

FINAL

**SASOL MINING
MIDDELBULT - BLOCK 8 - SHONDONI**

EIAR (NEMA & MPRDA)

**ENVIRONMENTAL
IMPACT
ASSESSMENT**

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COMPILED FOR



SASOL MINING (Pty) Ltd
Middelbult – Block 8 – Shondoni

COMPILED BY



JMA Consulting (Pty) Ltd
*Sustainable Environmental Solutions
through
Integrated Science and Engineering*

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6. ENVIRONMENTAL IMPACT ASSESSMENT

6.1 IMPACT ASSESSMENT METHODOLOGY

The impact assessment methodology used for the Middelbult – Block 8 - Shondoni Project is based on a Sasol Mining Standard Impact Assessment Rating Matrix.

This matrix was developed in-house by Sasol Mining, but nevertheless contains all the critical elements for Environmental Impact Assessment as proposed in the formal DEAT Protocol for Environmental Impact Assessment – *DEAT (2002) Impact Significance, Information Series 5, Department of Environmental Affairs and Tourism (DEAT), Pretoria.*

The protocol comprise a series of steps in order to systematically go through a process of:

1. Identifying and quantifying an impact (determining the severity). **Step 1.**
2. Calculating the likelihood of an impact happening. **Step 2.**
3. Quantification of the level of magnitude attached to the impact. **Step 3.**

During the identification process the following aspects are considered:

- The physical quantity of the potential impact (be it a volume, concentration or quantitative measurement).
- The toxicity of impact, measured against a pre-defined hazard rating.
- The measurement of the extent of an impact.
- The duration of the impact, measured in years.
- The environmental status of the impact.
- The regulatory impact in terms of legislation that has relevance.
- The impact on any Interested and Affected Parties.

A quantitative rating system is used to assign a value to each of the above aspects:

Criteria	Definition	Points
Quantity	The quantity (Volume) that will impact on the environment	
	Less than 1m ³ / incident or > 10 mg/ m ³ or < 61dBa	0
	More than 1 m ³ but less than 10 m ³ per incident or > 25 mg/ m ³	1
	More than 10 m ³ but less than 100 m ³ per incident > 50 mg/ m ³ or > 61dBa	2
	More than 100 m ³ but less than 1000 m ³ per incident or > 100mg/ m ³	3
	More than 1000 m ³ per incident \ continuous or > 120 mg/ m ³ or > 85dBa	4

Toxicity	Hazard rating (Dangerous properties of hazardous material)	
	Non-hazardous – (substances which will not result in any risk)	0
	Hazard rating 1 – (Substances which could result in relatively low risk)	1
	Hazard rating 2 – (Substances which could result in serious risk)	2
	Hazard rating 3 – (Substance which could result in severe risk)	3
Extent	How far does the impact extend?	
	Limited to Business unit	0
	Limited to mine lease area	1
	Regional (Refer to TEKSA area)	2
	National (Refer to Mpumalanga area)	3
	International (refer to beyond South Africa’s boundaries)	4
Duration	How long will the impact last?	
	Less than 5 years	0
	Between 5 – 15 years	1
	Exceeding mine lifetime	2
	Impact permanently present	3
Status	Status of impact	
	Beneficial (Improve the environment) – no risk reduction needed	-1
	Neutral (No change to the environment) – No risk reduction needed	0
	Adverse (Degradation of the environment) – Risk reduction needed	1
Legislation	Are there any regulatory requirements applicable to aspects – impacts?	
	None	0
	Yes, No fines, not cause loss of operating permit, but still reportable incident	1
	Yes, and will result in / prosecution or loss in production	2
	Yes, and will cause loss of operating permit or mine stoppage.	3
	Yes, and may lead to closing down of mine	4
I & AP’s	Interested and affected parties (I&AP)	
	No impact	0
	Impact to employees in unit	1
	Impact to local community / stakeholders	2
	Impact to general public – beyond TEKSA area (Bad publicity)	3

Table 6.1(A). Impact Assessment Criteria used at Middelbult – Block 8 - Shondoni.

Once a sum value has been determined for a specific impact, an Impact Severity Score is calculated (C-number) as **Step 1**, based on the Table below:

Severity score	Risk matrix Consequence Category
21 - 22	C7
19 - 20	C6
17 - 18	C5
14 - 16	C4
10 - 13	C3
5 - 9	C2
Less than 5	C1

Table 6.1(B). Impact Assessment Criteria used at Middelbult – Block 8 - Shondoni.

During **Step 2** the likelihood of an impact occurring/re-occurring is assessed at the hand of the Table provided below:

Likelihood Descriptors	Probability Intervals	Likelihood Definitions	P-value
Unforeseen	0 – 0.1%	The event is not foreseen to occur	P1
Highly unlikely	0.1 – 1%	The event may occur in exceptional circumstances (very remote)	P2
Very unlikely	1 – 5%	The event may occur in certain circumstances (remote chance)	P3
Low	5 – 15%	The event could occur (moderate chance)	P4
Possible	15 – 40%	The event may occur (realistic chance)	P5
Likely	40 – 75%	The event will probably occur (significant chance)	P6
Almost Certain	75 – 100%	The event is expected to occur or occurs regularly	P7

Table 6.1(C). Likelihood of an Impact Occurring (P-value).

Finally, the overall impact is quantified in a “Level of Risk” matrix, by combining the C-value (calculated in **Step 1**) with the P-value (calculated in **Step 2**) in the matrix provided below (**Step 3**). The overall impacts will be ranked based on the Level of Risk, as identified below:

	P1	P2	P3	P4	P5	P6	P7
C7	Level 3 Risk	Level 3 Risk	Level 3 Risk	Level 1 Risk	Level 1 Risk	Level 1 Risk	Level 1 Risk
C6	Level 3 Risk	Level 3 Risk	Level 3 Risk	Level 2 Risk	Level 2 Risk	Level 2 Risk	Level 1 Risk
C5	Level 4 Risk	Level 4 Risk	Level 4 Risk	Level 3 Risk	Level 2 Risk	Level 2 Risk	Level 2 Risk
C4	Level 5 Risk	Level 5 Risk	Level 5 Risk	Level 3 Risk	Level 3 Risk	Level 3 Risk	Level 3 Risk
C3	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 5 Risk	Level 5 Risk	Level 5 Risk	Level 4 Risk
C2	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 5 Risk
C1	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk	Level 6 Risk

Table 6.1(D). Level of Risk Matrix for Impacts at Middelbult – Block 8 - Shondoni.

The matrices shown above make use of generic criteria in order to systematically identify, predict, evaluate and determine the significance of impacts resulting from project construction, operation and decommissioning. However, in order to enhance the accuracy and integrity of the outcome of the Impact Assessment, the suite of potential environmental impacts (to both the natural and human environments) identified in the EIA, were as far as possible **quantified during the various specialist studies conducted** – see discussion in section 6.4 of this report.

6.2

CONSTRAINTS AND LIMITATIONS OF IMPACT ASSESSMENT

The base line studies conducted for the Sasol Mining Middelbult – Block 8 – Shondoni EIA/EMPR and related Authorization Processes, represents the basis from which to assess impacts related to both existing and proposed mining activities and also provides the required environmental objectives to be pursued during the conceptualization and design of environmental management measures.

Insufficient base line characterization could therefore present constraints to impact assessment. Not all of the environmental components considered during the base line studies are prone to actual impacts at Middelbult – Block 8 – Shondoni, most notably meteorology and geology. However, deficiencies in the description of these aspects, could influence the assessment of impacts related to other environmental components.

Meteorology

A stand alone meteorological study was not conducted for this project. However, all the relevant information as required by other disciplines such as ground water, surface water and air quality was generated by the individual specialists and discussed in their respective reports. A stand alone discussion was nevertheless compiled from these other reports for inclusion into the EIAR. Although the project is not expected to have any impact on the meteorology of the area, the meteorological information generated was required for impact assessments related to ground water, surface water, air quality, plant life, animal life, aquatic ecosystems, as well as noise.

Topography

A detailed DTM (Digital Terrain Model), covering the entire study area, was obtained from Sasol Mining for the purposes of this project. An elevation resolution of 2 m topographic elevation intervals was used for this project. However, due to the accuracy of the base data, interpolation to even higher resolution is possible. The information generated will support a surface subsidence monitoring program, as well as the surface water impact assessment and the design of water management and waste management measures.

Soils

With the exception of a small section of the old Middelbult Mine in the extreme south of the study area, the remainder of the old Middelbult Mining Area, the entire Block 8 Area and also the new Springbokdraai, Leeuwpan and Block 8 Northern Reserves, have all been covered with a high density quantitative soils survey, which resulted in a soils base line description and impact assessment of very high integrity and confidence.

Land Use and Land Capability

The land use and land capability base line study and impact assessment was based on the detailed soils study and are both of similar accuracy, integrity and confidence than the soils study.

Geology

Due to the fact that the study area is a highly developed mining area, a wealth of both regional and local geological data and related information (structural geological information pertaining to the presence of dolerite dykes, dolerite sills and faults) was readily available from Sasol Mining. The available data was, however, supplemented through the drilling of a number of geological boreholes to generate site specific geological information in support of essentially the ground water investigation for the site. The geological understanding of the site is therefore of high integrity.

The geological investigation also attended to geochemical aspects as it relate to the potential for Acid Mine Drainage and the long term deterioration in mine water and ground water quality. The geochemical study was focussed on the coal seam horizons and is deemed to be fully sufficient for the purposes of long term water quality prediction at Middelbult – Block 8 – Shondoni, especially as the calculations could be calibrated at the hand of observed underground mine water qualities from mined out underground sections in the greater study area.

Ground Water

The following constraints and limitations can be present at the ground water impact assessment study:

- Quantity:** The quantification of ground water related impacts are sometimes based on the results of ground water models and/or analytical calculations. These quantities are calibrated with known similar geohydrological conditions. However, the exact impact can only be determined during the operational phase activities when monitoring/measurement devices are used. In the event where a loss in borehole yield takes place, this loss in volume is based on information sourced from 3rd parties.
- Toxicity:** The toxicity of ground water quality deterioration is measured against SABS Drinking Water Standards. No detailed Toxicological studies were performed. The Standard use is deemed sufficient for the study.
- Extent:** A high degree of certainty can be attached to this parameter. The most ground water related impacts take place within the Business Unit.
- Duration:** The duration of ground water related impacts can be assessed at the hand of the time of impact, i.e. Operational Phase, Close Phase, etc. The duration of long term impacts is a function of the calibration of flooding models. No single mining operation is the same, and flooding rates will differ. Continuous monitoring will increase the confidence levels of models.
- Status:** No limitations or constraints exist for these criteria.
- Legislation:** The legislation pertaining to EIA applications, MPRDA regulations and DWAF regulations is very clear.
- I & AP:** No limitations or constraints exist for these criteria.

Surface Water

Due to the availability of extensive meteorological data sets, and due to the highly accurate topographical data available for the study area, the surface water base line description and impact assessment is highly quantitative and is deemed to be accurate to high levels of confidence.

Plant Life

There were no major constraints or limitations associated with the plant life assessment. Of minor concern was the fact that this study and assessment was undertaken in winter, but was based on detailed data collected during the growing season. The potential limitations of this approach are addressed by recommending a follow-up survey for threatened plants in the footprint of proposed infrastructure during the flowering season of those species that could potentially occur on site.

Animal Life

Specific quantities for the listed activities were not provided so it was necessary to estimate these in order to define the “quantity” of each impact.

Wetlands

The impact assessment is based on the baseline information contained within this report, which is made up of data collected in the field during 2010, as well as data contained in the wetland report compiled in 2004.

The project description used for the impact assessment was taken from Chapters 1-4 of the Sasol Mining Middelbult-Shononi Environmental Impact Assessment report compiled by JMA Consulting.

The impact assessment methodology was used as provided by JMA Consulting.

Aquatic Ecosystems

The impacts for ecosystems were rated according to a once-off field survey which may have missed important species with spatially or temporally isolated distributions. For example, certain fish species may have been missed and may erroneously have been assumed to be absent.

The ratings given for listed activities and water use licence applications have been lumped and should therefore be seen as an estimate of the overall impact. These should therefore be viewed as guidelines only and should be considered in association with individual impacts for each activity.

Specific activities were not identified under each water use licence application and exemption application category and impacts may therefore have been missed.

Air Quality

The only air quality impacts that will be associated with the mine, will occur during the construction and decommissioning phases and will be related to dust and gaseous emissions from construction vehicles. In view of the documented limited extent, duration, intensity and significance of these air quality impacts, and in view of the standard management measures which will be applied by the contractors during these activities, an air quality specialist study was not deemed to be required. This aspect has been documented in the Scoping Report and Plan of Study and was approved by the I&AP's as well as the authorities.

Noise

The noise base line study and impact assessment for this project are both highly quantitative and are based on worst case direct noise measurements (winter; day and night) both at sources, as well as at current and potential receptor localities. The impact assessment as based on the existing noise sources, supplemented with what is expected from the additional activities is deemed adequate.

Visuals

The visuals assessment is deemed of high quality and integrity. The base line study represents a site specific visibility assessment supplemented with a detailed and comprehensive photographic assessment. The impact assessment was done subject to a well researched contextual analyses.

Heritage

A Phase I Heritage Impact Assessment (HIA) study, as required in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999), was done for this project.

Socio-Economics

The study is supported by an approved Social and Labour Plan.

Summary Statement (Constraints and Limitations)

A high integrity Environmental Impact Assessment requires three fundamental components:

- highly accurate and site specific base line descriptions supported with data generated through on site observation/measurement and monitoring.
- detailed quantitative process descriptions related to all activities that could impact on the environment in order to be able to identify and describe all potential impacts of the activity on the environment.
- sophisticated impact assessment tools that can describe and assess impacts through all the life cycle phases of the project, including calculation tools and simulation models that can simulate the effects of activities on the receiving environment in a transient manner.

In view of the above, and based on the work performed for this project and which is discussed extensively in this report, it is believed that the Environmental Impact assessment conducted for Middelbult – Block 8 – Shondoni, is indeed of high quality and integrity. The constraints and limitations that were identified, were taken into consideration during the numerical ratings in the sense that where they could influence the rating, the more conservative rating was always selected.



6.3

IDENTIFICATION OF ACTIVITIES/ASPECTS

During the impact assessments performed by the various specialists in their specialist studies, each specialist identified impacts based on his/her experience and with reference to the project description provided by the EAP for the project (JMA Consulting). This was done to ensure that specialists are not guided to only address impacts specifically mentioned in “Listed Activities” but that they would indeed identify and assess all activities related to the Middelbult – Block 8 – Shondoni Mine’s current and future operations and which may impact on the environment. The full specialist reports compiled by the different specialists are contained as APPENDICES in VOLUME IV of this submission.

However, for this EIAR, the EAP structured the “Activities/Aspects“ which needed to be assessed, in groups relating to the legal authorization process requirements as relevant to the different regulating authorities, namely Mpumalanga DEDET and Gauteng DWA. In addition to this, and specifically to support the development of the overall comprehensive EIA/EMP for the Mine in support of the requirements of DMR, including already authorized existing Shafts at Middelbult and Block 8, activities requiring assessment for the EMP design purposes were additionally identified and grouped into three additional categories, namely:

- Middelbult – Block 8 – Shondoni Surface Shaft Activities. (The activities identified for these areas were compiled subject to the detailed Shondoni Shaft Activity Inventory as compiled from the detailed project description for the new shaft (Shondoni Techno-Economic Study), supplemented with all activities identified at the remaining Middelbult – Block 8 Shafts as contained in the previous two approved EMPR’s – Main Shaft, West Shaft, Ithembaletu Shaft. North Shaft and North West shaft have been decommissioned and closed).
- Middelbult – Block 8 – Shondoni Underground Mining Activities. (The underground mining activities related to the Middelbult – Block 8 Mine, and which could impact on the environment, have all long been identified, described and assessed. From a pure mining perspective, the Shondoni project merely represents an altered and extended underground mine plan. No “new” impacts are therefore anticipated, but the changes and extensions to the underground mine plan have necessitated that the impacts had to be revisited and re-assessed).
- Middelbult – Block 8 – Shondoni Coal Conveyor Activities. (Activities related to two conveyors are relevant. The first one has been in operation since the days of the original Middelbult EMPR that was approved in 2002. The second conveyor is the new one proposed for the Shondoni project.

Once an activity was identified, it is assumed that it will run through all the life cycle phases of the project namely, **construction phase, operational phase, decommissioning and closure phase, and post closure phase.**

However, for previously approved activities, although some are still operational, others have already been decommissioned and closed, such as for example the Middelbult North Shaft and Middelbult North West Shaft.

6.3.1

NEMA EIA Listed Activities (GNR 386 & GNR 387)

National Environmental Management Act, Act No. 107 of 1998		
Section 24	Environmental Authorisation Application	
GNR 386		
Activity 1(c)	The construction of facilities or infrastructure, including associated structures of infrastructure, for the storage of 250 tons or more but less than 100 000 tons of coal	Coal throw out stockpile area at Shondoni Shaft
Activity 1(m)	The construction of facilities or infrastructure, including associated structures of infrastructure, for any purpose in the 1:10 year flood line of a river or stream, or within 32 m from the bank of the river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including – (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs	Conveyor Pedestal for crossing of Trichardt Spruit
Activity 1(n)	The construction of facilities or infrastructure, including associated structures of infrastructure, for the off-stream storage of water, including dams and reservoirs, with a capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of the activity listed in item 6 of Government Notice No. R. 387 of 2006	Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex
Activity 4	The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.	Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit
Activity 7	The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres at any one location or site.	Diesel Fuel Storage Tanks at Shondoni Shaft Complex
Activity 12	The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of it section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).	Removal of Indigenous Vegetation during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure
Activity 13	The abstraction of groundwater at a volume where any general authorisation issued in terms of the National Water Act, 1998 (Act No. 36 of 1998) will be exceeded.	Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people
Activity 14	The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission.	Tetra Radio System that will be installed above ground at the Shaft Complex Area.
Activity 15	The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.	Access Road to Shondoni Shaft Complex from Tar road R547
GNR 387		
Activity 1 (l)	The construction of facilities or infrastructure, including associated structures or infrastructure, for the transmission and distribution of above ground electricity with a capacity of 120 kilovolts or more.	Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays.
Activity 1(j)	The construction of facilities or infrastructure, including associated structures or infrastructure, for the bulk transportation of dangerous goods using pipelines, funiculars or conveyors with a throughput capacity of 50 tons or 50 cubic metres or more per day.	Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (Sasol Coal Supply, the central coal stockpile area).
Activity 2	Any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more.	Developed area including shaft surface infrastructure and conveyor route.

6.3.2

NWA Water Uses

National Water Act, Act No. 36 of 1998		
NWA Section 40	Integrated Water Use License Application (Includes Registrations)	
Section 21(a)	Taking water from a water resource	Service water used underground sourced from underground water make (21(j))
Section 21(c)	Impeding or diverting the flow of water in a watercourse	Coal conveyor from Shondoni Shaft to Central Coal Stockpile Area
Section 21(f)	Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit	Shondoni Shaft Sewerage Plant
Section 21(g)	Disposing of waste in a manner which may detrimentally impact on a water resource	Shondoni Shaft Service Water Dams, Storm Water PCD and Shondoni Shaft Berms Walls
Section 21(i)	Altering the bed, banks, course or characteristics of a watercourse	Coal Conveyor from Shondoni Shaft to Central Coal Stockpile Area. Possible stream diversion at Shaft Locality for Incline Shaft.
Section 21(j)	Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people	Removing Mine Water Make from the No.4 Seam and No.2 Seam Underground Works
NWA Section 39	General Authorisations	
Section 21(c)	To be applied for in consultation with DWAF	
Section 21(f)	To be applied for in consultation with DWAF	
Section 21(g)	To be applied for in consultation with DWAF	
Section 21(i)	To be applied for in consultation with DWAF	
GNR 1352	Water Use Registration	
	Included in Water Use License Application and/or General Authorisation	

6.3.3

NWA GNR 704 Activity Exemptions

National Water Act, Act No. 36 of 1998		
GNR 740 (R 3)	Exemptions from GNR 704	
Regulation 4 (a) (Restrictions On Locality)	No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked.	Shondoni Shaft Complex
Regulation 4 (b) (Restrictions On Locality)	No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest.	Entire Middelbult, Block 8, Springbokdraai and Leeuwpans Reserve
Regulation 4 (d) (Restrictions On Locality)	No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary.	Shondoni Shaft Complex and Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (Sasol Coal Supply, the central coal stockpile area).
Regulation 5 (Restrictions On Use of Material)	No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource.	Use of overburden material excavated from Shondoni Shafts for construction of berms around Shondoni Shaft Complex

6.3.4 NEMWA Listed Waste Management Activities

National Environmental Management Waste Act, Act No. 59 of 2009		
NEMWA Section 45	Application for Waste Management Licences	
Category B (7)	Treatment of sewage with an annual throughput capacity of 15 000 cubic metres or more.	Shondoni Shaft Sewerage Plant.

6.3.5 MPRDA Middelbult – Block 8 – Shondoni Surface Shaft Activities

Mineral and Petroleum Resources Development Act, Act No. 28 of 2002	
MPRDA Section 44	Mining Right Application
Shondoni Shaft, Main Shaft, West Shaft and Ithembaletu Shaft	
Site clearance prior to construction	
Storage of topsoil stripped during construction	
Compaction of in-situ footprints prepared for infrastructure construction	
Excavation during shaft sinking (vertical and incline)	
Storage of materials generated during shaft sinking	
Construction of access road	
Construction of surface buildings, shaft headgear, parking areas, etc	
Construction of surface coal handling facilities (bunker, throw-out area, emergency stockpile)	
Construction of water management infrastructure (canals, berms, silt traps, dams)	
Erection of security fences	

6.3.6 MPRDA Middelbult – Block 8 – Shondoni Underground Mining Activities

Mineral and Petroleum Resources Development Act, Act No. 28 of 2002	
MPRDA Section 44	Mining Right Application
No.4 Seam and No.2 Seam Underground Bord and Pillar and Selective High Extraction Mining	
Primary development and bord and pillar mining on the No.2 coal seam horizon	
Primary development and bord and pillar mining on the No.4 coal seam horizon	
Possible increased extraction on the No.4 coal seam horizon	
Storage of excess mine water in mined underground sections	

6.3.7 MPRDA Middelbult – Block 8 – Shondoni Coal Conveyor Activities

Mineral and Petroleum Resources Development Act, Act No. 28 of 2002	
MPRDA Section 44	Mining Right Application
Shondoni Shaft Conveyor and Main Shaft Conveyor	
Site clearance along conveyor servitude	
Storage of topsoil stripped during construction	
Excavation for conveyor pedestals	
Construction of conveyor and conveyor housing	
Construction of (over and under) road crossings	
Erection of security fences	

6.4 IDENTIFY AND ASSESS IMPACTS – SPECIALIST STUDIES

Based on the identified “activities and aspects” each specialist identified and assessed impacts related to each of the relevant environmental components during the specialist study phase of the project.

6.4.1 Meteorological Assessment

A dedicated meteorological specialist study was not conducted for this project. The information contained in Chapter 5 of this report was collated from other specialist studies and represents base line information in support of other specialist studies that require meteorological data, such as ground water, surface water, air quality and noise. The activities at Middelbult – Block 8 – Shondoni will not have any effect on the meteorology or climate of the study area.

6.4.2 Topographical Assessment

Although a dedicated topographical specialist study was not conducted for this project, Sasol Mining was already in possession of a detailed DTM for the study area, which provides the base line data in support of other specialist studies that require topographical data, such as ground water, surface water and visuals. However, high extraction coal mining as planned for certain sections of the No.4 seam in the Block 8 – Shondoni area, could under certain conditions result in surface subsidence. The base line topographical data available, and used in this report, will facilitate identification and quantification of such subsidences in the unlikely event that it does occur.

6.4.3 Soils Assessment

A highly quantitative, analytical Soils Study was undertaken for the Middelbult – Block 8 – Shondoni project, the results of which are detailed in a Soils Specialist Study which is attached as APPENDIX 5.3(A) in VOLUME IV of this submission. The high integrity base line study, which included field observation and soil sampling on a predetermined grid, followed by soil laboratory analyses, facilitated a high integrity empirical/analytical impact assessment for large sections of the old, already mined out, Middelbult Reserve, for the entire Block 8 Reserve, as well as for the three new reserve blocks, Springbokdraai, Leeuwpan and Block 8 Northern Reserves.

6.4.4 Land Capability & Land Use Assessment

A specialist study was conducted to assess land capability and land use from a biophysical perspective. The specialist report, which is a combined report with the soils study, is attached as APPENDIX 5.3(A) in VOLUME IV of this submission. The biophysical assessment defined the current land use, as well as the soil/land potential, for different land use applications.

The impact assessment for land capability and land use is an empirical/analytical one, supported with accurate quantitative onsite information on current land use, supplemented with soil physical and chemical impact information for the current activities as generated during the soils study.

From a legal land capability and land use perspective, the information contained in the Property Description in Chapter 4 of VOLUME I of this report, details the zoning status for each of the properties located within the larger mine lease area.

6.4.5 Geological/Geochemical Assessment

The specialist work conducted for the geological/geochemical assessment, represents base line information required to support impact assessments related to land capability and land use, ground water, surface water, plant life, animal life, wetlands, aquatic ecosystems, and air quality. The results of these assessments are contained in one combined Specialist Reports, namely a Geology Specialist Report attached as APPENDIX 5.5(A) in VOLUME IV of this submission.

The information generated is of a highly accurate, site specific, quantitative nature and which will support both analytical and stochastic impact assessment. The geological regime was quantified through on site borehole drilling and sampling, both by Sasol Mining for geological exploration, as well as by JMA, for investigative purposes, followed by laboratory testing of ANA samples, resulting in both physical and geochemical characterization of the geological regime.

6.4.6 Ground Water Assessment

A highly quantitative, site specific geohydrological investigation, comprising a base line study, impact assessment and design of a ground water management measures and monitoring plan was conducted for the Middelbult – Block 8 – Shondoni project. A copy of the Ground Water Specialist Report is attached as APPENDIX 5.6(A) in VOLUME IV of this submission. The ground water impact assessment is of very high integrity and contains elements of empirical and analytical mine water balance, and salt balance, impact assessment. The base line study provided all the necessary quantitative data to facilitate analytical impact modelling for a wide range of ground water related impacts.

6.4.7 Surface Water Assessment

A surface water specialist report is attached as APPENDIX 5.7(A) in VOLUME IV of this submission. The highly accurate and quantitative Meteorological and Topographical information generated for the project, enabled high integrity hydrological calculations and modelling to be performed for the existing and proposed mining activities. The impact of existing and proposed new facilities on the storm water run-off volumes and quality of the site, could therefore be assessed analytically to a very high degree of confidence.

6.4.8 Plant Life Assessment

A Plant Life Specialist Report is attached as APPENDIX 5.8(A) in VOLUME IV of this submission. The survey conducted has resulted in an accurate empirical/analytical plant life impact assessment for both the current, as well as future activities.

6.4.9 Animal Life Assessment

An Animal Life Specialist Report is attached as APPENDIX 5.9(A) in VOLUME IV of this submission. The survey conducted resulted in an accurate empirical/analytical animal life impact assessment for both the current, as well as future activities.

6.4.10 Wetland Assessment

A Wetland Specialist Report is attached as APPENDIX 5.10(A) in VOLUME IV of this submission. The survey conducted resulted in an accurate empirical/analytical animal life impact assessment for both the current, as well as future activities.

6.4.11 Aquatic Ecosystems Assessment

An Aquatic Ecosystems Specialist Report is attached as APPENDIX 5.11(A) in VOLUME IV of this submission. The survey conducted has resulted in an accurate empirical/analytical aquatic ecosystems impact assessment for both the current, as well as future activities.

6.4.12 Air Quality Assessment

The only air quality impacts that will be associated with the mine, will occur during the construction and decommissioning phases and will be related to dust and gaseous emissions from construction vehicles. In view of the documented limited extent, duration, intensity and significance of these air quality impacts, and in view of the standard management measures which will be applied by the contractors during these activities, an air quality specialist study was not deemed to be required. This aspect has been documented in the Scoping Report and Plan of Study and was approved by the I&AP's as well as the authorities.

6.4.13 Noise Assessment

A Noise Specialist Report is attached as APPENDIX 5.13(A) in VOLUME IV of this submission. The survey conducted, represents the current situation at Middelbult – Block 8 – Shondoni for winter, day and night conditions, thus resulting in an accurate empirical/analytical noise impact assessment for both the current, as well as future activities.

6.4.14 Visual Assessment

A Visual Aspects Specialist Report is attached as APPENDIX 5.14(A) in VOLUME IV of this submission. The survey conducted, represents the current situation at Middelbult – Block 8 – Shondoni, thus resulting in an accurate empirical/analytical visual impact assessment for both the current, as well as future activities.

6.4.15 Heritage Assessment

A Heritage Aspects Specialist Report is attached as APPENDIX 5.15(A) in VOLUME IV of this submission. The survey conducted, represents the current situation at Middelbult – Block 8 – Shondoni, thus resulting in an accurate empirical/analytical heritage aspects impact assessment for both the current, as well as future activities.

6.4.16 Socio-Economic Asssment

The study is supported by an approved Social and Labour Plan, a copy of which is attached as APPENDIX 5.16(A) in VOLUME IV of this submission.

6.5 ASSESSMENT OF IMPACT SIGNIFICANCE

For a detailed and in depth discussion on the assessment of impact significance for each of the individual environmental components, please refer to the Specialist Study Reports contained in VOLUME IV of this submission.

However, for the purposes of this EIAR, the project EAP, JMA Consulting, collated and summarized all the available impact assessment information from the Specialist Study Reports into Impact Significance Assessment Tables.

The method used to compile these Tables has been described in section 6.1, the aspects related to each of the NEMA and NEMWA listed activities, the NWA Water Uses and GNR 704 Exemptions, as well as the different MPRDA Mining Activities at Middelbult – Block 8 – Shondoni, have been identified in section 6.3, and the impacts associated with each aspect have been obtained from the specialist study reports.

Tables have been compiled for each of the Middelbult – Block 8 – Shondoni life cycle phases, construction, operation, decommissioning and closure, as well as post closure. For currently existing activities/aspects, the construction phase has obviously not been assessed. However, for all new/proposed activities/aspects, impacts have been assessed for each life cycle phase.

The Impact Assessment Tables contain the following columns:

- Activity/Aspect Description
- Impact Identification and Description
- Quantity
- Toxicity
- Extent
- Duration
- Status
- Legislation
- I&AP's
- Severity Total
- Severity C Number
- Degree of Likelihood
- Risk Level Before Mitigation

6.5.1 Construction Phase Impact Significance Tables

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Topography		Topography										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	The coal throw out stockpile will change the topographical view, but will not alter the topographical profile.	1	0	1	1	0	1	0	4	C1	Almost Certain	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	N/A	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Some excavation will take place in the construction of the dams, but will not alter the topographical profile.	1	0	1	1	0	1	0	4	C1	Almost Certain	Level 6 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	N/A	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	N/A	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	N/A	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	N/A	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	N/A	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	N/A	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	N/A	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	N/A	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	N/A	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	N/A	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	N/A	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	N/A	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	N/A	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	N/A	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	N/A	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	N/A	~	~	~	~	~	~	~	~	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction and commissioning of the shaft complex at Shondoni.	N/A	~	~	~	~	~	~	~	~	~	~	
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	N/A	~	~	~	~	~	~	~	~	~	~	
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.	N/A	~	~	~	~	~	~	~	~	~	~	
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Construction and commissioning of the conveyor	N/A	~	~	~	~	~	~	~	~	~	~	
Activity Description		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Soils and Land Capability		Soils and Land Capability										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Contamination of soil footprint by RoM Product, and loss of soil utilization	4	2	1	1	1	1	1	11	C3	Almost Certain - P7	Level 4 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Contamination of soil footprint by RoM Product and Hydrocarbon spills, and loss of soil utilization	4	3	1	1	1	2	1	13	C3	Almost Certain - P7	Level 47 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Contamination of subsols by dirty water seepage, and loss of utilization of the resource	4	3	1	2	1	2	1	14	C4	Almost Certain	Level 3 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	None - Completed during construction phase - No added impacts	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Possible contamination of soil footprint outside of bunded area. Loss of soil utilization	3	3	1	1	1	2	1	12	C3	Possible P5	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Loss of soil and land utilization if this is ongoing into the operational phase.	3	1	1	2	1	1	2	11	C3	Likely - P6	Level 5 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Potential ongoing impact on soil moisture and loss of land utilization	3	2	1	1	1	2	2	12	C3	Likely - P6	Level 5 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Completed in Construction Phase - No additional impacts of consequence other than the loss of the soil resource and utilization potential	2	0	0	1	2	1	1	7	C2	Likely - P6	Level 5 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Loss of soil resource and utilization potential and possible contamination by product and hydrocarbon spills	4	3	2	1	1	2	2	15	C4	Likely - P6	Level 3 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Ongoing loss of soil resource and utilization potential due to service road	4	0	2	2	1	1	2	12	C3	Almost Certain - P7	Level 4 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	On-going loss of soil resource and utilization potential and possible contamination by product and hydrocarbon spills	4	3	2	1	1	2	2	15	C4	Likely - P6	Level 3 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Loss of soil resource and utilization potential and possible contamination by product and hydrocarbon spills	4	2	2	2	1	1	2	14	C4	Almost Certain P7	Level 3 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	The on-going reduction in water resources will potentially reduce the irrigation potential and render the land capability less productive due to lowering of soil moisture content.	4	0	2	2	1	2	2	13	C3	Almost Certain P7	Level 4 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Diversion of water from its present course could affect the land capability in terms of productivity due to reduction in soil moisture content	4	0	2	2	1	2	2	13	C3	Possible P5	Level 5 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Discharge of waste to unprotected soils will render them less useable. The loss of this resource could potentially be permanent if not managed.	4	1	2	1	1	2	2	13	C3	Low P4	Level 5 Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	N/A to soils directly. However, the contamination of the water resource would ultimately impact on soils that are irrigated or over which they flow if not protected.	4	1	2	1	1	2	2	13	C3	Low P4	Level 5 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Diversions of water courses or rivers will impact the soils over which the water is engineered to flow. These soils will be lost from the system and potentially be contaminated or impacted by poor quality water	4	0	2	2	1	2	2	13	C3	Possible P5	Level 5 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Taking of water from the earth's system will alter the soil moisture dynamics which will in turn affect the biosphere and ecology of the area that is dependent on and adapted to the present biological balance.	4	1	2	2	1	2	2	14	C3	Almost Certain P7	Level 4 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged.	N/A	~	~	~	~	~	~	~	~	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	N/A	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.		~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
On-going mining - haulage of raw product to surface and beneficiation	Continued loss of soil resource and utilization potential, plus possible contamination of footprint soils.	3	2	0	1	1	1	1	9	C2	Almost Certain - P7	level 5 Risk
Possible contamination of footprint soils and stored berm materials by dirty water in area of shaft workings	Continued loss of soil resource and utilization potential, plus possible contamination of footprint soils.	3	3	0	1	1	1	1	10	C3	Likely - P6	Level 4 Risk
Compaction of in-situ footprint and stored material, plus erosion of unprotected areas and storage facilities.	Continued loss of soil resource and utilization potential	3	1	0	1	1	1	1	8	C2	Likely - P6	Level 6 Risk
Vehicle impacts	Loss of resource by dust emissions	3	1	1	1	1	1	1	9	C2	Likely - P6	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Continued loss of soil resource and utilization potential, plus possible contamination of footprint soils.	3	2	0	1	1	1	1	9	C2	Almost Certain - P7	level 5 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Ongoing operation of shafts, access roads and haulage ways	Continued loss of soil resource with possibility of contamination by operational activities - Rom product and vehicle impacts - Hydrocarbons, compaction and/or erosion	3	1	0	1	1	1	1	8	C2	Almost Certain - P7	Level 5 Risk
Potential for contamination of stored soils from adit declines and shafts operations - water, by product and hydrocarbons from operation vehicles	The continued loss of resource and utilization potential due to operation of mining infrastructure and storage of product (RoM) and natural materials	3	1	0	1	1	1	1	8	C2	Almost Certain - P7	Level 5 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of haulage facility	Ongoing loss of resource and soil utilization potential, and the potential for contamination by spillage of product and hydrocarbons	4	3	2	1	1	1	2	14	C4	Almost Certain P7	Level 3 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Ground Water		Ground Water										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	The construction of a 15 000t ROM coal stockpile area at Shondoni Shaft. The construction activities consist of the preparation of a suitable footprint area and will in itself not lead to any potential ground water pollution.	2	1	0	0	0	3	1	7	C2	Almost Certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Conveyor Pedestal will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	The construction of a Storm Water Pollution Control Dam that can lead to a deterioration of ground water quality directly beneath the facility.	4	1	0	0	0	3	1	9	C2	Almost Certain	Level 5 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Conveyor Pedestal will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	The storage of diesel fuel in storage tanks can lead to ground water pollution due to spillages/leaks.	2	3	0	2	1	3	2	13	C3	Highly Unlikely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Clearance of vegetation will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Any water removed from the No.4 Coal seam will be deemed polluted and stored in other sections of mined out areas, or pumped to surface to the Storm Water Pollution Control Dam (SWPCD).	4	1	1	0	0	3	1	10	C3	Very unlikely	Level 6 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Installation of Radio System will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	The construction of an access road will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	The construction of the Overhead Power line will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to	The construction of a coal conveyor belt will not intersect ground water, so no impact will	~	~	~	~	~	~	~	0	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	take place.											
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	This activity only refers to surface disturbance. Since no ground water is intersected, no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Ground water seepage into the shaft complex during construction activities, through weathered and fresh aquifer units (to a depth of 120 meters).	2	0	0	0	1	2	1	6	C2	Likely	Level 6 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Ground water seepage captured in the shaft complex during construction activities will be pumped to pollution control dams on surface. Since the water originated in a construction area, it is considered polluted.	2	0	0	0	1	2	1	6	C2	Likely	Level 6 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Any water removed from the No.4 Coal seam will be deemed polluted and stored in other sections of mined out areas. A detailed mine optimisation plan has been designed to create the necessary storage of water in mined out areas for the total Life of Mine.	4	1	1	0	0	3	1	10	C3	Very unlikely	Level 6 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction and commissioning of the shaft complex at Shondoni.	Depletion in ground water availability and quality as a result of ground water seepage during the construction of the shaft complex.	2	0	1	0	1	2	1	7	C2	Likely	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Depletion in ground water availability and quality as a result of ground water seepage during the construction of the shaft complex.	2	0	1	0	1	2	1	7	C2	Likely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Construction and commissioning of the shaft complex at Shondoni.	No mining activities will commence at Shondoni before the shaft complex is completed.	~	~	~	~	~	~	~	0	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area).	The construction of a coal conveyor belt will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Surface Water		Surface Water										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Service Water Dams and Storm Water Pollution Control Dam at	Impact on water quality:	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk

CONSTRUCTION PHASE ACTIVITIES	Activity Description	Impact Identification/Description	Criteria for Determining Severity							SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation	
			Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's				SEVERITY TOTAL
	Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion											
	Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Impact on water quality: Based on Sasol Mining's experience at similar shafts, groundwater quality from the shafts is likely to be slightly to moderately impacted on in terms of sulphates and TDS, with potential impacts if allowed to spill to the catchment.	3	1	1	0	1	2	0	8	C2	Likely	Level 6 Risk
	Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES			LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
	Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	N/A	~	~	~	~	~	~	~	~	~	~	~
	Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40			NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
	Taking water from a water resource - Section 21 (a).	Impact on groundwater yield, not a surface water impact.								0			
	Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion. Applicable at conveyor stream crossings.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	N/A	~	~	~	~	~	~	~	~	~	~	~
	Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Impact on water quality: Overburden removed from the shaft excavations will be placed in an overburden stockpile. This material has the potential to contain some carbonaceous material.	3	1	1	0	1	2	0	8	C2	Likely	Level 6 Risk
		Impact on water quality: Based on Sasol Mining's experience at similar shafts, groundwater quality from the shafts is likely to be slightly to moderately impacted on in terms of sulphates and TDS, with potential impacts if allowed to spill to the catchment.	3	1	1	0	1	2	0	8	C2	Likely	Level 6 Risk
	Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion. Applicable at conveyor stream crossings.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
	Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Impact on water quality: Based on Sasol Mining's experience at similar shafts, groundwater quality from the shafts is likely to be slightly to moderately impacted on in terms of sulphates and TDS, with potential impacts if allowed to spill to the catchment.	3	1	1	0	1	2	0	8	C2	Likely	Level 6 Risk
Exemptions from GNR 704			Exemptions from GNR 704										
	No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not applicable during construction phase	~	~	~	~	~	~	~	~	~	~	~
	No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not applicable during construction phase	~	~	~	~	~	~	~	~	~	~	~
	No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not applicable during construction phase	~	~	~	~	~	~	~	~	~	~	~
	No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not applicable during construction phase	~	~	~	~	~	~	~	~	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.		~	~	~	~	~	~	~	~	~	~	
MINE SHAFT AREAS		MINE SHAFT AREAS										
Material from the shaft sinking activities	Impact on water quality: Overburden removed from the shaft excavations will be placed in an overburden stockpile. This material has the potential to contain some carbonaceous material.	3	1	1	1	1	2	2	11	C3	Likely	Level 5 Risk
Dewatering of water ingress to the shaft	Impact on water quality: Based on Sasol Mining's experience at similar shafts, groundwater quality from the shafts is likely to be slightly to moderately impacted on in terms of sulphates and TDS, with potential impacts if allowed to spill to the catchment.	3	1	1	0	1	2	1	9	C2	Likely	Level 6 Risk
Coal handling infrastructure (shaft, bunker workshops, offices and stockpiles)	Civil activities related to construction: Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Water management infrastructure, involving construction of: - Clean water diversion canals and berms - Pollution control dams	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	N/A during the operational phase.	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None		~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Stripping of topsoil and undertaking of civil works for the conveyor belt	Impact on water quality: Stripping of vegetation and topsoil during construction activities, resulting in increased suspended solids and some risk of erosion	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Plant Life		Plant life										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	4	1	1	2	1	1	1	11	C3	Almost Certain	Level 4 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	3	1	1	3	11	C3	Almost Certain	Level 4 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	3	1	1	2	1	1	2	11	C3	Almost Certain	Level 4 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	2	1	1	3	10	C3	Almost Certain	Level 4 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	2	2	1	1	1	1	1	9	C2	Almost Certain	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	3	1	1	1	9	C2	Almost Certain	Level 5 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	0	1	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	1	0	1	1	1	1	2	7	C2	Almost Certain	Level 5 Risk
Construction of an Access Road (wider than 4m) at Shondoni Shaft Complex from Tar road R547 - Activity 15.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation.	4	1	1	2	1	1	3	13	C3	Almost Certain	Level 4 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, alien plant invasions, habitat fragmentation, habitat deterioration, change in physical abiotic conditions.	3	0	1	2	1	1	3	11	C3	Almost Certain	Level 4 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, alien plant invasions, habitat fragmentation, habitat deterioration, change in physical abiotic conditions.	4	1	1	2	1	1	3	13	C3	Almost Certain	Level 4 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, alien plant invasions, habitat fragmentation, habitat deterioration, change in physical abiotic conditions.	4	1	1	2	1	1	2	12	C3	Almost Certain	Level 4 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).									0			
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation, change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	None	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	None	~	~	~	~	~	~	~	~	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation, change in physical abiotic conditions.	2	0	1	3	1	2	2	11	C3	Almost Certain	Level 4 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	None	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	3	1	2	3	12	C3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	3	1	2	3	12	C3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	3	1	2	3	12	C3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	2	0	1	3	1	2	3	12	C3	Almost Certain	Level 4 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
	None.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction and commissioning of the shaft complex at Shondoni.	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation and deterioration and change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Habitat destruction, loss of populations of threatened plant species, potential loss of populations of medicinal plant species, habitat fragmentation and deterioration and change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
	None.	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Construction and commissioning of the conveyor	Habitat destruction	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4 Risk
Construction and commissioning of the conveyor	Loss of populations of threatened plant species	2	0	2	2	1	1	2	10	C3	Almost Certain	Level 4 Risk
Construction and commissioning of the conveyor	Loss of populations of medicinal plant species	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Construction and commissioning of the conveyor	Habitat fragmentation	4	0	2	2	1	1	2	12	C3	Almost Certain	Level 4 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Animal Life		Animal Life										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential	4	0	1	2	1	1	3	12	C3	Almost Certain	Level 4 Risk

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
related Infrastructure - Activity 12.	loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area											
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	None	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	1	0	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	1	1	1	3	9	C2	Almost Certain	Level 5 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	1	1	1	3	9	C2	Almost Certain	Level 5 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Habitat Loss, Habitat Fragmentation and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	1	1	1	1	3	9	C2	Almost Certain	Level 5 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	None	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Habitat Loss, Habitat Fragmentation, Habitat Deterioration and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation, a deterioration in the quality of the habitat due to changes in the vegetation and/or abiotic characteristics and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	1	0	2	1	1	1	3	9	C2	Almost Certain	Level 5 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	None	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	None	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Habitat Loss, Habitat Fragmentation, Habitat Deterioration and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation, a deterioration in the quality of the habitat due to changes in the vegetation and/or abiotic characteristics and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	1	0	2	1	1	1	3	9	C2	Almost Certain	Level 5 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	None	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Habitat Loss, Habitat Fragmentation, Habitat Deterioration and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation, a deterioration in the quality of the habitat due to changes in the vegetation and/or abiotic characteristics and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat Loss, Habitat Fragmentation, Habitat Deterioration and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation, a deterioration in the quality of the habitat due to changes in the vegetation and/or abiotic characteristics and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Habitat Loss, Habitat Fragmentation, Habitat Deterioration and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation, a deterioration in the quality of the habitat due to changes in the vegetation and/or abiotic characteristics and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	2	2	1	2	3	12	C3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Habitat Loss, Habitat Fragmentation, Habitat Deterioration and the Potential Loss of Red Data List Fauna : The clearing of vegetation will lead to a loss of habitat, habitat fragmentation, a deterioration in the quality of the habitat due to changes in the vegetation and/or abiotic characteristics and the potential loss of Red Data List fauna due either to accidental deaths during construction or due to emigration from the disturbed area	2	0	2	2	1	2	3	12	C3	Almost Certain	Level 4 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	None	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction and commission of the Shondoni Shaft Complex and all associated infrastructure.	Habitat Loss: The clearing of vegetation will lead to a loss of available habitat for terrestrial fauna. Habitat Fragmentation: The construction of the access road will lead to a fragmentation of habitat. Loss of Red Data List Fauna: Construction activities may lead to the accidental or deliberate death of fauna and avifauna. Habitat Deterioration: Changes in both the vegetation and abiotic characteristics of the area can have a negative impact on	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4 Risk

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
	habitat quality.											
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaethu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Habitat Loss: The clearing of vegetation will lead to a loss of available habitat for terrestrial fauna. Habitat Fragmentation: The construction of the access road will lead to a fragmentation of habitat. Loss of Red Data List Fauna: Construction activities may lead to the accidental or deliberate death of fauna and avifauna. Habitat Deterioration: Changes in both the vegetation and abiotic characteristics of the area can have a negative impact on habitat quality.	4	0	1	2	1	1	3	12	C3	Almost Certain	Level 4 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
	None	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Construction of the Conveyor Belt and fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyor	Habitat Fragmentation: The construction of the access road will lead to a fragmentation of habitat	4	0	2	2	1	1	2	12	C3	Almost Certain	Level 4 Risk
Construction of the Conveyor Belt and fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyor	Habitat Loss: The clearing of vegetation will lead to a loss of available habitat for terrestrial fauna	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4 Risk
Construction of the Conveyor Belt and fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyor	Loss of Red Data List Fauna: Construction activities may lead to the accidental or deliberate death of fauna and avifauna	4	0	2	2	1	1	3	13	C3	Almost Certain	Level 4 Risk
Construction of the Conveyor Belt and fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyor	Habitat Deterioration: Changes in both the vegetation and abiotic characteristics of the area can have a negative impact on habitat quality	4	0	2	2	1	1	2	12	C3	Almost Certain	Level 4 Risk
Activity Description		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Impact Identification/Description		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Wetlands		Wetlands										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	0	1	2	2	9	C2	Almost certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Construction of the conveyor pedestal within the Trichardspruit floodplain wetland will result in some loss of wetland habitat, increased erosion risk within the wetland, increase in suspended solids and turbidity downstream of the construction site and an increase in alien and weedy species within the wetland.	1	1	1	0	1	2	2	8	C2	Almost certain	Level 5 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Construction of the conveyor pedestal within the Trichardspruit floodplain wetland will result in some loss of wetland habitat, increased erosion risk within the wetland, increase in suspended solids and turbidity downstream of the construction site and an increase in alien and weedy species within the wetland.	1	1	1	0	1	2	2	8	C2	Almost certain	Level 5 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	4	1	1	1	1	2	2	12	C3	Almost certain	Level 4 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Clearing of vegetation will result in a loss of wetland habitat	4	n/a	1	2	1	2	2	12	C3	Almost certain	Level 4 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Removal of water from the underground workings per se is not expected to have any impact on the wetlands of the area, as these wetlands are considered to be supported by surface water. However, release of this water into any water resource is likely to result in changes to the hydrology (flow volumes and velocities) of the receiving water resource, a change in water quality as well as an increased erosion risk.	0	1	2	2	1	2	2	10	C3	Almost certain	Level 4 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	1	1	1	1	1	2	2	9	C2	Almost certain	Level 5 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Construction of the power line pylons and associated service road will result in some loss of wetland vegetation, increased erosion risk where construction takes place within wetland areas, as well as increased sediment movement into the wetlands. The power line will further pose a hazard to larger water birds found within the wetlands on site.	2	1	1	2	1	2	2	11	C3	Almost certain	Level 4 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Construction will involve the clearing of vegetation as well as earth works (excavation, compaction, levelling etc.). Impacts resulting from these activities will include, loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
water quality, and increased surface run-off that could lead to erosion.												
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Where water is taken from a groundwater source on site, no significant impact is expected to the wetlands. Where water is taken from a wetland, decreased flows within the affected wetland could result in a change in species composition of the biodiversity associated with that wetland.	2	0	1	0	1	2	2	8	C2	Almost certain	Level 5 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Any activities that impede or impound flows within the wetlands on site could result in changes to the wetland hydrology, resulting in increased erosion risk where flow concentration has taken place, while extended saturation due to impoundment of flows could result in changes to species composition.	2	1	1	2	1	3	3	13	C3	Almost certain	Level 4 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Deterioration in water quality as well as altered hydrology are likely to result from the discharge of water containing waste, resulting in changes to the species composition of aquatic fauna as sensitive taxa are lost, as well as increased sediment transport and erosion due to increased flows.	2	1	2	1	1	3	3	13	C3	Almost certain	Level 4 Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Waste disposal could result in a deterioration of water quality.	1	2	2	1	1	3	3	13	C3	Almost certain	Level 4 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Any activity altering the bed, banks or characteristics of a water resource could result in loss of wetland habitat, increased erosion risk and sediment transport, water quality deterioration (increase in suspended solids and turbidity) and an increase in alien vegetation due to disturbance.	2	1	1	2	1	3	3	13	C3	Almost certain	Level 4 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Removal of water from the underground workings per se is not expected to have any impact on the wetlands of the area, as these wetlands are considered to be supported by surface water. However, release of this water into any water resource is likely to result in changes to the hydrology (flow volumes and velocities) of the receiving water resource, a change in water quality as well as an increased erosion risk.	0	1	2	2	1	3	3	12	C3	Almost certain	Level 4 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Construction of any of the listed activities (residue deposit, dam, reservoir together with any associated structure or any other facility) within the 1:100 year flood line of any of the watercourses on site could result in loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Mining underneath the wetlands on site could result in collapse of the strata overlying the mine, resulting in surface subsidence. This could impact on the wetlands on site through the increased infiltration of surface water into groundwater, resulting in decreased flows within the wetlands and associated desiccation of the wetland habitat. New wetland areas could also be created where subsidence leads to the formation of depressions and inwardly draining areas within the landscape. This could further reduce flows within the wetlands as water is isolated from the main drainage lines. However, these impacts would only become apparent during the operational phase and post-closure phases. No impact is expected during the construction phase due to undermining of the wetlands. Construction of any infrastructure within the 1:50 year flood line of any of the watercourses on site could result in loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Construction of any of the listed activities (sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource) within the 1:100 year flood line of any of the watercourses on site could result in loss of wetland habitat, increased sediment movement into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.	2	1	1	1	1	2	2	10	C3	Almost certain	Level 4 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Using residue or substances likely to cause pollution to construct any dam, impoundment, embankment, berm, road or railway etc. is likely to result in deterioration of water quality.	2	1	2	2	1	3	2	13	C3	Likely	Level 4 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	The construction of a sewage treatment facility will result in the clearing of vegetation and compaction and excavation of soils. This could result in a loss of wetland habitat as well as deterioration of water quality through increased sediment transport into the wetlands.	4	1	1	1	1	2	2	12	C3	Almost certain	Level 4 Risk
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction of Shondoni shaft area.	Loss of wetlands will occur where the shaft area intrudes on the wetlands on site. Clearing of vegetation and earth works will result in increased surface run-off and increased sediment transport into the adjacent water resources, including wetlands. Disturbance to wetlands adjacent to the construction area could result in displacement of species and an increase in alien vegetation. Deterioration in water quality could result as a consequence of spillages of hazardous materials on site, as well as from run-off from materials stockpiles and littering.	1	0	1	3	1	3	3	12	C3	Almost certain	Level 4 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Loss of wetlands will occur where the shaft area intrudes on the wetlands on site. Clearing of vegetation and earth works will result in increased surface run-off and increased sediment transport into the adjacent water resources, including wetlands. Disturbance to wetlands adjacent to the construction area could result in displacement of species and an increase in alien vegetation. Deterioration in water quality could result as a consequence of spillages of hazardous materials on site, as well as from run-off from materials stockpiles and littering.	1	0	1	3	1	3	3	12	C3	Almost certain	Level 4 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Construction of the underground mine	During construction of the underground mine it is likely that groundwater will be pumped out of the workings. Release of this water could result in deteriorating water quality and altered flows within receiving water resources.	1	1	2	2	1	3	3	13	C3	Almost certain	Level 4 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Construction of the conveyor belt	Loss of wetland habitat will occur within the direct footprint of the conveyor servitude	2	0	2	2	1	3	2	12	C4	Almost certain	Level 4 Risk
Construction of the conveyor belt	Clearing of vegetation and earth works will result in increased surface run-off and increased sediment transport into the adjacent water resources, including wetlands. This will be especially significant on the approach and departure slopes to valley bottoms.	2	1	1	0	1	3	2	10	C3	Almost certain	Level 4 Risk
Construction of the conveyor belt	Increased erosion risks within the wetlands were conveyor pedestals are constructed within the wetlands (e.g. within the 1:10 year flood line of the Trichardtspruit) due to disturbance of sediments and concentration of flows.	2	0	2	2	1	3	2	12	C4	Likely	Level 4 Risk
Construction of the conveyor belt	Increased erosion risk on the approach and departure slopes to valley bottom and floodplain wetlands due to the preferential flow path provided by the service road adjacent to the conveyor route.	2	1	1	0	1	3	2	10	C3	Almost certain	Level 4 Risk
Construction of the conveyor belt	Habitat fragmentation will result as a consequence of the clearing of vegetation along the conveyor servitude and the setting up of fences.	2	0	2	2	1	2	2	11	C3	Almost certain	Level 4 Risk
Activity Description		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Aquatic Ecosystems		Aquatic Ecosystems										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Acidification and salinisation of surface and groundwater as a result of seepage/runoff	3	3	2	1	1	2	2	14	C3	Possible	Level 3 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Mobilisation of sediments, increased suspended solids and turbidity in watercourses and invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Contamination of surface water or groundwater as a result of overflow, seepage or structural failure of pollution dams	2	1	1	1	1	2	2	10	3	Possible	Level 5 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Mobilisation of sediments, increased suspended solids and turbidity at stream crossings	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Mobilisation of sediments, increased sediment loads in drainage lines	1	0	1	0	1	0	0	3	1	Likely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Mobilisation of sediments, increased sediment loads in drainage lines	1	0	1	0	1	0	0	3	1	Likely	Level 6 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	None during construction phase	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	None	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Mobilisation of sediments, increased sediment loads in drainage lines	1	0	1	0	1	0	0	3	1	Likely	Level 6 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Mobilisation of sediments in drainage lines/stream crossings	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Mobilisation of sediments, increased suspended solids and turbidity at stream crossings	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Mobilisation of sediments in drainage lines/stream crossings	1	0	1	0	1	0	0	3	1	Likely	Level 5 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Where water is taken from a groundwater source on site, no significant impact is expected to the wetlands. Where water is taken from streams, decreased flows within the affected stream could result in a change in species composition of the biodiversity associated with that watercourse.	3	0	1	0	1	2	2	9	C2	Almost Certain	Level 5 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Road, power line and conveyor crossings are likely to cause restricted flows during construction. This will result in erosion. Constrictions for extended periods may result in changes in habitat type and species composition, especially with regard to fish.	3	0	2	1	1	3	2	12	3	Almost Certain	Level 4 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Deterioration in water quality as well as altered hydrology are likely to result from the discharge of water containing waste, resulting in changes to the species composition of aquatic fauna as sensitive taxa are lost, as well as increased sediment transport and erosion due to increased flows.	4	2	2	1	1	3	3	16	C4	Almost Certain	Level 3 Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Contamination of surface and groundwater	1	3	2	1	1	3	3	14	C4	Possible	Level 3 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Mobilisation of sediments, increased suspended solids and turbidity at stream crossings, Loss of wetland vegetation and habitat, invasion by alien vegetation.	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Removal of water from the underground workings per se is not expected to have any impact on the wetlands of the area, as these wetlands are considered to be supported by surface water. However, release of this water into any water resource is likely to result in changes to the hydrology (flow volumes and velocities) of the receiving water resource, a change in water quality as well as an increased erosion risk.	4	1	2	2	1	3	3	16	C4	Almost Certain	Level 3 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or	Construction of any of the listed activities (residue deposit, dam, reservoir together with any associated structure or any other facility) within the 1:100 year flood line of any of the watercourses on site could result in loss of wetland habitat, increased sediment movement	4	1	1	1	1	2	2	12	C3	Almost Certain	Level 4 Risk

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	into adjacent wetlands, deterioration in water quality, and increased surface run-off that could lead to erosion.											
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not applicable during construction.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Contamination of surface water as a result of spills (e.g. hydrocarbons, cement, sewage), increased erosion, sediment movement into watercourses, increased surface runoff which may alter hydrology and exacerbate erosion.	1	3	3	0	1	1	3	12	3	Likely	Level 5 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Contamination of surface water or groundwater as a result of spills of hazardous materials, overspill, seepage or structural failure of pollution dams	4	1	1	1	1	2	2	12	3	Possible	Level 5 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.		~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction and commissioning of the shaft complex at Shondoni	Mobilisation of sediments	2	0	1	0	1	1	3	8	2	Almost Certain	Level 5 Risk
Construction and commissioning of the shaft complex at Shondoni	Contamination of surface water as a result of spills (e.g. hydrocarbons, cement, sewage)	1	3	3	0	1	1	3	12	3	Likely	Level 5 Risk
Pollution control dams	Contamination of surface water or groundwater as a result of overspill, seepage or structural failure of pollution dams	4	1	1	1	1	2	2	12	3	Possible	Level 5 Risk
Drainage/seepage from overburden stockpile	Acidification and salinisation of surface and groundwater	4	3	2	1	1	2	2	15	4	Possible	Level 3 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
N/A		~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Construction of pedicels and conveyor tunnels/road crossings	Mobilisation of sediments, increased suspended solids and turbidity in streams and wetlands; invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Conveyor Route	Habitat fragmentation will result as a consequence of the clearing of vegetation along the conveyor servitude and the setting up of fences.	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4 Risk
Construction of stream crossings	Constriction/diversion of flows at road/conveyor crossings	3	0	2	1	1	3	2	12	3	Almost Certain	Level 4 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Air Quality		Air Quality										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Construction vehicles will create localised secondary fugitive dust and gaseous particles due to construction activities.	1	0	1	1	0	1	1	5	C2	Almost Certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	N/A	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Construction vehicles will create localised secondary fugitive dust and gaseous particles due to construction activities.	1	0	1	1	0	1	1	5	C2	Almost Certain	Level 5 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	N/A	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	N/A	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Construction vehicles will create localised secondary fugitive dust and gaseous particles due to construction activities.	1	0	1	1	0	1	1	5	C2	Almost Certain	Level 5 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	N/A	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	N/A	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Construction vehicles will create localised secondary fugitive dust and gaseous particles due to construction activities.	1	0	1	1	0	1	1	5	C2	Almost Certain	Level 5 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	N/A	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Construction vehicles will create localised secondary fugitive dust and gaseous particles due to construction activities.	1	0	1	1	0	1	1	5	C2	Almost Certain	Level 5 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity	N/A	~	~	~	~	~	~	~	~	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
2. NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40												
Taking water from a water resource - Section 21 (a).												
Impeding or diverting the flow of water in a watercourse - Section 21 (c).												
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).												
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).												
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).												
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).												
Exemptions from GNR 704												
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).												
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).												
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.												
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008												
MINE SHAFT AREAS												
Construction and commissioning of the shaft complex at Shondoni.												
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).												
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM												
None.												
CONVEYOR BELT ROUTE												
Construction and commissioning of the conveyor												
Criteria for Determining Severity												
Noise												
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES												
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).												
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).												
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).												
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.												
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.												
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.												

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Localized Noise caused by construction activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Localized Noise caused by construction activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Localized Noise caused by construction activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Localized Noise caused by construction activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Localized Noise caused by construction activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Localized Noise caused by construction activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	N/A	~	~	~	~	~	~	~	~	C1	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	N/A	~	~	~	~	~	~	~	~	C1	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	N/A	~	~	~	~	~	~	~	~	C1	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	N/A	~	~	~	~	~	~	~	~	C1	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	N/A	~	~	~	~	~	~	~	~	C1	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	N/A	~	~	~	~	~	~	~	~	C1	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	N/A	~	~	~	~	~	~	~	~	C1	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	N/A	~	~	~	~	~	~	~	~	C1	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	N/A	~	~	~	~	~	~	~	~	C1	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	N/A	~	~	~	~	~	~	~	~	C1	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	N/A	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Blasting at surface during shaft construction	Airblast noise	1	0	1	0	1	1	2	6	C2	P5	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Operating shafts with no blasting activities, no reportable impact.	0	0	0	0	0	0	0	0	C1	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
N/A	N/A	0	0	0	0	0	0	0	0	C1	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Conveyor construction	Foundation digging and erection of steel construction noise	0	0	0	0	0	0	1	1	C1	P5	Level 6 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Visuals		Visuals										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS											
Clearing of Vegetation	Highly visible from R547; has impact on short to medium range views on road users	0	0	1	0	1	0	1	3	C1	Almost Certain	Level 6 Risk	
	Alterations to Landscape and Visual Character (Vegetation & Landcover)	0	0	1	0	1	0	1	3	C1	Almost Certain	Level 6 Risk	
	Alterations to Landscape and Visual Character (Hydrology)	0	0	1	0	1	0	1	3	C1	Likely	Level 6 Risk	
Construction Activities	Highly visible from R547; has impact on short to medium range views on road users	0	0	1	1	1	0	2	5	C1	Almost Certain	Level 6 Risk	
	Visibility impact for long range views from east	0	0	1	1	0	0	2	4	C1	Almost Certain	Level 6 Risk	

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
ALTERATIONS TO LANDSCAPE AND VISUAL CHARACTER (MORPHOLOGY & TOPOGRAPHY)		0	0	1	1	0	0	2	4	C1	Almost Certain	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.		N/A										
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Clearing of Vegetation	Highly visible from R547; has impact on short to medium range views on road users and Brendan Village residents	0	0	1	0	1	0	2	4	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Vegetation & Landcover)	0	0	1	0	1	0	1	3	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Hydrology)	0	0	1	0	1	0	1	3	C1	Likely	Level 6 Risk
Construction Activities	Highly visible from R547 and Brendan Village; has impact on short to medium range views on road users and residents	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Visibility Impact on road users at road-crossings	0	0	1	0	1	0	1	3	C1	Almost Certain	Level 6 Risk
	Visibility impact for long range views	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Morphology & Topography)	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Visual Exposure impact for road users of R547 as well as Brendan Village residents	0	0	1	0	1	0	2	4	C1	Almost Certain	Level 6 Risk
Activity Description		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Impact Identification/Description		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Heritage		Heritage										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~

CONSTRUCTION PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
N/A	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Construction and commissioning of the shaft complex at Shondoni.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.	Not Applicable	~	~	~	~	~	~	~	~	C1	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Construction and commissioning of the conveyor belt.	Construction activities affecting sites CEO2 (cattle kraal) and FC02 (buildings).	1	0	0	3	1	2	2	9	C2	Likely	Level 6
Construction and commissioning of the conveyor belt.	Construction activities affecting sites GY15, GY16, GY17 and GY 18 (all graves).	1	0	0	3	1	2	2	9	C2	Likely	Level 6
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Socio-Economic		Socio-Economic										
Please refer to Sasol Shondoni Social and Labour Plan		Please refer to Sasol Shondoni Social and Labour Plan										

6.5.2 Operational Phase Impact Significance Tables

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
OPERATIONAL PHASE ACTIVITIES		Topography										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	As discussed for the Construction Phase.	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	As discussed for the Construction Phase.	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
None	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Increased extraction of the No. 4 Coal seam.	Increased extraction of pillars on the No.4 Coal seam will lead to roof and overburden collapse that might reach surface. This will lead to surface and sub-surface subsidence.	4	0	1	2	1	2	2	12	C3	Possible	Level 5 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of the conveyor	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Soil and Land Capability		Soil and Land Capability										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Contamination of soil footprint by RoM Product, and loss of soil utilization	4	2	1	1	1	1	1	11	C3	Almost Certain - P7	Level 4 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Contamination of soil footprint by RoM Product and Hydrocarbon spills, and loss of soil utilization	4	3	1	1	1	2	1	13	C3	Almost Certain - P7	Level 47 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Contamination of subsoils by dirty water seepage, and loss of utilization of the resource	4	3	1	2	1	2	1	14	C4	Almost Certain	Level 3 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	None - Completed during construction phase - No added impacts								0			
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Possible contamination of soil footprint outside of bunded area. Loss of soil utilization	3	3	1	1	1	2	1	12	C3	Possible P5	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Loss of soil and land utilization if this is ongoing into the operational phase.	3	1	1	2	1	1	2	11	C3	Likely - P6	Level 5 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Potential ongoing impact on soil moisture and loss of land utilization	3	2	1	1	1	2	2	12	C3	Likely - P6	Level 5 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Completed in Construction Phase - No additional impacts of consequence other than the loss of the soil resource and utilization potential	2	0	0	1	2	1	1	7	C2	Likely - P6	Level 5 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Loss of soil resource and utilization potential and possible contamination by product and hydrocarbon spills	4	3	2	1	1	2	2	15	C4	Likely - P6	Level 3 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Ongoing loss of soil resource and utilization potential due to service road	4	0	2	2	1	1	2	12	C3	Almost Certain - P7	Level 4 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	On-going loss of soil resource and utilization potential and possible contamination by product and hydrocarbon spills	4	3	2	1	1	2	2	15	C4	Likely - P6	Level 3 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Loss of soil resource and utilization potential and possible contamination by product and hydrocarbon spills	4	2	2	2	1	1	2	14	C4	Almost Certain P7	Level 3 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	The on-going reduction in water resources will potentially reduce the irrigation potential and render the land capability less productive due to lowering of soil moisture content.	4	0	2	2	1	2	2	13	C3	Almost Certain P7	Level 4 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Diversion of water from its present course could affect the land capability in terms of productivity due to reduction in soil moisture content	4	0	2	2	1	2	2	13	C3	Possible P5	Level 5 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Discharge of waste to unprotected soils will render them less useable. The loss of this resource could potentially be permanent if not managed.	4	1	2	1	1	2	2	13	C3	Low P4	Level 5 Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	N/A to soils directly. However, the contamination of the water resource would ultimately impact on soils that are irrigated or over which they flow if not protected.	4	1	2	1	1	2	2	13	C3	Low P4	Level 5 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Diversions of water courses or rivers will impact the soils over which the water is engineered to flow. These soils will be lost from the system and potentially be contaminated or impacted by poor quality water	4	0	2	2	1	2	2	13	C3	Possible P5	Level 5 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Taking of water from the earth's system will alter the soil moisture dynamics which will in turn affect the biosphere and ecology of the area that is dependent on and adapted to the present biological balance.	4	1	2	2	1	2	2	14	C3	Almost Certain P7	Level 4 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
or estuary - Regulation 4(d).												
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
On-going mining - haulage of raw product to surface and beneficiation	Continued loss of soil resource and utilization potential, plus possible contamination of footprint soils.	3	2	0	1	1	1	1	9	C2	Almost Certain - P7	Level 5 Risk
Possible contamination of footprint soils and stored berm materials by dirty water in area of shaft workings	Continued loss of soil resource and utilization potential, plus possible contamination of footprint soils.	3	3	0	1	1	1	1	10	C3	Likely - P6	Level 4 Risk
Compaction of in-situ footprint and stored material, plus erosion of unprotected areas and storage facilities.	Continued loss of soil resource and utilization potential	3	1	0	1	1	1	1	8	C2	Likely - P6	Level 6 Risk
Vehicle impacts	Loss of resource by dust emissions	3	1	1	1	1	1	1	9	C2	Likely - P6	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembalethu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Continued loss of soil resource and utilization potential, plus possible contamination of footprint soils.	3	2	0	1	1	1	1	9	C2	Almost Certain - P7	Level 5 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Ongoing operation of shafts, access roads and haulage ways	Continued loss of soil resource with possibility of contamination by operational activities - Rom product and vehicle impacts - Hydrocarbons, compaction and/or erosion	3	1	0	1	1	1	1	8	C2	Almost Certain - P7	Level 5 Risk
Potential for contamination of stored soils from adit declines and shafts operations - water, by product and hydrocarbons from operation vehicles	The continued loss of resource and utilization potential due to operation of mining infrastructure and storage of product (RoM) and natural materials	3	1	0	1	1	1	1	8	C2	Almost Certain - P7	Level 5 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of haulage facility	Ongoing loss of resource and soil utilization potential, and the potential for contamination by spillage of product and hydrocarbons	4	3	2	1	1	1	2	14	C4	Almost Certain P7	Level 3 Risk
		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Ground Water		Ground Water										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	The operation of a 15 000t ROM coal stockpile area at Shondoni Shaft. Seepage from the stockpile area can lead to ground water pollution, if not managed correctly.	4	1	0	2	1	3	1	12	C3	Very Unlikely	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Conveyor Pedestal will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	The operation of a Storm Water Pollution Control Dam (SWPCD) that can lead to a deterioration of ground water quality directly beneath the facility.	4	2	1	2	1	3	2	15	C4	Highly Unlikely	Level 5 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Conveyor Pedestal will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	The storage of diesel fuel in storage tanks can lead to ground water pollution due to spillages/leaks.	2	3	1	2	1	3	2	14	C4	Highly Unlikely	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Any water removed from the No.4 Coal seam will be deemed polluted and stored in other sections of mined out areas, or pumped to surface to the Storm Water Pollution Control Dam (SWPCD).	4	2	1	2	1	3	2	15	C4	Highly Unlikely	Level 5 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	The operation of the Overhead Power line will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	The operation of a coal conveyor belt will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	This activity only refers to surface disturbance. Since no ground water is intersected, no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	All underground water accruing in mining sections during the operational phase will be stored in mined-out underground mine workings (storage reservoirs). This component will only be triggered if any water is pumped to surface. No 21(a) application is required at this stage. If and when this happens, an amendment to the WULA will be done.	~	~	~	~	~	~	~	0	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Discharging waste or water containing waste into a water resource	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).												
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Ground water seepage captured from the ROM stockpile (maximum 2000m ³ /a) at Shondoni Shaft Complex will be pumped to the Storm Water Pollution Control Dam (SWPCD).	4	1	0	2	1	2	1	11	C3	Almost Certain	Level 4 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Any water removed from the No.2 and No.4 Coal seam will be deemed polluted and stored in other sections of mined out areas. A detailed mine optimisation plan has been designed to create the necessary storage of water in mined out areas for the total Life of Mine.	4	1	1	2	1	3	2	14	C4	Almost Certain	Level 3 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Operating the shaft complex at Shondoni for the Life of Mine.	Depletion in ground water availability and deterioration of ground water quality in the Shaft as a result of ground water seepage during the operational phase of the shaft complex. The shaft complex will be sealed/grouted, so little to no impact will take place.	1	0	0	2	1	1	1	6	C2	Highly Unlikely	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaethu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Depletion in ground water availability and deterioration of ground water quality in the Shaft as a result of ground water seepage during the operational phase of the shaft complex. The shaft complex will be sealed/grouted, so little to no impact will take place.	1	0	0	2	1	1	1	6	C2	Highly Unlikely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
The influx of groundwater recharge into mine workings due to bord and pillar mining of the No's 2 and 4 coal seam.	Ground water recharge from surface will enter areas of bord and pillar mining due to the fact that mining will create an increasing void.	4	0	1	2	1	3	1	12	C3	Almost Certain	Level 4 Risk
The increased influx of groundwater into mine workings due to pillar extraction activities of the No.4 coal seam.	An increased ground water recharge from surface will take place due to sub-surface subsidence on the No.4 coal seam.	4	0	1	2	1	3	1	12	C3	Almost Certain	Level 4 Risk
Inter-mine and inter-section flow of ground water during the operational phase.	Ground water resources stored in underground mining units can migrate from one mine/section to an adjacent mine/section, due to a difference in hydraulic pressure. Flow can also be induced where flooding compartments decant into surrounding compartments due to a roll in the coal seam floor.	4	1	1	2	0	2	1	11	C3	Possible	Level 5 Risk
Depletion of external users' groundwater resources and fountains due to bord and pillar mining activities of the No's 2 and 4 coal seams.	Bord and pillar mining activities can intersect external user's boreholes directly and can lead to a reduction/complete depletion of external user's borehole yields.	1	0	0	2	1	3	2	9	C2	Unforeseen	Level 6 Risk
Depletion of external users' groundwater resources and fountains due to pillar extraction mining activities of the No. 4 coal seam.	Pillar extraction mining activities can lead to sub-surface subsidence, that in turn will lead to a reduction/complete depletion of external user's borehole yields.	2	0	1	2	1	3	2	11	C3	Low	Level 5 Risk
Depletion of stream base flow due to sub-surface subsidence of the No.4 coal seam.	Pillar extraction mining activities can lead to sub-surface subsidence, that in turn will lead to a reduction/complete depletion of ground water base flow to rivers and non-perennial streams.	4	0	2	2	1	3	2	14	C4	Low	Level 3 Risk
Deterioration in groundwater quality in all underground sections, and migration into the receiving environment.	Ground water recharge to underground mining units that remains in reservoirs will come in contact with coal pillars, mine floors and roofs. A gradual deterioration in ground water quality will take place over time, depending amongst other things, residence times, natural buffer capacity and mixing ratios of ground water from different sources.	4	2	1	3	1	3	1	15	C4	Almost Certain	Level 3 Risk
Groundwater pollution originating from the ROM coal stock pile at the Shondoni Shaft Complex.	The operation of a 15 000t ROM coal stockpile area at Shondoni Shaft. Seepage from the stockpile area can lead to ground water pollution, if not managed correctly.	2	2	0	2	1	3	1	11	C3	Almost Certain	Level 4 Risk
Groundwater pollution originating from the Storm Water Pollution Control Dam (SWPCD).	The operation of a Storm Water Pollution Control Dam (SWPCD) that can lead to a deterioration in ground water quality directly beneath the facility.	4	2	1	2	1	3	2	15	C4	Almost Certain	Level 4 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area).	The Life of Mine operation of a coal conveyor belt will not intersect/impact ground water resources, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Surface Water		Surface Water											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Impact on catchment yield: Dirty areas will be isolated by means of clean water diversions and containment canals draining to PCDs. Infrastructure on surface totals less than 30ha in extent, and impact on yield is considered negligible.	0	0	0	2	1	0	0	3	C1	Almost Certain	Level 6 Risk	
	Impact on water quality: - Contamination of runoff water that contacts with carbonaceous material on surface - Seepage from the PCDs - Risk of spill from the PCDs	4	2	3	1	1	3	2	16	C4	Almost Certain	Level 3 Risk	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Impact on water quality: Potential impact due to spillage of coal from overloaded conveyors and at transfer stations.	0	2	1	1	1	1	7	C2	Likely	Level 6 Risk		
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Impact on catchment yield: Dirty areas will be isolated by means of clean water diversions and containment canals draining to PCDs. Infrastructure on surface totals less than 30ha in extent, and impact on yield is considered negligible.	0	0	0	2	1	0	0	3	C1	Almost Certain	Level 6 Risk	
	Impact on water quality: - Contamination of runoff water that contacts with carbonaceous material on surface - Seepage from the PCDs - Risk of spill from the PCDs	4	2	3	1	1	3	2	16	C4	Almost Certain	Level 3 Risk	
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Construction phase impact	~	~	~	~	~	~	~	~	~	~	~	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Impact on water quality: At an average water make of 5MI/day (average over life of mine), but increasing to 10MI/day just before closure and sulphate concentration conservatively estimated at 2500mg/l, the mine could generate an average of 25 tons of sulphate per day, impacting on surface water users, in stream aquatic life and the salt loading on dam systems. TDS would be expected to be around double this, with a total loading of around 50 tons per day.	4	2	3	3	1	3	3	19	C6	Almost Certain	Level 1 Risk	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Construction phase impact	~	~	~	~	~	~	~	~	~	~	~	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Impact on water quality: Potential impact due to spillage of coal from overloaded conveyors and at transfer stations.	0	2	1	1	1	1	1	7	C2	Likely	Level 6 Risk	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Impact on catchment yield: Dirty areas will be isolated by means of clean water diversions and containment canals draining to PCDs. Infrastructure on surface totals less than 30ha in extent, and impact on yield is considered negligible.	0	0	0	2	1	0	0	3	C1	Almost Certain	Level 6 Risk	
	Impact on water quality: - Contamination of runoff water that contacts with carbonaceous material on surface - Seepage from the PCDs - Risk of spill from the PCDs	4	2	3	1	1	3	2	16	C4	Almost Certain	Level 3 Risk	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Impact on groundwater yield, not a surface water impact.								0				
Storing of water - Section 21 (b).	Impact on catchment yield: Dirty areas will be isolated by means of clean water diversions and containment canals draining to PCDs. Infrastructure on surface totals less than 30ha in extent, and impact on yield is considered negligible.	0	0	0	2	1	0	0	3	C1	Almost Certain	Level 6 Risk	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Impact on water quality: Potential impact due to spillage of coal from overloaded conveyors and at transfer stations. Applicable to conveyor crossings.	0	2	1	1	1	1	1	7	C2	Likely	Level 6 Risk	
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Impact on water quality: - Contamination of runoff water that contacts with carbonaceous material on surface - Seepage from the PCDs - Risk of spill from the PCDs	4	2	3	1	1	3	2	16	C4	Almost Certain	Level 3 Risk	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Impact on water quality: Potential impact due to spillage of coal from overloaded conveyors and at transfer stations. Applicable to conveyor crossings.	0	2	1	1	1	1	1	7	C2	Likely	Level 6 Risk	
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Impact on water quality: At an average water make of 5MI/day (average over life of mine), but increasing to 10MI/day just before closure and sulphate concentration conservatively estimated at 2500mg/l, the mine could generate an average of 25 tons of sulphate per day, impacting on surface water users, in stream aquatic life and the salt loading on dam systems. TDS would	4	2	3	3	1	3	3	19	C6	Almost Certain	Level 1 Risk	

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
	be expected to be around double this, with a total loading of around 50 tons per day.											
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Impact on catchment yield: Loss of catchment yield due to subsidence in areas of high extraction mining. Expected loss in catchment yield of 0.3% (worst case) at the Vaal Dam.	2	0	3	3	1	0	2	11	C3	Likely	Level 5 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Coal handling infrastructure (shaft, bunker workshops, offices and stockpiles)	Impact on catchment yield: Dirty areas will be isolated by means of clean water diversions and containment canals draining to PCDs. Infrastructure on surface totals less than 30ha in extent, and impact on yield is considered negligible.	0	0	0	2	1	0	0	3	C1	Almost Certain	Level 6 Risk
	Impact on water quality: Contamination of runoff water that contacts with carbonaceous material on surface - Seepage from the PCDs - Risk of spill from the PCDs	4	2	3	1	1	3	2	16	C4	Almost Certain	Level 3 Risk
	Impact on/of extreme flooding events: Offices, workshops and stockyard and shaft areas have been located outside the 1:100 year flood line.	0	0	0	1	1	2	1	5	C2	Highly unlikely	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Impact on catchment yield: Dirty areas will be isolated by means of clean water diversions and containment canals draining to PCDs. Infrastructure on surface totals less than 30ha in extent, and impact on yield is considered negligible.	0	0	0	2	1	0	0	3	C1	Almost Certain	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Underground mining	Impact on catchment yield: Loss of catchment yield due to subsidence in areas of high extraction mining. Expected loss in catchment yield of 0.3% (worst case) at the Vaal Dam.	2	0	3	3	1	0	2	11	C3	Likely	Level 5 Risk
Potential mine water discharge	Impact on water quality: At an average water make of 5MI/day (average over life of mine), but increasing to 10MI/day just before closure and sulphate concentration conservatively estimated at 2500mg/l, the mine could generate an average of 25 tons of sulphate per day, impacting on surface water users, in stream aquatic life and the salt loading on dam systems. TDS would be expected to be around double this, with a total loading of around 50 tons per day.	4	2	3	3	1	3	3	19	C6	Almost Certain	Level 1 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Transport of coal via conveyor to the stockyard at Sasol Synfuels	Impact on water quality: Potential impact due to spillage of coal from overloaded conveyors and at transfer stations.	0	2	1	1	1	1	1	7	C2	Likely	Level 6 Risk
OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Plant Life		Plant Life										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Continuous alien plant invasions, habitat deterioration, change in physical abiotic conditions, potential spillages.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Continuous alien plant invasions, habitat deterioration, change in physical abiotic conditions, potential spillages.	2	0	1	2	1	1	2	9	C2	Likely	Level 6 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Spillages from the dam leading to a change in the physical abiotic conditions.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Spillages from diesel tanks leading to a change in the physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Possible	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and	Alien plant invasions during the operation of the site.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
related Infrastructure - Activity 12.												
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Alien plant invasions during the operation of the site.	1	0	1	2	1	1	2	8	C2	Highly unlikely	Level 6 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Spillages along the access roads leading to a change in the physical abiotic conditions.	2	0	1	2	1	1	3	10	C3	Possible	Level 5 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	3	0	2	1	1	1	2	10	C3	Likely	Level 5 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	3	0	2	1	1	1	2	10	C3	Likely	Level 5 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	3	0	2	1	1	1	2	10	C3	Likely	Level 5 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Change in physical abiotic conditions.	2	0	1	2	1	2	2	10	C3	Possible	Level 5 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	2	2	10	C3	Almost Certain	Level 4Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Change in physical abiotic conditions.	2	1	1	2	1	2	2	11	C3	Possible	Level 5 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	2	2	10	C3	Almost Certain	Level 4Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	1	0	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	1	0	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Habitat deterioration, change in physical abiotic conditions	2	1	1	1	1	1	2	9	C2	Likely	Level 6 Risk
MINE SHAFT AREAS		MINE SHAFT AREAS										
Operation of the shaft complex at Shondoni	Alien plant invasions	1	0	1	2	1	1	2	8	C2	Likely	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembalethu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Alien plant invasions	1	0	1	2	1	1	2	8	C2	Likely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NOS 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NOS 2 AND 4 COAL SEAM										
None.	None.								0			
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of the conveyor	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk
		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Animal Life		Animal Life										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	2	0	1	2	1	1	3	10	C3	Likely	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	2	0	1	2	1	1	3	10	C3	Likely	Level 5 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	2	0	1	2	1	1	3	10	C3	Likely	Level 5 Risk	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	2	0	1	2	1	1	3	10	C3	Likely	Level 5 Risk	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	None	~	~	~	~	~	~	~	~	~	~	~	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	2	0	1	2	1	1	3	10	C3	Likely	Level 5 Risk	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (i).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	2	2	1	1	3	13	C3	Likely	Level 5 Risk	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	2	2	1	1	3	13	C3	Likely	Level 5 Risk	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Habitat Deterioration: Removing water from the water resource could affect the habitat quality for fauna causing them to move to more suitable habitat	2	0	2	2	1	2	2	11	C3	Low	Level 5 Risk	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Habitat Deterioration	3	0	1	2	1	1	2	10	C3	Possible	Level 5 Risk	
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Habitat Deterioration: Discharging of polluted water into the water resource could affect the habitat quality for fauna causing them to move to more suitable habitat	2	1	2	2	1	2	2	12	C3	Possible	Level 5 Risk	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Habitat Deterioration: Discharging of polluted or contaminated substances into the water resource could affect the habitat quality and pose a health risk for fauna causing them to move to more suitable habitat	2	1	2	2	1	2	2	12	C3	Possible	Level 5 Risk	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Habitat Deterioration	3	0	1	2	1	1	2	10	C3	Possible	Level 5 Risk	
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Habitat Deterioration: Discharging of polluted or contaminated water into the water resource could affect the habitat quality and pose a health risk for fauna causing them to move to more suitable habitat	2	1	2	2	1	2	2	12	C3	Possible	Level 5 Risk	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Habitat Deterioration and Loss of Red Data List Fauna: Activities during the operational phase may lead to a deterioration of habitat at the edges of the built-up areas and accidental loss of Red Data List fauna.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk	
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.	Habitat Deterioration	2	2	2	2	1	2	3	14	C4	Likely	Level 3 Risk	
MINE SHAFT AREAS		MINE SHAFT AREAS											
Construction and commission of the Shondoni Shaft Complex and all associated infrastructure	Loss of Red Data List Fauna: Operational activities may lead to the accidental or deliberate death of fauna and avifauna. Habitat Deterioration: Activities during the operational phase, discharge of polluted water into, and abstraction of water from, the water resource could affect the habitat quality for fauna causing them to move to more suitable habitat.	4	0	2	2	1	1	3	13	C3	Likely	Level 5 Risk	
All other remaining operational shafts (Main Shaft, West Shaft and Itsembalethu Shaft) and decommissioned shafts (North Shaft	Loss of Red Data List Fauna: Operational activities may lead to the accidental or deliberate death of fauna and avifauna. Habitat Deterioration: Activities during the operational phase,	4	0	2	2	1	1	3	13	C3	Likely	Level 5 Risk	

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
and North-West Shaft).	discharge of polluted water into, and abstraction of water from, the water resource could affect the habitat quality for fauna causing them to move to more suitable habitat.												
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM											
None													
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE											
Operation of the Conveyer Belt and presence of the fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyer	Loss of Red Data List Fauna: Operational activities may lead to the accidental or deliberate death of fauna and avifauna	4	0	1	2	1	1	3	12	C3	Possible	Level 5 Risk	
Operation of the Conveyer Belt and presence of the fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyer	Habitat Deterioration: Activities during the operational phase, discharge of polluted water into, and abstraction of water from, the water resource could affect the habitat quality for fauna causing them to move to more suitable habitat	4	0	2	2	1	1	3	13	C3	Likely	Level 5 Risk	
		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Wetlands		Wetlands											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Operation of the coal throw out stockpile area could result in the deterioration of water quality of adjacent wetlands through run-off from the stockpile and from dust.	2	2	1	2	1	2	3	13	C3	Likely	Level 4 Risk	
Conveyer Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Most impacts of the conveyer pedestal are expected during the construction phase. However, if the pedestal leads to concentration of flows, this could result in erosion through the operational phase. Coal dust blown off the conveyer could result in deterioration of water quality.	2	1	2	2	1	2	2	12	C3	Likely	Level 4 Risk	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Leakage and seepage from the service water and storm water pollution control dams could lead to deterioration in water quality of adjacent wetlands.	2	2	1	2	1	2	3	13	C3	Likely	Level 4 Risk	
Excavation for Coal Conveyer Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	All excavation will take place during the construction phase. No excavation will take place during the operational phase, thus no impacts are expected.	~	~	~	~	~	~	~	~	~	~	~	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Deterioration in water quality due to leakages and spillages during operation.	2	2	1	2	1	2	3	13	C3	Likely	Level 4 Risk	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	This impact is limited to the construction phase. No vegetation clearing will take place during the operational phase.	~	~	~	~	~	~	~	~	~	~	~	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Dewatering of the underground workings should not impact on the wetlands on site, as these are mostly maintained by surface water. However, discharge of this water into wetlands could result in deterioration of water quality and altered flows within the receiving wetland.	2	1	2	2	1	2	2	12	C3	Almost Certain	Level 4 Risk	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Operation of the Tetra Radio Station is not expected to have any impact on the wetlands on site. The radio station will be located within the shaft complex and all storm water associated with the radio station will be captured in the shaft's storm water management system.	~	~	~	~	~	~	~	~	~	~	~	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Operation of the access road could result in the deterioration of water quality due to spillages from vehicles as well as storm water run-off from the road surface. Storm water run-off could also result in erosion within the water course and at erosion discharge points.	2	2	1	2	1	1	2	11	C3	Likely	Level 5 Risk	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Most impacts associated with the power lines are expected during the construction phase. If the mitigation measures for the construction phase are fully implemented, no significant impacts are expected during the operational phase.	~	~	~	~	~	~	~	~	~	~	~	
Construction of a Coal Conveyer from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Deterioration of water quality due to spillages.	2	1	2	2	1	1	2	11	C3	Likely	Level 5 Risk	
Development of an area including shaft surface infrastructure and conveyer route where more than 20 hectares is disturbed - Activity 2.	The impact of the surface disturbance associated with the shaft area are dealt with under the construction table. Operation of the shaft area will result in generation of storm water, the discharge of which could result in erosion and water quality deterioration in receiving wetlands.	2	1	2	2	1	2	2	12	C3	Likely	Level 4 Risk	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Where water is taken from a groundwater source on site, no significant impact is expected to the wetlands. Where water is taken from a wetland, decreased flows within the affected wetland could result in a change in species composition of the biodiversity associated with that wetland.	3	0	1	0	1	2	2	9	C2	Almost Certain	Level 5 Risk	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Any activities that impede or impound flows within the wetlands on site could result in changes to the wetland hydrology, resulting in increased erosion risk where flow concentration has taken place, while extended saturation due to impoundment of flows could result in changes to species composition.	2	1	1	2	1	3	3	13	C3	Almost Certain	Level 4 Risk	
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Deterioration in water quality as well as altered hydrology are likely to result from the discharge of water containing waste, resulting in changes to the species composition of aquatic fauna as sensitive taxa are lost, as well as increased sediment transport and erosion due to increased flows.	2	1	2	1	1	3	3	13	C3	Almost Certain	Level 4 Risk	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Waste disposal could result in a deterioration of water quality.	2	1	2	1	1	3	3	13	C3	Almost Certain	Level 4 Risk	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Any activity altering the bed, banks or characteristics of a water resource could result in loss of wetland habitat, increased erosion risk and sediment transport, water quality deterioration (increase in suspended solids and turbidity) and an increase in alien vegetation	2	1	1	2	1	3	3	13	C3	Almost Certain	Level 4 Risk	

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation	
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	due to disturbance. Removal of water from the underground workings per se is not expected to have any impact on the wetlands of the area, as these wetlands are considered to be supported by surface water. However, release of this water into any water resource is likely to result in changes to the hydrology (flow volumes and velocities) of the receiving water resource, a change in water quality as well as an increased erosion risk.	2	1	2	2	1	2	2	12	C3	Almost Certain	Level 4 Risk	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	These activities could result in the deterioration of water quality during the operational phase.	2	1	2	2	1	2	2	12	C3	Likely	Level 4 Risk	
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	2	0	3	3	1	2	2	13	C3	Likely	Level 4 Risk	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	These activities could result in the deterioration of water quality during the operational phase.	2	1	2	2	1	2	2	12	C3	Likely	Level 4 Risk	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	These activities could result in the deterioration of water quality during the operational phase.	2	1	2	2	1	2	2	12	C3	Likely	Level 4 Risk	
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.	Operation of a sewage treatment plant could result in the deterioration of water quality.	1	1	2	2	1	2	2	11	C3	Likely	Level 4 Risk	
MINE SHAFT AREAS		MINE SHAFT AREAS											
Operation of Shondoni shaft complex	Water quality deterioration due to discharge of storm water. Erosion due to discharge of storm water. Disturbance to wetlands located adjacent to the shaft area.	2	1	1	2	1	2	2	11	C3	Almost Certain	Level 4 Risk	
All other remaining operational shafts (Main Shaft, West Shaft and Ithembalethu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Water quality deterioration due to discharge of storm water. Erosion due to discharge of storm water. Disturbance to wetlands located adjacent to the shaft area.	2	1	1	2	1	2	2	11	C3	Almost Certain	Level 4 Risk	
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM											
Underground mining.	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	2	0	1	2	1	3	3	12	C3	Possible	Level 4 Risk	
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE											
Operation of conveyor	Spillages and coal dust from the conveyor could result in water quality deterioration	1	1	2	2	1	1	2	10	C3	Likely	Level 5 Risk	
Criteria for Determining Severity		Criteria for Determining Severity											
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Before Mitigation	
Aquatic Ecosystems		Aquatic Ecosystems											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Contamination of surface water or groundwater as a result of seepage/runoff/dust from stockpiles	2	1	3	1	1	2	3	13	3	6	Level 5 Risk	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Acidification of surface water as a result of leaks/ spills of pumped mine water en route to treatment facility or of coal/coal dust from the conveyor. Erosion may also occur where flows are constricted.	2	3	2	1	1	2	2	13	3	7	Level 4 Risk	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Contamination of surface water or groundwater as a result of overflow, seepage or structural failure of pollution dams	2	3	2	1	1	2	2	13	3	6	Level 4 Risk	
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Construction phase only	~	~	~	~	~	~	~	~	~	~	~	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Contamination of surface water as a result of spills or leaks	3	3	2	0	1	1	3	13	3	6	Level 5 Risk	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Construction phase only	~	~	~	~	~	~	~	~	~	~	~	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Acidification, salinisation and increased sulphates and iron in surface water; Loss of sensitive taxa and biodiversity	3	1	3	1	1	2	2	13	3	7	Level 4 Risk	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Operation of the access road could result in the deterioration of water quality due to spillages from vehicles as well as storm water run-off from the road surface. Storm water run-off could also result in erosion within the water course and at erosion discharge points.	3	2	1	2	1	1	2	12	C3	P6	Level 5 Risk	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Pollution of surface water due to spillages/dust	2	2	3	1	1	2	2	13	C3	7	Level 4 Risk	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	The impact of the surface disturbance associated with the shaft area are dealt with under the construction table. Operation of the shaft area will result in generation of storm water, the discharge of which could result in erosion and water quality deterioration in receiving wetlands.	2	2	2	2	1	2	2	13	C4	P6	Level 5 Risk	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Decreased base flows in watercourses, resulting in increased channelization and associated loss of floodplain habitats (e.g. oxbow lakes)	0	0	1	2	1	2	3	9	2	7	Level 5 Risk	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Stream and wetland crossings will impede flows and cause erosion. Impounded flows will result in a change in species composition while erosion will result in water quality deterioration.	2	0	1	1	1	0	2	7	2	7	Level 5 Risk	
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Contamination of surface water (salinisation, acidification) through leaks	1	1	1	1	1	3	3	11	C3	7	Level 4 Risk	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Contamination of surface water and ground water	0	1	2	1	1	3	3	11	C3	5	Level 5 Risk 5	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Any activity altering the bed, banks or characteristics of a water resource could result in loss of wetland habitat, increased erosion risk and sediment transport, water quality deterioration (increase in suspended solids and turbidity) and an increase in alien vegetation due to disturbance.	4	1	1	2	1	3	3	15	C4	P7	Level 3 Risk	
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Acidification and salinisation (especially by sulphates) of surface water; decreased base flows in watercourses resulting in loss of floodplain habitats	4	1	2	1	1	2	2	13	C3	7	Level 4 Risk	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	These activities could result in the deterioration of water quality during the operational phase.	1	1	2	2	1	2	2	11	C3	P6	Level 5 Risk	
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Subsidence or decant resulting in contamination (acidification, salinisation) of surface water with mine water, resulting in the loss of aquatic species and biodiversity	1	1	2	3	1	2	2	12	C3	5	Level 5 Risk	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	These activities could result in the deterioration of water quality during the operational phase.	1	1	2	2	1	2	2	11	C3	P6	Level 5 Risk	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Pollution of surface water	1	1	3	1	1	2	2	11	C3	7	Level 4 Risk	
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.	Operation of a sewage treatment plant could result in the deterioration of water quality.	1	2	2	2	1	2	2	12	C3	P6	Level 5 Risk	
MINE SHAFT AREAS		MINE SHAFT AREAS											
channelization of storm water (cut-off trench)	Erosion at storm water outlets	2	0	0	1	1	0	0	4	1	6	Level 6 Risk	
Shaft complex: water management system (i.e. dams and pipelines)	Contamination of surface water or groundwater as a result of overflow or seepage from pollution dams and stockpiles	2	1	2	1	1	2	2	11	3	6	Level 5 Risk	
Construction and commissioning of the shaft complex at Shondoni	Contamination of surface water as a result of spills (e.g. hydrocarbons, sewage)	1	1	2	0	1	1	3	9	3	6	Level 6 Risk	
Shaft complex: water management system (i.e. dams and pipelines)	Loss of sensitive taxa and biodiversity	1	1	3	3	1	1	3	13	3	6	Level 5 Risk	
UNDERGROUND MINING ACTIVITIES OF THE NO.2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.2 AND 4 COAL SEAM											
Dewatering - leaks/spills/discharge	Acidification and salinisation (especially by sulphates) of surface water	2	2	2	1	1	3	2	13	3	7	Level 4 Risk	
Underground mining	Acid Mine Drainage: increasing acidification and salinisation of surface and ground water	2	2	2	2	1	2	2	13	3	7	Level 4 Risk	
Subsidence	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	2	0	1	3	1	3	2	12	3	P5	Level 5 Risk	
Decreased base flows and increased channelization of watercourses	Loss of habitats and wetland function	2	0	2	2	1	2	2	11	3	7	Level 4 Risk	
Contamination by mining water (spills/subsidence/seepage)	Loss of sensitive taxa and biodiversity	2	2	2	2	1	2	2	13	3	7	Level 4 Risk	
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE											
Coal spills/coal dust	Pollution of surface water	1	2	2	1	1	3	2	12	3	7	Level 4 Risk	

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Coal spills/coal dust	Loss of sensitive taxa and biodiversity	1	2	2	3	1	2	2	13	3	6	Level 5 Risk	
Stream Crossings	Erosion and sedimentation	1	0	1	1	1	0	2	6	2	7	Level 5 Risk	
Pipeline leaks/spills	Acidification of surface water as a result of leaks/ spills of pumped mine water en route to treatment facility	1	2	2	1	1	3	2	12	3	7	Level 4 Risk	
conveyor route	Invasion by alien vegetation	1	0	2	3	1	1	2	10	3	7	Level 4 Risk	
Activity Description		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Impact Identification/Description		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Air Quality		Air Quality											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL - B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~	
MINE SHAFT AREAS		MINE SHAFT AREAS											

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Increased extraction of the No. 4 Coal seam.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of the conveyor	Small volumes of secondary dust can be created by the conveyance of coal	1	0	1	1	0	1	1	5	C2	LOW	Level 6 Risk
		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Noise		Noise										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Localized Noise caused by operational activities.	1	1	0	0	0	1	2	5	C2	Likely	Level 6 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or	Not Applicable	~	~	~	~	~	~	~	~	~	~	~

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).												
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Surface Ventilation Fans	Fan noise disturbance at night - Chicken Farm only	2	0	1	1	1	2	2	9	C2	P7	Level 5 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
N/A	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Conveyor operation	Conveyor noise at night	2	0	2	1	1	2	2	10	C3	P7	Level 4 Risk
Activity Description		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Visuals		Visuals										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course	Not Applicable	~	~	~	~	~	~	~	~	~	~	~

OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Shondoni Shaft Operation	Highly visible from R547; has impact on short to medium range views on road users			1	1	1	0	1	4	C1	Certain	Level 6 Risk
	Visibility impact for long range views from east			1	1	0	0	2	4	C1	Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Morphology & Topography)			1	1	0	0	2	4	C1	Certain	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of Conveyor Belt	Highly visible from R547 and Brendan Village; has impact on short to medium range views on road users and residents	0	0	1	1	1	0	2	5	C2	Certain	Level 5 Risk
	Visibility impact for long range views	0	0	1	0	0	0	2	3	C1	Certain	Level 6 Risk
	Visibility and Visual Exposure Impact on road users at road-crossings	0	0	1	1	1	0	1	4	C1	Certain	Level 6 Risk
	Visual Exposure impact for road users of R547 as well as Brendan Village residents	0	0	1	1	1	0	2	5	C2	Certain	Level 5 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Heritage		Heritage										
Heritage Impacts only applicable for Construction Phase		Heritage Impacts only applicable for Construction Phase										
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Socio-Economic		Socio-Economic										
Please refer to Sasol Shondoni Social and Labour Plan		Please refer to Sasol Shondoni Social and Labour Plan										

6.5.3 Decommissioning and Closure Phase Impact Significance Tables

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Topography		Topography										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water	Not Applicable	~	~	~	~	~	~	~	~	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.												
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Decommissioning of Shondoni shaft area												
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Areas of the mine where surface subsidence can still take place after mining activities have stopped.	Residual pillar collapse that can lead to further surface subsidence.	1	0	1	2	1	2	2	9	C2	Possible	Level 6
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
None	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Soils and Land Capability		Soils and Land Capability										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Loss of soils nutrient while in storage	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Contamination by dirty water used for watering re-vegetation	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Hydrocarbon spills from rehab vehicles	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Reduction in area	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Loss of soils nutrient while in storage	Depletion in the ground water availability as a result of ground water abstraction during the construction of the shaft complex.	~	~	~	~	~	~	~	~	~	~	~
Contamination by dirty water used for watering re-vegetation	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Hydrocarbon spills from rehab vehicles	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Reduction in area	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Loss of soils nutrient while in storage	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Contamination by dirty water used for watering re-vegetation	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Hydrocarbon spills from rehab vehicles	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Reduction in area	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Ground Water		Ground Water										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	The decommissioning of a 15 000t ROM coal stockpile area at Shondoni Shaft. Residual seepage from the stockpile footprint area can lead to further ground water pollution.	1	1	0	0	1	1	0	4	C1	Possible	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	The Conveyor Pedestal will not intersect ground water, so no impact will take place during decommissioning of the infrastructure.	~	~	~	~	~	~	~	0	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	The decommissioning of the Storm Water Pollution Control Dam (SWPCD) footprint.	2	2	1	0	1	1	0	7	C2	Almost Certain	Level 5 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	The Conveyor Pedestal will not intersect ground water, so no impact will take place during decommissioning of the infrastructure.	~	~	~	~	~	~	~	0	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	The decommissioning of diesel fuel storage tanks can lead to residual ground water pollution.	1	3	0	0	1	1	0	6	C2	Very Unlikely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	The decommissioning of the Overhead Power line will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	The decommissioning of a coal conveyor belt will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	This activity only refers to surface disturbance. Since no ground water is intersected, no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40												
Taking water from a water resource - Section 21 (a).	Not Applicable, since no water will be pumped to surface during the decommissioning phase.	~	~	~	~	~	~	~	0	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable, since no water will be captured from any ROM stock piles (decommissioned).	~	~	~	~	~	~	~	0	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable, since no water will be moved around for decommissioning purposes.	~	~	~	~	~	~	~	0	~	~	~
Exemptions from GNR 704												
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008												
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
MINE SHAFT AREAS												
Closing the shaft complex at Shondoni.	Localized depletion of ground water (if it occurred during the operational phase) will be reversed, and ground water levels will start to return to pre-mining ground water levels.	2	0	0	1	0	0	0	3	C1	Almost Certain	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Localized depletion of ground water (if it occurred during the operational phase) will be reversed, and ground water levels will start to return to pre-mining ground water levels.	2	0	0	1	0	0	0	3	C1	Almost Certain	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM												
The continuous influx of groundwater recharge into mine workings due to bord and pillar mining of the No's 2 and 4 coal seam, during the decommissioning phase.	Ground water recharge due to operational phase mining activities will continue during the decommissioning phase. The impact will persist well beyond the post-closure phase and will be addressed in that section.	4	1	1	0	1	0	1	8	C2	Almost Certain	Level 5 Risk
The increased influx of groundwater into mine workings due to pillar extraction activities of the No.4 coal seam, during the decommissioning phase.	Ground water recharge due to operational phase mining activities will continue during the decommissioning phase. The impact will persist well beyond the post-closure phase and will be addressed in that section.	4	1	1	0	1	0	1	8	C2	Almost Certain	Level 5 Risk
CONVEYOR BELT ROUTE												
Decommissioning of the Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area).	The decommissioning of the coal conveyor belt will not intersect/impact ground water resources, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Criteria for Determining Severity												
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Surface Water												
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES												
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
	from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.											
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Impact on water quality: The PCD will remain in place post closure and will therefore contain any impacts on runoff water resulting from the decommissioning and removal of infrastructure during this phase. No impact expected.	0	0	0	0	0	0	0	0	C1	Unforeseen	Level 6 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Construction phase impact	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Operational phase impact	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Impact on groundwater yield, not a surface water impact.								0			
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Impact on water quality: The PCD will remain in place post closure and will therefore contain any impacts on runoff water resulting from the decommissioning and removal of infrastructure during this phase. No impact expected.	0	0	0	0	0	0	0	0	C1	Unforeseen	Level 6 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Operational phase impact	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Impact on catchment yield: Decommissioning will not significantly change the operational loss in yield.	2	0	3	3	1	0	2	11	C3	Likely	Level 5 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or	Not Applicable	~	~	~	~	~	~	~	~	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.												
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.										0		
MINE SHAFT AREAS		MINE SHAFT AREAS										
Coal handling infrastructure (shaft, bunker workshops, offices and stockpiles)	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
Water management infrastructure	Impact on water quality: The PCD will remain in place post closure and will therefore contain any impacts on runoff water resulting from the decommissioning and removal of infrastructure during this phase. No impact expected.	0	0	0	0	0	0	0	0	C1	Unforeseen	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Underground mining	Impact on catchment yield: Decommissioning will not significantly change the operational loss in yield.	2	0	3	3	1	0	2	11	C3	Likely	Level 5 Risk
Potential mine water discharge	Impact on water quality: Once mining and related dewatering ceases, water levels will begin to recover. Levels not expected to reach decant levels until 80 to 100 years after mining ceases, well after decommissioning. Unlikely that water from the mining area will affect the environment during decommissioning	4	2	3	3	1	3	3	19	C6	Almost Certain	Level 1 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Decommissioning and dismantling of conveyor	Impact on water quality: Removal of surface infrastructure, with potential increase in suspended solids in runoff from the site. In most instances, removal of infrastructure will have positive impact in terms of storm water management.	1	0	1	0	1	1	0	4	C1	Possible	Level 6 Risk
OPERATIONAL PHASE ACTIVITIES		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Plant Life		Plant Life										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Continuous alien plant invasions, habitat deterioration, change in physical abiotic conditions, potential spillages.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Continuous alien plant invasions, habitat deterioration, change in physical abiotic conditions, potential spillages.	2	0	1	2	1	1	2	9	C2	Likely	Level 6 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Spillages from the dam leading to a change in the physical abiotic conditions.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Spillages from diesel tanks leading to a change in the physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Possible	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Alien plant invasions during the operation of the site.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Alien plant invasions during the operation of the site.	1	0	1	2	1	1	2	8	C2	Highly unlikely	Level 6 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Spillages along the access roads leading to a change in the physical abiotic conditions.	2	0	1	2	1	1	3	10	C3	Possible	Level 5 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	3	0	2	1	1	1	2	10	C3	Likely	Level 5 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	3	0	2	1	1	1	2	10	C3	Likely	Level 5 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	3	0	2	1	1	1	2	10	C3	Likely	Level 5 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Change in physical abiotic conditions.	2	0	1	2	1	2	2	10	C3	Possible	Level 5 Risk
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	2	2	10	C3	Almost Certain	Level 4Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Change in physical abiotic conditions.	2	1	1	2	1	2	2	11	C3	Possible	Level 5 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	2	2	10	C3	Almost Certain	Level 4Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged,	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	1	0	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	1	0	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Habitat deterioration, change in physical abiotic conditions	2	1	1	1	1	1	2	9	C2	Likely	Level 6 Risk
MINE SHAFT AREAS		MINE SHAFT AREAS										
Operation of the shaft complex at Shondoni	Alien plant invasions	1	0	1	2	1	1	2	8	C2	Likely	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Alien plant invasions	1	0	1	2	1	1	2	8	C2	Likely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.	None.								0			
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Operation of the conveyor	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	4	0	1	2	1	1	3	12	C3	Likely	Level 5 Risk
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Animal Life		Animal Life										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	2	0	1	2	1	1	2	9	C2	Almost Certain	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	1	0	1	2	1	1	2	8	C2	Almost Certain	Level 5 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
	data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	3	0	2	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	3	0	2	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Habitat Loss, Habitat Disturbance and Loss of Red Data List fauna: The clearing/removal/demolition of infrastructure will cause habitat loss, accidental death Red data List fauna, and will leave cleared areas which may become populated with exotic, pioneer plant species, thereby preventing the re-establishment of the natural vegetation and habitat for fauna.	4	0	2	2	1	2	2	13	C3	Almost Certain	Level 4Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Decommissioning of the Shaft Area Infrastructure	Habitat Disturbance	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Decommissioning of the Shaft Area Infrastructure	Habitat Loss	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Decommissioning of the Shaft Area Infrastructure	Loss of Red Data List fauna	4	0	2	2	1	1	2	12	C3	Almost Certain	Level 4Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Decommissioning of the Conveyor Belt and the fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyor	Habitat Disturbance	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk
Decommissioning of the Conveyor Belt and the fenced servitude	Habitat Loss	4	0	1	2	1	1	2	11	C3	Almost Certain	Level 4Risk

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyer												
Decommissioning of the Conveyer Belt and the fenced servitude between the Shondoni Shaft Complex and the Middelbult Main Shaft Conveyer	Loss of Red Data List fauna	4	0	2	2	1	1	2	12	C3	Almost Certain	Level 4 Risk
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Wetlands		Wetlands										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Decommissioning of the stockpile will involve the removal of all infrastructure associated with the stockpile as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	1	2	9	C2	Almost Certain	Level 5 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Removal of the conveyor pedestal will result in similar impacts to its construction, namely increased sediment inputs to the Trichardtspruit, increased erosion risk, disturbance to the vegetation and an increase in alien vegetation.	2	1	1	1	1	1	2	9	C2	Almost Certain	Level 5 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Decommissioning of the dams will involve the removal of all infrastructure associated with the dams as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	1	2	9	C2	Almost Certain	Level 5 Risk
Excavation for Coal Conveyer Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Removal of the conveyor pedestal will result in similar impacts to its construction, namely increased sediment inputs to the Trichardtspruit, increased erosion risk, disturbance to the vegetation and an increase in alien vegetation.	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Decommissioning of the tanks will involve the removal of all infrastructure associated with the tanks as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	1	2	9	C2	Almost Certain	Level 5 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	No natural vegetation will be removed as part of the decommissioning process. Only vegetation within the footprint of the shaft area might be impacted. This impact is dealt with under the appropriate sections above and below.	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Dewatering will cease during decommissioning. No impact	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Decommissioning of the station will involve the removal of all infrastructure associated with the station as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	1	2	9	C2	Almost Certain	Level 5 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Decommissioning of the road will involve the removal of the road and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	1	2	9	C2	Almost Certain	Level 5 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Decommissioning of the power line will involve the removal of all infrastructure associated with the power line and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	1	1	1	1	1	2	2	9	C2	Almost Certain	Level 5 Risk
Construction of a Coal Conveyer from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Decommissioning of the conveyor will involve the removal of all infrastructure associated with the conveyor and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	1	1	1	1	1	2	2	9	C2	Almost Certain	Level 5 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Decommissioning of the shaft area will involve the removal of all infrastructure associated with the shaft area as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	1	1	1	1	1	2	2	9	C2	Almost Certain	Level 5 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Water abstraction will cease upon the end of the operational stage.	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	During decommissioning impeding structures will be removed. This will result in increased sediment inputs to the wetlands increased erosion risk, disturbance to the vegetation and an increase in alien vegetation.	2	1	1	1	1	2	2	10	C2	Almost Certain	Level 5 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Discharge of waste water will cease at the end of the operational phase.	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Disposal of waste will cease at the end of the operational phase. However, disposed waste could still contribute to water quality deterioration through leaching of pollutants.	2	1	1	1	1	2	2	10	C2	Likely	Level 5 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	This impact will occur mostly during the construction phase. However, removal of infrastructure located within water courses could result in increased sediment inputs to the wetlands increased erosion risk, disturbance to the vegetation and an increase in alien vegetation.	2	1	1	1	1	2	2	10	C2	Almost Certain	Level 5 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Water abstraction and discharge will cease upon the end of the operational stage.	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any	Decommissioning of the mine will involve the removal of all infrastructure associated with	2	1	1	1	1	2	2	10	C3	Almost Certain	Level 5 Risk

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	the mine as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.											
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	2	0	1	3	1	3	2	12	C3	Likely	Level 5 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Decommissioning of the mine will involve the removal of all infrastructure associated with the mine as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	2	2	10	C3	Almost Certain	Level 5 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Decommissioning of the mine will involve the removal of all infrastructure associated with the mine as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	2	2	10	C3	Almost Certain	Level 5 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Decommissioning of the sewage plant will involve the removal of all infrastructure associated with the sewage plant as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	2	1	9	C2	Almost Certain	Level 5 Risk
MINE SHAFT AREAS		MINE SHAFT AREAS										
Decommissioning the Shondoni shaft area	Decommissioning of the shaft area will involve the removal of all infrastructure associated with the shaft area as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	2	1	9	C2	Almost Certain	Level 5 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Decommissioning of the shaft area will involve the removal of all infrastructure associated with the shaft area as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	2	1	9	C2	Almost Certain	Level 5 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Underground mining.	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	2	0	3	3	1	3	1	13	C3	Likely	Level 4 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Decommissioning the conveyor	Decommissioning of the conveyor will involve the removal of all infrastructure associated with the conveyor as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	2	1	1	1	1	2	1	9	C2	Almost Certain	Level 5 Risk
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Aquatic Ecosystems		Aquatic Ecosystems										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Decommissioning of the stockpile will involve the removal of all infrastructure associated with the stockpile as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off. Surface water may be contaminated with coal dust.	4	1	1	1	1	2	3	13	C3	Almost Certain	Level 4 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Contamination of surface water or groundwater as a result of sediment mobilisation, spills or seepage	4	1	1	1	1	2	2	12	3	Possible	Level 5 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourse, invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Mobilisation of sediments, increased sediment loads in drainage lines	1	0	1	0	1	0	0	3	1	Likely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Mobilisation of sediments, increased sediment loads in drainage lines	1	0	1	0	1	0	0	3	1	Likely	Level 6 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient	No dewatering during decommissioning	~	~	~	~	~	~	~	~	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
continuation of mining and for the safety of people - Activity 13.												
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.		~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Mobilisation of sediments, increased sediment loads and storm water runoff in drainage lines	1	0	1	0	1	0	0	3	1	Likely	Level 6 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, erosion and invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).		~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	During decommissioning impeding structures will be removed. This will result in increased sediment inputs to the wetlands increased erosion risk, disturbance to the vegetation and an increase in alien vegetation.	4	1	1	1	1	2	3	13	C3	Almost Certain	Level 4 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	No dewatering during decommissioning	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Disposal of waste will cease at the end of the operational phase. However, disposed waste could still contribute to water quality deterioration through leaching of pollutants.	4	1	1	1	1	2	3	13	C3	Likely	Level 5 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Mobilisation of sediments, increased suspended solids and turbidity and erosion at stream crossings	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	No dewatering during decommissioning	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, erosion and invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	1	0	2	3	1	3	3	13	3	Likely	Level 5 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, erosion and invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Mobilisation of sediments, increased suspended solids and turbidity in receiving watercourses, erosion and invasion by alien vegetation	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Decommissioning of the sewage plant will involve the removal of all infrastructure associated with the sewage plant as well as the removal of contaminated soil (if any), and the landscaping of the footprint to the surrounding landscape profile. This will result in increased sediment transport into the wetlands and increased surface run-off.	4	1	1	1	1	2	3	13	C3	Almost Certain	Level 4 Risk
MINE SHAFT AREAS		MINE SHAFT AREAS										
Shaft complex: water management system (i.e. dams)	Acidification of surface and groundwater as a result of seepage from stockpiles or overspill from pollution dams	2	2	3	1	1	2	2	13	3	Likely	Level 5 Risk
Decommissioning of the shaft complex at Shondoni	Mobilisation of sediments and increased surface runoff	2	0	1	0	1	1	2	7	2	Almost Certain	Level 5 Risk
Decommissioning of the shaft complex at Shondoni	Erosion caused by stomacher	2	0	0	0	1	1	2	6	2	Likely	Level 6 Risk
Decommissioning of the shaft complex at Shondoni	Solid Waste	2	2	2	0	1	2	2	11	3	Almost Certain	Level 4 Risk
Shaft Complex	Invasion by alien vegetation	2	0	2	3	1	1	2	11	3	Almost Certain	Level 4 Risk
Coal spills/coal dust	Pollution of surface water	1	2	3	1	1	3	2	13	3	Almost Certain	Level 4 Risk
UNDERGROUND MINING ACTIVITIES OF THE NOS 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NOS 2 AND 4 COAL SEAM										
Underground mining and slimes dam	Acid Mine Drainage: increasing acidification and salinisation of surface and ground water	1	2	2	2	1	2	3	13	3	Almost Certain	Level 4 Risk
Subsidence	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	1	0	1	2	1	2	3	10	3	Likely	Level 5 Risk
Contamination by mine water (spills/subsidence/seepage)	Loss of sensitive taxa and biodiversity	1	2	2	2	1	2	3	13	3	Almost Certain	Level 4 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Deconstruction of pedicels and conveyor tunnels/road crossings	Mobilisation of sediments, increased suspended solids and turbidity in streams and	2	0	2	0	1	2	3	10	3	Almost Certain	Level 4 Risk

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
	wetlands											
Air Quality		Air Quality										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Poweline from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
NEMWA Section 19(3) and GN 718.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Decommissioning of Shondoni shaft area	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Decommissioning of the conveyor belt.	Deconstruction vehicles will create localised secondary fugitive dust and gaseous particles due to construction activities at the conveyour belt.	1	0	1	1	0	1	1	5	C2	LOW	Level 6 Risk
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Noise		Noise										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	N/A	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	N/A	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	N/A	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	N/A	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	N/A	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	N/A	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	N/A	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	N/A	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	N/A	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	N/A	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	N/A	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	N/A	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	N/A	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	N/A	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	N/A	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	N/A	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	N/A	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	N/A	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation	N/A	~	~	~	~	~	~	~	~	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).												
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	N/A	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	N/A	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	N/A	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Dismantling and vehicles on access road	Dismantling construction noise	0	0	0	0	0	0	0	0	C1	Likely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
N/A	N/A	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Dismantling and vehicles on service road	Dismantling construction noise	0	0	0	0	0	0	0	0	C1	Likely	Level 6 Risk
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Visuals		Visuals										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Decommissioning of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Decommissioning of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Decommissioning of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Decommissioning of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~

Activity Description	Impact Identification/Description	Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
		Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the Decommissioning of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
Not Applicable		~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Demolition Activities and removal of infrastructure	Highly visible from R547; has impact on short to medium range views on road users	0	0	0	1	1	0	2	4	C1	Almost Certain	Level 6 Risk
	Visibility impact for long range views from east	0	0	0	1	0	0	2	3	C1	Likely	Level 6 Risk
	Alterations to Landscape and Visual Character (Morphology & Topography)	0	0	1	1	-1	0	2	3	C1	Almost Certain	Level 6 Risk
Re-establishing of Vegetation	Highly visible from R547; has impact on short to medium range views on road users	0	0	1	0	-1	0	1	1	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Vegetation & Land cover)	0	0	1	0	-1	0	1	1	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Hydrology)	0	0	1	0	-1	0	1	1	C1	Likely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.	Not Applicable	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Removal of Conveyor Belt	Highly visible from R547 and Brendan Village; has impact on short to medium range views on road users and residents	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Visibility impact for long range views	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Morphology & Topography)	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Visual Exposure impact for road users of R547 as well as Brendan Village residents	0	0	1	0	1	0	2	4	C1	Almost Certain	Level 6 Risk
Re-establishing of Vegetation	Visible from R547; has impact on short to medium range views on road users and Brendan Village residents	0	0	1	0	-1	0	2	2	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Vegetation & Landcover)	0	0	1	0	-1	0	1	1	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Hydrology)	0	0	1	0	-1	0	1	1	C1	Likely	Level 6 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Heritage		Heritage										
Heritage Impacts only applicable for Construction Phase		Heritage Impacts only applicable for Construction Phase										
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Socio-Economic		Socio-Economic										
Please refer to Sasol Shondoni Social and Labour Plan		Please refer to Sasol Shondoni Social and Labour Plan										

6.5.4 Post Closure Phase Impact Significance Table

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Topography		Topography										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	~	~	~	~	~	~	~	~	~	~	~

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
or estuary - Regulation 4(d).												
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	None.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Rehabilitation & closure	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Areas of the mine where surface subsidence can still take place after mining activities have stopped.	Residual pillar collapse that can lead to further surface subsidence.	1	0	1	2	1	2	2	9	C2	Possible	Level 6 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Soils and Land Capability		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).												
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Construction and commissioning of the shaft complex at Shondoni	Depletion in the ground water availability as a result of ground water abstraction during the construction of the shaft complex.	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Ground Water		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	The final closure of a 15 000t ROM coal stockpile area at Shondoni Shaft. Residual seepage from the stockpile footprint area can lead to further ground water pollution.	1	1	0	0	1	1	0	4	C1	Possible	Level 6 Risk
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	The Conveyor Pedestal will not intersect ground water, so no impact will take place during final closure.	~	~	~	~	~	~	~	0	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	The closure and final rehabilitation of the Storm Water Pollution Control Dam (SWPCD) footprint.	0	1	1	0	1	1	0	4	C2	Almost Certain	Level 6 Risk
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	The Conveyor Pedestal will not intersect ground water, so no impact will take place during final closure of the infrastructure.	~	~	~	~	~	~	~	0	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	The removal of diesel fuel storage tanks.	1	0	0	0	1	1	0	3	C2	Very Unlikely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	The removal of the Overhead Power line will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	The final removal of the coal conveyor belt will not intersect ground water, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	This activity only refers to surface disturbance. Since no ground water is intersected, no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	After final flooding of mining sections, water will be stored in underground mining sections. IF surface treatment of ground water is required, the appropriate amendment to the	4	2	1	3	1	2	2	15	C4	Almost Certain	Level 3 Risk

POST CLOSURE PHASE ACTIVITIES	Activity Description	Impact Identification/Description	Criteria for Determining Severity							SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation	
			Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's				SEVERITY TOTAL
		WULA will be made to register this water use.											
	Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
	Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
	Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable, since no water will be captured from any ROM stock piles removed during closure phase).	~	~	~	~	~	~	~	0	~	~	~
	Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
	Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable, since no water will be moved around for closure purposes.	~	~	~	~	~	~	~	0	~	~	~
Exemptions from GNR 704			Exemptions from GNR 704										
	No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
	No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
	No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
	No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008			NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
	NEMWA Section 19(3) and GN 718.	Not Applicable.	~	~	~	~	~	~	~	0	~	~	~
MINE SHAFT AREAS			MINE SHAFT AREAS										
	Final closure of the shaft complex at Shondoni.	Localized depletion of ground water (if it occurred during the operational phase) will be reversed, and ground water levels will finally return to pre-mining ground water levels.	0	0	0	1	0	0	0	1	C1	Almost Certain	Level 6 Risk
	All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Localized depletion of ground water (if it occurred during the operational phase) will be reversed, and ground water levels will finally return to pre-mining ground water levels.	0	0	0	1	0	0	0	1	C1	Almost Certain	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM			UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
	The continuous influx of groundwater recharge into mine workings until all mining units are flooded.	Ground water recharge from surface will enter areas of bord and pillar and high extraction mining until all mining units are flooded.	4	1	1	2	1	3	2	14	C4	Almost Certain	Level 3 Risk
	The decant of underground mine water to surface, after total flooding of mining units.	After final flooding of mining sections, ground water can seep to surface due to conduit flow from high extraction subsidence areas.	4	1	0	2	1	2	2	12	C3	Low	Level 5 Risk
	Inter-mine and inter-section flow of ground water during the post closure phase.	Ground water resources stored in Shondoni underground mining units can migrate from one mine/section to an adjacent mine/section, due to a difference in hydraulic pressure. Flow can also be induced where flooding compartments decant into surrounding compartments due to a roll in the coal seam floor.	4	1	2	3	1	3	3	17	C5	Possible	Level 2 Risk
	Continuous depletion of external users' groundwater resources and fountains due to pillar extraction mining activities of the No. 4 coal seam.	Pillar extraction mining activities can lead to sub-surface subsidence, that in turn will lead to a reduction/complete depletion of external user's borehole yields, for indefinite time frames.	2	0	1	3	1	2	2	11	C3	Low	Level 5 Risk
	Depletion of stream base flow due to sub-surface subsidence of the No.4 coal seam, post-closure.	Pillar extraction mining activities can lead to sub-surface subsidence, that in turn will lead to a reduction/complete depletion of ground water base flow to rivers and non-perennial streams., for indefinite periods of time.	4	0	1	2	1	3	2	13	C3	Very Unlikely	Level 6 Risk
	Deterioration in groundwater quality in all underground sections, and migration into the receiving environment, after mining activities have stopped.	Ground water recharge to underground mining units that remains in reservoirs will come in contact with coal pillars, mine floors and roofs. A gradual deterioration in ground water quality will take place over time, eventually leading to total acidification of underground mine water.	4	2	1	3	1	3	2	16	C4	Almost Certain	Level 3 Risk
	Groundwater pollution originating from the ROM coal stock pile footprint at the Shondoni Shaft Complex after closure.	Seepage from the stockpile area footprint can lead to ground water pollution, if not rehabilitated correctly.	2	1	0	1	1	1	1	7	C2	Very Unlikely	Level 6 Risk
	Groundwater pollution originating from the Storm Water Pollution Control Dam (SWPCD) footprint after closure.	Seepage from the SWPCD footprint can lead to ground water pollution, if not rehabilitated correctly.	2	1	0	1	1	1	1	7	C2	Very Unlikely	Level 6 Risk
CONVEYOR BELT ROUTE			CONVEYOR BELT ROUTE										
	Final removal of the Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area).	The removal of the coal conveyor belt will not intersect/impact ground water resources, so no impact will take place.	~	~	~	~	~	~	~	0	~	~	~
			Criteria for Determining Severity							SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation	

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Surface Water		Surface Water											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Impact on water quality: The PCD will remain in place post closure .	0	0	0	0	0	0	0	0	C1	Unforeseen	Level 6 Risk	
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Impact on catchment yield: Decommissioning will not significantly change the operational loss in yield.	2	0	3	3	1	0	2	11	C3	Likely	Level 5 Risk	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~	

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
is likely to cause pollution of a water resource - Regulation 5.													
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.		Not Applicable.											
MINE SHAFT AREAS		MINE SHAFT AREAS											
Water management infrastructure at all shaft areas.	Impact on water quality: The PCD will remain in place post closure .	0	0	0	0	0	0	0	0	C1	Unforeseen	Level 6 Risk	
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM											
Underground mining	Impact on catchment yield: Decommissioning will not significantly change the operational loss in yield.	2	0	3	3	1	0	2	11	C3	Likely	Level 5 Risk	
Potential mine water discharge	Impact on water quality: Time to decant expected to be 80 to 100 years after mining ceases. Expected water qualities, at recharge rate of 8.7 ML/day: - pH 7.5 (bord & pillar areas); 2.5 (total extraction areas) - EC 1100 mS/m (bord & pillar areas); 800 mS/m (total extraction areas) - SO4 <50 mg/l (bord & pillar areas); 3200 mg/l (total extraction areas)	4	2	3	3	1	3	3	19	C6	Almost Certain	Level 1 Risk	
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE											
N/A		N/A											
POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Plant Life		Plant Life											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	1	0	1	0	1	1	4	C1	Very unlikely	Level 6 Risk	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	0	0	0	1	0	1	C1	Very unlikely	Level 6 Risk	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	0	0	1	0	0	1	0	2	C1	Very unlikely	Level 6 Risk	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	0	0	1	0	0	1	0	2	C1	Very unlikely	Level 6 Risk	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	0	0	1	0	0	1	0	2	C1	Very unlikely	Level 6 Risk	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											
Taking water from a water resource - Section 21 (a).	Change in physical abiotic conditions.	0	0	0	0	0	0	0	0	C1	Very unlikely	Level 6 Risk	
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	0	0	0	0	0	0	0	0	C1	Very unlikely	Level 6 Risk	
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Change in physical abiotic conditions.	0	0	0	0	0	0	0	0	C1	Very unlikely	Level 6 Risk	
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Change in physical abiotic conditions.	0	0	0	0	0	0	0	0	C1	Very unlikely	Level 6 Risk	
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Alien plant invasions, habitat deterioration, change in physical abiotic conditions.	0	0	0	0	0	0	0	0	C1	Possible	Level 6 Risk	
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Change in physical abiotic conditions.	3	1	1	2	1	1	2	11	C3	Very unlikely	Level 6 Risk	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	1	0	0	1	2	4	C1	Very unlikely	Level 6 Risk	

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).													
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	1	0	0	1	2	4	C1	Very unlikely	Level 6 Risk	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	1	0	0	1	2	4	C1	Very unlikely	Level 6 Risk	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation.	0	0	1	0	0	1	2	4	C1	Very unlikely	Level 6 Risk	
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.	None.								0				
MINE SHAFT AREAS		MINE SHAFT AREAS											
Rehabilitation & closure	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation, change in physical abiotic conditions.	1	0	0	0	0	1	2	4	C1	Very unlikely	Level 6 Risk	
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Habitat destruction, loss of populations of threatened plant species, loss of populations of medicinal plant species, habitat fragmentation, change in physical abiotic conditions.	1	0	0	0	0	1	2	4	C1	Very unlikely	Level 6 Risk	
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM											
	None.								0				
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE											
Rehabilitation & closure	Habitat destruction	0	0	1	1	0	1	1	4	C1	Very unlikely	Level 6 Risk	
Criteria for Determining Severity		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Animal Life		Animal Life											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	2	0	1	2	1	1	2	9	C2	Low	Level 6 Risk	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	2	0	1	2	1	1	2	9	C2	Low	Level 6 Risk	
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	2	0	1	2	1	1	2	9	C2	Low	Level 6 Risk	
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	~	~	~	~	~	~	~	~	~	~	~	
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	1	0	1	2	1	1	2	8	C2	Low	Level 6 Risk	
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES											
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	3	12	C3	Low	Level 5 Risk	
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	3	12	C3	Low	Level 5 Risk	
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40											

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Taking water from a water resource - Section 21 (a).	None	~	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	None	~	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	None	~	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	None	~	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	None	~	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Habitat Deterioration: Discharging of polluted or contaminated water from the underground workings into the water resource could affect the habitat quality and pose a health risk for fauna causing them to move to more suitable habitat	4	1	2	2	1	1	3	14	C4	Highly unlikely	Level 5 Risk	
Exemptions from GNR 704		Exemptions from GNR 704											
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	2	2	12	C3	Low	Level 5 Risk	
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	2	2	12	C3	Low	Level 5 Risk	
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	2	2	12	C3	Low	Level 5 Risk	
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	None	~	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008											
NEMWA Section 19(3) and GN 718.									0				
MINE SHAFT AREAS		MINE SHAFT AREAS											
The continued presence of infrastructure.	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	1	2	1	1	2	11	C3	Low	Level 5 Risk	
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM											
Complete extraction mining leading to surface subsidence	Habitat Alteration: Should subsidence occur it could lead to a change in the drainage of water within the landscape, resulting in either an increase or decrease in the water present at the surface. If such a change in hydrology causes a change in the vegetation communities present it would result in an increase in habitat for certain species and a loss of habitat for other faunal species.	4	0	2	2	1	3	3	15	C4	Highly unlikely	Level 5 Risk	
Pumping of water from the underground workings	Habitat Deterioration: Discharging of polluted or contaminated water into the water resource could affect the habitat quality and pose a health risk for fauna causing them to move to more suitable habitat	4	1	2	2	1	2	3	15	C4	Highly unlikely	Level 5 Risk	
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE											
The continued presence of infrastructure	Habitat Loss: Should it be decided that certain buildings or infrastructure remain after mine closure for use in other activities, it would result in the continued loss of habitat.	4	0	2	2	1	1	3	13	C3	Low	Level 5 Risk	
Criteria for Determining Severity		Criteria for Determining Severity									SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL				
Wetlands		Wetlands											
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES											
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk	
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk	
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk	
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk	

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not applicable to the post-closure phase	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	2	9	C2	Likely	Level 6 Risk
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not applicable to the post-closure phase								0			
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not applicable to the post-closure phase	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not applicable to the post-closure phase	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	1	1	2	1	7	C2	Likely	Level 6 Risk
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Undermining of wetlands could result in wetland loss and degradation where surface subsidence occurs. Fractures in the strata underlying the wetlands could result in loss of surface water to groundwater, leading to desiccation of wetlands and changes in species composition.	1	0	3	1	1	1	1	8	C2	Likely	Level 6 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	1	1	2	1	7	C2	Likely	Level 6 Risk
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	1	1	2	1	7	C2	Likely	Level 6 Risk
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
Shaft area	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembelethu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	1	0	1	2	1	2	1	8	C2	Likely	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Underground mining.	Decanting of polluted mine water expected to have a high salt load and to potentially be acidic	0	2	1	2	1	1	2	9	C2	Highly Unlikely	Level 6 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Conveyor route	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	2	0	1	2	1	2	1	9	C2	Likely	Level 6 Risk
		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Before Mitigation

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Aquatic Ecosystems		Aquatic Ecosystems										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Construction of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Contaminated mine water that is pumped to the water treatment facility, may contaminate surface water, causing acidification and salinisation (especially by sulphates)	2	2	2	3	1	2	2	14	4	5	Level 3 Risk
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Construction of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine Transmission Feeder Bays - Activity 1 (l).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Construction of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Contaminated mine water that is pumped to the water treatment facility, may contaminate surface water, causing acidification and salinisation (especially by sulphates)	2	2	2	3	1	2	3	15	4	7	Level 3 Risk
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Contaminated mine water that is pumped to the water treatment facility, may contaminate surface water, causing acidification and salinisation (especially by sulphates)	2	2	2	3	1	2	3	15	4	7	Level 3 Risk
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Subsidence can result in fissures forming above the mined area, leading to loss of surface water to groundwater or decant of contaminated mine water to surface water, causing acidification or salinisation.	4	2	2	3	1	2	2	16	4	7	Level 3 Risk
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the construction of any dam or other impoundment or any embankment, road or railway, or for any other purpose which	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
is likely to cause pollution of a water resource - Regulation 5.												
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
NEMWA Section 19(3) and GN 718.		~	~	~	~	~	~	~	~	~	~	~
MINE SHAFT AREAS		MINE SHAFT AREAS										
SHONDONI SHAFT AREA	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	4	0	1	2	1	2	2	12	C3	P6	Level 5 Risk
All other remaining operational shafts (Main Shaft, West Shaft and Ithembaletu Shaft) and decommissioned shafts (North Shaft and North-West Shaft).	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	4	0	1	2	1	2	2	12	C3	P6	Level 5 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
Subsidence/decant/leaks/spills	Subsidence can result in fissures forming above the mined area, leading to loss of surface water to groundwater or decant of contaminated mine water to surface water, causing acidification or salinisation (especially by sulphates).	4	1	2	2	1	2	3	15	7	7	Level 3 Risk
Contamination by mining water (spills/subsidence/seepage)	Loss of sensitive taxa and biodiversity	2	3	2	2	1	2	2	14	6	7	Level 3 Risk
Decreased base flows and increased channelization of watercourses	Loss of habitats and wetland function	4	0	2	2	1	2	3	14	4	7	Level 3 Risk
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Pipeline leaks/spills	Acidification of surface water as a result of leaks/ spills of pumped mine water en route to treatment facility	2	1	2	1	1	3	3	13	3	7	Level 4 Risk
Conveyor Route	The disturbed area might be colonised by alien vegetation and be exposed to erosion.	2	0	1	2	1	2	2	10	C3	P6	Level 5 Risk
Criteria for Determining Severity		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Air Quality		Air Quality										
No Air Quality Impacts were identified for the Post-Closure phase		No Air Quality Impacts were identified for the Post-Closure phase										
Criteria for Determining Severity		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Noise		Noise										
No Noise Impacts were identified for the Post-Closure phase		No Noise Impacts were identified for the Post-Closure phase										
Criteria for Determining Severity		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Visuals		Visuals										
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 386 ACTIVITIES										
Coal throw out stockpile area at Shondoni Shaft with a storage of more than 250 tons but less than 100 000 tons - Activity 1 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Conveyor Pedestal for crossing of Trichardt Spruit (in the 1:10 year flood line) - Activity 1 (m).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Service Water Dams and Storm Water Pollution Control Dam at Shondoni Shaft Complex with a capacity of 50 000 cubic metres or more - Activity 1 (n).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Excavation for Coal Conveyor Pedestal for crossing of Trichardt Spruit, removing more than 5 cubic meters of material - Activity 4.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Diesel Fuel Storage Tanks at Shondoni Shaft Complex with a combined capacity of more than 30 cubic metres but less than 1 000 cubic metres - Activity 7.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of Indigenous Vegetation of 3 hectares or more during Site Clearance for Post-Closure phase of Shondoni Shaft Complex and related Infrastructure - Activity 12.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removal of water found in the underground workings on the No.4 Seam and the No.2 Seam workings to facilitate the efficient continuation of mining and for the safety of people - Activity 13.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Installation of a Tetra Radio System above ground at the Shaft Complex Area - Activity 14.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Post-Closure phase of an Access Road (wider than 4m) to Shondoni Shaft Complex from Tar road R547 - Activity 15.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES		LISTED ACTIVITIES AT SHONDONI IN TERMS OF NEMA (ACT 107 OF 1998): GN 387 ACTIVITIES										
Post-Closure phase of a Double Circuit 132 kV Overhead Power line from Eskom Supply Point (SOL B) to Shondoni Mine	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Transmission Feeder Bays - Activity 1 (l).												
Post-Closure phase of a Coal Conveyor from Shondoni Shaft to Middelbult Main Shaft (to the central Sasol Coal Supply area) at a rate of more than 50 cubic meters per day - Activity 1 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Development of an area including shaft surface infrastructure and conveyor route where more than 20 hectares is disturbed - Activity 2.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40		NATIONAL WATER ACT (ACT 36 OF 1998): SECTION 40										
Taking water from a water resource - Section 21 (a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Impeding or diverting the flow of water in a watercourse - Section 21 (c).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit - Section 21 (f).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Disposing of waste in a manner which may detrimentally impact on a water resource - Section 21 (g).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Altering the bed, banks, course or characteristics of a watercourse - Section 21 (i).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people - Section 21 (j).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
Exemptions from GNR 704		Exemptions from GNR 704										
No person in control of a mine or activity may locate or place any residue deposit, dam, reservoir together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 metres from any water course or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked - Regulation 4(a).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may, except in relation to a matter contemplated in Regulation 10 (winning sand and alluvial minerals), carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood line or within a horizontal distance of 100 metres from any water course or estuary, whichever is the greatest - Regulation 4(b).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any water course or estuary - Regulation 4(d).	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
No person in control of a mine or activity may use any residue or substance which causes or is likely to cause pollution of a water resource for the Post-Closure phase of any dam or other impoundment or any embankment, road or railway, or for any other purpose which is likely to cause pollution of a water resource - Regulation 5.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008		NATIONAL ENVIRONMENTAL MANAGEMENT ACT: WASTE ACT, ACT NO. 59 OF 2008										
MINE SHAFT AREAS		MINE SHAFT AREAS										
Rehabilitated Shondoni Shaft area	Visible from R547; has impact on short to medium range views on road users	0	0	1	2	-1	0	1	3	C1	Almost Certain	Level 6 Risk
	Visibility impact for long range views from east	0	0	1	1	-1	0	2	3	C1	Almost Certain	Level 6 Risk
	Alterations to Landscape and Visual Character (Morphology & Topography) – Landscape back to previous character	0	0	1	1	-1	0	2	3	C1	Almost Certain	Level 6 Risk
UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM		UNDERGROUND MINING ACTIVITIES OF THE NO.S 2 AND 4 COAL SEAM										
None.	Not Applicable.	~	~	~	~	~	~	~	~	~	~	~
CONVEYOR BELT ROUTE		CONVEYOR BELT ROUTE										
Rehabilitated Conveyor Belt route	Visible from R547 and Brendan Village; has impact on short to medium range views on road users and residents	0	0	1	1	-1	0	2	3	C1	Almost Certain	Level 6 Risk
	Visibility impact for long range views	0	0	1	0	0	0	2	3	C1	Almost Certain	Level 6 Risk
	Visual Exposure impact for road users of R547 as well as Brendan Village residents	0	0	1	1	-1	0	2	3	C1	Almost Certain	Level 6 Risk
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Heritage		Heritage										
Heritage Impacts only applicable for Construction Phase		Heritage Impacts only applicable for Construction Phase										
Criteria for Determining Severity		Criteria for Determining Severity										
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL	SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation

POST CLOSURE PHASE ACTIVITIES		Criteria for Determining Severity								SEVERITY C-NUMBER	Degree Of Likelihood	Risk Level Before Mitigation
Activity Description	Impact Identification/Description	Quantity	Toxicity	Extent	Duration	Status	Legislation	I & AP's	SEVERITY TOTAL			
Socio-Economic		Socio-Economic										
Please refer to Sasol Shondoni Social and Labour Plan		Please refer to Sasol Shondoni Social and Labour Plan										

6.6 CUMULATIVE IMPACTS

In areas where extensive mining and associated industrial activities occur, as is the case for the greater Secunda area, impacts experienced at individual mines and/or plants may combine, and whereas they may be of acceptable magnitude and significance on individual mine/plant scale, could after they have accumulated, be fully un-acceptable on a regional scale.

Most of the identified biophysical and socio-economic impacts related to coal mining have the potential to accumulate and therefore have to be considered. In this regard, however, it is important to separate those that would accumulate linearly and those that would accumulate exponentially.

Linear accumulation is defined for impacts for which the aerial extent and zone of influence is directly related to the extent of the surface area where the impact is generated and occurs, or impacts for which the time duration is short. Examples of environmental attributes for which this is the case are:

- Topography
- Soils
- Land Use and Land Capability
- Geology
- Heritage

Exponential accumulation is defined for impacts for which the aerial extent and zone of influence exist beyond the extent of the surface area where the impact is generated and which could therefore increase in significance as it combines with the manifestations of other external impacts generated by neighbouring or down-gradient/down-stream sources.

Examples of environmental attributes for which this is the case are:

- Ground Water
- Surface Water
- Plant Life
- Animal Life
- Aquatic Ecosystems
- Air Quality
- Noise
- Visual Aspects
- Socio-economic Aspects

The specialist impact assessment reports commissioned for this Sasol Mining: Middelbult – Block 8 – Shondoni EIA/EMP project, addressed the cumulative impacts related to the exponential accumulation attributes listed above.

6.6.1 Ground Water

The cumulative impacts associated with ground water relates to the progressive mine water make resulting from aquifer dewatering, which increases linearly as the underground workings expand. Under normal bord and pillar mining conditions, the overlying aquifers remain structurally intact, but if overlying strata collapse should occur as a result of high extraction mining, the water make increases exponentially.

This phenomenon invariably results in the situation that the mine water make for an individual mine becomes greater than the underground storage capacity in the mine, resulting in the requirement to store excess mine water on surface. This situation is a reality at Sasol Mining in Secunda, where an integrated surface water management system for excess mine water has been developed – discussed in Chapter 4 of VOLUME I of this submission.

The magnitude of the excess mine water make can be limited if only bord and pillar mining, supplemented with limited high extraction is conducted. It is essentially for this reason that the proposed extensions to underground mining at Middelbult – Block 8 – Shondoni will employ only bord and pillar, with selective high extraction.

6.6.2 Surface Water

Sasol Mining is the only coal mining operation that potentially impacts on the Waterval River catchment. This includes all of Sasol's Secunda mining complexes, with the exception of Syferfontein Colliery and TCTS.

At present all mining in the catchment is underground, with no current plans for opencast mining. Of the underground, the vast majority is bord & pillar, with some 25% to 30% of the mined out areas being high extraction.

The cumulative impact on catchment yield is therefore expected to be relatively low. In addition, with dirty water contained in underground workings, the impact on water quality is also expected to be relatively low.

Other industrial and mining activities that potentially impact on the Waterval River catchment include the Sasol Secunda Industrial Complex, as well as some gold mines in the vicinity.

6.6.3 Plant Life

The proposed project is within a relatively disturbed landscape. From a vegetation and flora point of view, there has been a large amount of change within vegetation in this region. This has led to vegetation types within the study area being classified according to the Draft National List of Threatened Ecosystems (GN1477 of 2009), published under the National Environmental Management: Biodiversity Act (Act No. 10, 2004) as Vulnerable. Additional loss of vegetation in the study area may further reduce the extent of vegetation, but will be a relatively small change compared to existing change due primarily to cultivation, urban expansion and other mining.

The current project proposes underground mining with a small proportion of above-ground infrastructure. There will therefore be a small cumulative impact by this project, when taken in combination with existing changes in the area.

6.6.4 Animal Life

A cumulative impact can arise due to the combination of impacts from the project being evaluated with related impacts from other projects. These cumulative impacts occur when the project impacts compound the effects of other past, present and (expected) future projects, causing an increase in environmental degradation which is greater than that expected from the project being evaluated alone.

Cumulative impacts which are likely to occur are a loss of vegetation and habitat, habitat fragmentation and possibly a decrease in water quality, which will negatively impact the quality of remaining habitat. Urban expansion occurring in the surrounding towns and increased cultivation will cause an additional decrease in natural habitat and will lead to increasing fragmentation of the remaining habitat. Pollution originating from urban areas, roads, farming practices and other mining activities in the catchments are all expected to negatively impact the water resource, thereby further reducing the quality of available habitat, especially for those species utilizing wetland or riparian habitats.

Therefore the Shondoni Project can potentially contribute to accumulation of negative impacts on the environment and the terrestrial fauna, and for this reason, those mining activities contributing to the above mentioned cumulative impacts need to be carefully considered and every effort must be made to prevent the impacts from occurring, and if unavoidable, suitable mitigation measures should be carried out to minimize the impact.

6.6.5 Aquatic Ecosystems

Potentially the most significant cumulative impact that could be associated with the proposed Shondoni Project, is that of deteriorating water quality within the Waterval River and the Vaal River further downstream. The cumulative impact that coal mining could have on water quality is illustrated by current conditions in the Upper Olifants River, where the salinity loads already exceed the Resource Water Quality Objectives for the Upper Olifants River.

In general the southern coalfields are characterised by higher sodium concentrations, indicating a serious risk of deteriorating water quality due to increased salinities within the rivers draining this area, namely the Vaal River and its tributaries, once the coal mines in the area start decanting. Decanting of acidic water must also be considered. While numerous new coal mines and shafts have in the recent past been commissioned in the Secunda region, it is important to recognise the time lag between commissioning of the mine and decanting of polluted water. The life of mine of the Middelbult Reserve will be extended to 2041 by the Shondoni Shaft, where after it could take several years before the mine starts decanting polluted water.

While polluted decant from one or two of these mines might be within the assimilative capacity of the receiving water resources, the combined impact of polluted decant from all of the collieries within the Vaal River will need to be considered to accurately assess the significance of this impact. Given the reliance of South African industry on water obtained from the Vaal River, the maintenance of water quality within this river should be of utmost importance.

The construction and operation of the surface infrastructure will also contribute to the cumulative loss of natural habitats and biodiversity within the Secunda area.

6.6.6 Air Quality

Due to the inherent dispersion of air pollution through the atmosphere, any atmospheric emission originating from a primary or secondary source is bound to accumulate and manifest in the ambient air quality for any specific site or area. For the Sasol Mining: Middelbult – Block 8 – Shondoni EIA/EMP project, air quality impacts will be secondary in nature and will be related to dust pollution and gaseous emissions due to construction activities. These activities, and therefore their associated air quality impacts, will be very limited in extent and duration and is not expected to contribute significantly to a cumulative air quality impact in the region.

6.6.7 Noise

The ambient noise profile for any region or site, is determined by the ongoing noise propagated from existing sources in the area. The Middelbult – Block 8 – Shondoni operations do contribute to the ambient noise profile through noise propagated from overland coal conveyor belts, ventilation upcast shafts, and general road traffic on surface. As such the new expansions proposed, will no doubt contribute cumulatively to the ambient noise profile of the area, especially as the first two noise sources mentioned will be operated on a 24 hour/day basis.

6.6.8 Visual

Accumulation of visual impacts within a larger geographic area, essentially defines the “sense of place” of a site. Being located regionally within an overall mining and industrial region, the limited extent, isolated occurrence and mining/industrial nature of visual impacts caused by Sasol Mining: Middelbult – Block 8 – Shondoni activities, is not deemed to alter the “sense of place” of the area in which it is located.

6.6.9 Socio-Economic

Cumulative impacts associated with socio-economic aspects are termed the “multiplier effect”. The multiplier effect of socio-economic impacts and benefits of the Sasol Mining: Middelbult – Block 8 – Shondoni project within the greater Secunda Area, and to a lesser degree also further and beyond the local area itself, is significant. In view of the Development Goals for South Africa, job creation is certainly assessed to be one of the most important drivers for socio-economic upliftment, aimed at providing a better life for all. In this regard alone, Sasol Mining contributes a vast number of employment opportunities, the multiplier effect of which is far beyond significant.