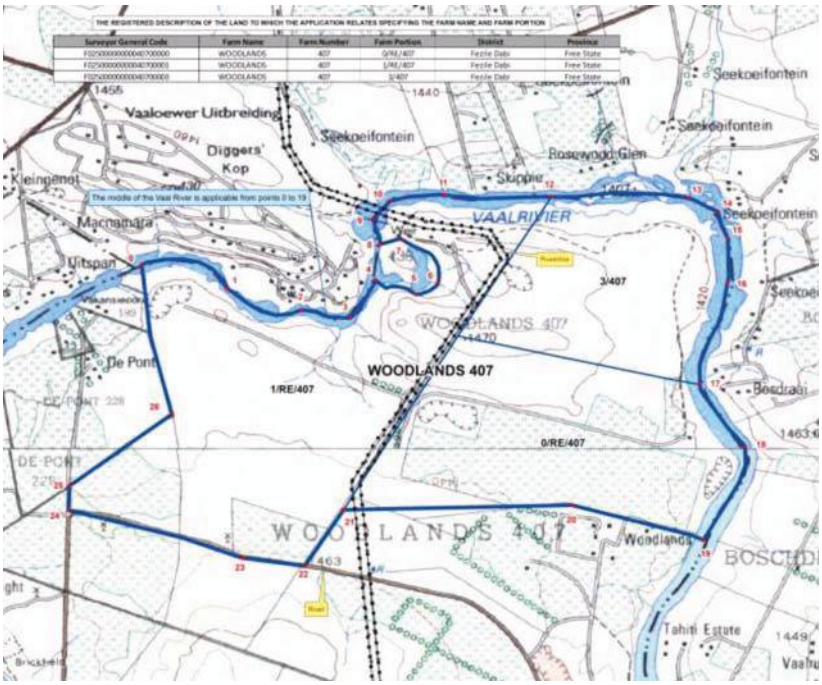
MEMORANDUM

TRAFFIC IMPACT ASSESSMENT

PROPOSED PURE SOURCE MINE DEVELOPMENT TO BE SITUATED NEAR SASOLBURG, FREE STATE PROVINCE



OCTOBER 2018

Prepared for:
Monte Cristo Commercial Park (Pty) Ltd
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Declaration of Independence

I, Leon Roets, hereby declare that Siyazi Transportation Services Free State (Pty) Ltd, an independent consulting firm, has no interest or personal gains in this project whatsoever, except receiving fair payment for rendering an independent professional service.

Consultant name: Leon Roets

Signature: 

Date: 09 October 2018

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF ASSUMPTIONS

LIST OF TABLES

Section 1

INTRODUCTION

Siyazi Transportation Services Free State (Pty) Ltd was appointed by Monte Cristo Commercial Park (Pty) Ltd to conduct a Traffic Impact Assessment (TIA) for the proposed Pure Source Mine Development to be located on the Remaining extent (Re) and the Remainder (of Portion 1) and Portion 3 of the farm Woodlands 407 within the Fezile Dabi District Municipality, Free State Province.

The proposed mining development would entail the mining and selling of silica sand, aggregate and alluvial diamonds. At the time of preparing this report, information on the volume of alluvial diamonds that is anticipated to be mined, processed and sold was not determined yet and will only be determined once mining of silica sand and aggregate initiates. The mining of alluvial diamonds was therefore excluded from the investigations as part of this study. It is recommended to revise investigations at a later stage when information becomes available to include the mining of the alluvial diamonds.

Vehicle access from and to the proposed mining development is proposed from Road S171 by means of a new access point.

Figure 1.1 provides the locality of the proposed mining development in relation to other activities in the vicinity, including the location of the intersections under investigation. **Figure 1.2** provides the proposed site layout of the proposed mining development.

The purpose of this study is to undertake an assessment of the implications of the vehicle traffic that could potentially be generated by the proposed mining development and:

a) The traffic impact that the change in land use would have on road- and transport-related infrastructure;
b) Whether it is possible to accommodate the proposed mining development within acceptable norms from a traffic-engineering point of view; and
c) The mitigating measures required to accommodate the proposed mining development within acceptable traffic-engineering norms.

FIGURE 1.1: LOCALITY OF PROPOSED MINING DEVELOPMENT AND RELEVANT INTERSECTIONS UNDER INVESTIGATION

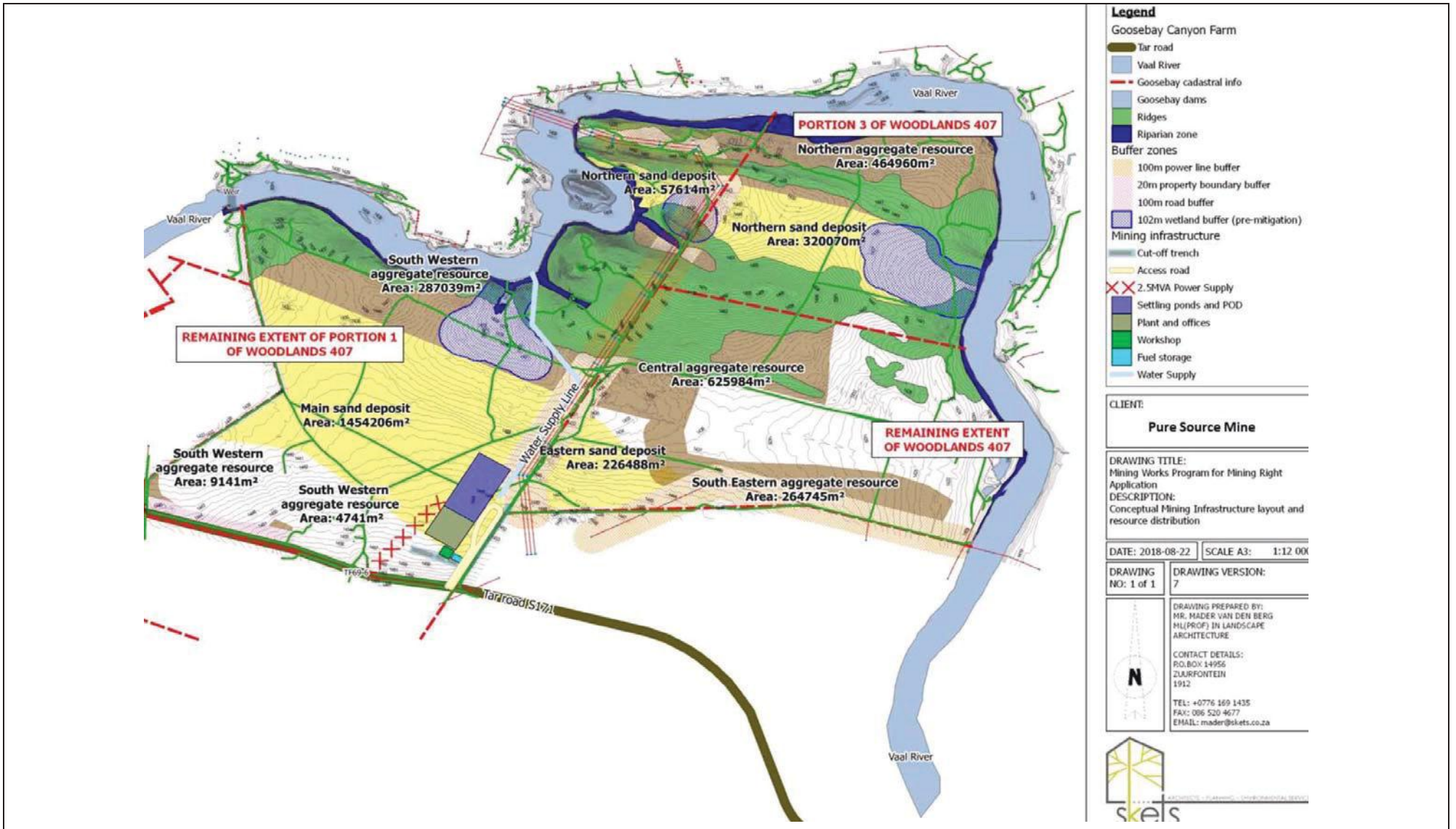

FIGURE 1.2: PROPOSED SITE LAYOUT OF THE PROPOSED MINING DEVELOPMENT

Source: Skets Architects

Table 1.1 provides information on the relevant intersections under investigation as part of the proposed mining development.

TABLE 1.1: RELEVANT INTERSECTIONS UNDER INVESTIGATION					
POINT	INTERSECTION STATUS	INTERSECTION	GPS CO-ORDINATES		RELEVANT INVESTIGATION
			LATITUDE	LONGITUDE	
A	Existing	Boundary Road and Road S171	S26°47'29.88"	E27°40'16.98"	Intersection performance, geometric layout and road safety
B	Proposed	Road S171 and the Proposed Mine Access Road (currently a gravel farm access road)	S26°45.533'	E27°36.216'	Geometric layout and road safety

Table 1.2 contains a summary of the extent of the proposed mining development for all project phases. It is important to take note that production is planned with a "production ramp-up" approach with full production capacity to be achieved 10 years after production initiates.

The following scenarios were investigated as part of the TIA:

a) **Scenario 1:** 2018 peak hour traffic without background traffic growth, without the proposed mining development (status quo);
b) **Scenario 2:** Projected 2018 peak hour traffic without background traffic growth, with the proposed mining development (construction phase);
c) **Scenario 3:** Projected 2028 peak hour traffic with background traffic growth, without the proposed mining development;
d) **Scenario 4:** Projected 2028 peak hour traffic with background traffic growth, with the proposed mining development (operational phase);

Even though the proposed mining development's construction phase might only initiate at a later stage following with the operational phase, it is standard traffic-engineering practice to evaluate the existing (base year) conditions as well as future (10 years) conditions, and therefore the traffic investigation for the base year (2018) include potential construction traffic and the operational phase was included in a 2028 scenario (10 years) in order to evaluate the potential impacts of the operational phase.

The timeframes used for the traffic impact assessment therefore does not depict the timeframes of a relevant phase of the proposed mining development but indicates the potential requirements and impact on traffic and road network due to the proposed mining development of the relevant phase at a certain time based on traffic-engineering guidelines.

The following sections of the report elaborate on the:

a) **Section 2:** Detailed information related to data collected and investigations.
b) **Section 3:** Findings and recommendations.

TABLE 1.2: SUMMARY OF THE EXTENT OF THE PROPOSED MINING DEVELOPMENT FOR THE RESPECTIVE PHASES				
DESCRIPTION	**PHASE**			
	CONSTRUCTION	**OPERATIONAL**	**DECOMMISSIONING**	**CLOSURE**
Mined products to be processed and sold to the market (at full production capacity)	Not Applicable	Silica sand: 67 000 m^3 (113 900 tonnes) per month Aggregate: 35 000m^3 (77 000 tonnes) per month	Not relevant. (Activities include the demolition of all infrastructures and the rehabilitation of the site).	Not relevant. (All activities on the site, although limited, are planned to be completed and the mining company will leave the site.)
Duration	Max 2 years	± 30 years	± 6 to 12 months	
Relevant time frame	2018 to 2020	2020 to 2050	After operational phase is completed	
Location from where workers are expected to come from for all phases	Management, skilled and administration	Vanderbijlpark, Parys, Sasolburg, Vredefort, Koppies, Heilbron and Edenville		
	Semi-skilled workers			
Total number of management, skilled and administrative staff	7	11 (At maximum production capacity)	Not known at the time of preparing the traffic impact assessment. Expected to be less staff than operational phase and anticipated to be one shift per day.	
Total number of semi-skilled staff	18	37 (At maximum production capacity)		
Number of shifts and shift times for all staff	Anticipated to be one shift per day.	Anticipated to be one shift per day.		

TABLE 1.2: SUMMARY OF THE EXTENT OF THE PROPOSED MINING DEVELOPMENT FOR THE RESPECTIVE PHASES				
DESCRIPTION	**PHASE**			
	CONSTRUCTION	**OPERATIONAL**	**DECOMMISSIONING**	**CLOSURE**
Heavy vehicles delivering consumables and/or construction materials and plant equipment per day via road transport	Assumed 5 per day.	Assumed 5 per day.	Limited, occasionally.	Limited, occasionally.
Assumed maximum % of heavy vehicles during AM or PM peak respectively	20%	20%	Limited, occasionally.	Limited, occasionally.
Light vehicle distribution	See **Figure B-2** of **Appendix B**		Same as for operational phase.	
Heavy vehicle distribution				
Abnormal vehicles delivering large components related to the proposed mining development	Once-off events.	Once-off events.	Once-off events.	Once-off events.
Access road	From and to Road S171 via a proposed new access point	Same as for construction phase.	Same as for construction phase.	Same as for construction phase.
Calculated number of vehicle trips to be generated per AM or PM peak hour	AM – 10 PM – 10 (see **Table 2.5** of **Section 2**)	AM – 109 PM – 109 (see **Table 2.6** of **Section 2**)	Less than construction and operational phases.	Less than construction and operational phases.

Section 2

DETAILED INFORMATION RELATED TO DATA COLLECTED AND INVESTIGATIONS

The purpose of **Section 2** is to provide detailed information related to the data collected and investigations conducted and consists of:

a) The *status quo* of the land use and road network characteristics of roads relevant to the proposed mining development which consists of the following information;

   i. Existing land use information;
   ii. Existing road characteristics and modal distribution; and
   iii. Traffic counts as basis for making traffic-engineering calculations.

b) The future land use and road network characteristics relevant to the proposed mining development which consists of the following information;

   i. Land use information, including existing and proposed latent developments in the area; and
   ii. Determination of vehicle trips expected to be generated due to the proposed mining development.

c) The current and future levels of service at the relevant intersections under investigation; and
d) Other traffic-related issues.

The following subsection elaborates on the above mentioned.

2.1 STATUS QUO OF LAND USE, AS WELL AS ROAD NETWORK CHARACTERISTICS

The following information is discussed in terms of the *status quo* of the existing land use and road characteristics:

a) Existing land use information;
b) Existing road characteristics and modal distribution; and
c) Traffic counts conducted as a basis for making traffic calculations.

2.1.1 EXISTING LAND USE INFORMATION

The relevant properties of the proposed mining development are currently mostly utilised for agricultural and residential purposes with some mining activities. For the purpose of this traffic impact assessment, it is assumed that

a) The vehicle traffic absorption rate (rate at which existing developments attract vehicular traffic) by all other types of completed adjacent developments will maintain the same status for the next ten years; and
b) That the average rate of growth of vehicle traffic in the area under investigation that is not relevant to the proposed mining development (background traffic) between the 2018 manual traffic counts and the 2028 scenario was anticipated at 3% per annum.

2.1.2 EXISTING ROAD CHARACTERISTICS AND MODAL DISTRIBUTION

The following are relevant as part of this section:

a) **Table 2.1** contains information related to the existing intersections under investigation;
b) **Figure 2.1** provides the existing road network layout for the area under investigation; and
c) **Table 2.2** provides information concerning the relevant road sections under investigation and includes the following:

    i) Relevant road section;
    ii) Picture of road section;
    iii) Existing class of road;
    iv) Proposed class of road;
    v) Road reserve widths;
    vi) Lane widths; and
    vii) Median widths.

d) **Tables 2.3** and **2.4** provide a copy of the Guidelines (COTO TRH26 "*South African Road Classification and Access Management Manual, Version 1.0, August 2012*" Rural areas) of typical road characteristics and access management requirements.

TABLE 2.1: SUMMARY OF INTERSECTION CONTROL AT EXISTING INTERSECTIONS UNDER INVESTIGATION

POINT	DESCRIPTION	INTERSECTION CONTROL	PEDESTRIAN ACTIVITIES	INTERSECTION PHOTO
A	Boundary Road and Road S171	Free-flow on Boundary Road	No pedestrian activity observed during surveys	
B	Road S171 and the Proposed Mine Access Road	Free-flow on Road S171	No pedestrian activity observed during surveys	

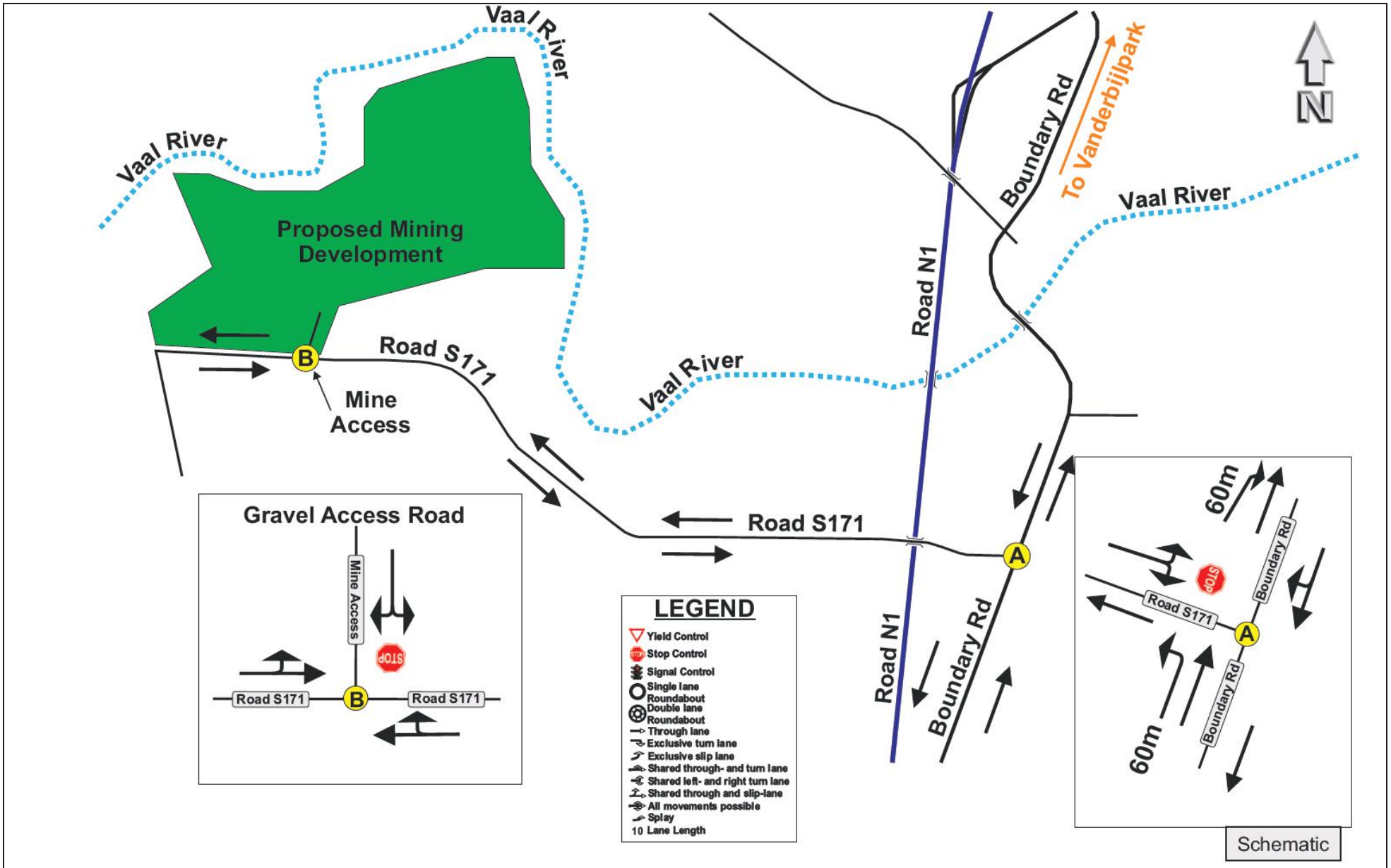

FIGURE 2.1: EXISTING ROAD NETWORK LAYOUT

TABLE 2.2: SUMMARY OF ROAD CHARACTERISTICS

RELEVANT ROAD SECTION	PICTURE OF ROAD SECTION	ASSUMED EXISTING CLASS OF ROAD	POSSIBLE FUTURE CLASS OF ROAD	Road Authority	Road Reserve (M)	Number of Lanes	Lane Width	Type of Surface	Median	Anticipated Traffic Growth per Annum over 10 Years	Speed Limit
Road Section 1 **Boundary Road** Road between Roads R42 and R59		**Primary Function:** Mobility Class: Minor arterial; Class No.: R3; Route No.: R **Description:** Main Road **Spacing between Intersections:** 1.6km	**Proposed Function:** Mobility Class: Minor arterial; Class No.: R3; Route No.: R **Description:** Main Road **Spacing between Intersections:** 1.6km	Department of Police, Roads and Transport, Free State Province	±30m	One lane per direction	3.7m wide	Asphalt	None	3%	100 km/h
Road Section 2 **Road S171** Provides access to Boundary Road from mines and farms		**Primary Function:** Access / Activity Class: Collector road; Class No.: R4; Route No.: N/A **Description:** Collector **Spacing between Intersections:** 600m – 800m	**Proposed Function:** Access / Activity Class: Collector road; Class No.: R4; Route No.: N/A **Description:** Collector **Spacing between Intersections:** 600m – 800m	Department of Police, Roads and Transport, Free State Province	±25m	One lane per direction	3.7m wide	Asphalt	None	3%	80 km/h

TABLE 2.3: RURAL FUNCTIONAL ROAD CLASSIFICATION

(COTO TRH26 - SOUTH AFRICAN ROAD CLASSIFICATION AND ACCESS MANAGEMENT MANUAL VERSION 1.0 AUGUST 2012)

FUNCTION			DESCRIPTION		MOBILITY				
BASIC FUNCTION	**ALTERNATE FUNCTIONAL DESCRIPTION**	**DETERMINING FUNCTION**	**CLASS NO. (R_)**	**CLASS NAME**	**ORIGIN / DESTINATION**	**THROUGH TRAFFIC COMPONENT**	**REACH OF CONNECTIVITY**	**% OF BUILT KM**	**AADT (AVERAGE ANNUAL DAILY TRAFFIC)**
Mobility	Vehicle priority, vehicle only, long distance, through, high order, high speed, numbered, commercial, economic, strategic; route, arterial road or highway	Movement is dominant, through traffic is dominant, the majority of traffic does not originate or terminate in the immediate vicinity, the function of the road is to carry high volumes of traffic between urban areas.	R 1	Principal arterial*	Metro areas, large cities, large border posts, join national routes.	Exclusively	> 50km	2 - 4% Classes 1 and 2	1 000 - 100 000+
			R 2	Major arterial*	Cities and large towns, transport nodes (harbour and international airports), smaller border posts, join major routes.	Exclusively	> 25km		500 - 25 000+
			R 3	Minor arterial*	Towns, villages and rural settlements, tourist destinations, transport nodes (railway sidings, seaports, landing strips), small border posts, other routes.	Predominant	> 10km	6 - 12% Classes1, 2 and 3	100 - 2 000+
Access / Activity	Access, mixed pedestrian and vehicle traffic, short distance, low order, lower speed, community / farm, road or street.	Access, turning and crossing movements are allowed, the majority of traffic has an origin or destination in the district, the function of the road is to provide a safe environment for vehicles and pedestrians using access points.	R 4	Collector road	Connect farming districts, rural settlements, tourist areas, national and private parks and mines to mobility routes.	Minimal	< 10km	20 - 25%	< 1 000
			R 5	Local road	Farm or property access, connection to other routes.	Nil Discontinued	< 5km	65 - 75%	< 500
			R 6	Walkway (path or track)	Settlements, farms, transport nodes, water points.	n/a	n/a	n/a	n/a

* In rural areas, the term distributor may be preferred to arterial.

TABLE 2.4: RURAL ACCESS MANAGEMENT REQUIREMENTS AND FEATURES

(COTO TRH26 - SOUTH AFRICAN ROAD CLASSIFICATION AND ACCESS MANAGEMENT MANUAL VERSION 1.0 AUGUST 2012)

BASIC FUNCTION	DESCRIPTION		REQUIREMENTS				TYPICAL FEATURES (Use appropriate context sensitive standards for design)									
	CLASS NO (R_)	CLASS NAME	DESIGN TOPOLOGY	ROUTE NO.	ACCESS TO PROPERTY	PARKING	SPEED km/h	INTERSECTION CONTROL	INTERSECTION SPACING	TYPICAL CROSS SECTION	ROADWAY / LANE WIDTH	ROAD RESERVE WIDTH	PUBLIC TRANSPORT AND PEDESTRIAN CROSSINGS	PEDESTRIAN FOOTWAYS (CONSTRUCTED)	CYCLE LANES	ANIMAL DRAWN VEHICLES
Mobility	R 1	Principal arterial	Expressway	Yes (N)	Not allowed*	No (off road rest stops allowed)	120	Grade separated or priority to through	8.0km	2/3/4 lanes, surfaced shoulders, climbing lanes	3.5 - 3.7m	60 - 80m (62m)	No	No	No	No
	R 2	Major arterial	Highway	Yes (R: 2 or 3-digit; or N)	Not allowed */**	No (off road rest stops allowed)	120	Priority or grade separated	5.0km	2/3 lanes, surfaced shoulders, climbing lanes	3.5 - 3.7m	40-70m (48m)	As required	Isolated	Recreational on shoulder	No
	R 3	Minor arterial	Main road	Yes (R: 3 or 2-digit)	Not allowed */**	No (off road rest stops allowed)	100 - 120	Priority, roundabout	1.6km	2 lanes surfaced, gravel shoulders	4.0m	30-50m (30m)	As required	Isolated	Recreational widen roadway both sides	Widen shoulder
Access / Activity	R 4	Collector road	Collector	Allowed, T (tourist) or D (district)	Yes	No (off road edge or in lay byes / viewpoints)	80 - 100	Priority	600 - 800m	2 lanes surfaced or gravel, gravel shoulders	3.5m	25m	As required	Rare, isolated	Widen roadway	Widen shoulder
	R 5	Local road	Farm road	Allowed, T (tourist) or L (local)	Yes	No (on verge or shoulder)	60 - 80	Priority	450 - 600m	1/2 lane/s gravel, 600mm concrete strips in environmental areas		20m	As required	Rare	Use roadway	Use roadway
	R 6	Walkway	Track or pathway	No	Yes	N/A			N/A					Not constructed, formed by use		

* Access to properties sufficiently large to warrant a private intersection / interchange which can be considered if access spacing requirements are met and there is no future need for public road.

** Low volume farm gate and tourist access (less than 10 vehicles per day) can be considered if no alternative exists.

2.1.3 TRAFFIC COUNTS AS BASIS FOR MAKING TRAFFIC-ENGINEERING CALCULATIONS

In order to gain a better understanding of the existing traffic patterns and movements adjacent to the proposed mining development, 12-hour manual traffic counts were conducted at the existing intersections that would potentially be affected by the proposed mining development.

It is standard traffic-engineering practice to conduct at least 12-hour manual traffic counts, as close as possible to a month-end Friday when traffic movement is expected to be at its highest.

The relevant 12-hour manual traffic count was conducted on Friday 02 February 2018 at the intersection of Boundary Road and Road S171 (**Point A**).

The combined hourly totals of all the vehicle types for the traffic survey conducted on Friday 02 February 2018 between 06:00 and 18:00 are indicated in **Table A-1** of **Appendix A** of this report. The description of the relevant vehicle movements at the relevant intersections appears in **Figure A-1** of **Appendix A**. **Figure B-1** provides a graphical presentation of the peak-hour traffic volumes as derived from the relevant manual traffic counts.

The respective peak-hour flows for the traffic count at the relevant intersections were identified as follows:

a) AM Peak: 07:00 to 08:00 (92 vehicles); and
b) PM Peak: 16:45 to 17:45 (148 vehicles).

Note: Although the peaks of the proposed mining development might not be at the same time as the existing background traffic peak hours, and shift starting and ending times of the proposed mining development might not fall within the existing vehicle traffic peak times, the background traffic peak hours were used in order to evaluate the worst-case scenario.

Figure 2.2 indicates the hourly traffic pattern, per 15-minute interval, for all modes of vehicles at the relevant intersections between 06:00 and 18:00 on Friday 02 February 2018. A graphical presentation of the peak-hour vehicle flows is indicated with **Figure B-1** of **Appendix B.**

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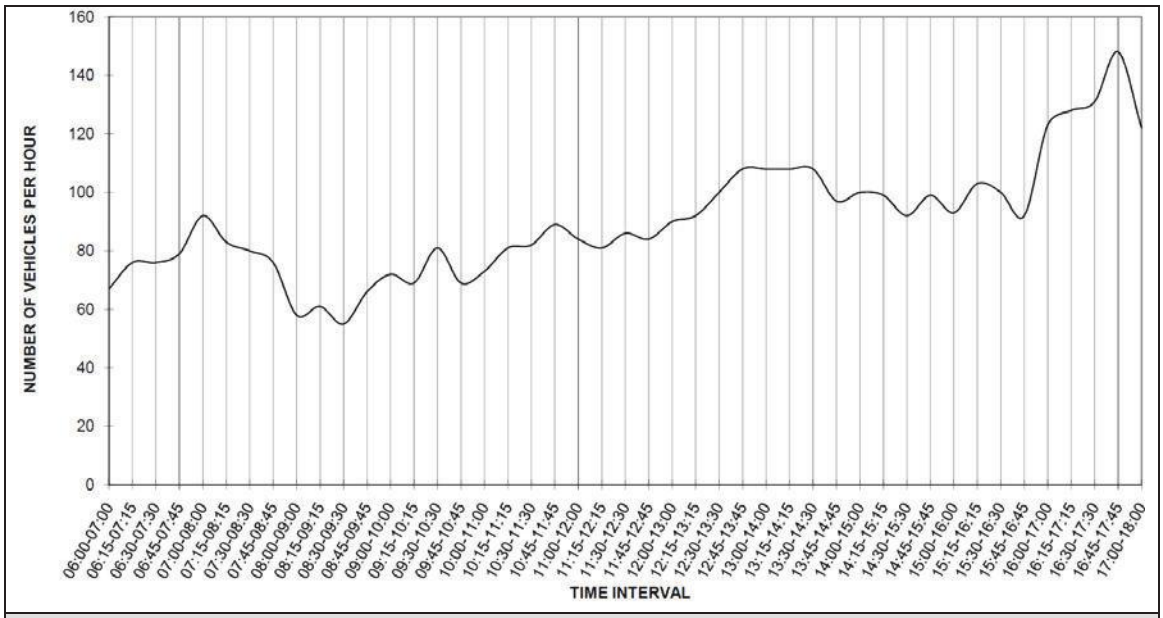


INTERSECTION OF BOUNDARY ROAD AND ROAD S171 (POINT A)

FIGURE 2.2: HOURLY TRAFFIC PATTERN PER 15-MINUTE INTERVAL FOR ALL MODES OF VEHICLES (06:00 to 18:00) AT THE RELEVANT INTERSECTION

2.2 FUTURE LAND USE AND ROAD CHARACTERISTICS

The following are relevant:

a) Land use information, including existing and proposed latent developments in the area;
b) Information about the expected future modal distribution;
c) Determination of the vehicle trips anticipated to be generated by the proposed mining development; and
d) Determination of the total traffic anticipated to be generated by the proposed mining development at the relevant intersections.

The subsections below elaborate on the above-mentioned future land use and road characteristics.

2.2.1 LAND USE INFORMATION, INCLUDING EXISTING AND PROPOSED LATENT DEVELOPMENTS IN THE AREA

No information of any latent rights (planned or other known developments within the study area) is readily available at the time of conducting this study, and it was therefore assumed that there were no known approved latent rights within the vicinity of the proposed mining development.

2.2.2 INFORMATION ABOUT THE EXPECTED FUTURE MODAL DISTRIBUTION

Figure B-2 of **Appendix B** indicate, in percentages, the expected vehicle trips distribution, respectively, of delivery vehicles, light vehicles and heavy vehicles for the AM and PM peak periods for the relevant scenarios.

2.2.3 DETERMINATION OF VEHICLE TRIPS EXPECTED TO BE GENERATED DUE TO THE PROPOSED MINING DEVELOPMENT

The following tables indicate the assumed trip generation rates, the number of vehicle trips which are expected to be generated due to the proposed activities of the proposed mining development for the construction and operational phases:

a) **Table 2.5**: Trip generation rates, expected number of vehicle trips to be generated due to the proposed mining development and the distribution of vehicle trips (construction phase); and
b) **Table 2.6**: Trip generation rates, expected number of vehicle trips to be generated due to the proposed mining development and the distribution of vehicle trips (operational phase).

Heavy vehicle trips (transportation of silica sand and aggregate to clients and market) were calculated based on available information obtained from the project team. The following information was used to determine the anticipated number of heavy vehicle trips to be generated by the proposed mining development:

a) For calculations of the total silica sand to be transported per month, a factor of 1,7 (density) was used per cubic meter to convert to tonnes;
b) For calculations of the aggregate to be transported per month, a factor of 2.2 (density) was used per cubic meter to convert to tonnes;
c) Mined product will be transported off site to clients via 30 tonne trucks;
d) Transporting of product to clients would occur Mondays to Saturdays.

The trip generation rates are based on the "*COTO TMH17, South African Trip Data Manual Version 1.01, September 2013*", information provided by the project team and assumptions made based on professional experience where information was not available.

TABLE 2.5: TRIP GENERATION RATES, EXPECTED NUMBER OF VEHICLE TRIPS TO BE GENERATED DUE TO THE PROPOSED MINING DEVELOPMENT AND THE DISTRIBUTION OF VEHICLE TRIPS (CONSTRUCTION PHASE)

Item	Component	Num Workers per Day	% Workers Active during Peak Hour	Num Workers Active per Peak Hour	Num Trucks per Day	% Trucks Active during Peak Hour	Num Trucks Active during Peak Hour	Assumed Ave. Num Persons per Veh	Comments	Trip Generation Calculations for Peak Hour						Final Trip Information for Traffic-engineering Calculations			
										If Inward Movement is Relevant Value = 1	Num Veh Trips for Inwards Direction	If Outward Movement is Relevant Value = 1	Num Veh Trips for Outwards Direction	Total Num Veh Trips Generated during Peak Hour (In & Out)	Calculated Trip Generation Rate per Veh during Peak Hour	Trip Dist. %		Trip Generation	
																In	Out	In	Out
AM Peak Hour																			
1.	Construction workers (using own transport)	7	100%	7				1,2	Trips per worker (1.2 persons per vehicle)	1	6	0	0	6	**0,83**	100%	0%	6	0
2.	Construction workers (transported via bus)	18	100%	18				20,0	20 persons per bus (bus deliver workers and leave site empty)	1	1	1	1	2	**0,10**	50%	50%	1	1
3.	Heavy vehicles delivering consumables and construction materials				5	20%	1	1,0	20% of delivery vehicles expected during peak periods	1	1	1	1	2	**2,00**	50%	50%	1	1
													TOTAL	10				8	2
PM Peak Hour																			
1.	Construction workers (using own transport)	7	100%	7				1,2	Trips per worker (1.2 persons per vehicle)	0	0	1	6	6	**0,83**	0%	100%	0	6
2.	Construction workers (transported via bus)	18	100%	18				20,0	20 persons per bus (bus enters site empty and leave with workers)	1	1	1	1	2	**0,10**	50%	50%	1	1
3.	Heavy vehicles delivering consumables and construction materials				5	20%	1	1,0	20% of delivery vehicles expected during peak periods	1	1	1	1	2	**2,00**	50%	50%	1	1
													TOTAL	10				2	8

TABLE 2.6: TRIP GENERATION RATES, EXPECTED NUMBER OF VEHICLE TRIPS TO BE GENERATED DUE TO THE PROPOSED MINING DEVELOPMENT AND THE DISTRIBUTION OF VEHICLE TRIPS (OPERATIONAL PHASE)

Item	Component	Num Workers per Day	% Workers Active during Peak Hour	Num Workers Active per Peak Hour	Num Trucks per Day	% Trucks Active during Peak Hour	Num Trucks Active during Peak Hour	Assumed Ave. Num Persons per Veh	Comments	Trip Generation Calculations for Peak Hour						Final Trip Information for Traffic-engineering Calculations			
										If Inward Movement is Relevant Value = 1	Num Veh Trips for Inwards Direction	If Outward Movement is Relevant Value = 1	Num Veh Trips for Outwards Direction	Total Num Veh Trips Generated during Peak Hour (In & Out)	Calculated Trip Generation Rate per Veh during Peak Hour	Trip Dist. %		Trip Generation	
																In	Out	In	Out
AM Peak Hour																			
1.	Administrative, skilled and management personnel (using own transport)	11	100%	11				1,2	Trips per worker (1.2 persons per vehicle)	1	9	0	0	9	**0,83**	100%	0%	9	0
2.	Mining workers (semi-skilled) (transported via bus)	37	100%	37				20,0	20 persons per bus (bus deliver workers and leave site empty)	1	2	1	2	4	**0,10**	50%	50%	2	2
3.	Heavy vehicles delivering consumables				5	20%	1	1,0	20% of delivery vehicles expected during peak periods	1	1	1	1	2	**2,00**	50%	50%	1	1
4.	Heavy vehicles transporting processed product (silica sand)				141	20%	28	1,0	20% of heavy vehicles expected during peak periods	1	28	1	28	56	**2,00**	50%	50%	28	28
5.	Heavy vehicles transporting processed product (aggregate)				95	20%	19	1,0	20% of heavy vehicles expected during peak periods	1	19	1	19	38	**2,00**	50%	50%	19	19
													TOTAL	109				59	50
PM Peak Hour																			
1.	Administrative, skilled and management personnel (using own transport)	11	100%	11				1,2	Trips per Worker (1.2 Persons per Vehicle)	1	9	0	0	9	**0,83**	0%	100%	0	9
2.	Mining workers (semi-skilled) (transported via bus)	37	100%	37				20,0	20 persons per bus (Bus enters site empty and leave with workers)	1	2	1	2	4	**0,10**	50%	50%	2	2
3.	Heavy vehicles delivering consumables				5	20%	1	1,0	20% of delivery vehicles expected during peak periods	1	1	1	1	2	**2,00**	50%	50%	1	1
4.	Heavy vehicles transporting processed product (silica sand)				141	20%	28	1,0	20% of heavy vehicles expected during peak periods	1	28	1	28	56	**2,00**	50%	50%	28	28
5.	Heavy vehicles transporting processed product (aggregate)				95	20%	19	1,0	20% of heavy vehicles expected during peak periods	1	19	1	19	38	**2,00**	50%	50%	19	19
													TOTAL	109				50	59

2.2.4 DETERMINATION OF THE TOTAL TRAFFIC EXPECTED TO BE GENERATED AT THE RELEVANT INTERSECTIONS

The detailed traffic-related investigation was conducted for the construction and operational phases of the proposed mining development at Point A. The following figures are relevant:

a) **Figure B-1:** 2018 peak hour traffic without background traffic growth without the proposed mining development (**Scenario 1**);
b) **Figure B-2:** Projected vehicle trip distribution for the proposed mining development relevant to all scenarios (**light and heavy vehicles**);
c) **Figure B-3:** Projected vehicle trips anticipated to be generated by the proposed mining development (**2018 construction phase**);
d) **Figure B-4:** Projected 2018 peak hour traffic without background traffic growth with the proposed mining development (**construction phase**) (**Scenario 2)**;
e) **Figure B-5:** Projected 2028 peak hour traffic with background traffic growth without the proposed mining development (**Scenario 3**);
f) **Figure B-6:** Projected vehicle trips anticipated to be generated by the proposed mining development (**2028 operational phase**); and
g) **Figure B-7:** Projected 2028 peak hour traffic with background traffic growth with the proposed mining development (**operational phase**) (**Scenario 4)**.

2.3 DETERMINATION OF THE LEVELS OF SERVICE AT THE RELEVANT INTERSECTION

The ***"SIDRA Intersection"*** software was used as an aid for the design and evaluation of the relevant intersection. The intersection of Boundary Road and Road S171 (**Point A**) was evaluated for levels of service. It was deemed not necessary to conduct evaluations at **Point B** due to the relatively low volume of vehicle traffic making use of Road S171 and therefore input was only provided in terms of road safety and intersection geometry.

In Appendix C Tables C-1 to **C-4** indicates the levels of service and the degree of saturation calculated for the relevant intersection for the respective scenario:

a) **Table C-1:** Levels of service for various approaches for the year 2018 **without** background traffic growth **without** the proposed mining development **(Scenario 1)**;
b) **Table C-2:** Levels of service for various approaches for the year 2028 **with** background traffic growth **without** the proposed mining development) **(Scenario 3)**;

c) **Table C-3:** Levels of service for various approaches for the year 2018 **without** background traffic growth **with** the proposed mining development (**construction phase**) **(Scenario 2)**; and
d) **Table C-4:** Levels of service for various approaches for the year 2029 **with** background traffic growth **with** the proposed mining development (**operational phase**) **(Scenario 4)**.

From **Tables C-1** and **C-4** it is possible to note that:

a) No geometric upgrading would be required from a capacity point of view without the proposed mining development;
b) Intersections would operate at acceptable levels from a capacity point of view with the proposed mining development with the recommended geometric improvements. Refer to **Section 3** of this report for more detail; and
c) Geometric upgrading of both intersections under investigation as part of the proposed mining development is recommended from a road safety point of view.

Refer to **Tables D-1** and **D-2** of **Appendix D** for level of service criteria description respectively for unsignalised and signalised intersections.

Table 2.7 provides a summary of the available reserve capacity on the various sections of roads that had been investigated. The assumed free-flow capacity of individual lanes is relevant provided that the relevant intersections have reserve capacity available for the relevant lanes of the intersections.

TABLE 2.7: AVAILABLE RESERVE CAPACITY FOR RELEVANT ROAD SECTION													
Point	Intersection	Direction of Road Section	Capacity per Lane	Number of Lanes	Total Capacity	2018 Actual Number of Vehicles		2018 Reserve Capacity Available		2028 Actual Number of Vehicles		2028 Reserve Capacity Available	
						AM	PM	AM	PM	AM	PM	AM	PM
A	Intersection of Boundary Road and Road S171	North (Boundary Rd)	1100	1	1100	25	26	1075	1074	59	65	1041	1035
		South (Boundary Rd)	1100	1	1100	31	63	1069	1037	67	114	1033	986
		West (Road S171)	700	1	700	36	59	664	641	108	129	592	571
B	Intersection of Road S171 and the Proposed Mine Access Road	North (Proposed Mine Access Rd)	Not Applicable. Mine Access Road.										
		East (Road S171)	700	1	700	11	27	689	673	65	95	635	605
		West (Road S171)	700	1	700	36	59	664	641	48	79	652	621

2.4 SENSITIVE ROAD SECTIONS AND INTERSECTIONS RELATED TO EXISTING AND PROPOSED CONDITIONS

Sensitive road sections and Intersections related to proposed conditions with the proposed mining development in terms of vehicular traffic include the following:

a) Where residents and schools are located (vehicle / pedestrian conflict);
b) Free-flow legs of intersections where right turning movements take place and where no dedicated right-turn lanes are provided;
c) Intersections with high volumes of vehicular traffic conflicts;
d) Road surface conditions based on visual inspections; and
e) Speeding.

The following figures are presented as part of the sensitive road sections:

a) **Figures 2.3:** Sensitive road sections and intersections indicating the anticipated sensitive areas and intersections **WITHOUT** recommended mitigating measures; and
b) **Figures 2.4:** Sensitive road sections and intersections indicating the anticipated sensitive areas and intersections **WITH** recommended mitigating measures.

It can be concluded from **Figure 2.3** and **2.4** that:

a) It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network under investigation with specific reference to Road S171. With the current poor state of Road S171, the additional anticipated heavy vehicle trips to be generated by the proposed mining development that will make use of the Road S171 can have a contribution to the further deterioration of Road S171. It is therefore recommended to collaborate with the relevant road authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan to ensure the availability of a roads network to transport workers and mined product (it is a permanent design issue and not traffic impact); and
b) It is anticipated that the sensitivity of the relevant section of Road S171 under investigation and the relevant intersections under investigation would improve with the implementation of the mitigating measures recommended as part of this report (refer to **Section 3)**.

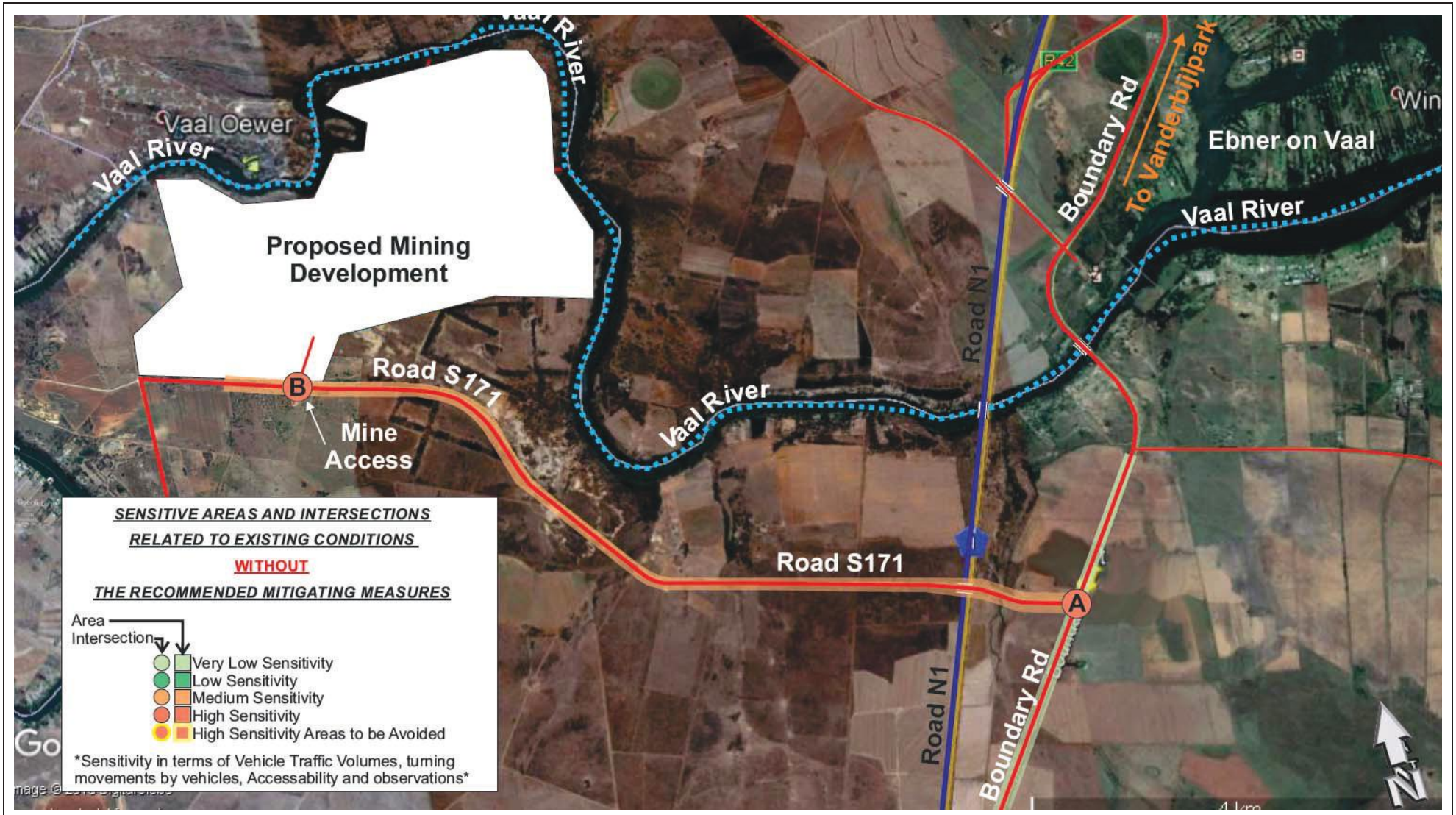


FIGURE 2.3: PRESENTATION OF SENSITIVE ROAD SECTIONS AND INTERSECTIONS INDICATING THE ANTICIPATED SENSITIVE AREAS AND INTERSECTIONS WITHOUT RECOMMENDED MITIGATING MEASURES

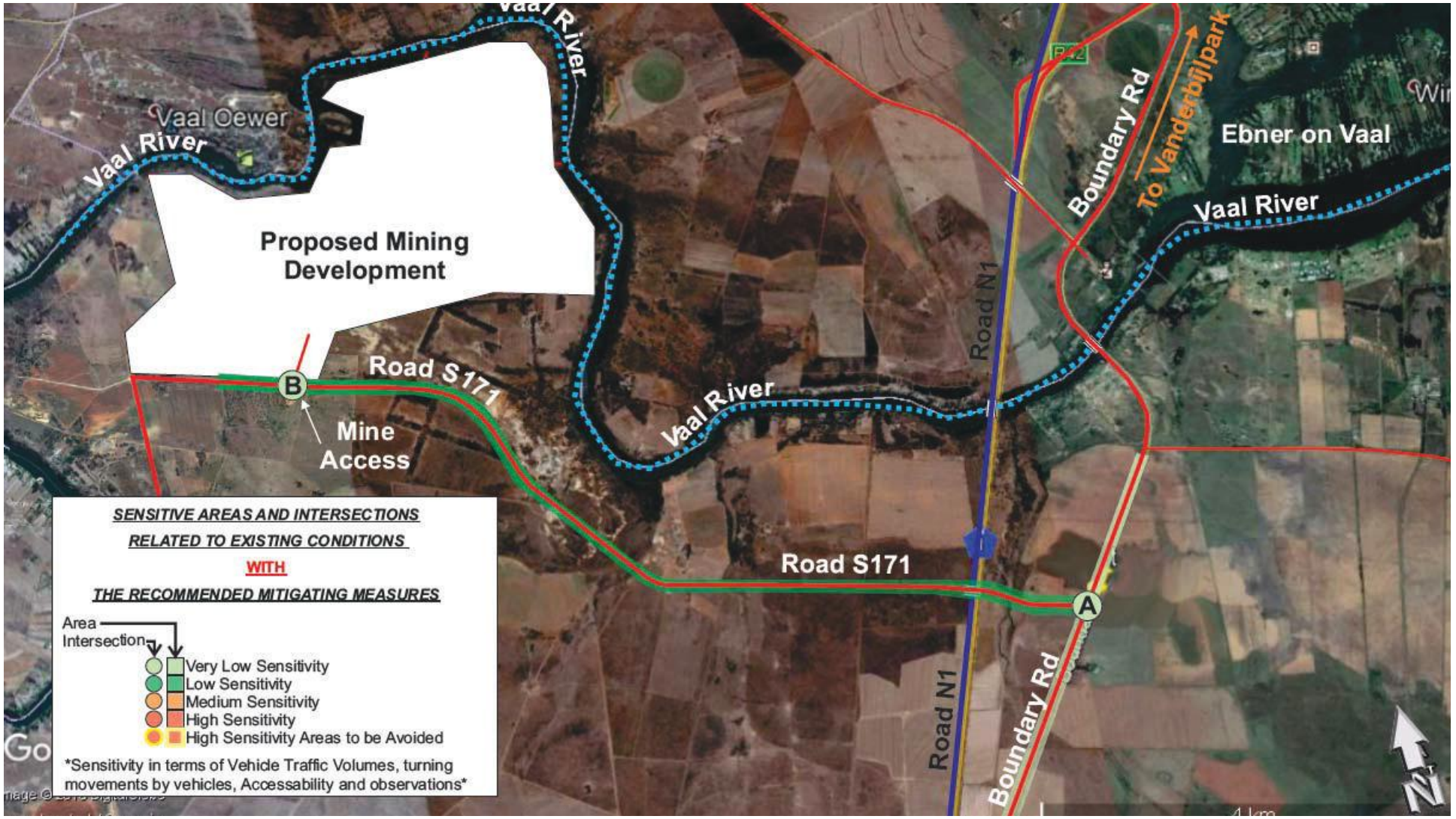


FIGURE 2.4: PRESENTATION OF SENSITIVE ROAD SECTIONS AND INTERSECTIONS INDICATING THE ANTICIPATED SENSITIVE AREAS AND INTERSECTIONS WITH RECOMMENDED MITIGATING MEASURES

2.5 INFORMATION REQUESTED BY RELEVANT ROAD AUTHORITY

Input will be provided as part of the EIA process. All comments / approval from the relevant road authorities will be included as part of the process as a separate document.

2.6 CONSULTATION WITH INTERESTED AND AFFECTED PARTIES (IAP)

Public consultation meetings were held on two separate occasions (Refer to EIS report for dates and meetings) where interested and affected parties were given the opportunity to provide comments. **Appendix G** provides the relevant comments that were made during the relevant meetings respectfully. From a traffic point of view, the Traffic Impact Assessment was compiled to address and provide information as far as practically possible on comments made with reference to traffic.

2.7 OTHER TRAFFIC-RELATED MATTERS

Table 2.9 provides a summary of the following:

a) Road safety;
b) Non-motorised transport; and
c) Public transport.

TABLE 2.9: SUMMARY OF OTHER TRAFFIC-RELATED MATTERS				
Item	**Description of Element**	**General Comments**	**Specific Issues**	**Actions Required**
1.	**ACCESS-RELATED MATTERS**			
1.1.1	**Access-related matters**	a) Access is proposed to be gained from Road S171 via a proposed new access point at **Point B.**	a) The Proposed Mine Access Road will need to be designed and constructed with road safety in mind. b) There is an existing gravel farm access within close proximity to the east of the Proposed Mine Access Road	a) The proposed access intersection is recommended to be constructed as depicted by Figure 3.1 of Section 3. b) The existing gravel farm access road within close proximity to the east of the Proposed Mine Access Road would need to be consolidated. c) Should farming activities continue, access from the Proposed Mine Access Road will need to be provided to the farm (it might be required to register a road servitude).
1.1.2	**Sight distances**	a) Sight distances at the existing intersections of Boundary Road and Road S171 (**Point A**) and Road S171 and proposed mine access road (**Point B**) were assessed visually and were deemed acceptable.	a) It is a general occurrence for vehicles to maintain normal road speeds at free-flow intersections in rural areas (lack of speed reduction).	a) Speed limit signs should be erected along the relevant section of Boundary Road. The speed limit should be limited to 80 km/h at **Points A** and **B** and enforced by the relevant road authority for the relevant section; and b) Rumble strips can be provided on Boundary Road prior to approaching **Point A.**
1.1.3	**Intersection spacing**	a) Intersection spacing would be acceptable for the Proposed Mine Access Road as long as the existing gravel farm access to the east is consolidated. b) The closest existing formal intersection along Road S171 from the Proposed Mine Access Road will be 600 metres which meets requirements.	a) None	a) None
1.1.4	**Recommended intersection geometric layout for the existing and proposed intersections in terms of road safety**	a) The intersection geometric layout should be based on geometric design requirements to ensure a safe and effective intersection layout.	a) Right turning vehicles from Boundary Road at **Point A** and Road S171 at **Point B.** b) Vehicles turning left from the proposed mining development into Road S171 with the need to join the main traffic flow.	a) Provide dedicated right-turn lanes on Boundary Road (Northern approach) at **Point A** and on Road S171 (Eastern approach) at **Point B** to ensure safe waiting space for vehicles waiting to turn right. b) Provide an acceleration lane towards the east on Road S171 at **Point B** (heavy vehicles). Refer to **Figure 3.1** for more detail concerning recommended geometric layouts.

TABLE 2.9: SUMMARY OF OTHER TRAFFIC-RELATED MATTERS				
Item	**Description of Element**	**General Comments**	**Specific Issues**	**Actions Required**
2.	**CONDITION OF ROAD S171 FROM WHERE THE PROPOSED MINING DEVELOMENT WOULD GAIN ACCESS FROM AND TO**			
2.1	**Current condition of relevant section of Road S171**	a) A visual inspection of the relevant section of Road S171 under investigation was conducted during a site visit.	a) From the visual inspection of the relevant section of Road S171 under investigation, it is possible to note that the road surface is currently in a poor condition with multiple potholes and the road surface is possibly deteriorating. b) A site investigation on the condition of Road S171 was conducted by the Department of Police, Roads and Transport Free State Province which confirms the findings from the visual inspection. Refer to **Appendix H** for a copy of the report.	a) In order to ensure that mined product and workers can be transported at all times, it is recommended that a Roads Maintenance Plan (upgrades included) be prepared in collaboration with other land owners, developments and the relevant roads authority; and b) A pavement design specialist should be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers.
3.	**ROAD SAFETY ISSUES**			
3.1	**General road safety**	The following are typical elements related to the road network, which cause road safety problems in rural and urban areas and which need to be addressed on a continuous basis: a) Intersection layout, with specific reference to dedicated right-turn lanes, where there is heavy vehicle movement; b) Pedestrian movements (road crossings); c) Intersection alignment, such as staggered intersections; d) Insufficient public transport facilities; e) Access control for vehicle movement; f) Fencing to control animal movement; g) Lack of or deterioration of reflective road studs for visibility during the night at strategic points; h) Lack of pedestrian walkways to separate pedestrian and vehicle movements at strategic points; i) Lack of provision and quality of road markings; j) Lack of provision and quality of road signs; and b) Improper road safety training for workers as well as adjacent communities.	a) Need for reflective road studs at strategic points; b) Need for overhead lighting at intersections; c) Road markings are fading; and d) Need for relevant road traffic signs.	In general, the report was compiled so as to address the road safety issues as far as practically possible: a) Refer to **Section 3.2** for the required and recommended intersection improvements; b) Collaborate with the relevant road authority to ensure that the road maintenance plan to maintain the relevant road network on which heavy vehicle movement is anticipated incorporates the necessary measures to support road safety conditions; c) Provide reflective road studs at strategic points (LED if possible) to ensure the safe operation of the relevant intersections under investigation at night time at strategic points; d) Provide required road traffic signs for the relevant intersections; e) Provide relevant road markings at relevant intersections under investigation (highway paint recommended); f) Provide mine and contractor workers with training on road safety; g) Road safety and awareness campaigns should be run at the mine; and c) Sweeping of intersections on a regular basis in order to prevent slippery conditions and visibility of road markings.

TABLE 2.9: SUMMARY OF OTHER TRAFFIC-RELATED MATTERS				
Item	**Description of Element**	**General Comments**	**Specific Issues**	**Actions Required**
4.	**NON-MOTORISED TRANSPORT**			
4.1	**Non-motorised transport**	a) No non-mine related pedestrian activity around the relevant intersections under investigation was observed during the site visit. b) Due to the location of the proposed mining development and the proposal that the proposed mining development will provide transport for semi-skilled workers who will not have their own transport available, it is anticipated that no pedestrians would walk to or from the proposed mining development.	a) None.	a) None.
5.	**PUBLIC TRANSPORT**			
5.1	**Public transport**	a) Two types of public transport commuters are relevant: i) Firstly, workers who travel to and from the proposed mining development during all phases; and ii) Secondly, visitors to the development during all phases. b) Due to the location of the proposed mining development and the proposal that the proposed mining development will provide transport for semi-skilled workers who will not have their own transport available, it is anticipated that no pedestrians would walk to or from the proposed mining development.	b) None	b) None

Section 3

FINDINGS AND RECOMMENDATIONS

Based on a site inspection of the existing road network adjacent to the site under investigation, traffic surveys, calculations and reference to the relevant traffic-engineering guideline documents, the following findings and recommendations were made:

3.1 FINDINGS

The following are discussed in terms of the findings:

a) Traffic impact during the respective phases; and
b) Site accessibility.

3.1.1 TRAFFIC IMPACT DURING THE RESPECTIVE PHASES

The capacity calculations for the TIA were conducted for the years 2018 (base-year construction phase) and 2028 (full development operational phase) respectively. The last-mentioned time frame is in line with traffic-engineering guidelines and practice and determined by the expected number of vehicle trips that could potentially be generated during any specific peak hour by a specific development. The expected operational lifespan of the proposed mining development is anticipated to be 30 years.

Furthermore, owing to the type and nature of the proposed mining activities, it is expected that the proposed activities will have a manageable impact on traffic during all phases, provided that road infrastructure improvements are implemented as recommended in **Table 3.1** and **Figure 3.1** to mitigate the impact of the proposed land development area.

Table E-1 of **Appendix E** provides a summary of the impact ratings for the operational phase respectively before and after recommended mitigating measures implemented. **Table E-1** of **Appendix E** was derived from **Table F-1** of **Appendix F** of the report that provides the criteria used in terms of the assessments process.

3.1.2 SITE ACCESSIBILITY

Vehicle access to and from the proposed mining development is anticipated to be possible from Road S171 via a proposed new access point (**Point B**). The existing gravel farm access road located to the east within close proximity of the Proposed Mine Access Road would need to be consolidated with the Proposed Mine Access Road. Should farming activities continue, it might be required to register a road servitude to ensure access to the farming portions. **Figure 3.1** provides a graphical presentation of the recommended road network improvements.

3.2 RECOMMENDATIONS

The following are discussed in terms of the recommendations:

a) Summary of intersection improvements recommended with the proposed mining development; and
b) Detailed summary of improvements recommended with the proposed mining development.

3.2.1 SUMMARY OF INTERSECTION IMPROVEMENTS RECOMMENDED WITH THE PROPOSED MINING DEVELOPEMNT

Table 3.1 provides a short summary of the intersection improvements recommended with the proposed mining development, and whether the improvements are required from an Intersection performance point of view (Technical / Capacity) or a road safety point of view.

TABLE 3.1: SUMMARY OF INTERSECTION IMPROVEMENTS RECOMMENDED IN TERMS OF ROAD / EARTH WORKS WITH THE PROPOSED MINING DEVELOPMENT

Point	Intersection Description	Improvements Required from an Intersection Performance Perspective	Improvements Recommended from a Road Safety Perspective
A	Intersection of Boundary Road and Road S171	No	Yes
B	Intersection of Road S171 and Proposed Mine Access Road	No	Yes, new intersection

3.2.2 DETAILED SUMMARY OF IMPROVEMENTS RECOMMENDED WITH THE PROPOSED MINING DEVELOPMENT

The following figures and tables provide information on the recommended intersection improvements with the proposed mining development.

a) **Figure 3.1**: Graphical presentation of the recommended intersection and roads network improvements **WITH** the proposed mining development;
b) **Table 3.2**: Intersection improvements recommended **WITH** the proposed mining development.

The TIA does not comment on pavement layer attributes in terms of the relevant road sections. The last-mentioned needs to be based on recommendations to be made by a Pavement Design Specialist input.

<u>The following is also relevant:</u>

a) The existing gravel farm access road located to the east within close proximity of the Proposed Mine Access Road would need to be consolidated with the Proposed Mine Access Road. Should farming activities continue, it might be required to register a road servitude to ensure access to the farming portions;
b) Road markings, reflective road studs (LED), road signs and overhead lights should be provided and maintained at all the relevant intersections under investigation to ensure visibility during night time, proper visibility of intersection lane geometry and sufficient information to road users;
c) In order to ensure that mined product and workers can be transported at all times with reference to Road S171, it is recommended that a Roads Maintenance Plan be prepared in collaboration with other land owners, developments and the relevant road authority;
d) Road safety training for workers and local community; and
e) Continuous maintenance of fencing along relevant roads (proposed mining development can only take responsibility for fencing for properties they own).

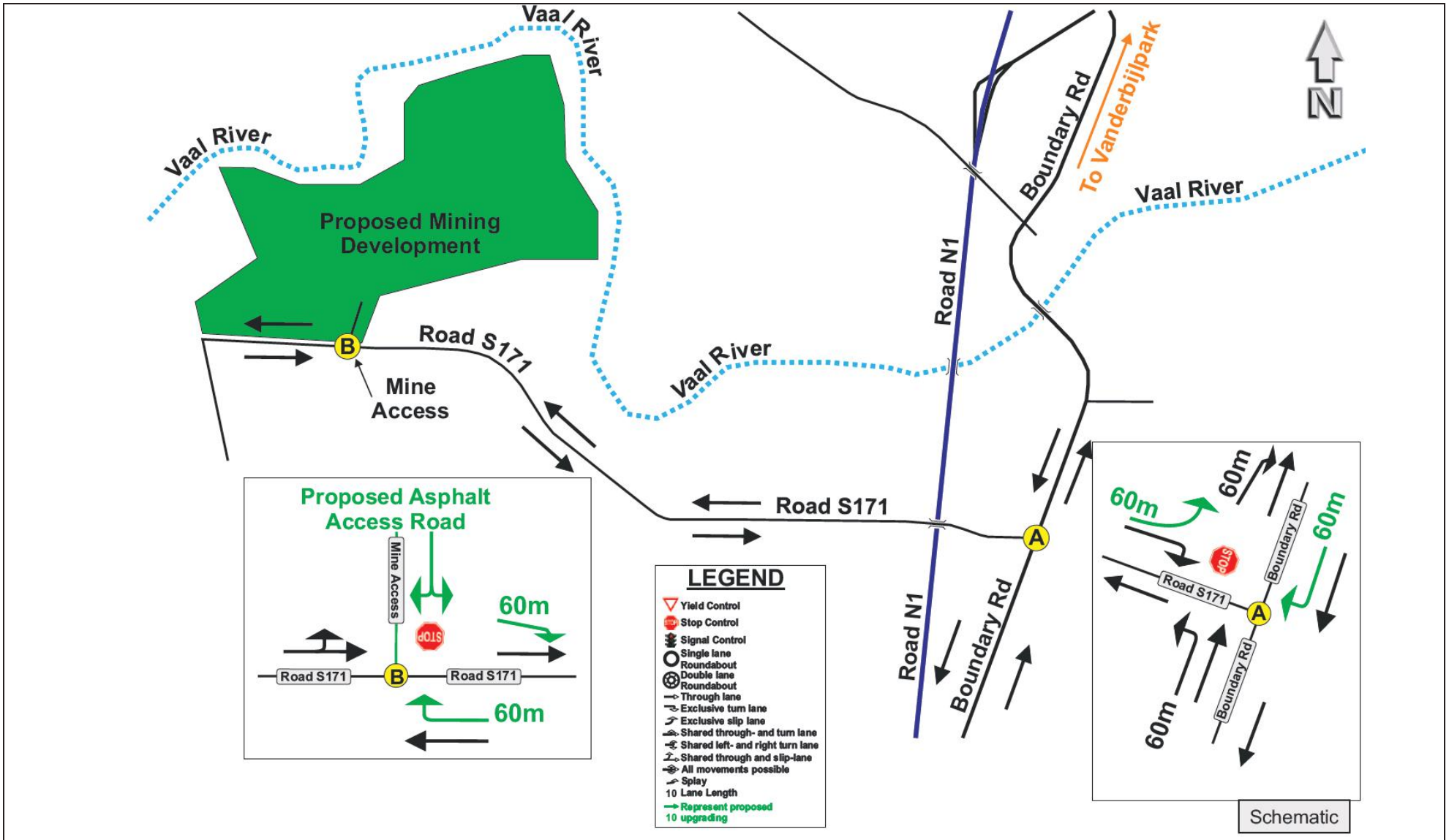
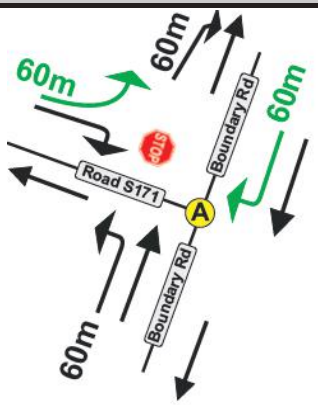
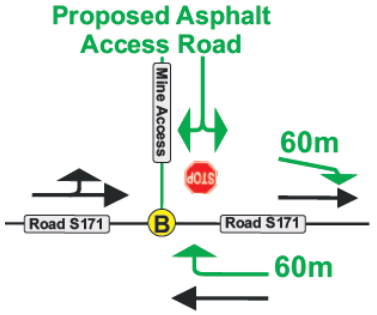


FIGURE 3.1: GRAPHICAL PRESENTATION OF THE RECOMMENDED INTERSECTION AND ROAD NETWORK IMPROVEMENTS WITH THE PROPOSED MINING DEVELOPMENT

TABLE 3.2: RECOMMENDED ROAD NETWORK IMPROVEMENTS WITH THE PROPOSED MINING DEVELOPMENT

POINT	INTERSECTION	APPROACH	IMPROVEMENTS RECOMMENDED															GEOMETRY DETERMINED BY MEANS OF SIDRA
			Approach Traffic Control				Extra Lanes Required (m)											
			Free-Flow	Stop	60m Radius Roundabout	Traffic Light System	Left-turn Taper	Left-turn Deceleration Lane	Acceleration Lane	Acceleration Lane in Middle of Road	Dedicated Right-turn Lane	Number of Extra Through Lanes	Improvements Required from a Road Safety or Intersection Performance Perspective	Reflective Road Studs Required at Intersection	Road Markings Required	Road Signs Required	Public Transport Loading and Off-loading	Pedestrian Walkways	
A	Intersection of Boundary Road and Road S171	*North (Boundary Rd)*	Yes	-	-	-	-	-	-	-	Yes, 60m	-	Road safety	Yes	Yes	Yes	-	-	
		South (Boundary Rd)	Yes	-	-	-	-	-	-	-	-	-	-		Yes	Yes	-	-	
		West (Road S171)	-	Yes	-	-	-	Yes, 60m slip lane	-	-	-	-	-		Yes	Yes	-	-	
B	Intersection of Road S171 and Proposed Mine Access Road	*North (Mine Access)*	-	Yes	-	-	-	-	-	-	-	-	-	Yes	Yes	Yes	-	-	
		East (Road S171)	Yes	-	-	-	-	-	Yes, 60m	-	Yes, 60m	-	Road Safety	Yes	Yes	Yes	-	-	
		West (Road S171)	Yes	-	-	-	-	-	-	-	-	-	-		Yes	Yes	-	-	

3.2.3 INSTITUTIONAL ARRANGEMENTS

The following recommendations are made in terms of the detailed design phase of roads for the proposed project:

a) Detailed investigations should be conducted in conjunction with the relevant road authority in terms of the existing quality and potential life span of the existing road surface layers of the roads where consumables, mined product and workers will be transported (Road S171 and Boundary Road); and
b) A road maintenance plan (possible upgrade for pavement layer) needs to be prepared in conjunction with the relevant road authority on public roads where trucks will operate as soon as the project has been approved, in order to ensure that the consumables, mined product and workers can be transported at all times.

3.2.4 REASONED OPINION FOR AUTHORISATION

In conclusion of the findings as part of the investigations, Siyazi Consulting Services Free State (Pty) Ltd is of the opinion that the proposed mining development would have a manageable impact on the relevant road network as long as the recommended mitigating measures are implemented as recommended as part of **Section 3** of this report and should thus be granted authorisation.

APPENDIX A

INFORMATION RELATED TO STATUS QUO

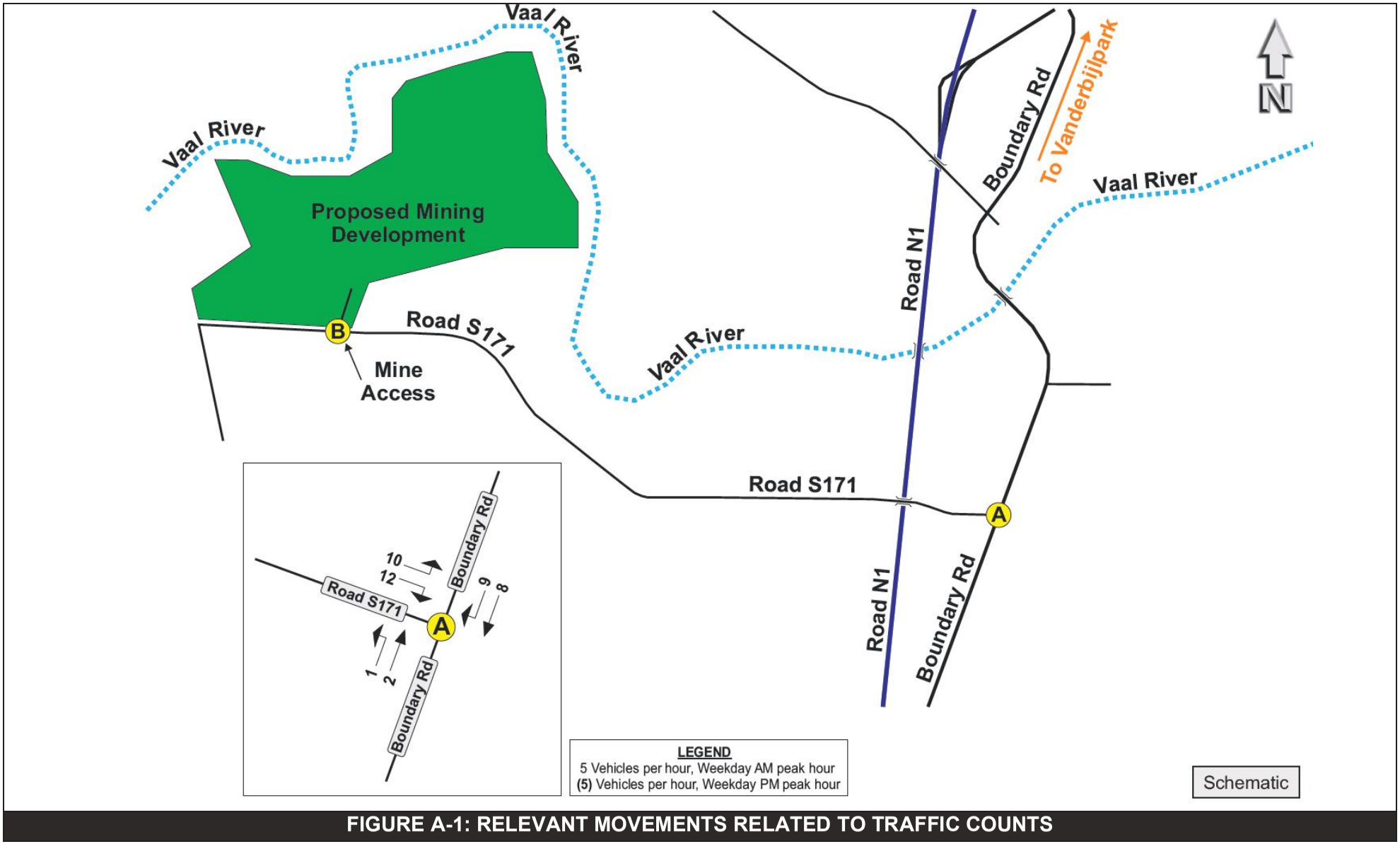


FIGURE A-1: RELEVANT MOVEMENTS RELATED TO TRAFFIC COUNTS

TABLE A-1: HOURLY TRAFFIC COUNTS FOR ALL VEHICLES SIMULTANEOUSLY AT THE INTERSECTION OF BOUNDARY ROAD AND ROAD S171 (POINT A) (02 FEBRUARY 2018)							
TIME INTERVALS	MOVEMENTS						
	1	2	8	9	10	12	TOTAL
06:00-07:00	2	26	12	10	15	2	**67**
06:15-07:15	3	31	11	12	16	3	**76**
06:30-07:30	3	27	14	16	13	3	**76**
06:45-07:45	8	24	18	17	9	3	**79**
07:00-08:00	18	17	28	18	8	3	**92**
07:15-08:15	21	8	31	14	7	2	**83**
07:30-08:30	26	6	31	9	6	2	**80**
07:45-08:45	29	2	29	9	6	1	**76**
08:00-09:00	19	3	22	7	6	1	**58**
08:15-09:15	25	2	19	8	6	1	**61**
08:30-09:30	20	2	15	10	6	2	**55**
08:45-09:45	25	4	19	9	7	2	**66**
09:00-10:00	27	4	23	12	4	2	**72**
09:15-10:15	23	5	24	12	3	2	**69**
09:30-10:30	27	5	34	12	2	1	**81**
09:45-10:45	16	3	36	11	1	2	**69**
10:00-11:00	22	3	35	8	4	1	**73**
10:15-11:15	20	4	36	13	7	1	**81**
10:30-11:30	20	3	37	12	8	2	**82**
10:45-11:45	27	5	34	12	10	1	**89**
11:00-12:00	23	4	35	13	8	1	**84**
11:15-12:15	24	2	37	10	7	1	**81**
11:30-12:30	29	3	34	13	7	0	**86**
11:45-12:45	24	1	37	15	7	0	**84**
12:00-13:00	23	2	39	16	10	0	**90**
12:15-13:15	26	3	40	13	9	1	**92**
12:30-13:30	22	2	47	15	12	2	**100**
12:45-13:45	26	2	53	14	9	4	**108**
13:00-14:00	23	4	55	15	7	4	**108**
13:15-14:15	21	3	59	15	6	4	**108**
13:30-14:30	24	7	53	16	5	3	**108**
13:45-14:45	19	9	44	15	8	2	**97**
14:00-15:00	24	7	42	16	9	2	**100**
14:15-15:15	27	10	34	16	11	1	**99**
14:30-15:30	25	6	32	16	9	4	**92**
14:45-15:45	28	5	32	20	11	3	**99**
15:00-16:00	27	6	33	16	8	3	**93**
15:15-16:15	24	4	42	19	11	3	**103**
15:30-16:30	23	4	46	13	12	2	**100**
15:45-16:45	23	3	45	11	8	2	**92**
16:00-17:00	26	1	55	14	23	4	**123**
16:15-17:15	31	3	52	13	22	7	**128**
16:30-17:30	30	4	55	15	22	5	**131**
16:45-17:45	40	4	58	19	22	5	**148**
17:00-18:00	38	5	46	17	11	5	**122**

APPENDIX B

TRIP INFORMATION RELATED TO THE EXISTING TRAFFIC

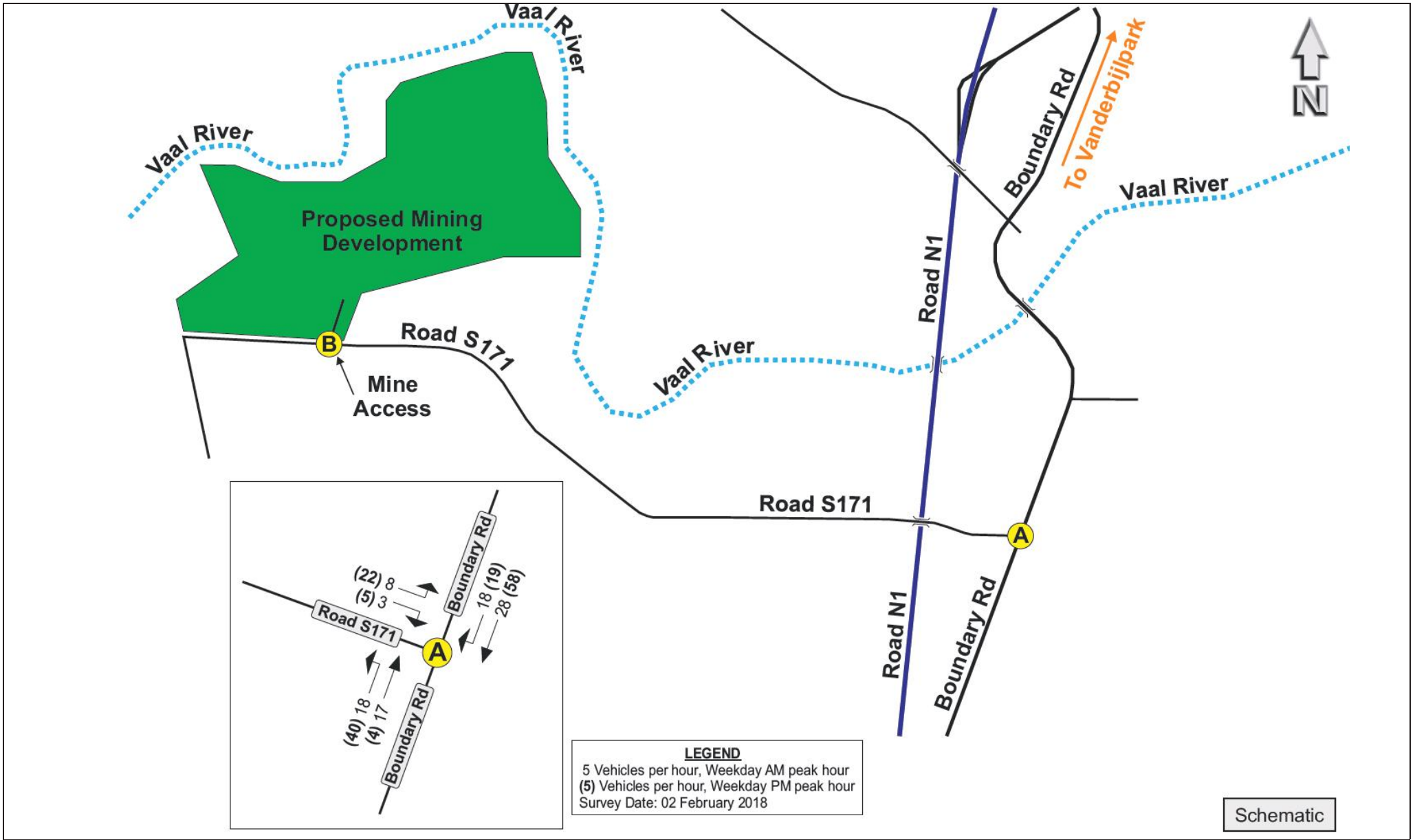


FIGURE B-1: 2018 PEAK HOUR TRAFFIC WITH BACKGROUND TRAFFIC GROWTH WITHOUT THE PROPOSED MINING DEVELOPMENT (SCENARIO 1)

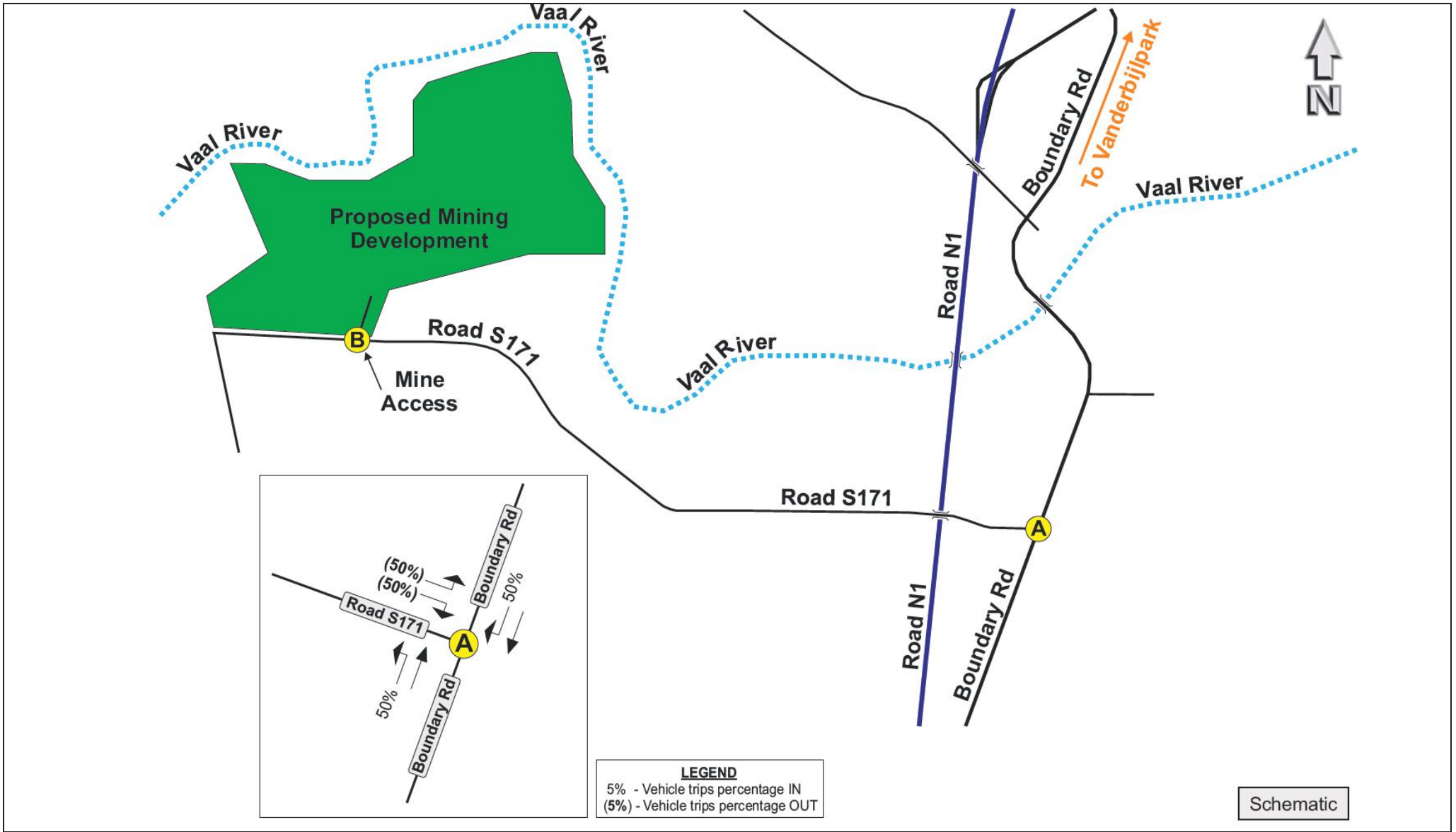


FIGURE B-2: PROJECTED VEHICLE TRIP DISTRIBUTION FOR THE PROPOSED MINING DEVELOPMENT RELEVANT TO ALL SCENARIOS (LIGHT AND HEAVY VEHICLES)

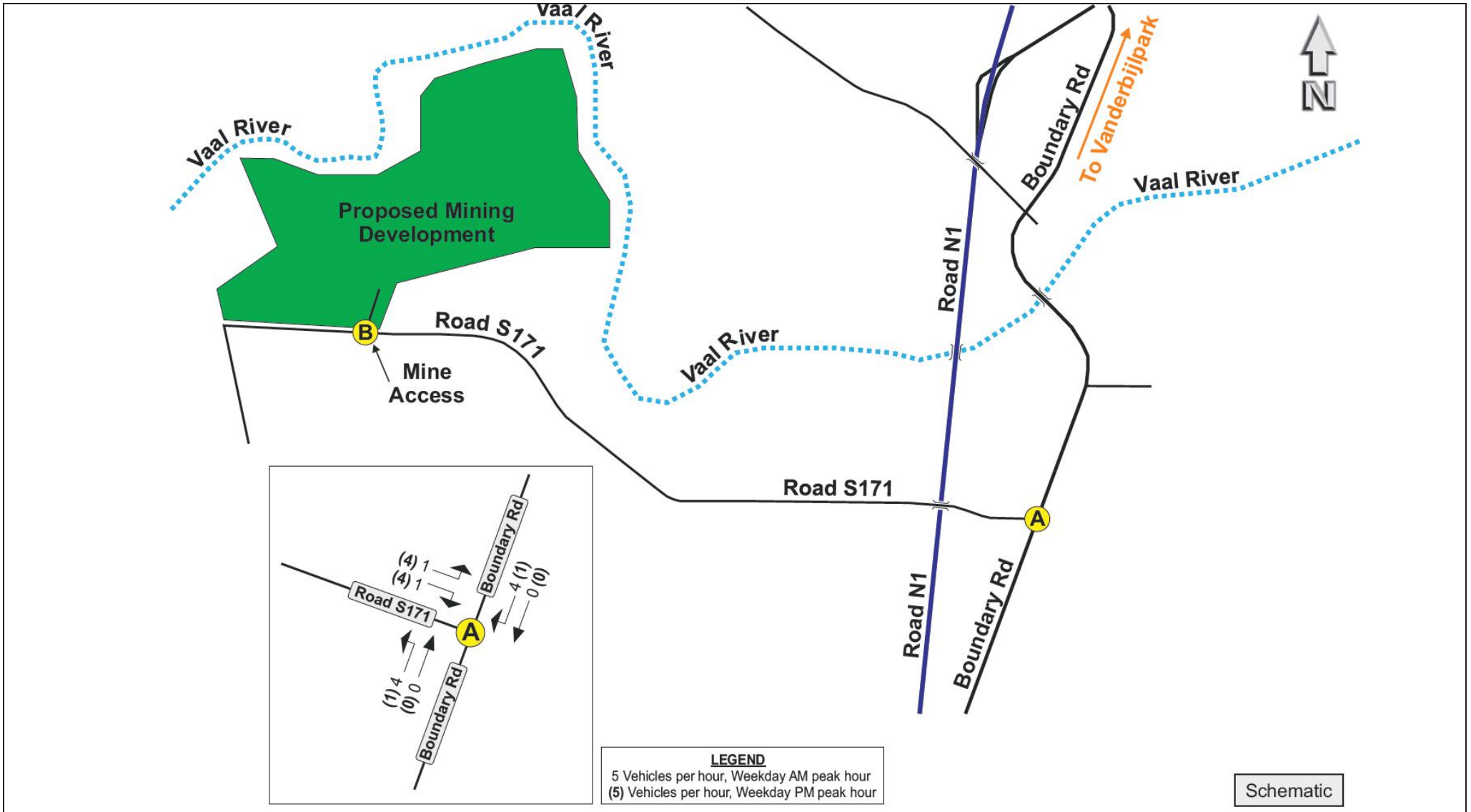


FIGURE B-3: PROJECTED VEHICLE TRIPS ANTICIPATED TO BE GENERATED BY THE PROPOSED MINING DEVELOPMENT (2018 CONSTRUCTION PHASE)

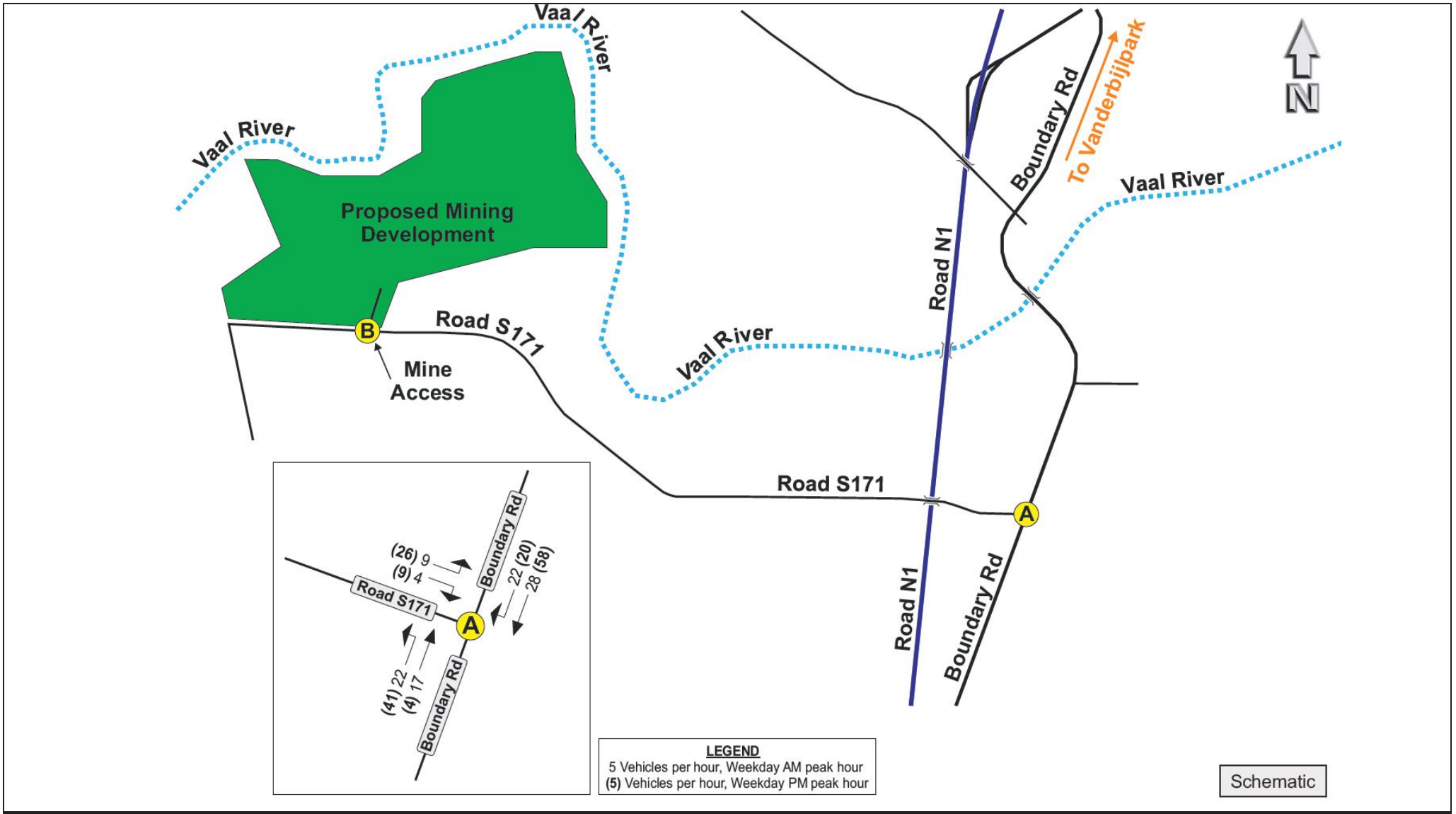


FIGURE B-4: PROJECTED 2018 PEAK HOUR TRAFFIC WITHOUT BACKGROUND TRAFFIC GROWTH WITH THE PROPOSED MINING DEVELOPMENT (CONSTRUCTION PHASE) (SCENARIO 2)

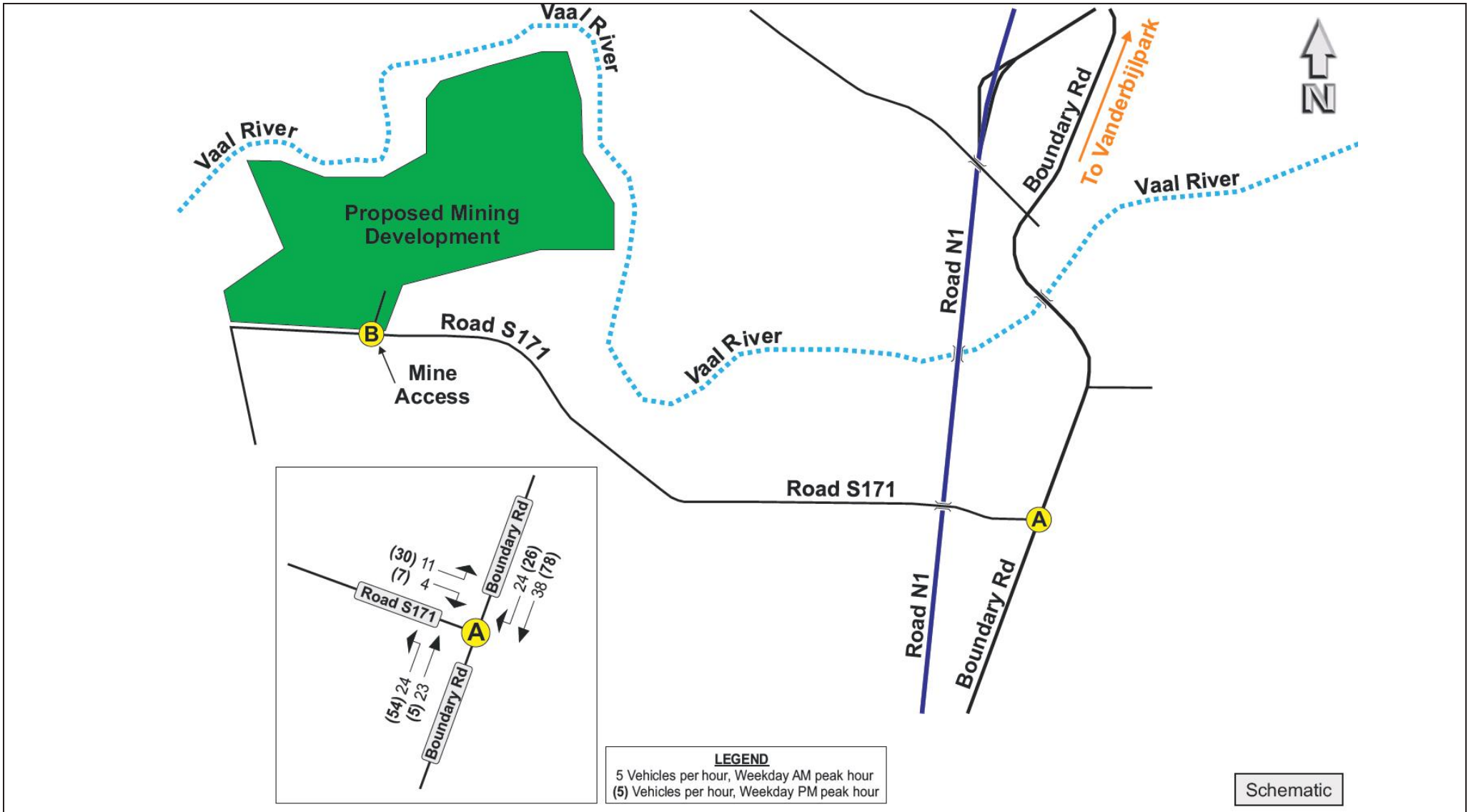


FIGURE B-5: PROJECTED 2028 PEAK HOUR TRAFFIC WITH BACKGROUND TRAFFIC GROWTH WITHOUT THE PROPOSED MINING DEVELOPMENT (SCENARIO 3)

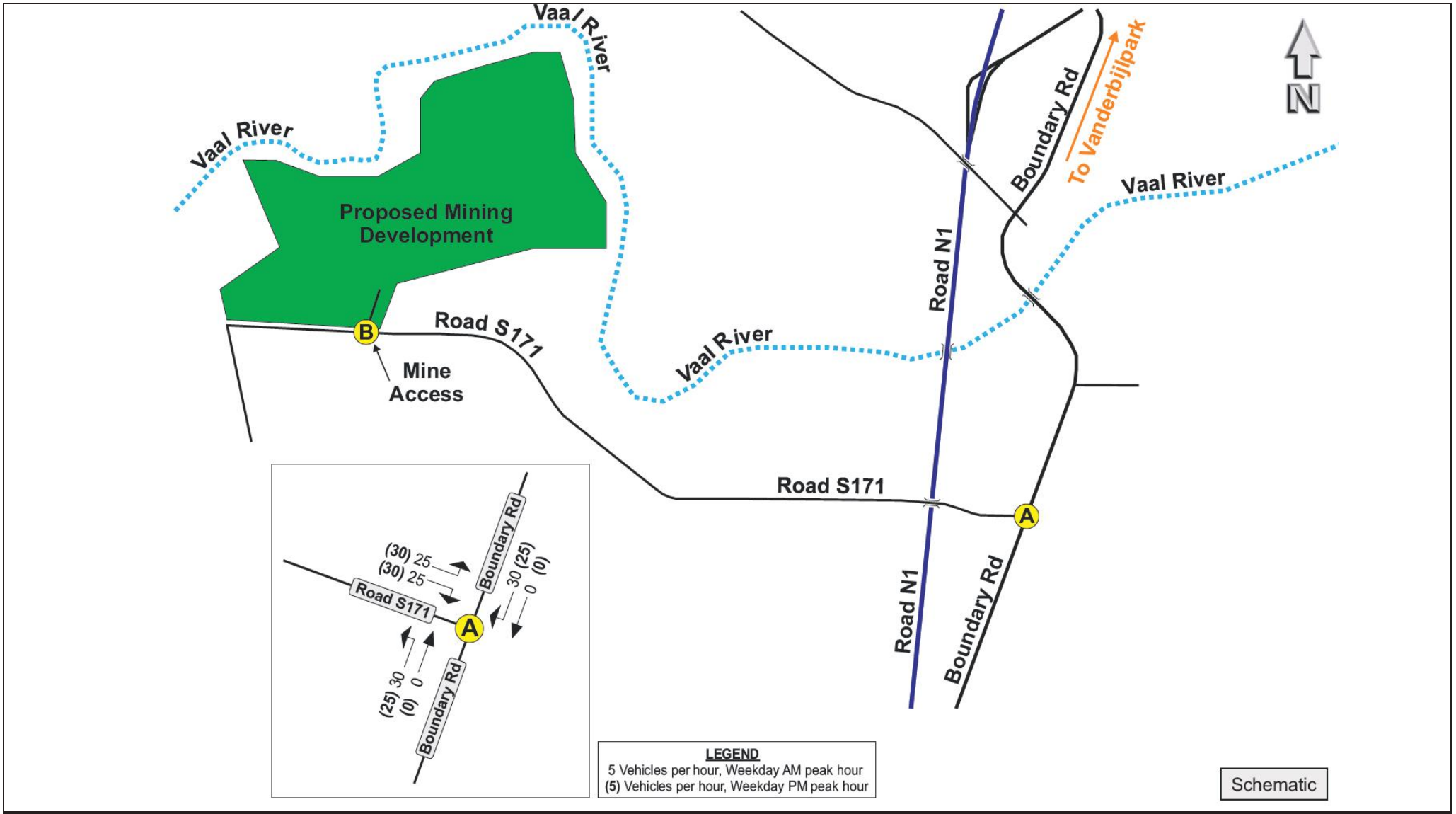


FIGURE B-6: PROJECTED VEHICLE TRIPS ANTICIPATED TO BE GENERATED BY THE PROPOSED MINING DEVELOPMENT (2028 OPERATIONAL PHASE)

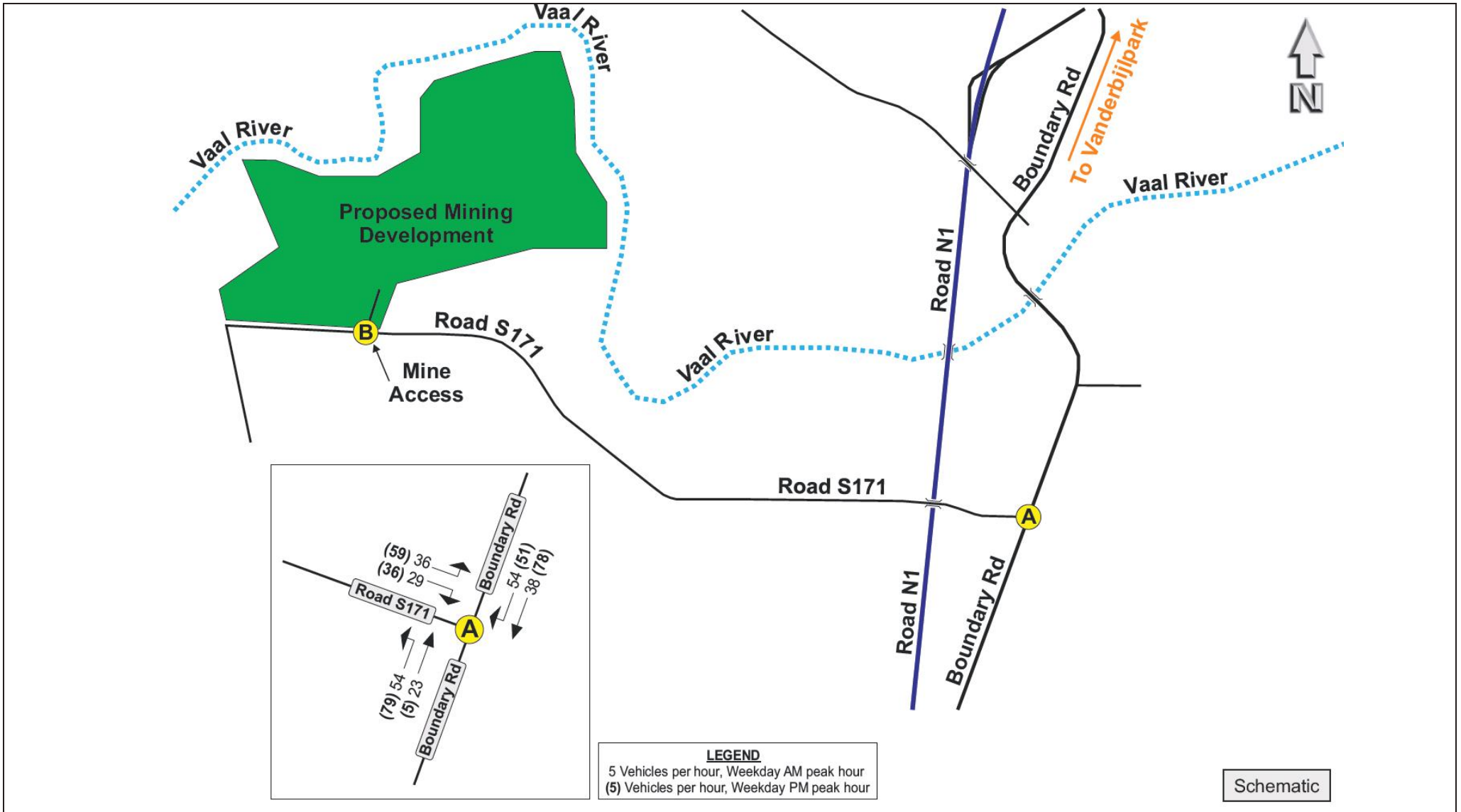


FIGURE B-7: PROJECTED 2028 PEAK HOUR TRAFFIC WITH BACKGROUND TRAFFIC GROWTH WITH THE PROPOSED MINING DEVELOPMENT (OPERATIONAL PHASE) (SCENARIO 4)

APPENDIX C

SIDRA CALCULATION RESULTS

TABLE C-1: LEVELS OF SERVICE FOR VARIOUS APPROACHES FOR THE YEAR 2018 WITHOUT BACKGROUND TRAFFIC GROWTH WITHOUT THE PROPOSED MINING DEVELOPMENT (SCENARIO 1)

POINT A: **INTERSECTION OF BOUNDARY ROAD AND ROAD S171**						
Type of intersection control: Free-flow on Boundary Road						
Existing Intersection Layout						
Levels of Service acceptable						
APPROACH	**FRIDAY (AM)**			**FRIDAY (PM)**		
	Delay	**Level of Service**	**Degree of Saturation**	**Delay**	**Level of Service**	**Degree of Saturation**
North (Boundary Rd)	2.3	A	0.035	1.5	A	0.059
South (**Road R41**)	2.9	A	0.012	5.1	A	0.029
West (Road S171)	9.0	A	0.012	8.4	A	0.029
Intersection	**3.3**	**A**	**0.035**	**3.8**	**A**	**0.059**

TABLE C-2: LEVELS OF SERVICE FOR VARIOUS APPROACHES FOR THE YEAR 2028 WITH BACKGROUND TRAFFIC GROWTH WITHOUT THE PROPOSED MINING DEVELOPMENT (SCENARIO 3)

POINT A: **INTERSECTION OF BOUNDARY ROAD AND ROAD S171**						
Type of intersection control: Free-flow on Boundary Road						
Existing Intersection Layout						
Levels of Service acceptable						
APPROACH	**FRIDAY (AM)**			**FRIDAY (PM)**		
	Delay	**Level of Service**	**Degree of Saturation**	**Delay**	**Level of Service**	**Degree of Saturation**
North (Boundary Rd)	2.3	A	0.047	1.6	A	0.080
South (**Road R41**)	2.8	A	0.016	5.1	A	0.039
West (Road S171)	9.1	A	0.016	8.5	A	0.040
Intersection	**3.3**	**A**	**0.047**	**3.9**	**A**	**0.080**

TABLE C-3: LEVELS OF SERVICE FOR VARIOUS APPROACHES FOR THE YEAR 2018 WITHOUT BACKGROUND TRAFFIC GROWTH WITH THE PROPOSED MINING DEVELOPMENT (SCENARIO 2)						
POINT A: **INTERSECTION OF BOUNDARY ROAD AND ROAD S171**						
Type of intersection control: Free-flow on Boundary Road						
Recommended Intersection Layout						
Levels of Service acceptable						
APPROACH	**FRIDAY (AM)**			**FRIDAY (PM)**		
	Delay	**Level of Service**	**Degree of Saturation**	**Delay**	**Level of Service**	**Degree of Saturation**
North (Boundary Rd)	2.5	A	0.021	1.5	A	0.039
South (**Road R41**)	3.1	A	0.015	5.1	A	0.029
West (Road S171)	9.0	A	0.017	8.6	A	0.045
Intersection	**3.6**	**A**	**0.021**	**4.1**	**A**	**0.045**

TABLE C-4: LEVELS OF SERVICE FOR VARIOUS APPROACHES FOR THE YEAR 2028 WITH BACKGROUND TRAFFIC GROWTH WITH THE PROPOSED MINING DEVELOPMENT (SCENARIO 4)						
POINT A: **INTERSECTION OF BOUNDARY ROAD AND ROAD S171**						
Type of intersection control: Free-flow on Boundary Road						
Recommended Intersection Layout						
Levels of Service acceptable						
APPROACH	**FRIDAY (AM)**			**FRIDAY (PM)**		
	Delay	**Level of Service**	**Degree of Saturation**	**Delay**	**Level of Service**	**Degree of Saturation**
North (Boundary Rd)	3.5	A	0.053	2.4	A	0.054
South (**Road R41**)	3.9	A	0.036	5.2	A	0.057
West (Road S171)	9.3	A	0.090	9.3	A	0.140
Intersection	**5.2**	**A**	**0.090**	**5.3**	**A**	**0.140**

APPENDIX D

LEVEL OF SERVICE CRITERIA DESCRIPTION

TABLE D-1: LEVEL OF SERVICE CRITERIA DESCRIPTION FOR UNSIGNALISED INTERSECTIONS		
LEVEL OF SERVICE	**AVERAGE TOTAL DELAY (SEC/VEH)**	**PERFORMANCE EVALUATION**
A	≤ 5	Excellent
B	> 5 and ≤ 10	Very Good
C	>10 and ≤ 20	Good
D	>20 and ≤ 30	Average
E	>30 and ≤ 45	Poor
F	>45	Fail

TABLE D-2: LEVEL OF SERVICE CRITERIA DESCRIPTION FOR SIGNALISED INTERSECTIONS		
LEVEL OF SERVICE	**AVERAGE TOTAL DELAY (SEC/VEH)**	**PERFORMANCE EVALUATION**
A	≤ 5	Excellent
B	> 5 and ≤ 15	Very Good
C	> 15 and ≤ 25	Good
D	> 25 and ≤ 40	Average
E	> 40 and ≤ 60	Poor
F	> 60	Fail

Level of Service criteria obtained from *The Highway Capacity Manual (Special Report 2009)*

APPENDIX E

SUMMARY OF IMPACT RATINGS

TABLE E-1: IMPACT RATING DUE TO THE PROPOSED MINING DEVELOPMENT (OPERATIONAL PHASE)																
OPERATIONAL PHASE																
RECEPTOR	ACTIVITY		IMPACT	BEFORE MITIGATION						AFTER MITIGATION						Comments and Mitigation Measures
				Intensity	Duration	Spatial Scale	Consequence	Probability	Significance	Intensity	Duration	Spatial Scale	Consequence	Probability	Significance	
Road and Traffic	Mining Activities	Road Capacity	1. Relevant road sections (reconstructing/repairing of roads)	*H*	*H*	*M*	*High*	*H*	*High*	*H+*	*H*	*M*	*High+*	*H*	*High+*	See **Section 2.7** of the report, **Table 2.9** *(Road maintenance plan recommended)*
			2. Relevant intersections (need for additional lanes)	*L*	*H*	*M*	*Med*	*M*	*Med*	*L*	*H*	*M*	*Med*	*M*	*Med*	No additional lanes required due to the proposed mining development.
		Road Safety Issues	3. Intersection (access) spacing (Proposed Access Road)	*VL*	*H*	*M*	*Med*	*H*	*High*	*VL*	*H*	*M*	*Med*	*H*	*High*	*See **Section 2.7** of the report. Intersection spacing is deemed to be acceptable.*
			4. Vertical road alignment at proposed access intersection	*VL*	*H*	*M*	*Med*	*H*	*High*	*VL*	*H*	*M*	*Med*	*H*	*High*	*No problems envisaged with regards to vertical road alignment. No change in impact rating due to the proposed mining development.*
			5. Available sight distance at proposed access intersection	*VL*	*H*	*M*	*Med*	*H*	*High*	*VL*	*H*	*M*	*Med*	*H*	*High*	*Sight distance for proposed access intersection deemed acceptable.*
			6. Speed limit at proposed access intersection	*VL*	*H*	*M*	*Med*	*H*	*High*	*VL*	*H*	*M*	*Med*	*H*	*High*	*Speed limit at proposed access intersection deemed acceptable at 80km/h.*
			7. Relevant intersections (need for dedicated left- and right-turn lanes, **proposed access intersection**)	*H*	*H*	*M*	*High*	*M*	*High*	*H+*	*H*	*M*	*High+*	*M*	*High+*	*Dedicated right-turn lanes recommended at Points A and B.*
			8. Pedestrian movements (with reference to access roads and access intersections)	*VL*	*H*	*M*	*Med*	*H*	*High*	*VL*	*H*	*M*	*Med*	*H*	*High*	*See **Items 4** of **Table 2.9.** Pedestrian movement around intersections not envisaged.*
			9. Public transport loading and off-loading	*VL*	*H*	*M*	*Med*	*H*	*High*	*VL*	*H*	*M*	*Med*	*H*	*High*	*See **Items 5** of **Table 2.9.** Workers not making use of transport are proposed to be transported by small busses from and to site.*

APPENDIX F

IMPACT RATINGS CRITERIA

TABLE F-1: CRITERIA USED IN THE ASSESSMENT OF IMPACTS		
PART A: DEFINITION AND CRITERIA*		
Definition of SIGNIFICANCE		**Significance = consequence x probability**
Definition of CONSEQUENCE		**Consequence is a function of intensity, spatial extent and duration**
Criteria for ranking of the INTENSITY of environmental impacts	**VH**	Severe change, disturbance or degradation. Associated with severe consequences. May result in severe illness, injury or death. Targets, limits and thresholds of concern continually exceeded. Substantial intervention will be required. Vigorous/widespread community mobilization against project can be expected. May result in legal action if impact occurs.
	H	Prominent change, disturbance or degradation. Associated with real and substantial consequences. May result in illness or injury. Targets, limits and thresholds of concern regularly exceeded. Will definitely require intervention. Threats of community action. Regular complaints can be expected when the impact takes place.
	M	Moderate change, disturbance or discomfort. Associated with real but not substantial consequences. Targets, limits and thresholds of concern may occasionally be exceeded. Likely to require some intervention. Occasional complaints can be expected.
	L	Minor (Slight) change, disturbance or nuisance. Associated with minor consequences or deterioration. Targets, limits and thresholds of concern rarely exceeded. Require only minor interventions or clean-up actions. Sporadic complaints could be expected.
	VL	Negligible change, disturbance or nuisance. Associated with very minor consequences or deterioration. Targets, limits and thresholds of concern never exceeded. No interventions or clean-up actions required. No complaints anticipated.
	VL+	Negligible change or improvement. Almost no benefits. Change not measurable/will remain in the current range.
	L+	Minor change or improvement. Minor benefits. Change not measurable/will remain in the current range. Few people will experience benefits.
	M+	Moderate change or improvement. Real but not substantial benefits. Will be within or marginally better than the current conditions. Small number of people will experience benefits.
	H+	Prominent change or improvement. Real and substantial benefits. Will be better than current conditions. Many people will experience benefits. General community support.
	VH+	Substantial, large-scale change or improvement. Considerable and widespread benefit. Will be much better than the current conditions. Favourable publicity and/or widespread support expected.
Criteria for ranking the DURATION of impacts	**VL**	Very short, always less than a year.
	L	Short-term, occurs for more than 1 but less than 5 years.
	M	Medium-term, 5 to 10 years.
	H	Long term, between 10 and 20 years. (Likely to cease at the end of the operational life of the activity)
	VH	Very long, permanent, +20 years (Irreversible. Beyond closure)
Criteria for ranking the EXTENT of impacts	**VL**	A portion of the site.
	L	Whole site.
	M	Beyond the site boundary, affecting immediate neighbours
	H	Local area, extending far beyond site boundary.
	VH	Regional/National

***VH = very high, H = high, M= medium, L= low and VL= very low and + denotes a positive impact.**

TABLE F-1: CRITERIA USED IN THE ASSESSMENT OF IMPACTS							
PART B: DETERMINING CONSEQUENCE							
SEVERITY = VL							
DURATION	Very long	VH	Medium	Medium	Medium	High	High
	Long term	H	Low	Medium	Medium	Medium	High
	Medium term	M	Low	Low	Medium	Medium	Medium
	Short term	L	Very low	Low	Low	Medium	Medium
	Very short	VL	Very low	Low	Low	Low	Medium
SEVERITY = L							
DURATION	Very long	VH	Medium	Medium	High	High	High
	Long term	H	Medium	Medium	Medium	High	High
	Medium term	M	Low	Medium	Medium	Medium	High
	Short term	L	Low	Low	Medium	Medium	Medium
	Very short	VL	Very low	Low	Low	Medium	Medium
SEVERITY = M							
DURATION	Very long	VH	Medium	High	High	High	Very High
	Long term	H	Medium	Medium	High	High	High
	Medium term	M	Medium	Medium	Medium	High	High
	Short term	L	Low	Medium	Medium	Medium	High
	Very short	VL	Very low	Low	Medium	Medium	Medium
SEVERITY = H							
DURATION	Very long	VH	High	High	High	Very High	Very High
	Long term	H	Medium	High	High	High	Very High
	Medium term	M	Medium	Medium	High	High	High
	Short term	L	Medium	Medium	Medium	High	High
	Very short	VL	Low	Medium	Medium	Medium	High
SEVERITY = VH							
DURATION	Very long	VH	High	High	Very High	Very High	Very High
	Long term	H	High	High	High	Very High	Very High
	Medium term	M	Medium	High	High	High	Very High
	Short term	L	Medium	Medium	High	High	High
	Very short	VL	Low	Medium	Medium	High	High
			VL	L	M	H	VH
			A portion of the site	Whole site	Beyond the site boundary, affecting immediate neighbours	Local area, extending far beyond site boundary.	Regional/ National
			EXTENT				

***VH = very high, H = high, M= medium, L= low and VL= very low and + denotes a positive impact.**

TABLE F-1: CRITERIA USED IN THE ASSESSMENT OF IMPACTS							
PART C: DETERMINING SIGNIFICANCE							
PROBABILITY (of exposure to impacts)	Definite/ Continuous	**VH**	Medium	High	High	Very High	Very High
	Probable	**H**	Medium	Medium	High	High	Very High
	Possible/ frequent	**M**	Low	Medium	Medium	High	High
	Conceivable	**L**	Low	Low	Medium	Medium	High
	Unlikely/ improbable	**VL**	Very low	Low	Low	Medium	Medium
			VL	**L**	**M**	**H**	**VH**
			CONSEQUENCE				

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	**Decision guideline**
Very High	Potential fatal flaw unless mitigated to lower significance.
High	It must have an influence on the decision. Substantial mitigation will be required.
Medium	It should have an influence on the decision. Mitigation will be required.
Low	Unlikely that it will have a real influence on the decision. Limited mitigation is likely to be required.
Very Low	It will not have an influence on the decision. Does not require any mitigation

***VH = very high, H = high, M= medium, L= low and VL= very low and + denotes a positive impact.**

APPENDIX G

COMMENTS BY INTERESTED AND AFFECTED PARTIES

I&AP	Method	Date	Issue	Response
Athos Phytides	E-mail	12 November 2018	Good day My name is Athos Phytides Contact Details : 083 629 7065 REF: FS 30/5/1/2/2/10048 MR My concern is the quality of the road and the amount of trucks on the road and the water table. Hope to hear from you soon Kind Regards Athos Phytides	Dear Athos, Thank you for your mail. Based on the Traffic Impact Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface of S171 is in a poor condition with multiple potholes. In order to avoid further deterioration of this road, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. According to the Traffic Impact Assessment, it is expected that the proposed activities will have a manageable impact on traffic during all phases of the project, provided that road infrastructure improvements are implemented to mitigate the impact of the proposed land development area. Groundwater studies are still on-going. However, impacts on the water table could be associated with mine dewatering and water supply from groundwater resources. Both these impacts will be properly assessed and quantified during the EIA phase of the project. • Mine dewatering - The process by which water is removed due to the mining process. The proposed mining is shallow (i.e. less than 20 m deep). The recorded water levels in the area are also shallow and interception of groundwater is likely. The water should be managed according to the National Environmental Management Act (NEMA) Requirements i.e. closed system separating contact with non-contact water. The drawdown of the water will be monitored with regional monitoring boreholes to correctly measure any potential impact and

I&AP	Method	Date	Issue	Response
				mitigate accordingly. • Water supply - This is currently on-going and additional studies are required to properly assess the impact on the local groundwater regime should groundwater be used and licensed for water supply. Should you have any further questions in this regard, please do not hesitate to contact me.
Simone Santana/ Allan Santana	E-mail	09 November 2018	To Whom It May Concern: We would like to raise our objection, as owners of Plot 2, Pont de Val, Vaal Eden, Parys district, to the intention of Pure Source Mining Operations – owned by the Applicant Monte Cristo Commercial Park (Pty) Ltd – to the application for open cast mining which involves open pits and associated mining infrastructure. The objection raised by us should be noted on the following grounds: 1. Our property's main purpose is our second dwelling out of Johannesburg to enjoy quiet family time. During our 10 years on our portion of the farm, we have enjoyed our solitude, peace, quiet and nature of the remote location. The remoteness from towns was a prime decision for our investment because we wanted a weekend and holiday escape. a. We are deeply concerned for the safety of our property which is mostly unoccupied during the week, we are as concerned for our safety for when our children and us are alone on the property during the times of occupancy. With the stated increase	Dear Simone, Please see our responses in red. To Whom It May Concern: We would like to raise our objection, as owners of Plot 2, Pont de Val, Vaal Eden, Parys district, to the intention of Pure Source Mining Operations – owned by the Applicant Monte Cristo Commercial Park (Pty) Ltd – to the application for open cast mining which involves open pits and associated mining infrastructure. Your objection to the proposed Pure Source Mine is noted. The objection raised by us should be noted on the following grounds: 1. Our property's main purpose is our second dwelling out of Johannesburg to enjoy quiet family time. During our 10 years on our portion of the farm, we have enjoyed our solitude, peace, quiet and nature of the remote location. The remoteness from towns was a prime decision for our investment because we wanted a weekend and holiday escape. a. We are deeply concerned for the safety of our property which is mostly unoccupied during the week; we are as concerned for our safety for when our children and us are alone on the property during the times of occupancy. With the stated increase in temporary and permanent staff

I&AP	Method	Date	Issue	Response
			in temporary and permanent staff needing accommodation on the proposed farm, this would significantly expose our quiet location for unintended associates within your staffing commune. You therefor CANNOT guarantee the safety of our property, staff or family. b. The associated noise pollution that will be part of the mining operation would be unacceptable. Based on previous experience, your own clearing and machinery in preparation of the site (which has started) has continued till late at night and over weekends. This may or may not be with your consent – however we have witnessed this to be the case. c. The natural environment i.e. bird life, mammal and reptile species have already been impacted by the current mining operations and will continue to dwindle and eradicated with continued mining activity. 2. Water supply – a. Our main water supply is from our borehole which has been tested and is of the cleanest and purest quality. Our main concern is the impact on our water source that over time – will contaminate this water source. b. The natural runoff of mining activity and any additional contamination by other sources such as effluent into the Vaal river is also of grave concern. The Vaal river is a key water resource and with the high consumption of	needing accommodation on the proposed farm, this would significantly expose our quiet location for unintended associates within your staffing commune. You therefor CANNOT guarantee the safety of our property, staff or family. Noted. Based on the Socio-Economic Impact Assessment, it is understood that an influx of workers and jobseekers to an area (whether locals are employed, or outsiders are employed) could increase the safety risks in the local area and have an impact on the local social dynamics. Where possible, the Applicant will source local labour within the surrounding townships. As such, there won't be a need for labourers to relocate to site. Labourers will be transported to and from site on a daily basis. Should locals be employed, it could minimise the perceived and actual risk in this regard. According to the Social and Labour Plan, Pure Source Mine will facilitate suitable employee accommodation that will allow employees to reside in a stable, healthy and secure environment within commuting distance from their place of work. b. The associated noise pollution that will be part of the mining operation would be unacceptable. Based on previous experience, your own clearing and machinery in preparation of the site (which has started) has continued till late at night and over weekends. This may or may not be with your consent – however we have witnessed this to be the case. According to the Noise Baseline Assessment, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. The following mitigation measures have been recommended in order to minimise noise impacts: • Maintain vehicles and equipment in good working order.

I&AP	Method	Date	Issue	Response
			water required for your mining activity – we are completely opposed to pumping from or into the river system which is inevitable despite many assurances that this would not be the case 3. The road usage – a. The current road infrastructure of the main road S171 is in complete disrepair due to the amount of heavy-duty trucks. The road is simply not suitable for the heavy equipment and heavily loaded vehicles – it is a rural road designed for minimal traffic and certainly not for the loaded capacity of trucks that will constantly be on this road. b. It is also our concern that the unsafe driving practices of your trucks will still cause a fatality – will this only be the point at which local government/department of mineral resources steps in?? When one of our communities has borne the brunt of greed? We request that this process be completely halted and that our rights as owners and peace-loving community members be put first. Regards, Simone and Allan Santana	• Provide noise berms where possible between activities and receptors. • Conduct noise monitoring in response to noise complaints. No mining operations are currently taking place as the Applicant is still in the process of applying for a Mining Right. Rehabilitation of the previously mined areas (under mining permits) is currently underway. The planned working hours for the proposed Pure Source Mine are as follows: • For mining activities, a 5.5 day work week with a 2 shift system is proposed. Operating hours would be from 06:00 to 18:00. For diamond sorting, a 6 day work week with a 2 shift system, operating 24 hours a day. However, the 24 hour shift for diamond sorting will be reconsidered during the Environmental Impact Assessment (EIA) phase. c. The natural environment i.e. bird life, mammal and reptile species have already been impacted by the current mining operations and will continue to dwindle and eradicated with continued mining activity. Your comment is noted. Based on the terrestrial biodiversity assessment undertaken in support of this application, open pit mining and site clearance for infrastructure and associated access roads may result in the loss of habitat for species of conservation concern as well as the displacement, direct mortalities and disturbance of the faunal community. The biodiversity specialist has recommended mitigation measures to minimise impacts on fauna, which include, but a not limited to, (i) avoiding high biodiversity sensitivity areas and complying with prescribed buffer zones as well as (ii) implementing training to ensure that all stuff are aware of faunal sensitivity. 2. Water supply –

I&AP	Method	Date	Issue	Response
				a. Our main water supply is from our borehole which has been tested and is of the cleanest and purest quality. Our main concern is the impact on our water source that over time – will contaminate this water source. Noted. According to the Groundwater assessment, potential impacts on groundwater anticipated during the operational phase include (i) a decline in water quality due to excavation of the sand and the wash plant facility as well as (ii) potential contamination of aquifers as a result of hydrocarbon spillage. The groundwater sampled on-site currently shows no negative impacts associated with the historical mining activities on the Farm Goosebay or at the neighbouring sand mine operations. b. The natural runoff of mining activity and any additional contamination by other sources such as effluent into the Vaal River is also of grave concern. The Vaal river is a key water resource and with the high consumption of water required for your mining activity – we are completely opposed to pumping from or into the river system which is inevitable despite many assurances that this would not be the case Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. No untreated waste water and/or effluent will be discharged into the Vaal River as it will be managed in a closed system wherein contact water will be separated from non-contact water as per the Requirements of the National Environmental Management Act (NEMA). Water utilised during the sand washing process will be recycled back to the wash plant for re-use. 3. The road usage – a. The current road infrastructure of the main road S171 is in complete disrepair due to the amount of heavy-duty trucks. The road is simply not suitable

I&AP	Method	Date	Issue	Response
				for the heavy equipment and heavily loaded vehicles – it is a rural road designed for minimal traffic and certainly not for the loaded capacity of trucks that will constantly be on this road. Based on the Traffic Impact Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface of S171 is in a poor condition with multiple potholes. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. In order to avoid further deterioration, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. b. It is also our concern that the unsafe driving practices of your trucks will still cause a fatality – will this only be the point at which local government/department of mineral resources steps in?? When one of our communities has borne the brunt of greed? Your concern is duly noted. The following mitigation measures have been recommended in order to ensure road safety: • Construct safe access points/intersections. • Educate employees (temporary and permanent) about road safety. • Enforce strict vehicle speeds. • If a person or animal is injured by traffic activities, an emergency response procedure must be

I&AP	Method	Date	Issue	Response
				implemented. We request that this process be completely halted and that our rights as owners and peace-loving community members be put first. Your request is noted and will be included in the Issues and Responses Report to be submitted to the Competent Authority for their decision-making. Should you have any further questions in this regard, please do not hesitate to contact me.
Rudolff Wilhelm Hendrik Gersteling	E-mail	08 November 2018	Mr Gersteling completed the I&AP registration form and provided the following comments: • Mining should not take place. • I stay permanently at 228 farm de Pont which is less than 2 km from Goose Bay. • Communities which exist within the application area include the following residential owners: Mr and Mrs Burger farm de Pont 228 subdivision 15, Mar and Mrs Phytides farm de Pont 228 subdivision 1, Mr and Mrs Santana farm de Pont 228 subdivision 2, Mr and Mrs Hannekom Vaal Eden. • Not aware of any tribal authorities within, or affected by, the proposed project. Although Goose Bay is situated in the Vredefort Dome and the Vredefort Dome forms part of one of the top heritage sites in the world. • Other I&APs who need to be notified include Department of Environmental Affairs, Wildlife Trust, www.fauna-flora.org, www.conseevationconnected.co.za.	Good day, Thank you for your mail and for completing the Interested and Affected Party registration forms. Your comments and objection to the above mentioned project are duly noted. According to the specialist studies undertaken in support of this application, the proposed application area does not overlap with, nor will it impact upon any formally protected area. We are required by the relevant legislation to maintain a 5 km buffer from protected areas. The edge of the crater of the Vredefort Dome, a UNESCO World Heritage Site, is ~8 km to the south-west of the site. As such, the Vredefort Dome will not be impacted upon by the proposed mining activities. Ambient particulate and gaseous concentrations resulting from mining operations will be assessed in the air quality assessment during the Environmental Impact Assessment (EIA) phase of the project, in order to determine their impact on human health. Your concerns regarding road safety and the poor state of the roads are noted. Based on the Traffic Impact Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface

I&AP	Method	Date	Issue	Response
			• More than 200 species of birdlife is found in this area. In addition, a huge variety of reptiles are also present. More than 50 species of small mammals live in this habitat. Majority of these birds and animals stay in their territory. Farmers farm with mielies, cattle and sheep. • The properties 228 farm de Pont subdivisions 5 and 6 are for sale. • This land is part of a heritage site (Vredefort Dome). • Microscopic organisms, animals and birds live in the environment of Goose Bay and surrounds. In terms of socio-economics, this environment is for agricultural purposes and not mining. • Any activity of mining should not take place. • Nature is destroyed. Mining will carry on for 30 years. When winds blow, dust coming from the mines will result in risks on human health. Our children cannot enjoy riding bicycles because of dangerous trucks on the public road. • I made a choice by buying land at 228 farm de Pont subdivision 3 to give my family a different kind of life. They have the opportunity to enjoy the country/farm life and nature. I have also offered my life to build a house and develop my land as an investment. Currently with all the mining activities taking place, the lives of my family have changed. The noise	of S171 is in a poor condition with multiple potholes. In order to avoid further deterioration of this road, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. The following mitigation measures have been recommended to ensure road safety: ✓ Construct safe access points/intersections. ✓ Educate employees (temporary and permanent) about road safety. ✓ Enforce strict vehicle speeds. ✓ If a person or animal is injured by traffic activities, an emergency response procedure must be implemented. Based on the Noise Impact Assessment, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures have been recommended to reduce noise impacts relating to this project. The planned working hours for the proposed Pure Source Mine are as follows: ✓ For mining activities, a 5.5 day work week with a 2 shift system is proposed. Operating hours would be from 06:00 to 18:00. For diamond sorting, a 6 day work week with a 2 shift system, operating 24 hours a day. However, the 24 hour shift for diamond sorting will be reconsidered during the EIA phase. The Terrestrial Biodiversity Assessment identified the potential loss of habitat for Species of Conservation Concern (SCC) (based on the National Biodiversity Areas Plan) and the loss of areas of high biodiversity (based on the Free

I&AP	Method	Date	Issue	Response
			coming from the mines is very loud. We no longer see the animals and birds that lived in this habitat. The windy storms we often experience are terrible. We stay in a cloud of dust and this has an influence on our health. • The trucks using the road pose a danger to all road users as they drive fast and do not adhere to road rules. My family and I do not feel safe living near the mines.	State Critical Biodiversity Areas Plan). Further investigations will be made during the EIA phase. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality impacts. In addition, mitigation measures such as dust suppression have been proposed to minimise dust emission. Should you have any further concerns or questions in this regard, please do not hesitate to contact me.
Madelein Gersteling	E-mail	08 November 2018	Mrs Gersteling completed the I&AP registration form and provided the following comments: • Mining should not take place. • I stay with my husband and daughter on 228 farm de Pont subdivision 5. The deed is in my husband's name. • There are five families staying on the farm de Pont. Some only come on weekends. The Gerstelings and Burgers stay permanently. • Other I&APs who need to be notified are Greenpeace SA and the Department of Environmental Affairs. • The receiving environment comprises crop and livestock farming. When we bought our land it was agricultural land. • There is a heritage site within the project surrounds (one of the top heritage sites in the world) – the	Good day, Thank you for your mail and for completing the Interested and Affected Party registration forms. Your comments and objection to the above mentioned project are duly noted. According to the specialist studies undertaken in support of this application, the proposed application area does not overlap with, nor will it impact upon any formally protected area. We are required by the relevant legislation to maintain a 5 km buffer from protected areas. The edge of the crater of the Vredefort Dome, a UNESCO World Heritage Site, is ~8 km to the south-west of the site. As such, the Vredefort Dome will not be impacted upon by the proposed mining activities. Ambient particulate and gaseous concentrations resulting from mining operations will be assessed in the air quality assessment during the Environmental Impact Assessment (EIA) phase of the project, in order to determine their impact on human health. Your concerns regarding road safety and the poor state of the roads are noted. Based on the Traffic Impact

I&AP	Method	Date	Issue	Response
			Vredefort Dome. • Wildlife is a huge concern. Many species of wildlife live in their habitat. The land is proclaimed for agricultural purposes and not for mining. • The activities that go with mining are problematic – conservation of nature is destroyed. Sand poses a risk to human health on windy days. The trucks on the road destroy the road and pose a danger to all road users. • This activity of mining will destroy God's beautiful nature. All wildlife will disappear with time. 30 years is a very long time. I do not feel safe living here anymore and definitely fight a constant battle that mining should not take place in this environment.	Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface of S171 is in a poor condition with multiple potholes. In order to avoid further deterioration of this road, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. The following mitigation measures have been recommended to ensure road safety: ✓ Construct safe access points/intersections. ✓ Educate employees (temporary and permanent) about road safety. ✓ Enforce strict vehicle speeds. ✓ If a person or animal is injured by traffic activities, an emergency response procedure must be implemented. Based on the Noise Impact Assessment, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures have been recommended to reduce noise impacts relating to this project. The planned working hours for the proposed Pure Source Mine are as follows: ✓ For mining activities, a 5.5 day work week with a 2 shift system is proposed. Operating hours would be from 06:00 to 18:00. For diamond sorting, a 6 day work week with a 2 shift system, operating 24 hours a day. However, the 24 hour shift for diamond sorting will be reconsidered during the

I&AP	Method	Date	Issue	Response
				EIA phase. The Terrestrial Biodiversity Assessment identified the potential loss of habitat for Species of Conservation Concern (SCC) (based on the National Biodiversity Areas Plan) and the loss of areas of high biodiversity (based on the Free State Critical Biodiversity Areas Plan). Further investigations will be made during the EIA phase. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality impacts. In addition, mitigation measures such as dust suppression have been proposed to minimise dust emission. Should you have any further concerns or questions in this regard, please do not hesitate to contact me.
Inneke Gersteling	E-mail	08 November 2018	Inneke completed the I&AP registration form and provided the following comments: • Mining should not take place. • I am 18 years old and stay with my mom and dad. • There are a number of families with their employees that stay on the land. • Another I&AP that needs to be notified in the Department of Environmental Affairs. • The receiving environment comprises crop and livestock farming as well as horse farming. • We stay in a heritage site called the	Good day, Thank you for your mail and for completing the Interested and Affected Party registration forms. Your comments and objection to the above mentioned project are duly noted. According to the specialist studies undertaken in support of this application, the proposed application area does not overlap with, nor will it impact upon any formally protected area. We are required by the relevant legislation to maintain a 5 km buffer from protected areas. The edge of the crater of the Vredefort Dome, a UNESCO World Heritage Site, is ~8 km to the south-west of the site. As such, the Vredefort Dome will not be impacted upon by the proposed mining activities. Ambient particulate and gaseous concentrations resulting from mining operations will be assessed in the air quality

I&AP	Method	Date	Issue	Response
			Vredefort Dome. • I am very concerned for the wildlife. My dad and I are very involved with the wildlife that is found here. • I see less and less wild animals. I do not hear the fish eagles anymore. The noise levels are high and I cannot breathe when the wind blows. • I am scared to stay here. I cannot ride my horses if a mine is opening up again. My horses get scared of the trucks passing along the road. In the past few years, my dad had to purchase new tyres because of all the potholes in the road. I	assessment during the Environmental Impact Assessment (EIA) phase of the project, in order to determine their impact on human health. Your concerns regarding road safety and the poor state of the roads are noted. Based on the Traffic Impact Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface of S171 is in a poor condition with multiple potholes. In order to avoid further deterioration of this road, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. The following mitigation measures have been recommended to ensure road safety: ✓ Construct safe access points/intersections. ✓ Educate employees (temporary and permanent) about road safety. ✓ Enforce strict vehicle speeds. ✓ If a person or animal is injured by traffic activities, an emergency response procedure must be implemented. Based on the Noise Impact Assessment, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures have been recommended to reduce noise impacts relating to this project. The planned working hours for the proposed Pure Source Mine are as follows: ✓ For mining activities, a 5.5 day work week with a 2

I&AP	Method	Date	Issue	Response
				shift system is proposed. Operating hours would be from 06:00 to 18:00. For diamond sorting, a 6 day work week with a 2 shift system, operating 24 hours a day. However, the 24 hour shift for diamond sorting will be reconsidered during the EIA phase. The Terrestrial Biodiversity Assessment identified the potential loss of habitat for Species of Conservation Concern (SCC) (based on the National Biodiversity Areas Plan) and the loss of areas of high biodiversity (based on the Free State Critical Biodiversity Areas Plan). Further investigations will be made during the EIA phase. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality impacts. In addition, mitigation measures such as dust suppression have been proposed to minimise dust emission. Should you have any further concerns or questions in this regard, please do not hesitate to contact me.
Abrie Hannekom/Hanekom Trust	E-mail	09 October 2018	Good day Zizo, I am Abrie Hanekom, the representative of the Hanekom Trust. We are totally against any form of mining in the area for the following reasons – 1. The miners do not keep their promises and break the law on many occasions. 2. The tar roads are not built to carry heavy vehicles at all. 3. The miners do not keep to the specified working hours. 4. The dust pollution is unbearable and	Dear Marlene, Thank you for your mail. Your objection and reasons thereof are noted. Responses to your comments are written in red font colour: 1. The miners do not keep their promises and break the law on many occasions Noted. 2. The tar roads are not build to carry heavy vehicles at all A traffic impact assessment has been undertaken in support

I&AP	Method	Date	Issue	Response
			are not controlled. 5. The trucks blocks the entrances to private property daily.\ 6. The Fauna and Flora of the area are permanently damaged. 7. Bird species are dying and leaving the area due to the dust pollution. 8. The Vaal River is also polluted and fish are dying. 9. The area is not zoned for mining. 10. The water table is decreasing. 11. The mining are conducted next to a town. 12. The value of our properties is decreasing and we need to be compensated to recover our losses. 13. No rehabilitation is done to the affected areas. KINDLY CONFIRM RECEIPT OF E-MAIL. Regards AJ Hanekom	of the Mining Right Application and the findings will be included in the final Scoping Report that will be made available to the public for review, in due course. In addition, consultation with the Free State Department of Police, Roads and Transport will be undertaken during the EIA phase of the project in order to initiate a long-term road maintenance plan, to ensure the availability of a road network to transport workers and mined product, should the Mining Right be granted by the DMR. 3. The miners do not keep to the specified working hours Noted. The Environmental Management Programme Report (EMPR, which is legally binding to the Applicant) that will be compiled for this project, during the EIA phase, will specify working hours and days for the operation of the mine. Interested and Affected Parties have the right to report any areas of non-compliance to the decision- making authority (the DMR) if the mine does not operate according to the conditions of the EMPR. 4. The dust pollution are unbearable and are not controlled The implementation of an effective dust suppression and control plan will be included as a condition in the EMPR. 5. The trucks blocks the entrances to private property daily The EMPR will recommend that a traffic management plan be established by the Applicant in order to prevent blockages. In addition, a 4 lane access road is proposed as part of the Mining Right application process, in order to manage traffic, should the Mining Right be granted by the DMR. 6. The Fauna and Flora of the area are permanently damaged Noted. 7. Bird species are dying and leaving the area due to

I&AP	Method	Date	Issue	Response
				the dust pollution The implementation of an effective dust suppression and control plan will be included as a condition in the EMPR. 8. The Vaal river are also polluted and fish are dying Noted. The EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. 9. The area are not zoned for mining Noted. According to the Zoning Certificate for the three affected properties, the area is zoned for agriculture. However, other permitted uses include shops, business premises, dwelling houses, residential buildings, places of worship, places of instruction and farming. Upon granting of the Mining Right, the Applicant will engage with the local Authority and apply for consent to include mining as an additional permitted use. 10. The water table are decreasing A preliminary groundwater has been undertaken as part of the Scoping phase and the findings are included in the Scoping Report. A more detailed groundwater assessment will be conducted during the EIA phase and mitigation measures will be included in the EMPR to be compiled for this project. 11. The mining are conducted next to a town According to the Mine, Health and Safety Act, (Act 29 of 1996, as amended) a 100 m buffer zone must be maintained between a mine and any existing infrastructure. This buffer zone has been considered in the proposed mine plan layout. 12. The value of our properties are decreasing and we need to be compensated to recover our losses An economic impact assessment has been undertaken as part of the Scoping phase and the findings are included in the Scoping Report (including the impact on the property values). A more detailed economic impact assessment will be conducted during the EIA phase and mitigation measures

I&AP	Method	Date	Issue	Response
				will be included in the EMPR for this project. 13. No rehabilitation are done to the affected areas A Closure application that is currently underway is addressing this.
Christiaan Strauss	Public Meeting	24 October 2018	Mr Strauss completed the I&AP registration form and provided the following comments: • Interested in the proposed project due to impact on the infrastructure, environment and quality of life. • Water, air and noise pollution, impact on the roads (S171).	Dear Chris, Thank you for attending the Open Day and for completing the Interested and Affected Party (I&AP) registration form. Your comments are duly noted. You have been registered as an I&AP and will be kept up to date with any developments regarding this project. Should you have any questions in this regard, please do not hesitate to contact me.
Gail Burger/Freddie Burger	E-mail	13 October 2018	Mr Burger completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse.	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted.

I&AP	Method	Date	Issue	Response
			• Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	• Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River.

I&AP	Method	Date	Issue	Response
				According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property

I&AP	Method	Date	Issue	Response
				values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for

I&AP	Method	Date	Issue	Response
				this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Susan E Malcomess	E-mail	18 October 2018	Dear Sirs Attached is my objection to the proposed mining application by Pure Source Mine. Yours faithfully Sue Malcomess Ms Malcomess completed the I&AP registration	Dear Susan, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Please state you interest in the project. Our property looks right across the Vaal River on to the

I&AP	Method	Date	Issue	Response
			form and provided the following comments: • Our property looks right across the Vaal River on to the proposed mining property. The mining operation will scar the land and make it unsightly. The noise will carry across the river and so will the dust when wind blows. The roads are not made for heavy trucks. It is in a World Heritage Site and tourism is important in the area. Mining will make the area less attractive for tourism. It is also concern to me that I believe the previous company who started mining on this land has an order from the Department of Mineral Affairs because the conditions of the license were not met. Why should this not happen again? • Communities which exist within the application area: there is an informal settlement, there are small holdings and the town of Parys is nearby. • Description of the receiving environment: It's in a World Heritage Site: The Vredefort Dome. The roads are not designed for heavy traffic. Who is going to rehabilitate them when they are destroyed by mining? It is on the banks of the Vaal River and these proposed operations could pollute the river. The area is subject to heavy winds and the open cast mining will create dust storms. • Aware of any land developments? No. • Cultural or heritage features within the	proposed mining property. The mining operation will scar the land and make it unsightly. The noise will carry across the river and so will the dust when wind blows. The roads are not made for heavy trucks. It is in a World Heritage Site and tourism is important in the area. Mining will make the area less attractive for tourism. It is also concern to me that I believe the previous company who started mining on this land has an order from the Department of Mineral Affairs because the conditions of the license were not met. Why should this not happen again? Your comments are noted. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures have been recommended to reduce noise impacts. Additional mitigation measures will be proposed in the Environmental Management Programme (EMPR) during the EIA Phase of this project. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as dust suppression have been proposed to minimise dust emission. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to

I&AP	Method	Date	Issue	Response
			application area and surrounds: THE VREDEFORT DOME. • Potential biophysical and socio-economic impacts: it will affect the tourism industry. Who wants to be near at mines? The unsightliness of Mpumalanga is living testimony to this. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: don't mine! And if you do adhere to the conditions and rehabilitate. • Specific concerns: most concerned the rehabilitation will not be done. Already the owner of the land has not rehabilitated from the mining already done.	collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. Based on the specialist studies undertaken in support of this application, the proposed application area does not overlap with, nor will it impact upon any formally protected area. We are required by the relevant legislation to maintain a 5 km buffer from protected areas. The edge of the crater of the Vredefort Dome, a UNESCO World Heritage Site, is ~8 km to the south-west of the site. As such, it will not be negatively affected by this application. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. Kindly note that enforcement of compliance with the EMPR is the responsibility of the Department of Mineral Resources. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact detail. There is an informal settlement, there are small holdings and the town of Parys is nearby. Noted. • Please can you provide us with a description of the receiving environment. It's in a World Heritage Site: The Vredefort Dome. The roads

I&AP	Method	Date	Issue	Response
				are not designed for heavy traffic. Who is going to rehabilitate them when they are destroyed by mining? It is on the banks of the Vaal River and these proposed operations could pollute the river. The area is subject to heavy winds and the open cast mining will create dust storms. We will reiterate that the Vredefort Dome is ~8 km to the south-west of the application area. Kindly refer to the first point for our responses on the issues you raised on heavy trucks and road rehabilitation. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. Mitigation measures have been recommended to minimise impacts on air quality. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? No. Noted. • Are you aware of any cultural or heritage features within the application area and surrounds, please provide details? THE VREDEFORT DOME. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. It will affect the tourism industry. Who wants to be near at mines? The unsightliness of Mpumalanga is living testimony to this. Your comment is noted. We will reiterate that the Economic Impact Assessment undertaken in support of this application

I&AP	Method	Date	Issue	Response
				indicated that, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. • Please describe any measures you believe should be implemented to mitigate, manage Don't mine! And if you do adhere to the conditions and rehabilitate. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Most concerned the rehabilitation will not be done. Already the owner of the land has not rehabilitated from the mining already done. Your concern is duly noted. Kindly note that the Client is in the process of rehabilitating the Mining Permit areas. Should you have any further concerns in this regard, please do not hesitate to contact me.
Tseki Lucky	E-mail	20 October 2018	Mr Tseki completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people.	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Are you aware of any communities which exist

I&AP	Method	Date	Issue	Response
			• Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but	within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/- 1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to

I&AP	Method	Date	Issue	Response
			agriculture.	be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation

I&AP	Method	Date	Issue	Response
				measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For

I&AP	Method	Date	Issue	Response
				example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the

I&AP	Method	Date	Issue	Response
				three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Molebogeng Tseki	E-mail	15 October 2018	Mrs Tseki completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values.	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development,

I&AP	Method	Date	Issue	Response
			• Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing

I&AP	Method	Date	Issue	Response
				property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses.

I&AP	Method	Date	Issue	Response
				It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property

I&AP	Method	Date	Issue	Response
				values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Joyce Nthabiseng Tseki	E-mail	15 October 2018	Mrs Tseki completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area:	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be

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			Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual

I&AP	Method	Date	Issue	Response
				scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted.

I&AP	Method	Date	Issue	Response
				• Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental

I&AP	Method	Date	Issue	Response
				Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Sandra Mostert	E-mail	14 October 2018	MsMostert completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area,	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided

I&AP	Method	Date	Issue	Response
			+/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water	in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values.

I&AP	Method	Date	Issue	Response
			pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities

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				and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan.

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				The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be

I&AP	Method	Date	Issue	Response
				pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
PM Mostert	E-mail	14 October 2018	Mr Mostert completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation?

I&AP	Method	Date	Issue	Response
			values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project.

I&AP	Method	Date	Issue	Response
				In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in

I&AP	Method	Date	Issue	Response
				local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts.

I&AP	Method	Date	Issue	Response
				Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Alinah Molefe	E-mail	15 October 2018	Ms Molefe completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be

I&AP	Method	Date	Issue	Response
			proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values. According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual

I&AP	Method	Date	Issue	Response
				scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted.

I&AP	Method	Date	Issue	Response
				• Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental

I&AP	Method	Date	Issue	Response
				Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Joseph Ramonanu	E-mail	13 October 2018	Mr Ramonanu completed the I&AP registration form and provided the following comments: • Existing communities within the application area: Vaal Eden, Vaaloewer and Plaas de Pont area,	Good day, Thank you for your mail and for completing the Interested and Affected Party registration form. Please see our responses in red. The answers you provided

I&AP	Method	Date	Issue	Response
			+/-1 600 people. • Tribal authorities within the application area: township and primary school. • Other I&APs who need to be notified: holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. • Description of the receiving environment: flora and fauna, grazing, natural water table, fish and bird life. • Land developments (current or proposed) within the application area: Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. • Cultural or heritage features within the application area and surrounds: graveyard, cave in Vaaloewer area. • Potential biophysical and/or socio-economic impacts: loss of tourism area, job losses due to decrease in tourism, depreciation of property values. • Measures that should be implemented to mitigate the anticipated biophysical and socio-economic impacts: stop mining completely. • Concerns: job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water	in the registration form are highlighted in yellow. • Are you aware of any communities which exist within the application area? Please provide detail and possible contact details: Vaal Eden, Vaaloewer and Plaas de Pont area, +/-1 600 people. Noted. • Are you aware of any tribal authorities within, or affected by, the proposed application? Please provide detail and possible contact details. Township and primary school. Noted. • Are you aware of any other I&APs who need to be notified? Please provide detail and possible contact details. Holiday resort, wedding venues, game farms and bird sanctuaries next to and caravan parks. Noted. • Please can you provide us with a description of the receiving environment. Flora and fauna, grazing, natural water table, fish and bird life. Noted. • Are you aware of any land developments (current or proposed) within the application area that may be relevant to the proposed mining operation? Vaal Eden Township, townhouse development, Vaal Eden Caravan Park and guesthouse. Noted. • Please describe any cultural or heritage features within the application area and surrounds, please provide detail? Graveyard, cave in Vaaloewer area. Noted. • Please describe any biophysical and/or socio-economic impacts that you believe should be considered during the study. Loss of tourism area, job losses due to decrease in tourism, depreciation of property values.

I&AP	Method	Date	Issue	Response
			pollution of the Vaal River. The mining site is not zoned for mining, but agriculture.	According to the Economic Impact Assessment, visual, air quality, noise and water quality impacts combined with the loss of biodiversity are likely to be the key concerns for tourism. Sources of positive impacts would stem from increased potential for business-related visitors. The measures recommended in other specialist studies to minimise negative impacts (primarily visual, air quality, noise, water quality, biodiversity, rehabilitation and social measures) and enhance positive impacts would also reduce impacts on tourism. Rehabilitation needs to be rigorously applied and adequately funded both concurrently and at closure, especially to minimise visual scarring and other tourism risks. The envisaged end land use is to develop the farm portions as an eco-estate with residential and hospitality facilities on the banks of the Vaal River. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Nonetheless, loss of employment due to the mining operations will be assessed in the Socio-Economic Impact Assessment during the Environmental Impact Assessment (EIA) phase of this project. In order to assess the potential impacts on existing property values, the property context surrounding the site was first considered by the economic specialist. Secondly, the results of the other specialist studies were scrutinised for information on impacts that could lead to welfare changes reflected in property value effects. The key potential sources of negative impacts on property values are visual, air quality, noise and biodiversity impacts. The Economic Impact Assessment states that property values in any given area are significantly driven by demand for housing, which in turn, is directly linked to economic opportunities

I&AP	Method	Date	Issue	Response
				and jobs in the area. The project therefore has the potential to increase demand and associated values for housing and property. The mitigation measures recommended in other specialist reports to minimise negative impacts (primarily visual, air quality, noise, water quality and social measures) and enhance positive impacts would reduce impacts on property values. • Please describe any measures you believe should be implemented to mitigate, manage, avoid, or remedy the anticipated biophysical and socio-economic impacts of the proposed activity. Stop mining completely. Your suggestion is noted. • Do you have any specific concerns, comments or objections to the proposed project, if so could you please provide us with information? Job losses, closure of businesses, property values, tar roads not built for heavy vehicles, dust and noise pollution. Your concerns are duly noted. According to the Social Impact Assessment, it is understood that the proposed project will promote employment creation within the local area. Furthermore, the project will contribute to local business as it will result in an increased potential for business-related visitors who will require accommodation in local guest houses. It is anticipated that the proposed mining development would add a significant number of heavy vehicle trips onto the relevant roads network, particularly road S171, which is currently in a poor state. It is understood that the additional anticipated heavy vehicle trips would result in further deterioration of this road. It is therefore recommended to collaborate with the relevant roads authority, other developments in the area and other property owners in order to initiate a long-term roads maintenance plan.

I&AP	Method	Date	Issue	Response
				The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality as well as noise impacts. In addition, mitigation measures such as (i) limiting disturbed areas and (ii) effective dust suppression have been proposed to minimise dust. Additional mitigation measures will be recommended in the Environmental Management Programme (EMPR) during the EIA Phase of this project. According to the noise baseline assessment for this project, noise impacts are expected to be slightly more notable to the south of the project activities. Furthermore, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures were recommended to reduce noise impacts. Kindly refer to point 7 for our response on property values. • General comments: NO MINING! Only one person will benefit from the mining due to hundreds of job losses. Water pollution of the Vaal River. The mining site is not zoned for mining, but agriculture. Following consultation with the Department of Water and Sanitation, bufferzones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. In addition, the EMPR will categorically state that no untreated waste water must be

I&AP	Method	Date	Issue	Response
				pumped into the Vaal River. The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. Should you have any further questions in this regard, please do not hesitate to contact me.
Renee de Jong Hartslief	E-mail	09 October 2018	Good evening Zizo et al, I am an ordinary RSA citizen. In 1994, I bought and currently operate a FS-gazetted Private Nature Reserve, The Savannah Africa, in the Vaal Eden area. Due to a medical crisis in my family, I have been in KZN for almost 5 months. In my private capacity, I hereby object, in the strongest terms, to each and every mining and water application, renewal or amendment in my area. You will forgive me please if I cannot cite all the reference numbers or applicant names: they keep changing. Here are those that come to mind: Pure Source, Sweet Sensations, Woodlands Eco-Estate, Tja Naledi, Barrage Bulk Sand – and now, Monte Christo. I object for, among others, the following reasons: 1. Rezoning has not taken place 2. Public Participation has been ignored 3. Rehabilitation is non-existent 4. Compliance with working hours is flagrantly disregarded 5. Roads in the area have been destroyed 6. The critically-endangered Vaal River is	Dear Renee, Thank you for your mail. Your objection and reasons thereof are noted. Please see below our responses in red. 1. Rezoning has not taken place The client will initiate the process of applying for consent to include mining as an additional permitted land use on the three properties, in the event that the Mining Right is granted by the DMR. 2. Public Participation has been ignored May you kindly elaborate on how the Public Participation has been ignored? 3. Rehabilitation is non-existant The client is in the process of applying for the closure of the 3 existing Mining Permits over the application area. 4. Compliance with working hours is flagrantly disregarded The Environmental Management Programme Report (EMPR, which is legally binding to the Applicant) that will be compiled for this project, during the EIA phase, will specify working hours and days for the operation of the mine. Interested and Affected Parties have the right to report any areas of non-compliance to the decision- making authority (the DMR) if the mine does not operate according to the conditions of the EMPR.

I&AP	Method	Date	Issue	Response
			under enormous threat 7. The Gauteng gateway to the Vredefort Dome World Heritage Site is severely compromised 8. In terms of the Mining Charter, communities are suffering, not benefiting from the mines 9. Our Sense Of Place is being destroyed 10. Noise, dust and water pollution are rife 11. Mining does not comply with the IDP, budget, SDP, or Bylaws of Fezile Dabi or Ngwathe Municipalities Please lodge my objections with all of the mines in the Vaal Eden area.	5. Roads in the area have been destroyed A traffic impact assessment has been undertaken in support of the Mining Right Application and the findings will be included in the final Scoping Report that will be made available to the public for review, in due course. In addition, consultation with the Free State Department of Police, Roads and Transport will be undertaken during the EIA phase of the project in order to initiate a long-term road maintenance plan, to ensure the availability of a road network to transport workers and mined product, should the Mining Right be granted by the DMR. 6. The critically-endangered Vaal River is under enormous threat Following consultation with the DWS, buffer zones have been included in the Mine Plan layout to reduce impacts on the nearby watercourses, including the Vaal River. 7. The Gauteng gateway to the Vredefort Dome World Heritage Site is severely compromised Noted. 8. In terms of the Mining Charter, communities are suffering, not benefiting from the mines The anticipated contributions to the communities surrounding Pure Source Mine were discussed with the Ngwathe Local Municipality representatives during the compilation of the Social and Labour Plan (SLP) for the project. 9. Our Sense Of Place is being destroyed Noted. Sense of place has been identified as a potential impact on the receiving environment during the Scoping phase of the project. This impact will be discussed in detail during the EIA phase and mitigation measures will be recommended. 10. Noise, dust and water pollution are rife Noted. Noise, dust and water pollution have been identified

I&AP	Method	Date	Issue	Response
				as potential impacts on the receiving environment during the Scoping phase of the project. This impact will be discussed in detail during the EIA phase and mitigation measures will be recommended. 11. Mining does not comply with the IDP, budget, SDP, or Bylaws of Fezile Dabi or Ngwathe Municipalities The Ngwathe Local Municipality IDP does not go into much detail in terms of the types of development which are supported by government and there does not appear to be a SDF for the municipality. Based on consultation with the Ngwathe Local Municipality representatives during the compilation of the SLP for this project, the Local Municipality LED criteria focuses on agriculture, SMMes, and tourism. However, the main economic activities in the Fezile Dabi District Municipality (of which the Ngwathe Local Municipality forms part of) are agriculture, manufacturing, mining and tourism. As requested, we have registered the following I&APs to the project database: • Renee Hartslief renee@bundunet.com • Vredefort Dome Tourism Association VredefortDomeInfo@gmail.com • The Savannah Africa TheSavannaaAfrica@gmail.com • Wild Water Conservancy coach@lifeadventures.co.za • LGV veilig@parys.co.za If you have any further questions in this regard, please do not hesitate to contact me.
Renee de Jong Hartslief	E-mail	07 November 2018	Dear Zizo, Thank you very much for this email and thanks Michael for your detailed response.	Dear Renee, Thank you for your mail. The oral comments acquired at the public meeting held on

I&AP	Method	Date	Issue	Response
			Regarding the public meeting held on 24th October: where will the oral comments by attendees like myself, Arnold and Sampie be recorded and incorporated? It seems that they should be available to all IAPs at the upcoming 10th November meeting? You took copious notes and I was fully expecting that some form of written documentation would be forthcoming from you. Here are bullet points of my report to Gavin: "Things I found interesting: 1. This was a Public Participation meeting, in their eyes 2. The road is problematic to ALL and Shango is going to have a hard time dealing with the report I will forward them 3. Zoning – they seem to think it can be done AFTER rights have been approved 4. "Sense of Place" is problematic for them 5. Mining Charter – because they APPLIED on 24 August, the Charter was Gazetted on 27 September, their report was published 8 November: Therefore, the only provision in the Charter they do NOT have to comply with is mine ownership 6. At first they said there was a Social and Labour Plan available on their website. But then they said it was with DMR and not available to the public 7. Still non-compliant re rehab – other	the 24th October 2018 will be incorporated into the Final Scoping Report, which will be made available to the public at a public venue and on the Shango Solutions website for download, in due course. Kindly forward me the link to the recording you made at the meeting. Should you have any further questions in this regard, please do not hesitate to contact me.

I&AP	Method	Date	Issue	Response
			contractors to blame” I would be happy to send you a link to the recording we made at the meeting. And attached please find the road report that must SURELY be addressed and made public... Please consider, at the very least, putting our oral comments and your answers from the last meeting on your web site, prior to this Saturday’s meeting. Best regards, Renee	
Sete Mgeina	E-mail	08 November 2018	Sete Mgeina completed the I&AP registration form and provided the following comments: • Mining should not take place. • I stay and work on my 2.2 hectare plot during the week. • Communities which exist within the application area are Mr and Mrs Phytides. Santana, Burger, Hannekom and all living on farm de Pont. • Not aware of any tribal authorities within, or affected by the proposed application. • Other I&APs who need to be notified are the Department of Environmental Affairs and Fauna and Flora. • Mielies and vegetables are planted each year. Farmers have cattle and sheep. Many animals and birds live in this environment. • Properties around the area where I work are for sale.	Good day, Thank you for your mail and for completing the Interested and Affected Party registration forms. Your comments and objection to the above mentioned project are duly noted. According to the specialist studies undertaken in support of this application, the proposed application area does not overlap with, nor will it impact upon any formally protected area. We are required by the relevant legislation to maintain a 5 km buffer from protected areas. The edge of the crater of the Vredefort Dome, a UNESCO World Heritage Site, is ~8 km to the south-west of the site. As such, the Vredefort Dome will not be impacted upon by the proposed mining activities. Ambient particulate and gaseous concentrations resulting from mining operations will be assessed in the air quality assessment during the Environmental Impact Assessment (EIA) phase of the project, in order to determine their impact on human health. Your concerns regarding road safety and the poor state of the roads are noted. Based on the Traffic Impact Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from

I&AP	Method	Date	Issue	Response
			• A heritage feature within the surrounds of the application area is the Vredefort Dome. • Many animals live on this environment. Crop farming (mielies and vegetables) and livestock farming (cattle) also occur in this area. • The sand is too much. When the wind blows my chest pains. I don't want to be near the mines. • Noise starts before 05:00 as a result of the many trucks on the roads. In addition, heavy duty machines make lots of noise. Where must all the animals and birds go? Dust from the mines poses a risk to my health.	road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface of S171 is in a poor condition with multiple potholes. In order to avoid further deterioration of this road, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. The following mitigation measures have been recommended to ensure road safety: ✓ Construct safe access points/intersections. ✓ Educate employees (temporary and permanent) about road safety. ✓ Enforce strict vehicle speeds. ✓ If a person or animal is injured by traffic activities, an emergency response procedure must be implemented. Based on the Noise Impact Assessment, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures have been recommended to reduce noise impacts relating to this project. The planned working hours for the proposed Pure Source Mine are as follows: ✓ For mining activities, a 5.5 day work week with a 2 shift system is proposed. Operating hours would be from 06:00 to 18:00. For diamond sorting, a 6 day work week with a 2 shift system, operating 24 hours a day. However, the 24 hour shift for diamond sorting will be reconsidered during the EIA phase. The Terrestrial Biodiversity Assessment identified the

I&AP	Method	Date	Issue	Response
				potential loss of habitat for Species of Conservation Concern (SCC) (based on the National Biodiversity Areas Plan) and the loss of areas of high biodiversity (based on the Free State Critical Biodiversity Areas Plan). Further investigations will be made during the EIA phase. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality impacts. In addition, mitigation measures such as dust suppression have been proposed to minimise dust emission. Should you have any further concerns or questions in this regard, please do not hesitate to contact me.
Maria Mkhwanazi	E-mail	08 November 2018	Ms Mkhwanazi completed the I&AP registration form and provided the following comments: • The mining should not take place. • Not a land owner or legal land occupier. I work from Monday to Friday on subdivision 3 of the farm de Pont 228. • Communities which exist within the application area include Mr and Mrs Phytides, Santana, Burger and Hannekom and all who live on the farm de Pont and Vaal Eden. • Not aware of any tribal authorities within, or affected by, the proposed application. • Another I&AP that needs to be notified is the Department of Environmental	Good day, Thank you for your mail and for completing the Interested and Affected Party registration forms. Your comments and objection to the above mentioned project are duly noted. According to the specialist studies undertaken in support of this application, the proposed application area does not overlap with, nor will it impact upon any formally protected area. We are required by the relevant legislation to maintain a 5 km buffer from protected areas. The edge of the crater of the Vredefort Dome, a UNESCO World Heritage Site, is ~8 km to the south-west of the site. As such, the Vredefort Dome will not be impacted upon by the proposed mining activities. Ambient particulate and gaseous concentrations resulting from mining operations will be assessed in the air quality assessment during the Environmental Impact Assessment (EIA) phase of the project, in order to determine their impact

I&AP	Method	Date	Issue	Response
			Affairs. • The receiving environment comprises mielies, cattle and sheep. Many beautiful animals reside in this area. This is the country side. • Properties around us are for sale. • A heritage feature within the surrounds of the application area is the Vredefort Dome. • Mining must not take place. STOP any mining. • The cloud of sand is terrible when the wind blows. The trucks around the area pose a great danger to humans. • The noise is terrible. When Goose Bay mined the sand, the sound was loud. I cannot breathe properly on windy days. My chest pains. We see less birds and animals. The grasslands are also gone.	on human health. Your concerns regarding road safety and the poor state of the roads are noted. Based on the Traffic Impact Assessment, the proposed Pure Source Mine will be accessed by means of an existing farm access road from road S171. A visual investigation of the relevant section of the road S171 was undertaken as part of the traffic assessment. According to the investigation, the road surface of S171 is in a poor condition with multiple potholes. In order to avoid further deterioration of this road, it is recommended that (i) a Roads Maintenance Plan, inclusive of upgrades, be prepared and that (ii) a pavement design specialist be commissioned to investigate the condition of the roadway layers in order to identify any collapsing and deterioration of the roadway layers. The following mitigation measures have been recommended to ensure road safety: ✓ Construct safe access points/intersections. ✓ Educate employees (temporary and permanent) about road safety. ✓ Enforce strict vehicle speeds. ✓ If a person or animal is injured by traffic activities, an emergency response procedure must be implemented. Based on the Noise Impact Assessment, the extent of noise impacts as a result of an intruding noise depends on existing levels in an area and on-site meteorology. Simulated MM5 weather data set was utilised on-site and the results show that the noise levels are within a permissible range. Mitigation measures have been recommended to reduce noise impacts relating to this project. The planned working hours for the proposed Pure Source Mine are as follows: ✓ For mining activities, a 5.5 day work week with a 2 shift system is proposed. Operating hours would be from 06:00 to 18:00. For diamond sorting, a 6

I&AP	Method	Date	Issue	Response
				day work week with a 2 shift system, operating 24 hours a day. However, the 24 hour shift for diamond sorting will be reconsidered during the EIA phase. The Terrestrial Biodiversity Assessment identified the potential loss of habitat for Species of Conservation Concern (SCC) (based on the National Biodiversity Areas Plan) and the loss of areas of high biodiversity (based on the Free State Critical Biodiversity Areas Plan). Further investigations will be made during the EIA phase. The impact on air quality will depend largely on sources of emissions present on a mine at any given time and the throughput of material. For example, if material is transported via haul roads, there will be greater emissions than if it were conveyed. To a large extent, the mined products for this project are expected to be transported via conveyor systems from the pits to the plant and product stockpiles, in order to minimise air quality impacts. In addition, mitigation measures such as dust suppression have been proposed to minimise dust emission. Should you have any further concerns or questions in this regard, please do not hesitate to contact me.
Rudi Liebenberg	Additional Public Consultation	10 November 2018	Ms Liebenberg completed the comments and responses form wherein she stated that she is interested in the proposed project due to (i) environmental impact, (ii) destruction of roads and (iii) danger travelling on narrow road or night driving. She further went on to provide the following comment: • The Applicant has proven not to care for rules and regulations. Currently continuing with work, no equal opportunity for prospecting rights, eco-estate doing mining.	Good day, Thank you for completing the comments and responses form provided to you at the additional public consultation held on the 10th November 2018. Kindly be advised that you have been registered as Interested and Affected Parties and will be kept up to date with any developments regarding this project. Below (in red) are our responses to the concerns you raised. • Environmental impact, destruction of roads and danger travelling on narrow road or night driving. Noted. A visual investigation of the relevant section of the road S171 was conducted as part of the Traffic Impact Assessment. It was noted that the road surface is in a poor condition with multiple

I&AP	Method	Date	Issue	Response
				potholes and it is possibly deteriorating. As such, it is recommended that a Roads Maintenance Plan be prepared, in collaboration with other landowners, developments and relevant roads authority, to ensure the availability of a road network to transport workers and mined product. In addition, a pavement design specialist should be commissioned to investigate the roadway layers in order to identify any collapsing and deterioration of the roadway layers. • The Applicant has proven not to care for rules and regulations. Currently continuing with work, no equal opportunity for prospecting rights, eco-estate doing mining. It is understood that rehabilitation activities are currently taking place on-site. The process to obtain the necessary Environmental Authorisation for establishing the eco-estate was initiated more than a decade ago (thus confirming the landowner's intentions in this regard). The environmental authorities were approached in terms of the relevant legislation. The Record of Decision (RoD) confirming the Environmental Authorisation was accordingly issued in 2011. Mining is an interim land use. Could you kindly elaborate on what your mean by 'no equal opportunity for prospecting rights'? Should you have any further questions in this regard, please do not hesitate to contact me.

MONTE CRISTO COMMERCIAL PARK (PTY) LTD

PURE SOURCE MINE

FS 30/5/1/2/2/10048 MR

FS 30/5/1/2/3/2/1/10048 EM

NOTES FOR THE RECORD

Scoping Phase Open Day

Vintage Yard Wedding Venue in Parys,

Free State Province of South Africa

09H00 to 20H00

24th October 2018

LANGUAGE

Open Day notes have been transcribed to English with Sesotho and Afrikaans translated into English

PURPOSE OF OPEN DAY
Present findings of the Scoping process to the public. Solicit comments on the Draft Scoping Report.

NOTES OF THE PURE SOURCE MINE SCOPING PHASE OPEN DAY	
Project	Pure Source Mine
Meeting Venue	Vintage Yard Wedding Venue, Free State Province of South
Date	24th October 2018
Language	Open Day notes have been transcribed to English with Sesotho and Afrikaans translated into English
OPEN DAY ATTENDEES	
Stephan Meyer	Noa8 Agencies
Russell Tate	The Biodiversity Company
Michael Adams	The Biodiversity Company
Mader van den Berg	Skets Architects and Planning
Pamela Sidambe	Umsizi Sustainable Social Solutions
Tshililo Malange	Shango Solutions
Ken Lovell	Shango Solutions
Mpho Mokhoane	Shango Solutions
Zizo Siwendu	Shango Solutions
Francois Myburgh	Shango Solutions
Peter le Roux	Shango Solutions
Grace Coetzee	Shango Solutions
Stefanie Weise	Shango Solutions
Theo Peters	Security
Michael Cocks	Monte Cristo Commercial Park (Pty) Ltd
Robert Schimpers	Goosebay Farm (Pty) Ltd
Community members (25)	Private
INTRODUCTION	
Interested and Affected Parties were welcomed as they walked into the venue, shown the 32 Open Day posters on display and asked to sign the attendance register. A project description was provided. The application area was shown on the maps and the allocated mining area of 363.5 ha was discussed. The maps were extensively used to illustrate the resource distribution of the sand and aggregate as well as the year-on-year mining plan. The land end use was also outlined.	
DISCUSSIONS	
Question/Comment (Community Member)	**Response (EAP, Specialists, Monte Cristo Commercial Park and Goosebay Farm Representatives)**
Roads and Traffic	
Who do we speak to regarding the roads situation?	The traffic specialist is not available. However, we can note down your concerns.
Robert (Schimpers) and I (Renee de Jong Hartslief) serve on the Free State Department of Agriculture Land Care Committee. In that capacity, we as a community came together to try and make these roads usable for the agricultural and hospitality activities that take place in this area. What we did as a committee is that we worked with the Free State Department of Roads who compiled this report in July 2017, which I think you really need to look at.	Could you kindly forward us the report?
Yes, I can forward it to you. If you look at the report, it is absolutely clear that this should never be able to work. I just wanted to put that out there. As a community, we got our own labour, equipment, material and we went and fixed the roads. We did this for quite a while. Our main reason for fixing the roads was to ensure road safety. Unfortunately we had rain a couple of weeks ago. As such, the roads are back to their old state. I just want to state that the bad state of the road is not only the mine's fault, but also a result of lack of maintenance. However, the municipality can only do what the municipality needs to do. This is a secondary road. It was never meant to be an industrial road. The municipality's hands are tired as well. So when you put out a nice e-mail to certain Interested and Affected Parties stating that you will establish a four lane road- who is going to construct the road, pay for it and maintain it?	The access road to the mine will be established by the Applicant. S171, as you said, is a regional road. Therefore, we need to have a meeting with the Department of Roads regarding possible upgrading and maintaince of the road.

Upgrading a road, not renewal, costs a million rand per km. It's a 10 km stretch, which means that they will need to spend approximately 10 million rand to upgrade the road. That does not take into account the S1052 which goes into Parys. The best people to provide you with a quotation on this are Woodlands HHP as they have constructed roads for the government. The other people to ask would be the owners of the other mines. You will see in the report what needs to be done. There are other mines operating in the area and you cannot always have a stop and go or two trucks passing close to one another simultaneously.	Thank you, noted.
The road S171 is currently in a bad state. It was not designed for carrying heavy trucks. The bad state of this road has affected the tourism industry.	Are there any tourist facilities that have closed down as a result of the bad state of the roads?
Non that I am aware of. I raised this point as I have heard people complain that they will no longer visit the tourist facilities in this area due to the poor state of the roads.	Okay, noted.
I do not think the notification went out to communities. Yes, you sent it. However, it was not received.	Noted.
In addition, there are free and local newspapers which people in this area read.	We understand. However, it would be important to note that there are budget limitations.
The latest Integrated Development Plan states that the S171 and S1052, which are the roads being impacted by the trucks, are designed for scenic tourism routes. It also states that rehabilitation of the Vaal Eden area must take place.	Noted.

APPENDIX H

SITE INSPECTION CONDITION OF SECONDERY ROAD S171

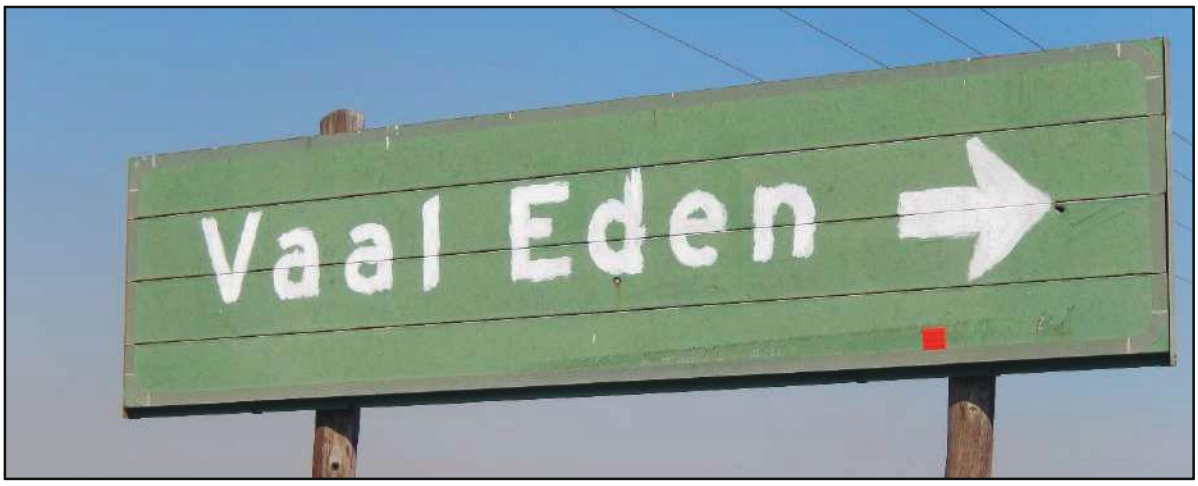
police, roads & transport
Department of
Police, Roads and Transport
FREE STATE PROVINCE

P43/2/203

REPORT

SITE INSPECTION

Condition of Secondary Road S171
Vaal Eden Road



Compiled by:
I. Roux
Engineer Pro Gr A

Chief Directorate Road

The report was completed following a letter of concern submitted by a member of the public to the office of the Member of the Executive Committee regarding the condition of special secondary road S171 (Vaal Eden Road)

The matter was referred to Mr. R. Thekso Chief Director Roads for investigation and completion of a report to the HOD.

INDEX

1. ***BACKGROUND***

A letter of concern was submitted by Mr. A.J. Hanekom on the 06th of July 2017 (Annexure A) stating various problems on the condition of secondary road S171. The matter was forwarded to the office of the Chief Director Roads (Annexure B) and a site investigation was done on the 16th of August 2017.

The Regional Engineer, Me. E. Phalatse, was contacted for historical information on S171 but no information could be provided.

2. ***LOCALITY***

The road that the member of the public is concerned about is located in the northern section of the Free State Province which borders the Gauteng province. The road is a secondary road with a paved road surface, but is not designed according to the same standard as that of a primary road.

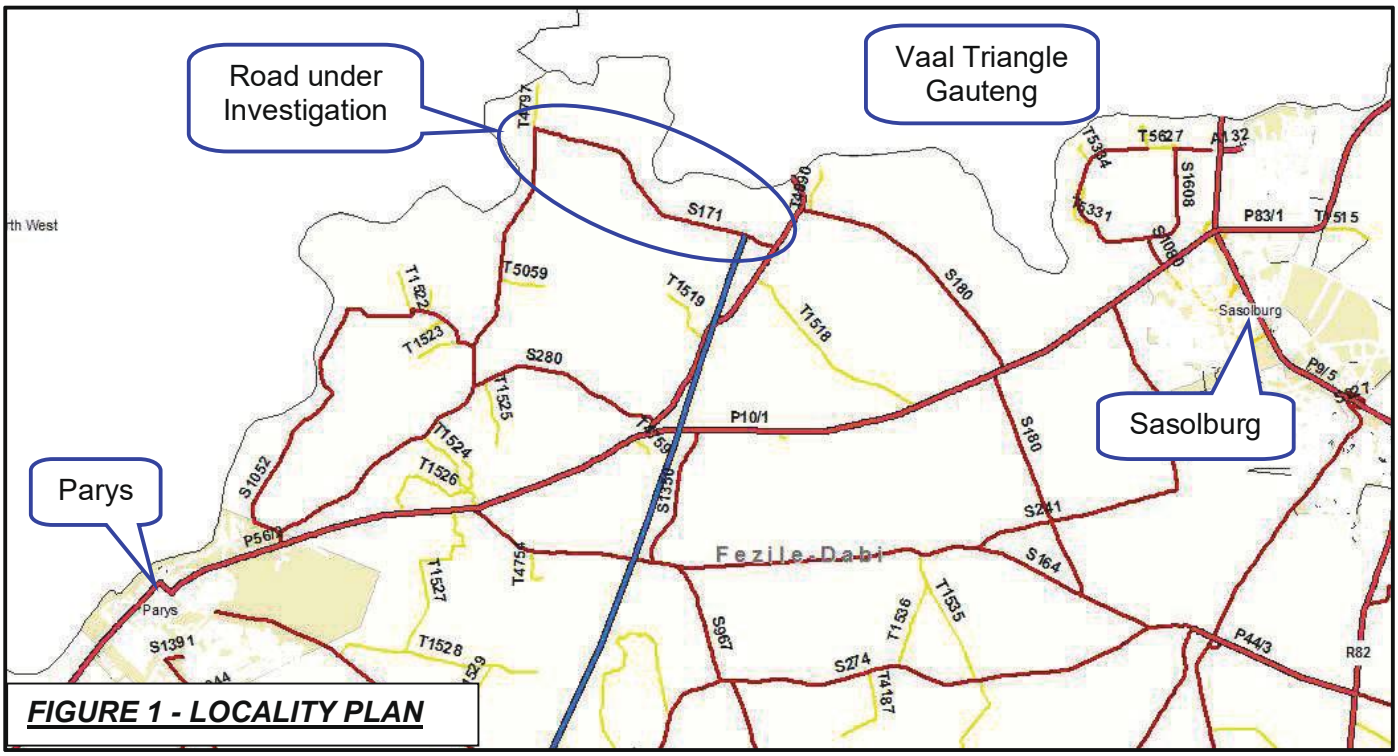


FIGURE 1 - LOCALITY PLAN

3. ***INVESTIGATION RESULTS***

3.1. Special Secondary Road S171 is proclaimed within a 25.0m road reserve with a paved road surface connecting with the remaining unpaved section of S171 and Primary Road P56/2.

3.2. The road was build as a collector road collecting all the local traffic from the township establishments along the Vaal River shore to the primary road P56/2, which distributes traffic to the Vaal Triangle and Parys town.

	@ km 0.0 Skid marks on P56/2 where the trucks brake to turn off onto S171.
	@ km 0.2 Faded Caution road sign, warning road users about the condition of the road ahead.

	@ km 0.2 Road shoulder higher than the road surface.
	@ km 0.5 Double swing gate on the left of S171.

	@ km .55 Farm Access to the right of S171 Road making is Degree 3 ,(INAKS)
	@ km 0.55 Exit out of farm access.

	From km 0.6 to km 1.3 Guardrails is missing. This is a danger for road users.
	From km 0.6 to km 1.3 Guardrails is missing.

	@ km 1.3 Crocodile Cracks on S171 arisen from the dry road surface.
	@ km 1.3 Missing storm water grid.

	@ km 1.9 Road failure and potholes for a 50m section of S171 The bad road condition causes sand to fall of the trucks passing over the potholes.
	@ km 1.9 Potholes cover the majority of the road width of S171.

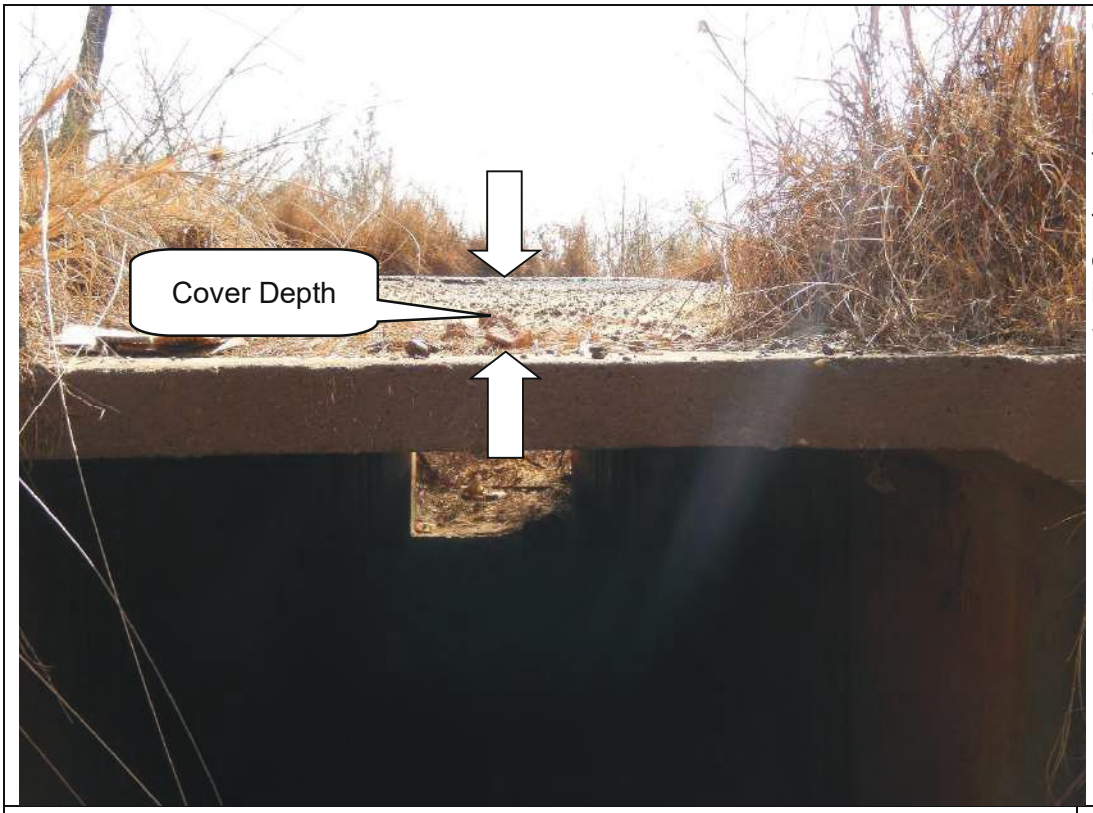
	@ km 1.9 Vegetation on the road shoulder restrict the width of the roadway causing hazardous environment for vehicles to pass
	@ km 1.9 The overall design width of 7.4m is reduced to 6.0m due to vegetation and trees on the road shoulder.

	@ km 2.1 Three Access roads to the right within a spacing of 40m of each other and a single access roads to the left.
	@ km 2.1 Blocked drainage pipes of the worst degree, degree 3 (INAKS) Grading of conditions is done with the Departmental INAKS document.

	@ km 2.1 Edge break on the access.
	@ km 2.1 Surface Failure and Aggregate Loss is present for long sections of S171.

	From km 2.6 to km 2.9 Road shoulder in the cutting is higher than the road surface.
	From km 2.6 to km 2.9 Embankment of the cutting has eroded causing v-drain to silt.

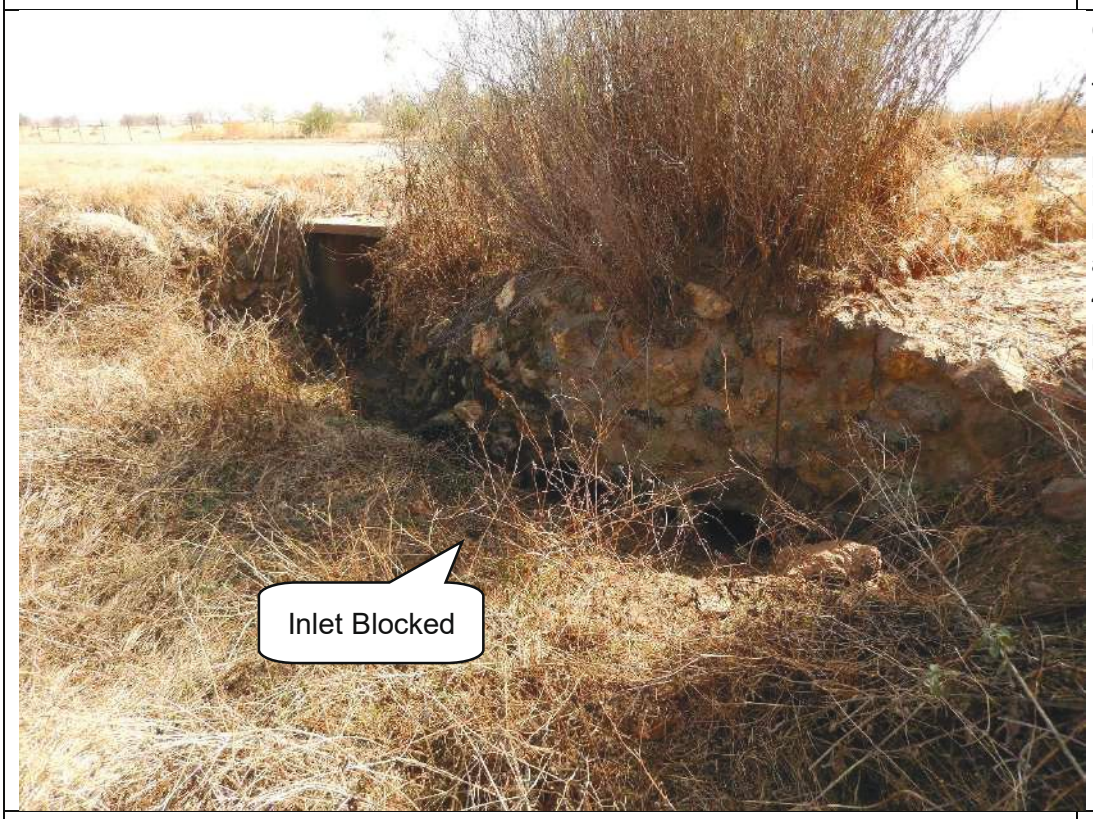
	@ km 3.1 Farm access to the left and right. Animals crossing with no warning signs and edge break on either side of S171.
	@ km 3.4 Road shoulder higher than road way causing water to pond on road way and potholes.



@ km 3.4

Sediment at the inlet and outlet of the culvert.

The material cover over to be investigated by Structural Engineer.



@ km 3.4

There is two 450mm Ø drainage pipes which the inlet is blocked with material and 30m away is three more 450mm Ø drainage pipes which are silt up.

	@ km 3.9 Farm access to the left and right. Edge break present at both sides.
	@ km 4.1 Farm access to the left and trees growing on the road shoulder. The overall design width of 7.4m is reduced to 6.8m due to vegetation and trees on the road shoulder.

	@ Km 4.3. Delineator present at the culvert.
	@ km 4.3 Soil on top of the culvert has subsided next to the wing wall.

	@ km 4.3 Culvert at km 4.3 has five 450mm Ø drainage pipes of which the one is installed lower than the others. There is a lot of material on the inlet side of the drainage pipes.
	@ km 4.5 Farm accesses to the left and right, Road shoulder is much higher than road way.

	@ km 6.2 Accesses to the left and right. Access to the right is for sand mining. No historic data could be obtained to determine if permition was provided by the Dep. The sight distance to either side is sufficient for save access.
	@ km 6.9 Road way has potholes and aggregate loss. The aggregate loss causes road shoulder height to increase and the road way is reduced to 6.6m from the designed 7.4m width.

@ km 7.6 and
km 7.8

Illegal road signs erected saying that heavy vehicles are moving ahead.

@ km 7.9

Access to Pure Source sand mine where truck turn wider and edge brake occurs.

The owner of the sand mine was contacted on site and the Department will investigate this matter.

	@ km 7.9 Truck turning out of the access road from the Pure Source sand mine.
	@ km 8.1 Double swing gate to the left of S171, the board on the fence indicates that it is a mining area. The Department will request DETEA to investigate.

	@ km 8.3 Access gate to Goosbay Canyon Eco and River Estate on the right. Sight distance to the left is only 95m and to the right ±450m.
	@ km 8.5 Road surface has potholes and crocodile cracks.

	@ km 9.8 T-junction of surfaced section of S171 with unsurfaced section of S171 and T4797. The road signs and road markings degree 3 (INAKS). No W104 (T-junction) warning sign at the intersection if approached from Barrage.

4. RECOMMENDATIONS

Short Term Remedial Actions: Normal Routine Maintenance

4.1. The road shoulders must be reshaped to remove excess material before the rainy season commence.

4.2. Reshape the side drain within the cutting between km 2.6 and km 2.9 and consider the upgrading of the drain to a stone pitched channel.

4.3. Guard rails and the drain grid in the concrete channel along S171 must be replaced as it hold a potential safety risk for motorists.

4.4. Silted material must be removed from the storm water pipes and the in- and outlets must be must be reshaped to ensure efficient drainage of storm water.

4.5. Install edge beams at all access roads on the surfaced section of S171 to prevent any further edge breaks. Access management must also be applied to determine whether the required approvals are in place.

4.6. Sand mining activities along S171 must be reported to the Department of Mineral Recourses (DMR) and Department of Economic Development, Tourism and Environmental Affairs (DETEA) to determine that the necessary permits were obtained through the prescribed procedures.

4.7. All the road signs on S171 must be replaced.

4.8. Remove all trees on road shoulder and vegetation within roads reserve.

4.9. Patching of potholes and repairing of road sections where surfacing has collapse.

Long Term Resolutions Contract Projects

4.10. Fog spray the surfaced road section and apply a slurry seal on the areas where the crocodile cracks occur before it could be re-sealed

4.11. Structural engineer investigate the carrying capacity of storm water culvert at km 3.4.

4.12. Reseal the surfaced road section once the remedial actions with regard to the drainage, shoulders, vegetation and pavement was completed

4.13. Repaint the road markings.

_____

Mr. I. Roux
Engineer RAMS

Annexure A

BG refer to HOD for response & feedback to Me
11/7/2017

Mr. A. J. Hanekom
P.O. Box 1768
Vanderbijlpark
1911

Mr. Sam Mashinini
Member of the Executive Committee
Free State Provincial Department of Police, Roads and Transport
45 Charlotte Maxeke Street, Perm building,
Bloemfontein
9330

P.O. Box 119
Bloemfontein
9300
(E-mail address: mec@freetrans.gov.za

WITHOUT PREJUDICE AND THE RESERVATION OF ALL MY RIGHTS

Dear Sir,

URGENT REQUEST FOR (I) AN INVESTIGATION INTO THE DANGEROUS AND POOR STATE OF THE VAAL EDEN ROAD, MAGISTERIAL DISTRICT OF PARYS; AND (II) THE UPGRADING OF THE SAID ROAD.

I am the owner of several established businesses in the engineering and construction industries which are based in Vanderbijlpark whilst my residence is situated at the Vaal Eden Township on the banks of the Vaal River in the Magisterial District of Parys.

The relevant Vaal Eden road – which road some of my staff, my family and myself use on an almost daily basis - is currently in a very poor state and I subsequently record herewith the following salient concerns, namely;

(a) Numerous large potholes that pose the risk of serious damage to vehicles , exist on the road;

(b) The relevant road is narrow and the shoulders thereof are significantly eroded;

(c) Numerous very heavy vehicles loaded with sand from sand mining operations in the vicinity of the relevant road are running on an almost daily basis and in my view contribute to serious exacerbation of the poor condition of the road;

(d) The synergy of the poor state of the relevant road and the numerous heavy vehicles transporting sand , pose serious risks of accidents and even loss of lives to other road users;

(e) residents from the Vaal Eden township (myself included) frequently have to travel on the relevant road at night and the risks of serious damage to vehicles and accidents obviously increase exponentially under such conditions;

(f) The safety (condition and load capacity) of the bridges and culverts on the relevant road (given the significant weight of the aforesaid heavy vehicles) need in my opinion to be checked as a priority;

(g) Loss of property values due to the deterioration of road infrastructure in the Vaal Eden area; and

(h) The possible exodus of residents in the said area due to amongst others (g) above, with resultant job losses.

You are subsequently kindly, though urgently, requested to (i) have the matter investigated to prevent injuries/ deaths and significant claims against e.g. your Department, and (ii) to order the urgent upgrade of the Vaal Eden road, please. I can also avail myself to accompany your team during an inspection *in loco* to point out specific dangers.

Kindly acknowledge receipt hereof.

Yours faithfully,

.....

AJ HANEKOM

Date: 04.07.17

Annexure B

police, roads & transport
Department of
Police, Roads and Transport
FREE STATE PROVINCE

Ref: 01/13/07/2017

To: Mr. R. Thekiso
Chief Director: Roads Infrastructure
Medfontein Building
Bloemfontein
9300

Mr Wesi
kindly respond to the letter
urgently Regards
07/08/2017

Dear Mr. Thekiso

RE: URGENT REQUEST FOR (I) AN INVESTIGATION INTO THE DANGEROUS AND POOR STATE OF THE VAAL EDEN ROAD, MAGISTERIAL DISTRICT OF PARYS; AND (II) THE UPGRADING OF THE SAID ROAD

The above matter refers,

Attached, kindly refer to the letter from Mr. A. J Hanekom, received from the office of the Honorable MEC.

Will you kindly investigate this matter and furnish the undersigned with a detailed report, also draft a response for the signature of the undersigned in this regard by the 17th July 2017.

Regards,

Mr. S.J Msibi
HoD: Police, Roads & Transport

13/07/2017
Date

OFFICE OF THE HEAD: POLICE, ROADS & TRANSPORT
P. O. Box 119, BLOEMFONTEIN, 9300.
Perm Building, 45 Charlotte Maxeke Street, BLOEMFONTEIN.
Tel: (051) 4098856, Email: HOD-SEC@freetrans.gov.za

APPENDIX I

PROFESSIONAL REGISTRATION AND CIRICULAM VITAE

Suid-Afrikaanse Raad vir Ingenieurswese

Hiermee word gesertifiseer dat *Leon Roets*

geregistreer is as *Professionele Ingenieur*

kragtens die Wet op die Ingenieursweseprofessie van Suid-Afrika 1990 (Wet 114 van 1990)

Datum *14 November 1996*

Registrasienommer *960547*

President

Registrateur

Council of South African Suid-Afrikaanse Raad vir Ingenieurswese Engineering

DE JONG 92

Die Suid-Afrikaanse Instituut van Siviele Ingenieurswese

Hiermee word gesertifiseer dat

Leon Roets

behoorlik verkies is as

Lid

Lidnommer: 206744

van

Die Suid-Afrikaanse
Instituut van Siviele Ingenieurswese

op

29 September 2006

Uitgereik onder die seël van die Instituut
Onder resolusie van die Raad

President

Uitvoerende Direkteur

SARF
better roads

SOUTH AFRICAN ROAD FEDERATION

This is to certify that

Leon Roets

ID No: 6510145135085

Has successfully attended a 5 day course on

ROAD SAFETY AUDITS

CPD VALIDATION NUMBER: SARF14/0003/17 (5 CREDITS)

SARF
better roads

HJ Lotter

Stefan Lotter
Presenter

Innocent Jumo
SARF President

13TH JULY – 17TH JULY 2015
GAUTENG – SANRAL – NORTHERN REGION

TRANSPORT & TRAFFIC ENGINEER CV

PERSONAL PARTICULARS

Name and Surname: Leon Roets
Identity Number: 6510145135085
Nationality: South African
Prof. Registration: 960547 - Professional Engineer

ACADEMIC QUALIFICATIONS

B Eng. (Civil Eng.) University of Pretoria, 1988

PROFESSIONAL MEMBERSHIP

Engineering Council of South Africa (ECSA)

EMPLOYMENT RECORD

01/2002 – Current:	Traffic Engineer Technical Director to SIYAZI Group of Companies
01/2002 – Current:	Office Manager for SIYAZI Limpopo (Pty) Ltd
01/2002 – Current:	Director and shareholder, SIYAZI Holdings (Pty) Ltd, SIYAZI Limpopo, SIYAZI-Thula, SIYAZI Gauteng and SIYAZI Free State
07/1996 – 12/2003:	Office Manager for all SIYAZI activities in the Limpopo Province
07/1996 – 12/2003:	Director and shareholder, SIYAZI Transportation & Services CC
11/1994 – 06/1996:	Representative of Africon Consulting Engineers Inc., Transportation Planning Division in the then Northern Province, based in Polokwane
08/1992 - 10/1994:	Africon Consulting Engineers Inc., Transport Planning Division in Pretoria
06/1990 - 08/1992:	Lexetran, Transport Planning Division of the then Van Wyk & Louw Group

Mr Roets has a total of 24 years experience. He is a Transport and Traffic Engineer with wide experience in transportation planning and modelling, data processing as well as Traffic Impact Studies.

MR ROETS COMPLETED A CONSIDERABLE NUMBER OF TRAFFIC IMPACT STUDIES FOR ALL TYPES OF DEVELOPMENTS, WHICH VARIES FROM BASIC RESIDENTIAL DEVELOPMENTS TO MAJOR SHOPPING CENTRE DEVELOPMENTS. THE FOLLOWING PROVIDES A SUMMARY OF SOME OF THE PROJECTS SPECIFICALLY RELATED TO MINE ACTIVITY:

Project	Client
Siyazi Transport & Technical and Liaison Assistance for Tripartite Forum (Twickenham)	Rustenburg Platinum Mine Limited-Mogalakwena Section
Mogalakwena Section Mine - Road Safety	Anglo American
Existing Aquarius Platinum Mine (Rustenburg) Transport Route Investigation (Proposed ROM Ore Transport by Road from K6 and Kwezi Shafts to AQPSA Kroondal Smelter)	SLR Consulting Engineers (Metago)
Twickenham Platinum Mines Integrated Transport Management Plan	WorleyParsons
7-day Electronic Counts for Two Rivers Platinum Mines	Two Rivers Platinum Mine
Proposed Scheiding Chrome Mine, Limpopo Province	Prime Resources (Pty) Ltd
Traffic Impact Assessment for Fumani Gold Mine	Ages (Pty) Ltd
Proposed CSP and PV Solar Power Plants near Jacobsdal, Free State	SLR Consulting Engineers
Proposed Siyanda Chrome Smelter, Northam, Limpopo	SLR Consulting Engineers
Traffic assessment for AQPSA, Rustenburg	SLR Consulting Engineers
Existing PPM mine near Pilanesberg, North West Province expansion	SLR Consulting Engineers
Proposed Musonoi Mine Situated near the Town of Kolwezi, Democratic Republic of Congo: Traffic Impact Assessment	Metago Environmental Engineers (PTY) ltd
Botswana Traffic Impact Assessment	SLR Consulting Engineers (Metago)
Proposed division of Road P50-1 near Pilanesberg	SLR Consulting Engineers (Metago)
Development of The Eastern Limb Mining Land Transport Strategy (ELM-LTS)	Steelpoort Valley Producers Forum
Proposed Kotulo Tsatsi Solar Park near Kenhardt, Northern Cape	Savannah Environmental (Pty) Ltd
Proposed Leeuw Mining Coral Mine: Utrecht KZN	SLR Consulting Engineers (Metago)
Proposed Moonlight Iron Ore Mining Development situated in the Waterberg District of the Limpopo Province: Traffic Impact Assessment	SLR Consulting Engineers (Metago)

Project	Client
Proposed Upgrading Kinsenda Copper Mine, Situated near the town of Likasi, in the DRC	SLR Consulting Engineers (Metago)
Traffic Impact Assessment for Intersection between Windhoek and Swakopmund	Metago Environmental Engineers (Pty) Ltd
Traffic Impact Assessment: Proposed Hawerklip Railway Station Situated on the Farm Matjisgoedkuil 266-IR Near Delmas	Metago Environmental Engineers (Pty) Ltd
Road Safety Project for Road R555	Steelpoort Producers Forum
Road Safety Project for Road R37, between Olifantsrivier and Burgersfort	Steelpoort Producers Forum
Kameni Product Transport Feasibility Study	Kameni
Proposed New PGM Mine Situated on the Farms Kalkfontein and Buffelshoek in the Steelpoort Area	Metago Environmental Engineers (Pty) Ltd
Proposed New Manganese Mining Operation, NCMC: Traffic Impact Assessment, Kuruman	Metago Environmental Engineers (Pty) Ltd
Project Management Road N11, Road Safety Project	Economic Sector Forum
Twickenham Public Transport System	Twickenham Platinum Mine
Road Master Plan for Mines in the Sekhukhune District	Steelpoort Producers Forum
Traffic Related Input for Realignment of Road N11	Economic Sector Forum in conjunction with SANRAL
Access to the Polokwane Smelter (Road R37)	Economic Sector Forum
Greenfield Expansion Project, Traffic Impact Assessment for Lwala Smelter	Semancor
Road R37 upgrade in Burgersfort for SANRAL	Steelpoort Producers Forum
Road Master Plan for Burgersfort	Steelpoort Producers Forum
Application to upgrade the existing Access Road D4170 to Road R37 (Modikwa Platinum Mine)	Steelpoort Producers Forum
New concentrator and smelter complex at Hernic's Bokfontein Chrome Mine on the farm Bokfontein 448 JQ near Brits in North West Province	Metago Environmental Engineers (Pty) Ltd
Proposed Development of a Manganese Mining Operation	Metago Environmental Engineers (Pty) Ltd
R555/Tweefontein Road Safety Project (Xtrata)	Xstrata Alloys Lion Ferrochrome
Traffic Related Input for Road R555	Steelpoort Producers Forum
Proposed Manganese Mining Operation On Portion 1 Of The Farm Lehating 741 Near Hotazel, Northern Cape Province	SLR Consulting Engineers (Metago)
Proposed Mokala Manganese Mine Situated Near Hotazel, Northern Cape Province	SLR Consulting Engineers (Metago)
Background Information on the Environmental Assessment for the proposed expansion of Eland Platinum Mine	Metago Environmental Engineers (Pty) Ltd
Development of an opencast and underground coal mining operation – Keaton Mine	Metago Environmental Engineers (Pty) Ltd
Mogalakwena Economic Sector, Transport related input for Mogalakwena Economic Sector	Economic Sector Forum
Traffic Counts Road R37	Steelpoort Producers Forum
Planning of multi modal facility for Burgersfort	Steelpoort Producers Forum
Provide input into traffic safety along Road R37	Steelpoort Producers Forum
Input into the transport of workers (Dilokong corridor)	Steelpoort Producers Forum
Strategy for Travel Demand Management for the Greater Tubatse Municipality and modelling for the R37 road	Steelpoort Producers Forum
Strategy to transport workers at the Modikwa Shaft	Modikwa Mine

SOME OF MR ROETS' OTHER TRAFFIC AND TRANSPORT ENGINEERING EXPERTISE AND EXPERIENCE INCLUDE THE FOLLOWING:
a) Shopping Centres that Range from 2 000 m^2 to 60 000 m^2
b) Various Filling Station Developments
c) Integrated Transport Plans for Various Local and District Municipalities • Vhembe • Ba-Phalaborwa • Polokwane • Sekhukhune • Thulamela • Limpopo • Mogalakwena
d) Public Transport Plans for Various Local and District Municipalities • Mopani • Vhembe • Tubatse • Capricorn
e) Design and Layout of Traffic Light System
f) Residential Development that vary from 100 to 12 000 stands

In conclusion the following are relevant:

The above-mentioned successful projects are a clear indication that Mr Roets is fully committed to sustainable development, and believes strongly in the following principles:

a) Providing safe, secure and reliable traffic-related facilities
b) Maintaining a balance between traffic engineering and the potential to create job opportunities. In other words, doing everything possible to take certain measures that would ensure the functionality of the proposed developments
c) Acting as a link between the developer and the relevant authority to ensure that development takes place successfully
d) Using his knowledge of local circumstances and conditions to the benefit of the local community, in order to stimulate job creation
e) Using his expertise, experience and qualifications to best effect in the belief that these should serve as a catalyst for job creation as far as is practically possible.

Leon Roets has the distinct advantage of possessing profound knowledge of transport and traffic issues of engineering. This in-depth knowledge in various fields, combined with the extensive knowledge that Siyazi has gained and also his record of successful co-operation with transport-related role players, his knowledge of the road network and the transport environment, probably makes Leon Roets one of the best candidates to provide traffic-related input for this project.

SOME OF THE TRANSPORT PLANNING PROJECTS THAT LEON ROETS HAD BEEN INVOLVED IN THE LIMPOPO PROVINCE INCLUDE:																
Authority / Project Description	Transport Forum	CPTR	OLS	RATPlan	PTP	ITP	LITP	DITP	Business Plans	Liaison	Public Transport Intermodal Facilities	Public Transport Facilities	Colour Coding	Transport Framework	Corridor Planning	Year
Technical Advisor – Taxi Industry Polokwane Integrated Rapid Transit									Y	Y		Y			Y	2015-2011
Elim Mall, Tzaneng Mall, Tzaneen Crossing, Tzaneen Lifestyle Centre, Burgersfort Mall, Malamulele												Y				2012-1998
Greater Tubatse Municipality	Y															2013-2003
Road R37 between Polokwane and Burgersfort (Dilokong Corridor)										Y					Y	2013-2003
Polokwane Intermodal Facilities, as part of Prism Consortium (Planning)											Y					2013-2010
Thohoyandou Intermodal Facilities, as part of MCE Consortium											Y					2013-2010
Giyani Intermodal Facility, Taxi Facilitation																2013-2010
Giyani, Makhado, Thohoyandou, Burgersfort, Special advisor for Intersite											Y					2013-2010
Vhembe District Municipality								Y								2010
Burgersfort, Road Master Network															Y	2009-2007
Mogalakwena Local Municipality	Y															2009-2006
Ba-Phalaborwa Local Municipality						Y										2008
Mogalakwena Local Municipality							Y									2008
Mogalakwena, Relocation and Road Safety of Road N11															Y	2008
Fetakgomo Local Municipality	Y															2007-2005
Polokwane, 2010 Priority Statement (PTIS)									Y							2007-2005
Polokwane Local Municipality					Y	Y										2007
Mogalakwena Local Municipality					Y											2007
Polokwane Local Municipality	Y															2006-1997
Sekhukhune District Municipality		Y	Y	Y	Y	Y										2006
Taxi Recapitalisation for Limpopo Department of Roads & Transport									Y							2005-2004
Limpopo Department or Roads and Transport													Y			2004
Part of team for Limpopo in Motion														Y		2004
Greater Tubatse Municipality		Y	Y	Y	Y	Y										2003
Capricorn District Municipality		Y														2003
Vhembe District Municipality		Y	Y		Y	Y										2003
Mopani District Municipality		Y	Y		Y	Y										2003
Pietersburg-Polokwane Transport Strategy						Y										2000
Polokwane, N1 Eastern bypass															Y	2000
Pietersburg-Polokwane Public Transport Strategy					Y											1997