with the Interested and Affected Parties (I&APs) serves to notify & consult with the landowner/legal occupier and other affected parties. Furthermore the applicant is to identify any additional I&AP's and to request I&APs to register as such (through newspaper advert for instance). This registration is important in that it ensures that those who register are kept informed of the status of the application and are provided with relevant documentation).
- d. The Mineral & Petroleum Resources Development Act, Act 28 of 2002 (MPRDA) requires a separate Report on Consultation. This Information must reach the DMR within 30 days of the applicant being notified that the application has been accepted. As a result the timeframes are very tight initially and respondents are given 2 weeks to respond to this BID so that the responses can be included in the Consultation report to be lodged at the DMR.
- e. The applicant is then given a further 30 days to compile the Environmental Management Programme (EMP).
- f. All comments are included in EMP.
- g. The DMR are responsible for distribution of the EMP to State Departments whom have 60 days to provide comment on the report to the DMR
- h. The standard practice is to provide all registered I&AP's with further opportunity to comment on the EMP during the State Department commenting period.
- i. The DMR assesses all comments and provides the applicant with their considered decision 60 days after receipt of all comments. (i.e. 120 days after EMP is lodged).

5 Brief Project Description

Prospecting is planned to take place through a combination of:

- Bulk sample drill and blasting of selected cuts in the faces and floors of the existing quarry and of the geological mapping projection of the horizontal strike of that bulk sample result, complemented by;
- Drilling in the projected resource area to prove the continuity of the material quality proven by the bulk sample cuts.

5.1 *Prospecting percussion drilling method*

The drilling will be done by percussion drilling as the key element to be determined is the correlation of the drill hole with the faces revealed in the bulk sample

excavation in order that a reliable horizontal projection of the strata can be made as basis for determining the reserve.

The drilling programme currently envisages the drilling of 34 percussion holes each to a depth of minimum 18.5 meters (5 rod-lengths of each 3.7m).

The alternative of core drilling of 34 holes to $\pm 20\text{m}$ depth each would be prohibitively expensive and would not offer the normal advantage of core drilling, being the ability to crush material to determine suitability, as in the case of this Prospecting Programme the suitability of material is to a large extent dependant on the crushing process and equipment used, and not only on the geological characteristics reflected in a core sample.

The method of prospecting by self-propelled tracked hydraulic percussion rig with correlation to existing nearby faces has been well established by Site Plan Consulting for the quarry industry and the methodology employed is described as follows:





- The initial holes are drilled from surface in close proximity to an existing face where the characteristics of the rock is fully known and logged in profile.
- The logging of the drill hole takes place as follows:
 - I. The drilling of the hole is logged continuously for the entire depth and such logging includes recordal of:
 - Timed penetration rate by second hand per drill rod (3.7m)
 - Level and colour of dust; with every change in these features
 - Sound; being dull (in soft materials) or level of ringing (when drilling hard competent rock)
 - II. Sampling;
 - as per the photos below the dust extraction system on the rig is partially disconnected to allow the drilling chips to be collected on a hand-held spade placed periodically adjacent to the hole
 - The samples are placed in fold-over sandwich (“Gladwrap”) plastic bags which are each numbered per drill hole number and depth of sample.
 - These samples are best laid out in rows per hole in a cardboard “beer-box” for ease of visual assessment of the trend in colour and texture and for removal of small amount of sample for hand-held visual inspection or magnifying glass assessment.
 - A summary sheet is prepared each day with a drill-log per hole to the format shown below.
- After the day’s drilling the geologist and/or lab technician shall compare the profile of each hole’s log against the profile of other hole logs and of the comparative quarry face in the same geological horizon and write a note on such findings on the correlation between the holes and the face. These notes will later serve in the comparison with the results of the lab tests conducted on the crushed bulk sample from the same horizon.

Gamohaam Drilling: Hole Number For Holes G1-G34
 Bit Diametermm Drill Rig
 Driller: Date:
 Depth of hole 3,7m drill rods x.....

	SAMPLE		Depth	Time / Rod		Comment by driller per half rod
	Marked			...min	...sec	
1 st Rod	½ rod	H 1a	1,8	.....	min	
	end 1 st Rod	H 1b	3,7	.....	sec	
2 nd Rod	½ rod	H 2a	5,5	.....	min	
	end 2 nd Rod	H 2b	7,4	.....	sec	
3 rd Rod	½ rod	H 3a	9,2	.....	min	
	end 3 rd Rod	H 3b	11,1	.....	sec	
4 th Rod	½ rod	H 4a	12,9	.....	min	
	end 4 th Rod	H 4b	14,8	.....	sec	
5 th Rod	½ rod	H 5a	16,6	.....	min	
	end 5 th Rod	H 5b	18,5	.....	sec	
6 th Rod	½ rod	H 6a	20,3	.....	min	
	end 6 th Rod	H 6b	22,2	.....	sec	
7 th Rod	½ rod	H 6a	24	.....	min	
	end 7 th Rod	H 6b	25,9	.....	sec	
General Comment on Hole:						

Diagram 1: Typical percussion drilling recordal log

The percussion hole spacing is set on an approximate 40-50m lateral spacing along contours but a 30-40m spacing across contours in order to ensure “overlap” of the hole profiles relative to contour elevation difference. All percussion holes will be drilled to a minimum depth of 18.5m (5 rods), but in certain cases drilling to 6-7 rods may take place especially to establish material qualities below the final floor of the bulk sampling. (Drill holes 8 and 24 will be drilled to nearer 30m in depth.)

	
<p><i>Photo 2 Typical self-propelled hydraulic percussion rig to be used</i></p>	<p><i>Photo 3: Partly disconnected dust extractor pipe and removed rubber shoe from the rig base to permit spade collection of sampling</i></p>
	
<p><i>Photo 4: typical spade for collection and sample bags placed in rows per hole in cardboard beer boxes</i></p>	<p><i>Photo 5: Typical chip pile produced by the drilling of the hole reflecting good blue-grey colour with no discolouration in this case</i></p>

5.2 Bulk Sampling

In order to prove a reserve of 2.4million m³ which will meet the highest specifications for aggregates, the processing equipment and method employed is a key element of the bulk sampling and consequently bulk sampling will consist of:

- Drilling, blasting and hauling shot rock from a series of designated blasts (where the blast origin will be correlated with the stratigraphic horizon and the results of lateral prospecting drilling in order to reliably project the correlation between bulk sample and adjacent drilling result.)
- Crushing and screening of each blast as a single batch with recordal of the product materials laboratory tests to the specified specifications
- Despatch of the batched materials crushed from the various stratigraphic horizons to projects where they can be tested in situ by both the approving authorities and the applicant whose laboratory technician will visit the test project sites to conduct sampling of the placed materials.

5.2.1 Drilling and blasting in designated blasts

As the material must be proven in the full stratigraphic column (given its horizontal bedding) as well as over the north-south extent of the envisaged reserve, three bulk sampling cuts traversing the slope in north-south direction are identified, with two of these cuts being in the east and west extremity of the existing excavation, and the third being the new box cut further to the west.

In order to reach the required depth of the box cut which will allow 20m drilling in such floor to reach the intended reserve depth of 40m below the low-lying portion of the site, the envisaged 30m deep box-cuts require benching to achieve such depth and hence the bulk sample centres around the taking of 30 individual blasts of 8 000m³ each, both to provide sample for testing as well as to provide benching space for achieving the required depth.

Diagrams 2a and 2b hereafter show the positions in plan and cross-section of the identified blasts numbered 1 to 25 in the existing quarry box cuts (2a) and A-G in the western box cut (2b) (We note that the box cuts taken in the upper hill slope are required to redress the existing 20m high face of the abandoned quarry as well as to provide the basis for safe benching in the event of either closure after prospecting or the further development of the excavation under a Mining Right as shown in the green line both cross section a and b.

The chronological/alphanumeric numbering of the blasts is required to both allow correlation with adjacent Prospecting drilling, shown in Diagram 2 west and east lateral Prospecting drilling zones, as well as these sequential blasts permitting the safe development of the next level of the cuts with maximum 10m faces.

The diagrams overleaf are then superimposed on the contoured Google[™] image background as the Prospecting Layout Plan Figure 3, while shown diagrammatically as Diagram 2c hereafter.

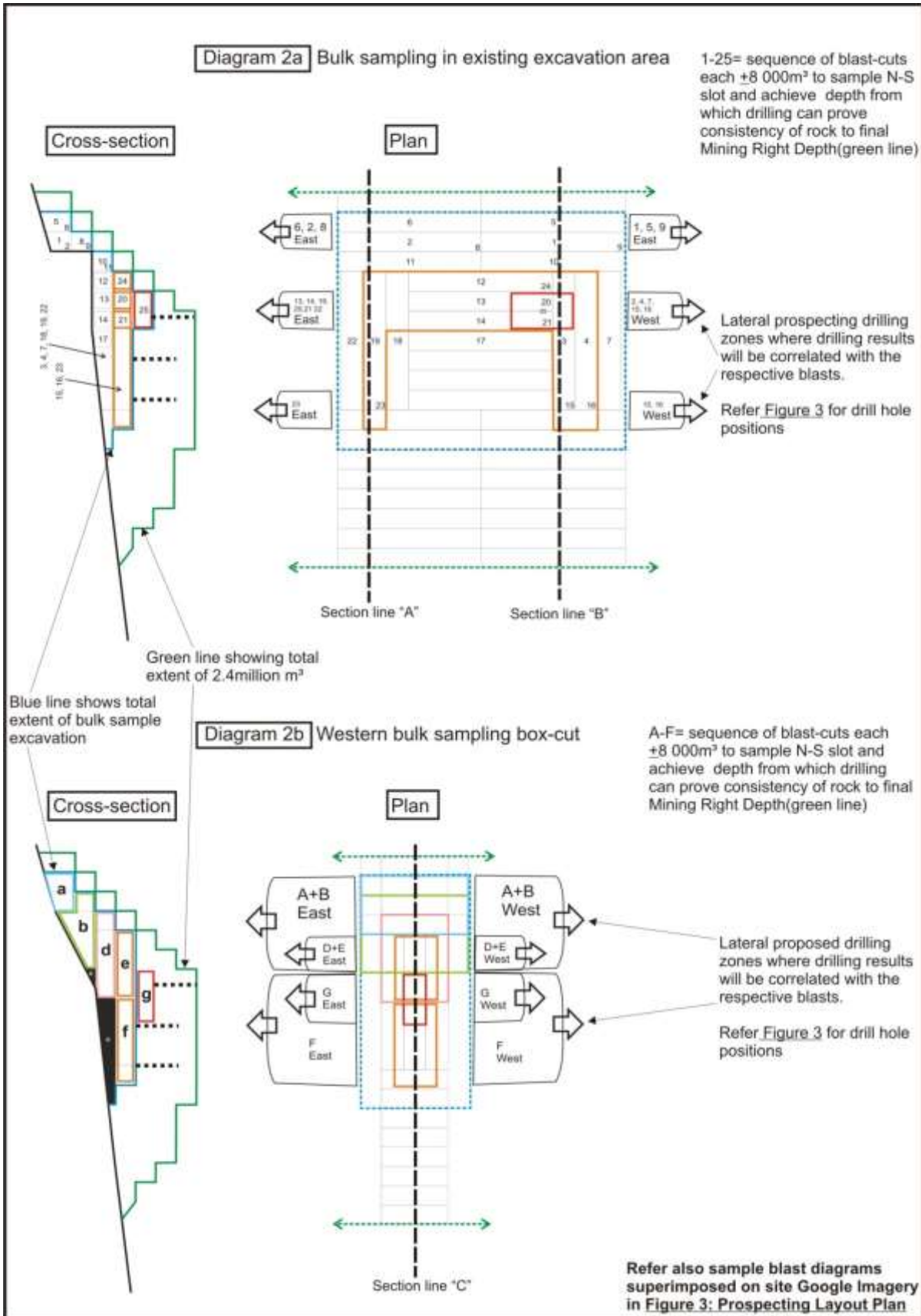


Diagram 2a and 2b: Diagrammatic bulk sampling for correlation of blasted and crushed material results with results from adjacent

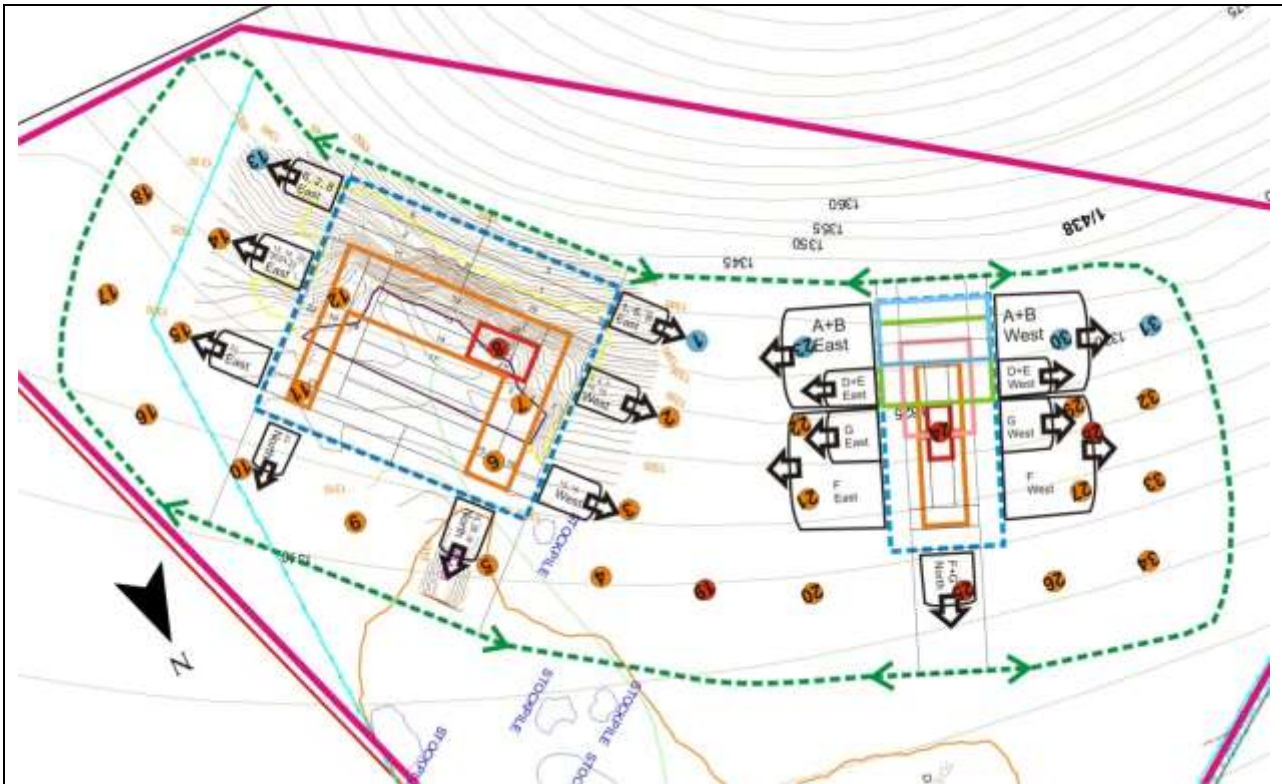


Diagram 3 Position of Diagrams 2a and 2b on-site with drill hole positions

5.2.2 Processing each blast (loading, hauling and crushing to product sizes)

As the crushing and screening process (plant layout) and the equipment components chosen to produce the high spec materials are as fundamental to proving the reserve as what the rock characteristics themselves are, the Applicant has produced the following process flow chart and plant layout for the Gamohaam Prospecting bulk sample processing, and will combine such plant layout with trials of mobile tracked in-pit primary and secondary crushing equipment.

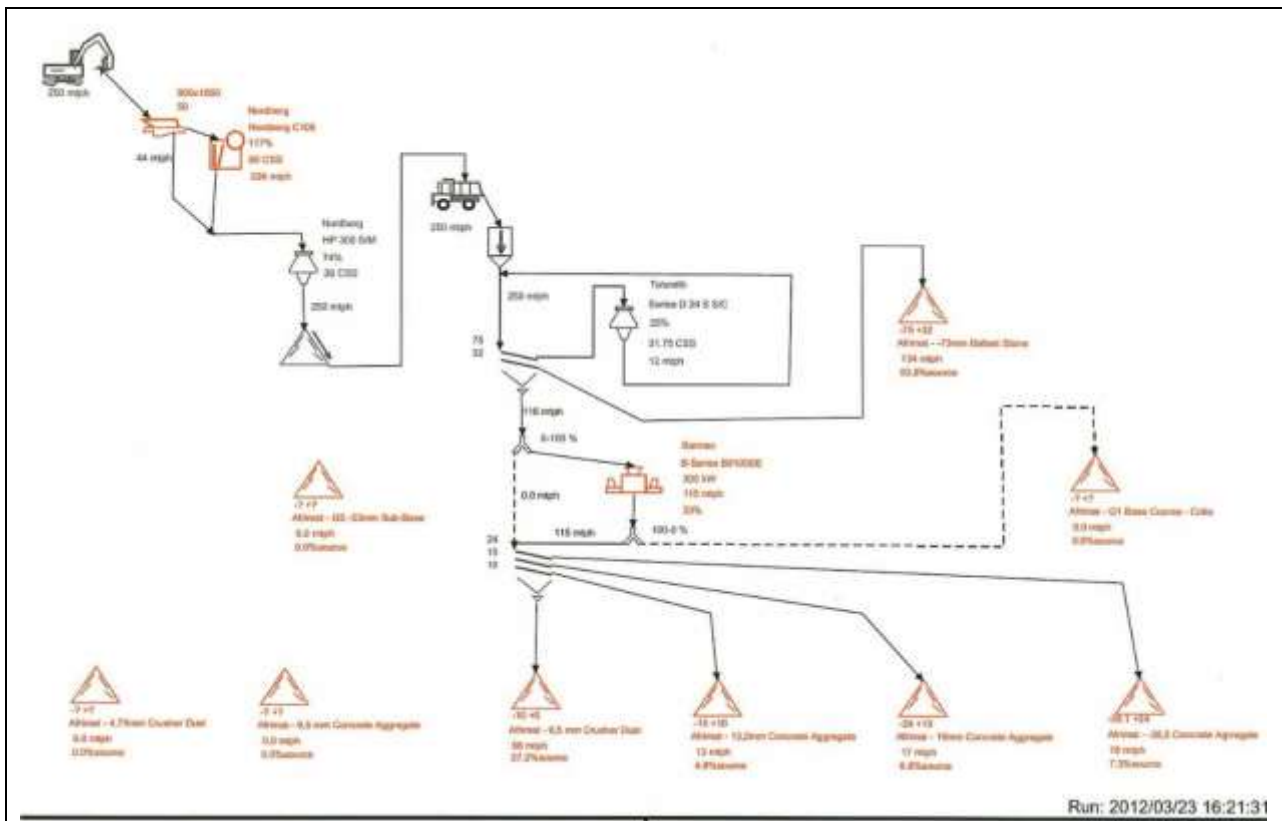


Diagram 4 : Process flow for aggregate sizes

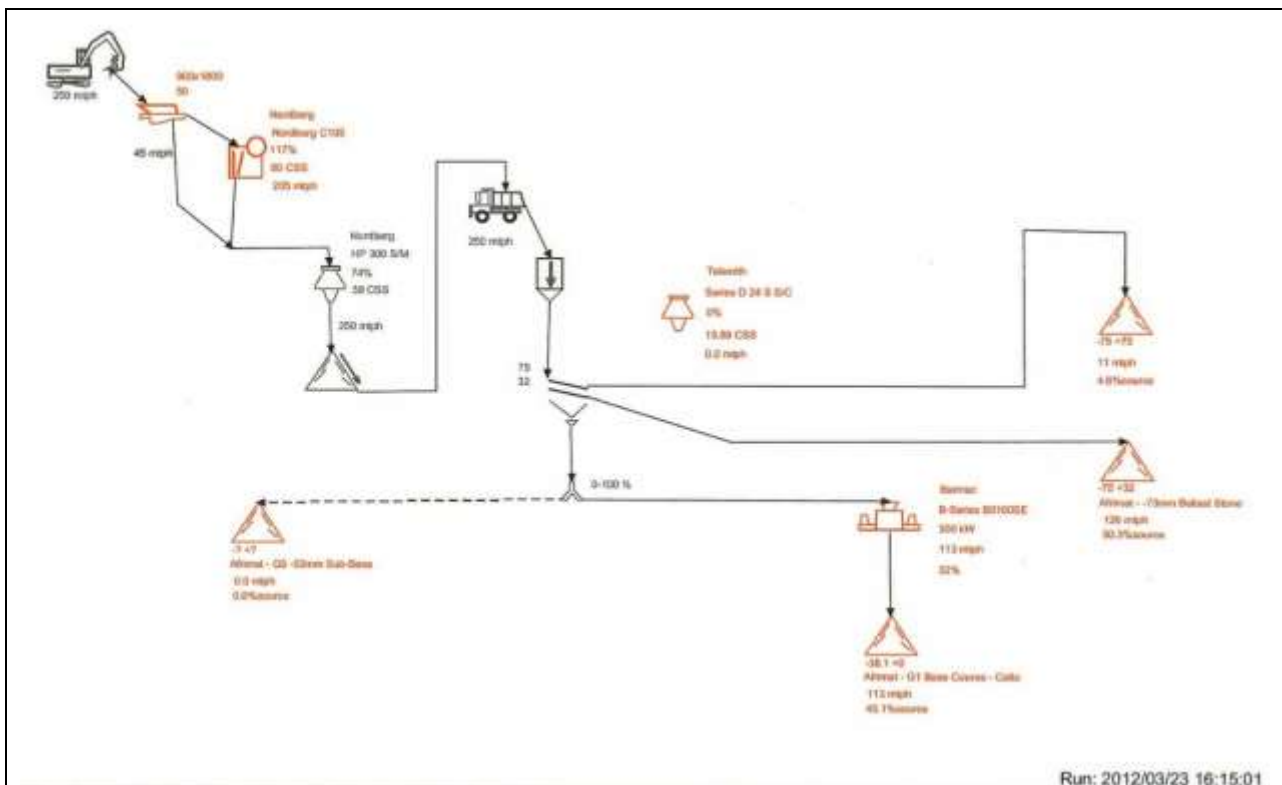


Diagram 5: Process flow for lower-grade road layer works (base-course)

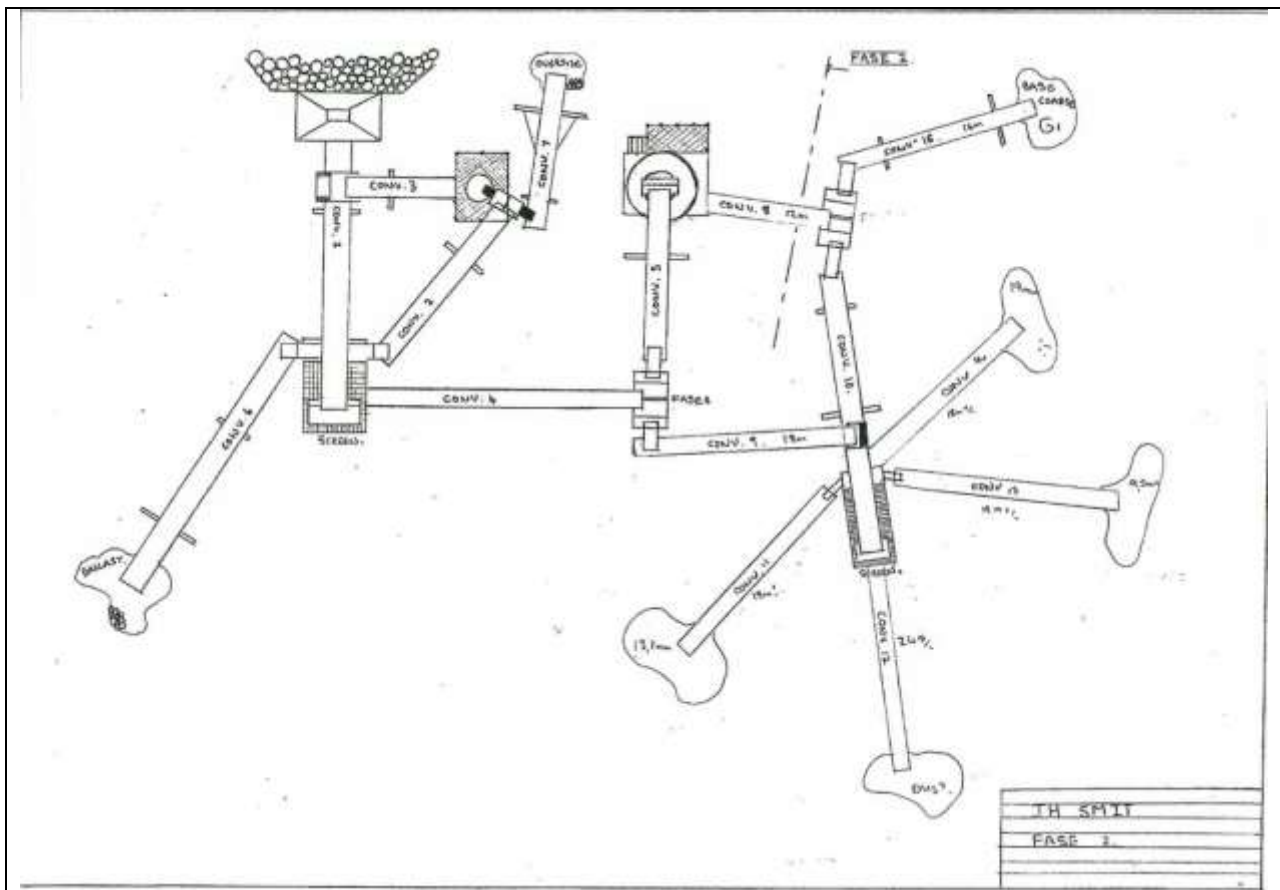


Diagram 6: Intended plant layout



Photo 6: Crushing and screening Plant at the Gamohaan site during previous quarrying activities to be re-instated with upgrade.



Photo 7: Typical in-pit tracked mobile primary crushing plant

5.2.3 Despatch and employment of sample to test projects

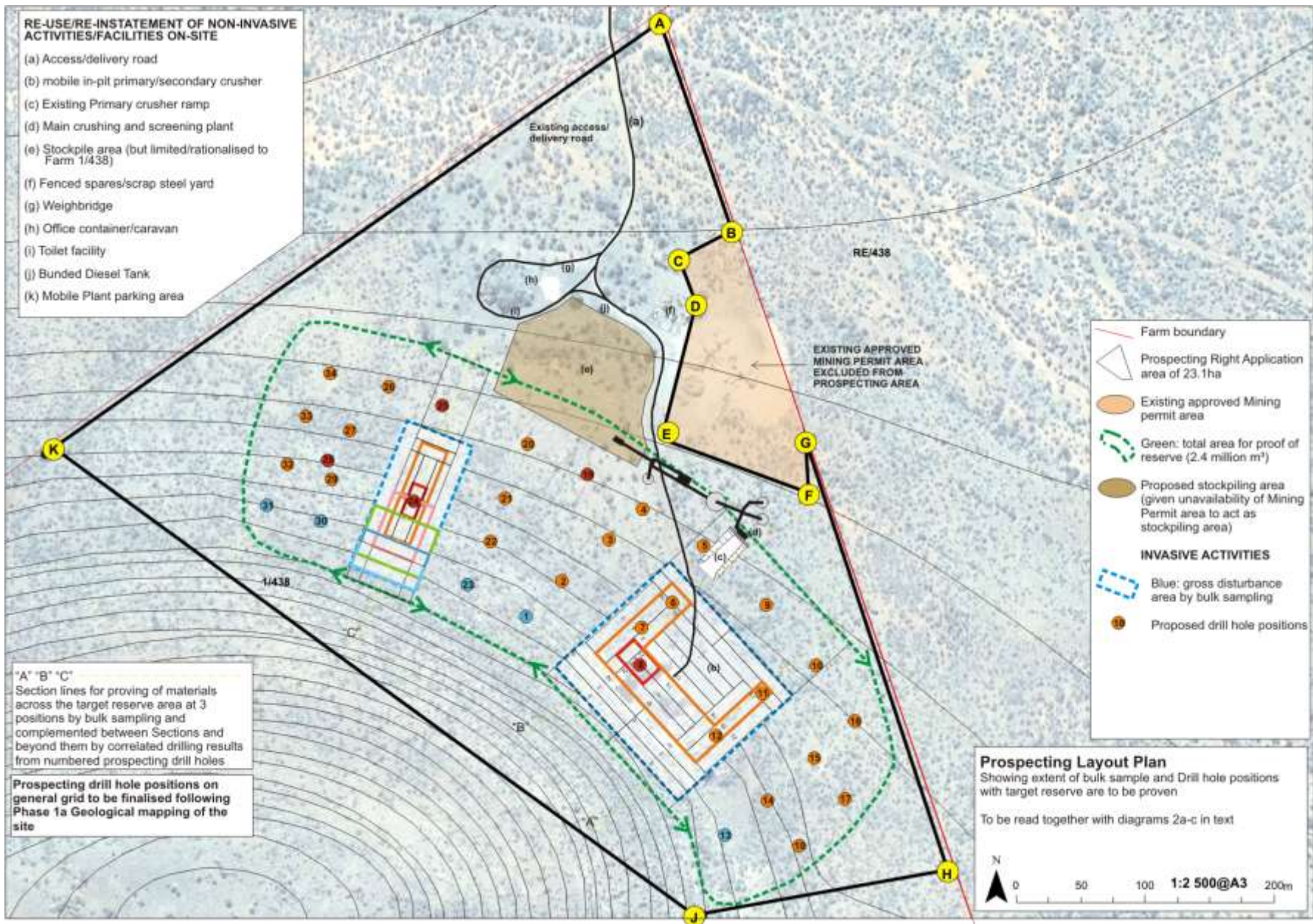
The Applicant will load and despatch materials (from each of the batched stockpiles produced) over the existing weigh bridge for delivery to projects where the performance of the batched sample can be monitored by in-situ testing by both the authority and the client's materials lab technician.



Photo 8: Existing weighbridge and containerised office on site

Overleaf:

Figure 3: Proposed site layout plan



6 Brief description of existing environment, anticipated impacts and impact attenuation (reduction) measures

6.1 Defining the impact

The impact on each of the aspects is measured according to the following table of significance.

a) Significance (level)

<i>Significance</i>		<i>Criteria</i>
Negative	Significant	<ul style="list-style-type: none"> Recommended level always exceeded with associated widespread community action Disturbance to areas that are pristine, have conservation value, are important resource to humans and will be lost forever Complete loss of land capability Destruction of rare or endangered specimens May affect the viability of the project
	Moderate	<ul style="list-style-type: none"> Moderate measurable deterioration and discomfort Recommended level occasionally violated – still widespread complaints Partial loss of land capability Complete change in species variety or prevalence May be managed Is Insignificant if managed according to EMP provisions
	Insignificant/Minor	<ul style="list-style-type: none"> Minor deterioration. Change not measurable Recommended level will rarely if ever be violated Sporadic community complaints Minor deterioration in land capability Minor changes in species variety or prevalence
Positive	Minor	<ul style="list-style-type: none"> Improvements in local socio-economics
	Significant	<ul style="list-style-type: none"> Major improvements in local socio-economics with some regional benefits

b) Duration

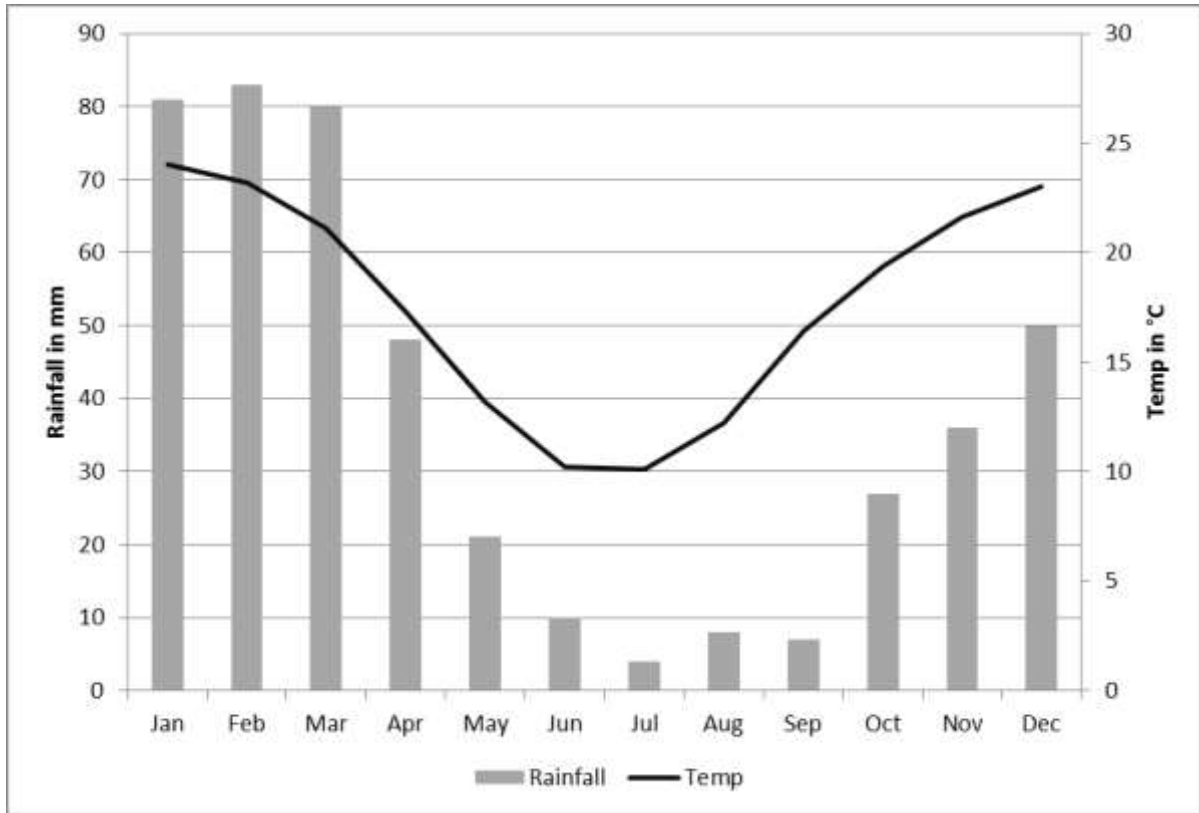
- Residual (post mining)
- Life of Mine
- Temporary

c) Probability

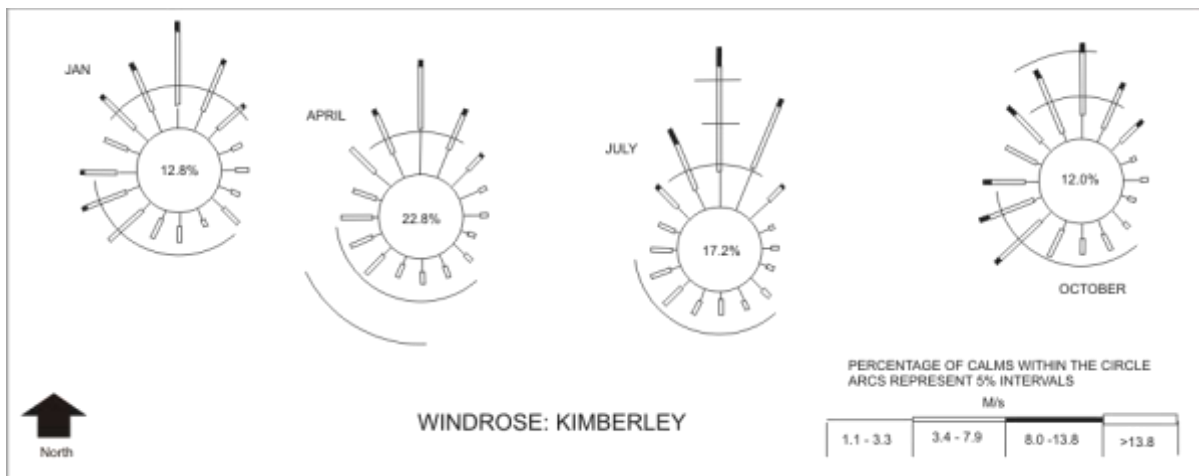
- Definite
- Possible
- Unlikely

6.2 Climate

The climatic data for the area is shown in the climograph and wind-rose below :



Source: WB40- Climate Data for Kuruman Station



Source: WB8 – Windrose for Kimberley

Other climatic indicators are as follows:

- ❑ Max monthly average temperature..... 31.5°C (Jan)
- ❑ Min monthly average temperature..... 1.1°C (July)
- ❑ Highest temperature extreme..... 40.0°C (1949, Jan)
- ❑ Average annual rainfall..... 455mm
- ❑ Average annual evaporation (A-Type Pan)..... 2997mm
- ❑ Max rainfall in 24hrs..... 127mm (1955)
- ❑ Max monthly rainfall..... 316mm (1972, Jan)

- ❑ No of days with measurable precipitation..... 56 days/yr
- ❑ No of days with more than 10mm precipitation..... 14.1 days/yr
- ❑ Days with thunder..... 33.8 days/yr
- ❑ Mist, hail and snow occur very infrequently

Generally high incidence of high wind speeds, high evaporation rate and low percentage of calms require that special attention be placed on dust suppression.

6.3 Surrounding Land Uses

Figure 1 shows the quarry located ±1km South of the R31 Road, with Maheane Village to the North of the R31, while Figure 2 shows the Prospecting Right Area surrounding and incorporating the previously disturbed quarry area, which is surrounded entirely by natural bushveld used for cattle grazing.

Note that Afrimat Aggregates Trading (Pty) Ltd also have a Mining Permit issued in their name (with DMR Ref # NC30/5/1/3/2/10090MP) for a <1.5ha area in the west – refer figures 2 and 3.

6.4 Topography

6.4.1 Existing Environment

The prospecting area is located at the foot and partway up the slope of the northern edge of the Kuruman hills. There is an existing excavation (Refer photo 1) with the upper edge of the face at level 1343m amsl². The current quarry floor is at level 1318m amsl (i.e. rear face height of 25m). The current excavation surface area is 9 968m². Below the excavation the slope breaks and becomes much flatter. Such area is suitable for and was utilised for plant, stockpiling and logistics.

6.4.2 Impact of the operation

Impact on topography will arise through the following activities:

- The excavations will result in a permanent and moderate impact on topography through the development of 2 excavations as shown in figure 3. The excavations will have the following approximate dimensions after bulk sampling:

Excavation	Surface Area	Depth (Average)
Eastern Excavation (already measures 1ha through previous mining)	1.7ha in total	±20m
Western Excavation	0.7ha	±20m

- Other impact on topography will result from the stockpiling of material. Such impact is insignificant and temporary

	Spatial extent	Significance	Duration	Probability	Post-closure impact
Excavations	Extension of existing excavation and new western sample box cut	Impact on topography: Insignificant to moderate	Permanent	Definite	Permanent, Moderate.

² Above mean sea level

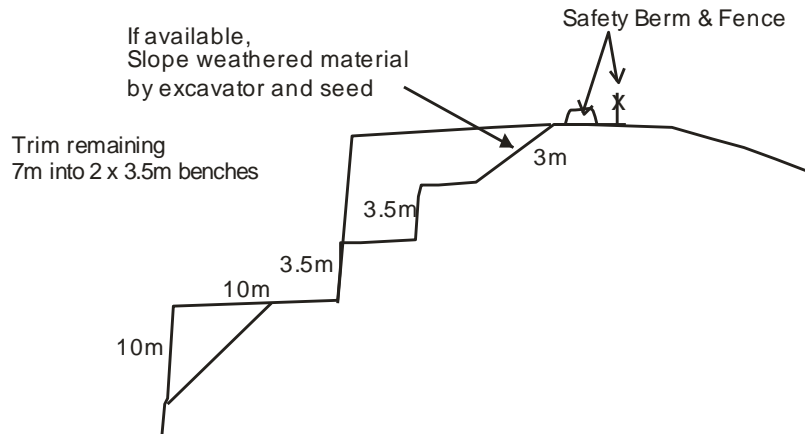
	<i>Spatial extent</i>	<i>Significance</i>	<i>Duration</i>	<i>Probability</i>	<i>Post-closure impact</i>
Stockpiles	Up to 5m high	Insignificant	Temporary / Life of mine	Definite	None

6.4.3 Proposed attenuation measures

The excavations will remain as a permanent feature (whether future mining of the site takes place or not). Note that should future mining of the site go ahead then such mining is not programmed to go any higher than the planned upper edge of the bulk sample box cuts proposed in this application. As a result the following measures will be applied only to the upper southern faces to enhance the “natural appearance” and improve safety of the excavation:

- The upper perimeter face will be blasted so that the excavation perimeter will have a 2-3m high sloped safety face (if weathering permits) and a 1m high safety berm surrounding the excavation as shown in the diagram below.

Provisional Upper Face Profile



- Ensuring that the excavation faces do not exceed 12m in height. The plans in this document show a face height of 10m. Final pit slope is designed to an overall slope of 1:1 (i.e. 10m faces on 10m benches)

6.5 Visual Impact

6.5.1 Existing Environment

Photo 1 shows the extent of visual impact of the existing excavation developed into the hillside. Such view is from both the town of Maheane and the R31 located 875m to the north.

6.5.2 Impact of the operation

This visual impact assessment is subject to further visual impact analysis to be included in the EMP. Provisionally; the impact is defined as follows:

- The existing eastern excavation will be advanced east and west by up to 50m each side with only minor advance up the hill.
- The proposed western sample box cut will be kept as narrow and as deep as possible (as safety allows) to not only get a good vertical cross section of the material for testing but

also to eliminate unnecessary visual impact should further mining of the site go ahead. The upper edge of the excavation will be at the same contour as the eastern box cut.

- The Plant and stockpiling area will be visible from the R31 and the village of Maheane.

Note that this visual impact must be considered against the background of the surrounding iron and manganese mines which dwarf this proposed bulk sampling exercise.

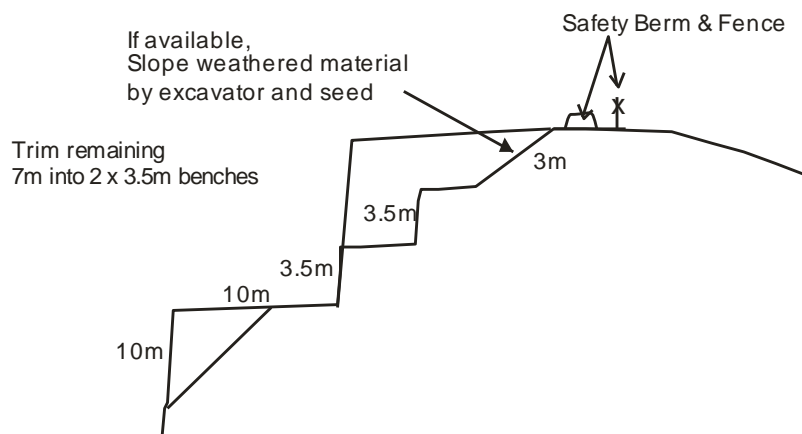
	<i>Spatial extent</i>	<i>Significance</i>	<i>Duration</i>	<i>Probability</i>	<i>Post-closure impact</i>
Existing eastern excavation advance	Very similar to existing impact on R31 and Maheane	Moderate - Significant	Permanent	Definite	Moderate - significant
New western sample box cut excavation	Additional (narrow) excavation visible to R31 and Maheane	Moderate/ significant.	Permanent	Definite	Moderate to significant
Plant and stockpiling area	Visible to R31 and Maheane	Moderate	Life of mine	Definite	None

6.5.3 Proposed attenuation measures

The impact attenuation measures which will be implemented include (but are not restricted to) the following:

- In order to reduce the permanent impact as a result of the upper faces of each excavation these upper southern faces will be rehabilitated as soon as feasible during the lifespan of the prospect. The upper faces will be trimmed so that the upper highwall is broken into a series of smaller faces on benches. The benches are topsoiled and vegetated thus screening the vertical faces beyond them.

Provisional Upper Face Profile



6.6 Soil

6.6.1 Existing Environment

The soils are not generally suited to arable dry-land or irrigated cultivation of crops and the area is utilised for grazing only.

Topsoil will be available for removal and stockpiling for later re-use in the plant and stockpiling area. Topsoil depths are unknown at this stage but assumed to be in the order of 15-20cm on the steeper slopes and deeper on the flatter lands below.

Note that no topsoil was removed prior to earlier mining of the site but fortunately the footprint of such disturbance is relatively small and the rehabilitation will most likely be accommodated using topsoil from this round of sampling.

6.6.2 Impact of the operation

Topsoil preservation is critical to successful rehabilitation of the site. Without topsoil removal and replacement, the site is subject to denudation and will result in impact on other environmental aspect such as windblown dust generation, visual impact through scarring of the lands, vegetation will not or will struggle to take root and animal life, land capability, agricultural potential will all be negatively impacted.

Given that topsoil preservation is of utmost importance, all usable topsoil must be removed and conserved for later use in rehabilitation of the site.

Activity	Spatial extent	Significance	Duration	Probability	Post-closure impact
Advance of existing eastern excavation	0.7ha (i.e. 1.7ha excavation less existing 1ha excavation)	Moderate	Temporary	Definite	Insignificant-None
New western box cut	0.7ha	Moderate	Temporary	Definite	Insignificant - None
Plant & Stockpiling area	±1.8ha	Moderate	Life of prospect	Definite	None, if replaced

6.6.3 Proposed attenuation measures

Removal of all soils to perimeter berms for storage for later re-use as growing medium on the benches (above level 1318m) and in the plant/stockpile area.

6.7 Land Capability

6.7.1 Existing Environment

The land capability of the entire prospect has been classified as wilderness area with subordinate grazing (despite current existing disturbance). This classification is more restrictive than pure grazing classification.

Land capability	Area	%
Wilderness area (including current 1ha excavation)	23.11ha	100%
Arable Land	0ha	0%
Grazing	0ha	0%
Wetland Area	0ha	0%
<i>Total</i>	<i>23.11ha</i>	<i>100%</i>

The carrying capacity of the undisturbed veld is approximately 11-13ha / large stock unit (http://www.agis.agric.za/agismap_atlas/), but the aim of the rehabilitation programme is to restore the veld to its wilderness rating.

6.7.2 *Impact of the operation*

The proposed prospecting will result in impacts in this regard as follows:

- Theoretical loss of all grazing areas within the prospecting right area over the life of prospect (i.e. 23.1ha) but loss will in actual event be restricted to temporary loss to grazing in plant and stockpiling area of 1.8ha and excavations as follows:
 - Excavation extension of the eastern excavation will result in permanent additional loss of 0.7ha of grazing potential land (which has in any event been given wilderness rating in this report)
 - Western box cut will result in further 0.7ha loss to grazing

NOTE: In the table below the impact refers to impact on grazing land capability which in case of the excavations is permanent. The impact on wilderness land capability is only temporary for all areas given that the excavations will be returned as wilderness areas (albeit with an altered habitat type)

Activity	Spatial extent	Significance	Duration	Probability	Post-closure impact
Loss of grazing area in prospecting right area. Assumes that entire area is fenced	23.11ha (total prospecting right application area)	Insignificant	Life of prospect	Unlikely (unless the entire prospect is fenced)	Excavations will never be available as grazing land. Still insignificant
Loss of grazing land to excavations	Additional 1.4ha in 2 excavations	Insignificant (at 11-13ha per animal unit)	Permanent	Definite	Insignificant
Loss of grazing land to stockpile and plant	±1.8ha	Insignificant	Life of Prospect	Definite	None

6.7.3 *Proposed attenuation measures*

No amount of rehabilitation will lead to the re-use of the excavation area for grazing.

Wherever possible topsoil will be removed to full depth and utilised as cover material / growth medium in the rehabilitation of the site after mining (in the case of the plant and stockpile area) or during mining (in the case of the upper benches which are completed and ready for rehabilitation)

6.8 **Natural Vegetation**

6.8.1 *Existing Environment*

The site falls within Kuruman Mountain Bushveld (Mucina and Rutherford, 2006). The following statistics apply to this Least Threatened vegetation type.

Original area (ha)	Remaining area (ha)	% remaining	% protected	Target (%)	Ecosystem status	Protection level
436 052	431 920	99	0	16	Least Threatened	not protected

It is worth noting that there has already been some disturbance of this vegetation in the Prospecting Right area as a result of earlier activities (viz excavation, ramp, plant area as well as logistical facility placement and stockpiles) BUT the majority of the stockpile area is located outside of the prospecting right area (in the Mining Permit area as indicated in Figure 3). That area will be rehabilitated in terms of the Mining Permit issued.

6.8.2 *Impact of the operation*

Activity	Spatial extent	Significance	Duration	Probability	Post-closure impact
Loss of habitat	Additional 1.4ha excavation advance and 1.8ha plant and stockpile area	Insignificant	Life of mine	Definite	None
Loss of natural species	Additional 1.4ha excavation advance and 1.8ha plant and stockpile area	Insignificant	Life of mine	Definite	None
Loss of red data species	Additional 1.4ha excavation advance and 1.8ha plant and stockpile area	Moderate (if it did occur)	Permanent	Very Unlikely	Moderate

6.8.3 *Proposed attenuation measures*

The main method of ensuring revegetation of the site is to replace topsoil as soon as feasible. In this case topsoil will be stockpiled for excessive lengths of time and as such will require rejuvenation of sorts.

Alien vegetation management system must also be put in place, if required. Such methodology will be specified in the EMP.

The following general principals apply:

1. Remove vegetation with topsoil to berms and limit berm height to no more than 2m so as to maximise seed viability.
2. No unnecessary access to the surrounding veld must be permitted.
3. No fires are permitted and no firewood is to be collected from the site or surrounds.
4. No ad hoc campsites in the veld.

6.9 Animal Life

6.9.1 Existing Environment and impact of the operation

Vast expanses of the same vegetation surrounding the site provide a habitat suitable for species typical of the area. These include buck, rodents (meerkat, mice, shrews etc), reptiles (snakes and tortoises) birds and insects. The large scale of the habitat type when compared to the extent of the proposed activities negate any significance of any impact in this regard.

6.9.2 Proposed attenuation measures

The animal life around the affected area will be temporarily chased away by the presence of such activities. There is a vast expanse of similar habitat type around every proposed activity area and it is unlikely that any impact on animal life will occur from the proposed activities.

Prior to dozing of soil and site work preparation an animal rescue programme must be conducted after visual inspection.

6.10 Surface Water

6.10.1 Existing Environment

There are no surface water resources on site or within 500m of this site

6.10.2 Impact of the operation

None

6.10.3 Proposed attenuation measures

None required.

6.11 Ground Water

6.11.1 Existing Environment

The site is located in quaternary basin D41L which allows for 300m³ groundwater to be withdrawn per hectare per year (over the entire farm). The excavation is located approximately 15m above surrounding lower lying area.

6.11.2 Anticipated Impact

Impact on groundwater could arise from:

1. Exposure of groundwater to atmosphere through mining through the groundwater table may lead to excess evaporation of the groundwater.
2. Possible (but highly unlikely) pollution of groundwater through poor hydrocarbon management.

6.11.3 Attenuation Measures

More information is required in respect of this aspect to assess accurately the impact and attenuation measures if required. Such information will be presented in the upcoming EMP.

6.12 Air Quality (Dust)

6.12.1 Current Status

At present, the ambient dust levels are low and any existing dust impact is the result of:

- Occasional vehicles on gravel roads in the area
- Dust that may be generated from surrounding mining activities
- Wind generated dust off denuded surfaces in this dry climate

6.12.2 Anticipated Impact

Dust generation as a result of the proposed project will be through the following:

Activity	Extent	Significance	Probability	Timing	Duration
Traffic generated dust along portions of access /delivery road	Local	Insignificant	Definite	On occurrence	Life of Prospect
Topsoil removal (occurs rarely)	Local / site only	Insignificant	Definite	On occurrence	Intervals for short periods
Drilling for blasting	Local / site only	Insignificant (with dust extraction equipment)	Definite	On occurrence	Drilling for 3-4 days prior to every blast
Blasting (1 x per month)	Local / Farm and surrounds	Moderate	Definite	On occurrence	30 blasts at once per month
Loading and hauling of shot rock	Local / Excavation only	Insignificant	Definite	On occurrence	Life of mine / periodic
Percussion drilling for prospecting	Local / Farm and surrounds	Insignificant	Definite	On occurrence	3-4 days per month over a 30 month period (max)
Crushing and screening	Local / Farm and surrounds	Insignificant especially given isolation of site	None with dust suppression	During plant operation	Life of mine
Dust off denuded areas	Local / Farm and surrounds	Insignificant	Likely	Under high winds	Life of mine / Negative

The wind roses as reflected for Kimberley in para 6.2 show strong and frequent winds from the northerly vectors throughout the year. This means that dust impact on Maheane is highly unlikely to take place – in fact dust impact on Maheane is unlikely even if wind did generally blow towards Maheane given the distance of 900m.

6.12.3 Attenuation Measures

The following attenuation measures must be put in place to limit dust generation and impact:

Activity	Extent	Proposed Attenuation Measures
Traffic generated dust along portions of access /delivery road.	Along unsurfaced sections of access road.	If such dust becomes an issue then use water cart wetting of road
Traffic generated dust off main haul roads and movement areas on site	Local / Farm and surrounds	Wetting of unsurfaced roadways by water cart spray (and permanent sprinklers if required) and limit speeds on the affected roads.
Topsoil removal (occurs rarely)	Local / site only	Pre-wet soil if dust generation requires such intervention (unlikely)
Drilling operation	Local / site only	Supply drills with dust extraction equipment (this is now standard).
Blasting (1 x per month)	Local / Farm and surrounds	Blast under low wind conditions, monitoring of blast fallout dust at other quarries shows that the level of fallout at 900m is low under most wind condition, as dust which has travelled so far tends to remain in suspension

Activity	Extent	Proposed Attenuation Measures
Loading and hauling of shot rock	Local / Excavation only	No feasible method of dust control. Remember that impact is over a very local area and action usually occurs inside the pit, therefore no impact beyond confines of pit
Crushing and screening	Local / Farm and surrounds	The following attenuation measures are to be implemented: <ol style="list-style-type: none"> Screens to be housed Transfer points to be housed Mist sprays to be fitted
Dust off denuded areas	Local / Farm and surrounds	Wetting by water cart when required.

6.13 Noise

6.13.1 Current Status

Current noise generating activities in the area are related to:

- Traffic (not much) on surfaced and unsurfaced roads in the area (i.e. between quarry and Maheane)
- Other surrounding mining related noise

6.13.2 Anticipated Noise Impact

The following noise sources have been identified to occur during the proposed project:

Activity	Extent	Significance		Probability	Timing / Duration
		Internally	Externally		
Earthmoving equipment	Local area	Moderate	None	Definite	Life of mine
Access road use by delivery vehicles	Local area	Insignificant	None	Definite	Day-time
Drilling	Local area	Insignificant	Insignificant (if any)	Possible	On occurrence
Blasting	Outside prospect right area	Moderate	Startling effect only. Moderate to Significant	Definite	On occurrence. ± Once per month.
Loading and hauling of ore	Local	Insignificant	None	Definite	On occurrence
Crushing and screening	Local	Moderate	Insignificant (Residence located downhill from plant).	Definite	When in operation

6.13.3 Attenuation Measures

The following attenuation measures must be put in place to limit noise generation and impact:

Activity	Extent	Attenuation measures
Earthmoving equipment	Local area	Ensure silencers are operational
Access road use by delivery vehicles	Local area	Maintain low speeds
Drilling	Local area	None feasible but will not generate any impact on surrounding land users
Blasting	Outside proepecting right area	<ol style="list-style-type: none"> Never blast under temperature inversion Avoid blasting under low cloud conditions Always try to blast at the same time of day so that it becomes expected Warn, by way of telephone / SMS, those who are most affected (i.e. those persons who register complaints (if any)). Apply best blasting practice to limit noise by correct stemming, electric detonation and bottom hole initiation

Activity	Extent	Attenuation measures
Loading and hauling of ore	Local	Ensure silencers are operational and maintain low speeds
Crushing and screening	Local	1. Enclose screens and crushers 2. Avoid crushing after hours

In addition, mining and crushing will be restricted to take place between hours of 07h00 to 19h00.

6.14 Blast Vibration and Fly Rock

6.14.1 Blast Vibration

Assessment of Impact

The closest structure to the proposed blasting area is the landowner farmstead which is located 850m from the closest point of the excavation (i.e. R31).

While the transmissivity i.e. the capacity of the country rock to transmit blast vibration is probably similar to that of the transmissivity of Table Mountain Sandstone in which we have our most reliable blast vibration monitoring results, the table below shows that even at 700m where underlain by sandstone, structures would be at no risk.

Distance from blast	Expected recorded vibration level at respective distances PPV in mm/s (peak particle velocity)	USBM (United States Bureau of Mines) recommended limit
350m	3-6 mm/s	10 mm/s
700m	2 mm/s	10 mm/s

It is further noted that the South African Standard recommended maximum PPV is 12.5 mm/s.

Impact Level and EIA Requirement

There will be no impact as a result of blast vibration.

6.15 Fly Rock

Assessment against accepted distance norm

As fly rock is legally acknowledged as being a potential impact within a radius of up to 500m, this operation will not impact on any surrounding land use or land user other than farm labour and / or livestock who may be in close proximity to the quarry at the time of blasting.

6.15.1 Attenuation Measures

In order to ensure that no persons or livestock are in proximity to the quarry at the time of blasting (i.e. within a safe distance of 400m radius), the landowner and his stock management personnel shall be instructed to respond to the procedure of a blast warning siren and shall further be notified on the previous day of a pending blast and time in order to move stock away from the quarry.

6.16 Impact on Cultural / Heritage Aspects

The process for determining the impact on cultural / heritage impacts will be as follows (as directed by South African Heritage Association (SAHRA)).

- This BID will be sent to SAHRA and they will decide on whether a Phase 1 Archaeological Impact Assessment (AIA) will be required. This requirement the most likely course of action.
- Such decision or AIA (if required) will be circulated to registered Interested and Affected Parties

6.17 Socio-economic Situation

6.17.1 Impacts

Potential impacts arise as follows through the proposed activities:

Negative

- Potential impacts on farm integrity: Poaching, stock theft, stock loss (through roadkill or gates being left open), security, and road condition deterioration.
- Potential impacts on rural settlements: Raise false levels of expectancy, economic concerns if mine / prospect labour are paid more than farm labour, immigration of workers, drugs etc. Fortunately there is no nearby rural settlement which can be negatively affected.

Positive

- Potential for infrastructure development
- Potential for employment opportunity.

6.17.2 Attenuation measures

The following measures will be implemented to limit the negative impacts:

- Only security personnel will be housed on site after hours
- All staff will be warned of the consequences (police referral and dismissal) for poaching and stock theft and conditions will be inserted into their employment contracts in this regard
- Stock security in terms of closure of gates, maintenance of water supply to watering troughs etc., will be discussed at weekly production/safety meetings

It must be noted that the potential for socio-economic upliftment as a result of this prospect is minor but future mining authorisation will have a much larger positive impact, given the minimum 30 year time frame of the proposed activities and the fact that social and labour plan requirements will ensure:

1. Corporate social responsibility is enforced through implementation of LED project.
2. Skills development is enforced through ABET, tertiary level bursaries for staff and community members, school support, Learnerships and apprenticeship training for staff and community members, mentoring programme, special attention placed to increasing numbers of women in mining, and more
3. Procurement progression plan to ensure continuous supply of goods and services from local and BEE companies
4. Plan to manage the effects of downscaling or retrenchments (if applicable).

7 Specific requests of I&AP's

It is incumbent on the applicant to provide a report to the DMR in respect of the results of consultation. The DMR have prepared a template which must be filled in by the applicant. The template contains a standard level of reporting and in order to ensure full transparency and meet the requirements of the DMR, the following questions are specifically asked of you as Interested and Affected Party to consider:

1. Do you agree with the provided description of the status of existing biophysical environment (as described in para 6.2 to 6.15)?
2. Do you agree with the potential impacts on biophysical environment identified as a result of the proposed mining (as described in para 6.3 to 6.15)?
3. Do you agree with the provided description of the status of existing heritage /cultural environment (as described in para 6.16)?
4. Do you agree with the potential impacts on heritage / cultural aspects identified as a result of the proposed mining (as described in para 6.16)?
5. Do you agree with the provided description of the status of existing socio economic environment (as described in para 6.17)?
6. Do you agree with the potential impacts on socio-economic aspects identified as a result of the proposed mining (as described in para 6.17)?
7. Do you know of any land developments which may be impacted upon by the proposed project?
8. Do you know of any other parties which should specifically be consulted in respect of this project?

8 Way Forward & Registration as Interested and Affected Party

The application has been lodged and was accepted by the DMR on 3 May 2013. Given this acceptance date and the legislated time frames for the Prospecting Right process, the following dates are not negotiable:

1. Lodging of consultation report including results of this preliminary consultation to the DMR on 3 June 2013
2. Lodging of EMPlan to the DMR by 3 July 2013
3. Lodging of final comments on EMPlan to DMR by end August 2013

In order for you/your organisation to be kept up to date with this process, you are required to register as Interested and Affected Party (I&AP) and should you have any comments at this stage which you would like incorporated in the Results of Consultation Report, you must register and / or respond by 27 May 2013 to the person at contact details below:

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PO Box 28
Strand
7139

Email: craig@siteplan.co.za
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