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Environmental Impact Assessment for Sibanye Gold Limited's West Rand Tailings Retreatment Project

Social Impact Assessment

Project Number:

GOL2376

Prepared for:

Sibanye Gold Limited

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Digby Wells and Associates (South Africa) (Pty) Ltd
(Subsidiary of Digby Wells & Associates (Pty) Ltd). Co. Reg. No. 2010/008577/07. Turnberry Office Park, 48 Grosvenor Road, Bryanston, 2191. Private Bag X10046, Randburg, 2125, South Africa
Tel: +27 11 789 9495, Fax: +27 11 789 9498, info@digbywells.com, www.digbywells.com

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Name	Responsibility	Signature	Date
Nic Boersema	Report Writer		23 July 2015
Jurie Erwee	Report Writer		30 June 2015
Karien Lotter	Senior Review		21 July 2015
Marcelle Radyn	Project Manager Review		30 October 2015

Digby Wells and Associates (South Africa) (Pty) Ltd

Contact person: Nic Boersema

Digby Wells House
Turnberry Office Park
48 Grosvenor Road
Bryanston
2191

Tel: 011 789 9495
Fax: 011 789 9498
E-mail: nic.boersema@digbywells.com

I, Nic Boersema as duly authorised representative of Digby Wells and Associates (South Africa) (Pty) Ltd., hereby confirm my independence (as well as that of Digby Wells and Associates (South Africa) (Pty) Ltd.) and declare that neither I nor Digby Wells and Associates (South Africa) (Pty) Ltd. have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of Sibanye Gold Limited, other than fair remuneration for work performed, specifically in connection with the proposed West Rand Tailings Retreatment Project, Gauteng Province.

Full name: Nicolaas Boersema

Title/ Position: Principal Social Scientist

Qualification(s): MA Anthropology

Experience (years): 30 years

EXECUTIVE SUMMARY

There is a long history of gold and uranium mining in the broader West Rand area with an estimated 1.3 billion tonnes of surface tailings, containing in excess of 170 million pounds of uranium and 11 million ounces of gold. Sibanye Gold Limited (SGL), who currently owns the majority of the tonnage and its gold and uranium content, plans to exploit all these resources to develop a long life and high yield surface business. Key to the successful execution of this development strategy is the West Rand Tailings Retreatment Project (WRTRP).

The WRTRP involves the construction of a large-scale Central Processing Plant (CPP) for the recovery of gold, uranium and sulfur from the available resources. The CPP, which is centrally located relative to the West Rand resources, will be developed in several phases to eventually treat up to 4Mt/month of tailings inclusive of current mine arisings. The resultant tailings will be deposited on a modern tailings storage facility (TSF) called the Regional TSF (RTSF).

The Project is located in the West Rand District Municipality (WRDM) in Gauteng Province. The WRDM includes four local municipalities (LMs): Mogale City, Westonaria, Randfontein and Merafong City. Towns and larger settlements located in the broader project area include Randfontein, Toekomsrus, Fochville, Carletonville, Westonaria, Venterspost, Modderfontein, Rietvallei, Bekkersdal and Mohlakeng. Sections of the pipeline routes also traverse the City of Johannesburg Metropolitan Municipality. The most significant land uses within the project area are mining, agriculture, residential and businesses. Of these, agriculture covers the largest portion of the area, followed by mining and residential uses. The area includes a large number of both historical and existing mining activities.

Sibanye Gold Limited is required in terms of national legislation to submit an application for environmental authorisation to the Department of Mineral Resources, together with several other permit applications, before proceeding with the Project. An Environmental Impact Assessment (EIA) will, therefore, be submitted in support of the permit applications. Digby Wells Environmental (Digby Wells) has been appointed to undertake a Social Impact Assessment (SIA) for the initial phase of the proposed WRTRP, as part of the environmental and social impact assessment process for the Project.

The Terms of Reference for the SIA are to undertake a screening exercise for the ultimate Project, describe the socio-economic environment in the project area, identify, describe and determine the significance of any potential social impacts that may arise as a result of the development of the initial phase, and recommend appropriate mitigation measures and management actions to avoid or minimise the potential negative impacts, and enhance the positive impacts associated with the initial phase of the Project. The development of the SIA involved three phases: a scoping phase, screening phase and an impact assessment phase.

The screening phase was undertaken to identify social risks and sensitivities for the ultimate WRTRP. The analysis concluded that, with adequate mitigation, none of the sensitivities and potential negative impacts identified for the ultimate Project would pose a fatal flaw from a

social perspective. Conversely, there are several significant positive economic and health impacts associated with the Project.

Section 7 of the report discusses the legal and policy framework applicable to the Project, while Section 8 provides a detailed description of the socio-economic baseline conditions in the project area. The key findings of the baseline description are summarised in the table below.

Table A-1: Summary of the Socio-Economic Baseline Profile

Socio-Economic Attribute	Supporting Data	Relevance to the Project
Opportunities and Benefits		
District and local municipal development plans are in place	Local and district municipal Integrated Development Plans (IDPs), Local Economic Development (LED) plans, and Spatial Development Frameworks (SDFs)	Opportunity for the project to align future socio-economic development programmes or Social and Labour Plans (SLPs) with existing municipal development plans; this will increase sustainability and relevance of initiatives.
Several large mining operations are situated within the secondary study area	Municipal SDFs; investigation of available spatial data	Opportunity to synergise LED initiatives with initiatives of existing mines
Commercial farming is a popular land use in the secondary and primary study area (see Section 4.1	Visual inspection of aerial imagery; Local and district municipal SDFs	Opportunity for SGL to pursue future projects, which are focussed on agriculture. This will contribute towards any drive aimed at diversifying the economy. District and local level economic development plans also identify agriculture as a key development area for economic diversification.
Large potential labour force	The youth comprises the largest age cohort in the secondary study area; high unemployment, especially among rural households; although most people have a relatively low skill level	SGL and appointed contractors can likely meet local recruitment targets, especially for semi-unskilled positions
Mining is by far the dominant sector across all study areas	Statistics South Africa (StatsSA) 2013: mining is the primary contributor to the regional economy (Gross Domestic Product-50>%); mining employed the largest number of people in the tertiary study area	Procurement could potentially be from suppliers located within the secondary study area who are currently servicing mines in the area It is likely that some individuals with mining related skills will reside in the secondary study area, which will assist the project or contractor in meeting local recruitment and procurement targets
General backlog of basic service delivery infrastructure (water, sanitation, electricity and tarred roads).	Stats 2013 and Merafong Local Municipality (MLM) IDP: ▪ Rural households in the local study area mostly rely on community standpipes and pit toilets ▪ Considerable housing backlogs ▪ Several service delivery protest in the area in 2014/2015 period	Provides opportunities to continue contribution to infrastructure development as part of drive towards LED (but may also hinder the productivity of the local workforce)

Socio-Economic Attribute	Supporting Data	Relevance to the Project
Gender disparity in employment rates – financial vulnerability among females	StatsSA, 2013 - Unemployment amongst females is significantly higher than males. Furthermore, when women do generate income, it is likely to be less than males	The project could contribute to gender equity by implementing higher female employment targets for contractors – this requirement, if feasible, could be formalised by incorporating it into the contractor's conditions of contract. That is if any contractors are appointed as part of the project.
High levels of inequality and poverty within rural areas and townships	StatsSA, 2013 and municipal IDPs: ▪ High unemployment rate combined with low levels of income throughout the tertiary study area ▪ Gini-coefficient throughout the secondary study area is at 0,68	Local procurement and job creation will have a major positive effect on local businesses their employees and dependants, as well as on successful job-applicants and their dependants
Constraints or Challenges		
Substantial housing shortage throughout the secondary and tertiary study area	Stats, 2013, and municipal IDPs: Growth in the percentage of informal settlements in both urban and rural areas	Any project-induced influx may place additional pressure on limited housing
Current land use on proposed project sites include commercial agriculture, residential and business uses	Inspection of aerial imagery, and municipal SDFs	SGL could consider that the physical and economic displacement of several vulnerable households would require detailed resettlement planning, which may have substantial time and cost implication for the project Land would likely have to be rezoned to allow for mining activities, which could have timing implication for the implementation of the proposed operation
The economy of the tertiary study area is very dependent on mining	Mining contributed to 50 % of the GDP; Mining is the primary driver behind employment in the secondary study area (municipal IDPs)	The project will likely contribute to increasing dependency on mining among local communities LED activities should preferably be aimed at establishing economic development outside the mining sector
Commercial farming is common	Municipal IDPs	Agricultural activities may potentially be directly affected by the proposed project if it affects the quality of water, this would likely result in stakeholder issues

Several interviews were conducted during May and June 2015 as part of the assessment phase of the SIA. Eighteen interviews were conducted with directly and/or indirectly affected land owners and land users in the project area. Most of the issues and concerns raised referred to issues that already exist, but respondents were of the opinion that the Project will exacerbate current conditions. Dust resulting from mining activities (and associated potential health issues) was an overriding concern. While most concerns referred to the perceived negative impacts associated with the Project, some respondents acknowledged the potential benefits that the Project may have in terms of "cleaning up the environment."

The impact and mitigation process and methodology undertaken for the SIA are discussed in Section 10. Table A-2 provides an overview of the identified social impacts associated with the Project.

Table A-2: Overview of Potential Impacts

Project Phase and Impact Type		Impact Name
Construction	Positive	Local employment creation
		Skills development and capacity building
		Local procurement of goods and services
		Local and regional economic development
	Negative	Community health, safety and security
		Displacement impacts (pre-construction)
		Disruption of movement patterns
		Impacts on surrounding farms
		Water quality impacts
		Project-induced population influx
Operation	Positive	Local employment creation
		Skills development and capacity building
		Local procurement of goods and services
		Local and regional economic development
		Improved quality of life
		Increased access to land
	Negative	Water quality impacts
		Impacts on surrounding farms
		Community health, safety and security
		Project-induced population influx
Decommissioning	Negative	Dependency on the Project for sustaining the local economy

The findings of the assessment of identified social impacts are presented in Section 11, which include a description of each impact, followed by the assessment rating and proposed mitigation measures for that impact. The findings are summarised in Table A-3 below. Section 12 addresses aspects relating to potential cumulative impacts associated with the Project. Section 13 identifies aspects of the socio-economic environment that may represent risks to SGL.

Section 14 presents a social impact management framework aimed at ensuring that the expected negative social impacts of the Project on host communities are managed, and that potential positive impacts on host communities are enhanced. Management measures place emphasis on aspects such as skills development and local economic development as these aspects will constitute the foundation for enhancing the Project's 'social' benefits. Moreover, negative impacts, such as increased pressure on infrastructure and services, and economic

dependence on the Project can be more effectively mitigated when the social benefits of the Project are enhanced.

Section 14.3 recommends that a project-specific monitoring programme be developed and implemented to monitor the implementation of social management actions. The approach adopted for the monitoring programme is based on the “inputs-outputs-outcomes-impacts” model, which assesses performance of each level of the "results chain."

In conclusion, a total of 13 social impacts were identified for the Project. Of these, six are positive, and seven are negative. If all mitigation measures are implemented according the recommendations in Section 11, it is anticipated that the consequence and/or probability of most negative impacts could be reduced. While not all negative impacts can be reduced to acceptable levels, most positive impacts will be significantly enhanced to maximise benefits to surrounding communities.

It is recommended that the mitigation measures summarised in Table 14-4 in the report, be incorporated into the EMP for the Project and, where relevant, into contract conditions to be issued to subcontractors. Measures must also be developed to monitor the implementation of mitigation measures and to take corrective action where necessary. It is recommended that SGL establish linkages and partnerships with other institutions (e.g. government, NGOs and other mines), involved in local economic development and social upliftment to maximise the Project’s benefits to the welfare of local communities.

Table A-3: Summary of Pre and Post Mitigation Ratings

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Conse-quence	Proba-bility	Signifi-cance	Duration	Extent	Intensity	Conse-quence	Proba-bility	Signifi-cance
Jobs	Local employment creation	Project Life	Local	Moderately high - positive	Moderately beneficial	Likely	Minor - positive	Project Life	National	High - positive	Highly beneficial	Highly probable	Moderate - positive
Skills	Skills development & capacity building	Project Life	Municipal Area	Moderate - positive	Moderately beneficial	Likely	Minor - positive	Project Life	Municipal Area	Moderately high - positive	Moderately beneficial	Highly probable	Moderate - positive
Procure	Local procurement of goods & services	Project Life	Province/ Region	Moderately high - positive	Highly beneficial	Likely	Minor - positive	Project Life	Province/ Region	High - positive	Highly beneficial	Highly probable	Moderate - positive
LED	Local & regional economic development	Project Life	Municipal Area	High - positive	Highly beneficial	Likely	Minor - positive	Beyond project life	Province/ Region	Very high - positive	Highly beneficial	Certain	Major - positive
QoL	Improved quality of life	Long term	Local	Moderately high - positive	Moderately beneficial	Highly probable	Minor - positive	Beyond project life	Municipal Area	High - positive	Highly beneficial	Highly probable	Moderate - positive
Land	Increased access to land	Permanent	Municipal Area	Moderately high - positive	Highly beneficial	Highly probable	Moderate - positive	Permanent	Municipal Area	High - positive	Highly beneficial	Certain	Major - positive
D-Move	Disruption of movement patterns	Medium term	Local	Low - negative	Slightly detrimental	Certain	Minor - negative	Medium term	Limited	Very low - negative	Slightly detrimental	Certain	Minor - negative
Health	Community health, safety & security	Beyond project life	Local	Very high - negative	Highly detrimental	Certain	Moderate - negative	Beyond project life	Limited	High - negative	Moderately detrimental	Highly probable	Moderate - negative
Displace	Displacement impacts	Permanent	Limited	Extremely high - negative	Highly detrimental	Certain	Major - negative	Permanent	Very limited	Moderately high - negative	Moderately detrimental	Certain	Moderate - negative
WQ	Water quality impacts	Permanent	Municipal Area	Moderately high - negative	Highly detrimental	Certain	Moderate - negative	Beyond project life	Local	Moderate - negative	Moderately detrimental	Highly probable	Minor - negative
Influx	Project-induced population influx	Beyond project life	Municipal Area	Moderately high - negative	Highly detrimental	Highly probable	Moderate - negative	Project Life	Local	Moderate - negative	Moderately detrimental	Likely	Minor - negative
Farms	Impacts on surrounding farms	Project Life	Limited	High - negative	Moderately detrimental	Certain	Moderate - negative	Project Life	Limited	Moderately high - negative	Moderately detrimental	Certain	Moderate - negative
Depend	Dependency of the Project for sustaining local economy	Beyond project life	Municipal Area	Moderately high - negative	Highly detrimental	Highly probable	Moderate - negative	Beyond project life	Municipal Area	Low - negative	Moderately detrimental	Likely	Minor - negative

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LIST OF ABBREVIATIONS AND ACRONYMS

ABET	Adult Basic Education
AsgiSA	Accelerated and Shared Growth Initiative for South Africa
AWTF	Advanced Water Treatment Facility
BBBEE	Broad-based Black economic empowerment
BEE	Black Economic Empowerment
BWPS	Bulk Water Pump Station
BWSF	Bulk Water Storage Facility
CBD	Central Business District
CPP	Central Processing Plant
CRDP	Comprehensive Sustainable Rural Development Programme
CSI	Corporate Social Investment
CTP	Central Treatment Plant
CTSF	Central Tailings Storage Facility
DEA	Department of Environmental Affairs
Digby Wells	Digby Wells Environment
DM	District Municipality
DMR	Department of Mineral Resources
DoL	Department of Labour
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
EPWP	Expanded Public Works Programme
ESD	Enterprise and Supplier Development Department
ESMP	Environmental and Social Management Plan
ESTA	Extension of Security of Tenure Act (Act No. 62 of 1997)
GDP	Gross Domestic Product
GSDF	Gauteng Spatial Development Framework
Ha	Hectare
HDI	Human Development Index
HDSA	Historically Disadvantaged South Africans
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome

HRD	Human Resources Development
IDP	Integrated Development Plan
IFC	International Finance Corporation
Km	Kilometre
km^2	Square Kilometre
LED	Local Economic Development
LM	Local Municipality
M&E	Monitoring and Evaluation
MLM	Merafong Local Municipality
MM	Metropolitan Municipality
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)
MRA	Mining Right Application
Mt/a	Million tonnes per annum
MWP	Mining Works Programme
NCD	Non-communicable diseases
NDP	National Development Plan
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NGOs	Non-governmental Organisation
NQF	National Qualifications Framework
NSDP	National Spatial Development Plan
PFS	Pre-feasibility Study
PGDS	Provincial Growth and Development Strategy
PS	Performance Standards
RAP	Resettlement Action Plan
RSDF	Regional Spatial Development Framework
RTSF	Regional tailings storage facility
RWD	Return Water Dam
SA	South Africa
SDF	Spatial Development Framework
SEP	Stakeholder Engagement Plan
SETA	Sector Education and Training Authority

SIA	Social Impact Assessment
SGL	Sibanye Gold Limited
SIPs	Strategic Integrated Projects
SLP	Social and Labour Plan
SMMEs	Small, Medium and Micro-sized Enterprises
SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)
StatsSA	Statistics South Africa
STD	Sexually Transmitted Diseases
TA	Traditional Authority
TB	Tuberculosis
ToR	Terms of Reference
TSF	Tailings Storage Facility
VCT	Voluntary counselling and testing
WBT	West Block Thickener
WLM	Westonaria Local Municipality
WRDM	West Rand District Municipality
WRTRP	West Rand Tailings Retreatment Project

1 Introduction

There is a long history of gold and uranium mining in the broader West Rand area with an estimated 1.3 billion tonnes of surface tailings, containing in excess of 170 million pounds of uranium and 11 million ounces of gold. Sibanye Gold Limited (SGL) currently owns the majority of the tonnage and its gold and uranium content. SGL plans to exploit all these resources to develop a long life and high yield surface business. Key to the successful execution of this development strategy is the West Rand Tailings Retreatment Project (WRTRP). The concept of the WRTRP is well understood with a seven year history of extensive metallurgical test work, feasibility studies and design by a number of major mining houses. A pre-feasibility study (PFS) completed during 2013 has confirmed that there is a significant opportunity to extract value from the SGL surface resources in a cost effective manner.

The WRTRP involves the construction of a large-scale Central Processing Plant (CPP) for the recovery of gold, uranium and sulfur from the available resources. The CPP, centrally located relative to the West Rand resources, will be developed in phases to eventually treat up to 4Mt/month of tailings inclusive of current mine arisings. The resultant tailings will be deposited on a modern tailings storage facility (TSF) called the regional TSF (RTSF).

1.1 Project Background

Sibanye Gold Limited's surface historical TSF holdings in the West Rand can be divided into three blocks; the Northern, Southern and Western Blocks. Each of these blocks contains a number of historical TSFs. Each of the blocks will be reclaimed in a phased approach with the Driefontein 3 and 5 TSFs the first to be sequentially reclaimed as part of the Western block, with the Cooke 4 South (C4S) TSF sequential to the Driefontein 5 TSF, all of which will be in parallel with the Cooke TSF of the Northern cluster.

- Western Block comprises: Driefontein 1, 2, 3, 4 and 5 TSFs, and Libanon TSF;
- Northern Block comprises: Cooke TSF, Venterspost North TSF, Venterspost South TSF and Millsite Complex (38, 39 and 40/41 and Valley); and
- Southern Block comprises: Kloof No.1 TSF, Kloof No.2 TSF, South Shaft TSF (future), Twin Shaft TSF (future), Leeudoorn TSF and C4S TSF.

Once commissioned, the Project will initially reclaim and treat the TSFs at a rate of 1.4 Mt/m (1Mt/m from Driefontein 3) followed sequentially by Driefontein 5 and C4S, and 0.4 Mt/m from Cooke TSF. Reclamation and processing capacity will ultimately ramp up to 4 Mt/m over an anticipated period of eight years. At the 4Mt/m tailings retreatment capacity, each of the clusters will be reclaimed and processed simultaneously.

The tailings material will be centrally treated in the new CPP. In addition to gold and uranium extraction, sulfur will be extracted to produce sulphuric acid. To minimise the upfront capital required for the development of the CPP, and to launch a viable economic start to the larger Project, only the necessary flotation cells, gold processing units, uranium plant and roaster/

acid plant will be developed during the initial implementation phase. Use of existing and available infrastructure could be used to process uranium until the volumetric increase in tonnage necessitates the need to expand the CPP for additional uranium treatment. The CPP will be modular with flotation, gold, uranium and acid plant modules from the original 1.4 Mt/m to the ultimate 4 Mt/m.

The new deposition site for the residue from the CPP would be located in an area that has been extensively studied as part of the original West Wits Project and the Cooke Uranium Project. The “deposition area” on which the project is focussing, has been termed the RTSF and is anticipated to accommodate the entire tonnage from the district. The RTSF, if proved viable, will be one large facility as opposed to two independent deposition facilities proposed by previous studies.

1.2 Project Location

The Project is located in the West Rand District Municipality (WRDM) in Gauteng Province. The WRDM includes four local municipalities (LMs): Mogale City, Westonaria, Randfontein and Merafong City. Towns and larger settlements located in the broader project area include Randfontein, Toekomsrus, Fochville, Carletonville, Westonaria, Venterspost, Modderfontein, Rietvallei, Bekkersdal and Mohlakeng. Sections of the RTSF/Cooke pipeline route traverse the City of Johannesburg Metropolitan Municipality.

The most significant land uses within the project area are mining, agriculture, residential and businesses. Of these, agriculture covers the largest portion of the area, followed by mining and residential uses. The area includes a large number of both historical and existing mining activities. Figure 1 illustrates the regional setting of the Project.

1.3 Primary Project Activities

The main EIA report provides a detailed description of the proposed WRTRP. The primary activities of the Project that need to be assessed are listed in **Error! Reference source not found.**.

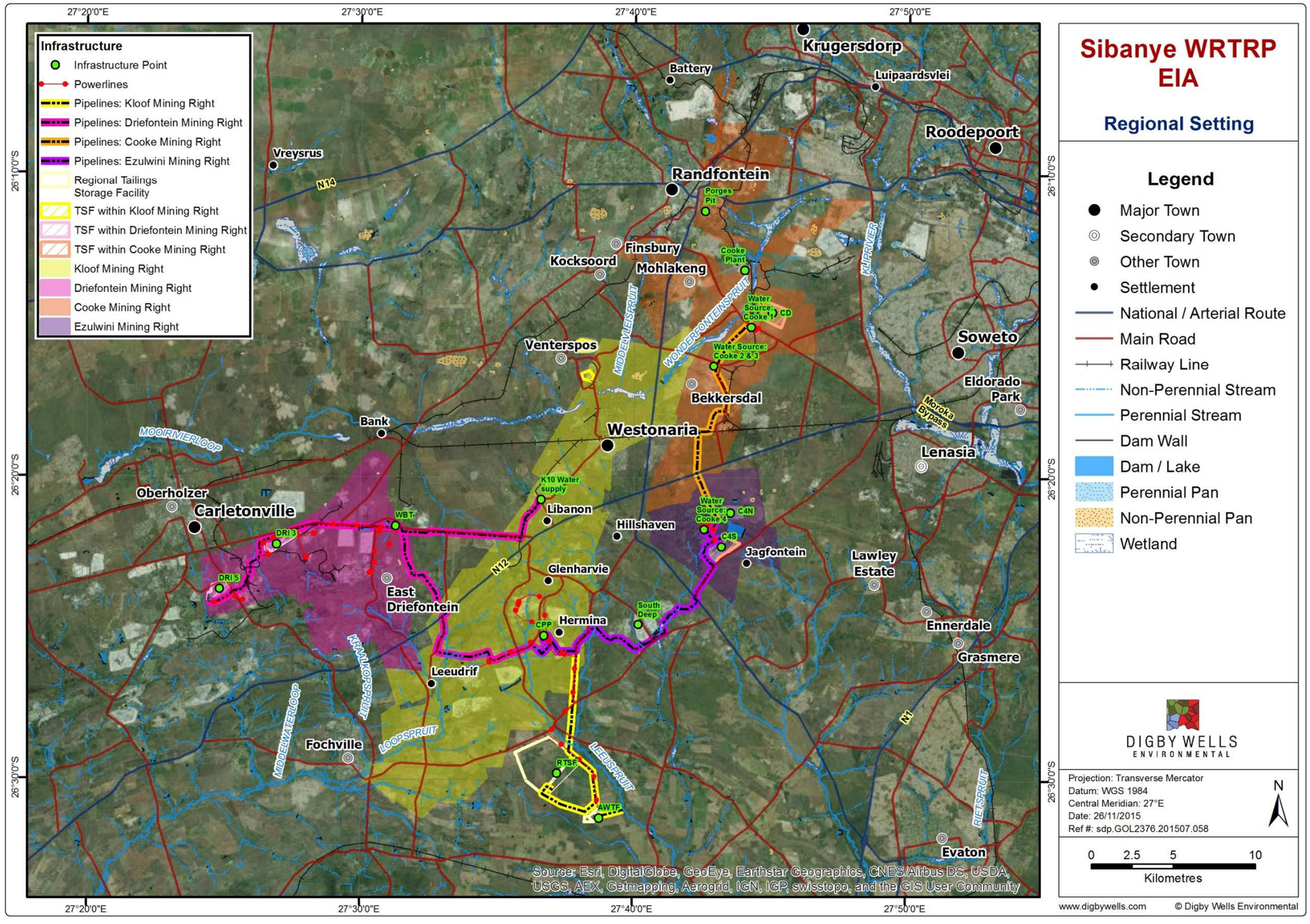


Figure 1: Regional Setting

Table 1-1: Preliminary Activities of the Initial Phase of the WRTRP

Category	Activity
Kloof Mining Right area	
Infrastructure	Pipeline Routes (residual tailings).
	Central processing Plant (CPP) incorporating Module 1 float and gold plants and uranium, roaster and acid plants.
	The Regional Tailings Storage Facility (RTSF), RTSF Return Water Dam (RWD) and Advanced Water Treatment Facility (AWTF). Collectively known as the RTSF complex.
Processes	Abstraction of water from K10 shaft
	Disposal of the residue from the AWTF.
	Gold, uranium and sulfur extraction at the CPP (tailings to RTSF)
	Water distribution at the AWTF for discharge.
Pumping	Pumping of up to 1.4 Mt/m of tailings to the RTSF.
	Pumping water from the RTSF return water dams to the AWTF.
	Discharging treated water to the Leeuspruit.
Electricity supply	Power supply from Kloof 1 substation to the CPP.
	Power supply from Kloof 4 substation to the RTSF and AWTF.
Driefontein Mining Right area	
Infrastructure	Pipeline Routes (water, slurry and thickened tailings).
	West block Thickener (WBT) and Bulk Water Storage Facility (BWSF) complex.
	Collection sumps and pump stations at the Driefontein 3 and 5 TSFs
Processes	Hydraulic reclamation of the Driefontein 3 and 5 TSFs.
Pumping	Pumping water from K10 to the BWSF located next to the WBT.
	Pumping water from the BWSF to the Driefontein TSFs that will be reclaimed. (Dri3 & 5 TSFs).
	Pumping slurry from the historic TSF sump to the WBT (from Driefontein 3 and 5 TSFs).
	Pumping the thickened slurry from the WBT to the CPP.
Electricity supply	Power supply from West Driefontein 6 substation to Driefontein 3 TSF.
	Power supply from West Driefontein Gold substation to Driefontein 5 TSF.
	Power supply from East Driefontein Shaft substation to WBT and BWSF.

Category	Activity
Cooke Mining Right area	
Infrastructure	Pipeline Routes (water, slurry and thickened tailings).
	Cooke thickener and BWSF.
	Collection sumps and pump stations at the Cooke and C4S TSFs.
Processes	Abstraction of water from Cooke 1 & 2 shafts.
	Hydraulic reclamation of the Cooke and C4S TSFs (which include temporary storage of the slurry in a sump).
Pumping	Pumping 400 kt/m of tailings from the Cooke TSF to the Cooke thickener
	Pumping from the Cooke thickener to the CPP via Ezulwini.
Electricity supply	Power supply from the Cooke substation to the Cooke thickener.
	Power supply from the Cooke Plant to the Cooke TSF
Ezulwini Mining Right area	
Infrastructure	Pipeline Routes (water, slurry and thickened tailings).
Processes	Uranium extraction at Ezulwini (tailings to Ezulwini North Dump).
	Abstraction of water from Cooke shaft.
Pumping	Pumping water from Cooke 4 Shaft to the C4S TSF for reclamation.
	Pumping slurry from the TSF sump to the CPP.
	Pumping return water from the CPP to the C4S BWSF
Electricity supply	Power supply from Ezulwini plant to the C4S TSF

1.4 Terms of Reference

Sibanye Gold Limited is required in terms of national legislation to submit an application for environmental authorisation to the Department of Mineral Resources[1], together with several other permit applications, before proceeding with the Project. An Environmental Impact Assessment (EIA) will, therefore, be submitted in support of the permit applications. Digby Wells Environmental (Digby Wells) has been appointed to undertake a Social Impact Assessment (SIA) for the initial phase of the proposed WRTRP, as part of the environmental and social impact assessment process for the Project.

The Terms of Reference for the SIA are to:

- Describe the socio-economic environment of the area likely to be impacted by the initial phase of the proposed WRTRP.
- Undertake a high level screening exercise to identify social risks and sensitivities for the ultimate WRTRP.
- Identify, describe and determine the significance of potential social impacts that may arise as a result of the development of the initial phase of the proposed Project; and
- Recommend appropriate mitigation measures and management actions to avoid or minimise potential negative impacts, and enhance the positive impacts associated with the initial phase of the Project.

The initial phase of the Project involves the following activities in the Driefontein and Kloof MRAs:

- Design and construct the CPP to treat sequentially the Driefontein 3 and 5 TSFs in the Western Cluster;
- Design and construct the RTSF. Tailings resulting from the Driefontein 3 and 5 TSFs treatment will be deposited onto the new RTSF;
- Production of a high grade uranium concentrate at the CPP, which could then be transported to Ezulwini for extraction of uranium and gold;
- Depositing of tailings from this process on existing operational Ezulwini North TSF; and
- Ultimate processing of the remainder of Western Cluster TSFs, namely; Driefontein 1, 2 and 4 and the Libanon TSF at the CPP.

In parallel and sequential to Driefontein 5 TSF, the following activities will take place:

- Re-mining of Cooke Dump, Ezulwini South TSF and associated pipelines; and

[1] Although the Department of Mineral Resources is the competent authority, the applications will be subject to the provisions of the Environmental Impact Assessment Regulations, 2014 (GN 982 of 4 December 2014)

- Inclusion of first uranium module, acid plant and roaster in CPP.

Subsequent phases of the Project will involve the reclamation of the remaining TSFs. The construction of the CPP will allow the retreatment of up to 1.4 Mt/m from the Driefontein 3 and 5 TSFs, the C4S TSF and the Cooke TSF. Driefontein 3, 5 and C4S TSFs will be mined sequentially over approximately 11 years, whilst the Cooke TSF will be mined concurrent to these for a period of 17 years.

1.5 Consideration of Project Alternatives

Project alternatives considered in this report are categorised into two types:

- Alternatives ***to*** the Project (in terms of the "no-go" option and alternative uses of the project area in the event that the Project is not implemented); and
- Alternatives ***involving*** the Project (alternative facility and infrastructure layout and associated routings).

The consideration of land use alternatives is essential for project planning to ensure that the development is justified and viable. Decisions should be evaluated in terms of sustainability, broadly defined as balancing environmental, economic and social equity factors/concerns.

The reclamation of the historical and existing TSFs is bound by the current footprint of these resources. However, the location of the RTSF is currently being utilised for agricultural and individual (private) residential purposes. If not utilised for mining and related activities (the no-go option), actual and potential land uses for the RTSF site mainly include commercial agriculture, grazing and individual residential uses. The CPP is also located on land currently used for agriculture, and surrounded by many historical TSFs. If not utilised for mining and related activities, land uses for the RTSF site mainly include commercial agriculture, grazing and, potentially, residential uses.

The SIA has investigated the socio-economic impacts associated with the physical locations of project facilities and infrastructure. Most of these facilities have already been the subject of independent site selection processes aimed at balancing environmental, economic and social factors.

2 Details of the Specialists

2.1 Nic Boersema: Principal Social Scientist

Over the past 30 years, Nic has gained wide-ranging experience in a variety of qualitative and quantitative research methods in rural development, socio-economic baseline studies, anthropological research, community profiles, stakeholder engagement, social impact assessment, participatory project evaluation, social management plans, and resettlement action plans. He has also been involved in Human Rights Impacts Assessment since 2013.

Since 2002, Nic was the project manager on a large number of social impact assessments and resettlement studies in Africa. Social impact assessments include mining development, water projects, roads, power plants and transmission lines. Resettlement projects include resettlement reviews and resettlement action plans, livelihood restoration and community development plans, influx management plans and resettlement monitoring.

In 2013, Nic has managed a Human Rights Impacts Assessment for a gold mine in Liberia. He has recently completed a Social Action Plan for Kalagadi Manganese Mine and Sinter Plant in South Africa, as well as an Influx Management Plan for a gold mine in Liberia. Nic is also participating in a project in Pakistan, as social specialist, involving the development of a Water Master Plan for the Thar Coalfields.

Nic has participated in several studies undertaken in accordance with the Equator Principles and IFC Performance Standards. He has worked in South Africa, Botswana, Lesotho, Mozambique, Swaziland, the DRC, Burkina Faso, Tanzania, Nigeria, Liberia, Sierra Leone, Guinea, Zambia, Malawi and Pakistan.

2.2 Jurie Erwee: Social Scientist

Jurie Erwee is a social consultant with six years of experience ranging over several domains of social research, including the planning and execution of social surveys, mine social and labour plans, participatory rural appraisal, stakeholder engagement, mine closure plans, sustainable livelihoods assessments, data management and statistical analysis, capturing and management of spatial data and community facilitation. Most of his work has been in the field of social impact assessment, resettlement planning and stakeholder engagement for mining and public infrastructure projects.

Jurie has been involved in an array of international projects, including projects in Liberia, Nigeria, Malawi, Burkina Faso, Namibia, Sierra Leone, Democratic Republic of the Congo and South Africa. He has attained a BA, Honours and Masters' degree with specialisation in psychology from the University of Pretoria. Jurie has completed additional training courses in resettlement planning and implementation, HIV/Aids and gender-related issues, as well as Social Impact Assessment.

3 Aims and Objectives

The primary objective of the SIA is to assess the Project and associated activities in terms of critical socio-economic considerations and related potential positive and negative impacts. A holistic approach was adopted, which included an assessment of social impacts associated with the initial phase of the Project, as well a screening of potential impacts and risks related to the ultimate Project. Particular attention was given to project components that represent more or less greenfield developments (in particular the proposed CPP and RTSF sites). The SIA also takes into consideration the gaps identified during the 2014 Social Gap Analysis undertaken for the Project. [2]

The SIA was designed to comply with the relevant national legislative requirements, such as the National Environmental Management Act, 1998 (Act No. 107 of 1998, as amended) (NEMA), and the Mineral and Petroleum Resources Act, 2002 (Act No. 28 of 2002, as amended) (MPRDA). Where applicable, international best practice requirements (e.g. the Performance Standards (PSs) of the International Finance Corporation (IFC)), were taken into consideration.

The development of the SIA involved three phases, namely a screening phase, a scoping phase and an impact assessment phase.

3.1 Screening Phase for the ultimate Project

This task involved a high-level screening exercise to identify social risks and sensitivities for the ultimate WRTRP (4 Mt/mth from all blocks, with three gold modules and future uranium roaster facilities at the CPP to the full footprint of the RTSF). Screening included an analysis of the socio-economic conditions and land uses at the various proposed project sites, as well as an assessment of social risks according to set of criteria.

3.2 Scoping Phase for the initial phase of the Project

A scoping exercise was undertaken for the initial phase of the Project, which includes 1.4 Mt/mth from Driefontein 3, 5 and C4S TSFs sequentially, as well as an initial gold module and uranium roaster acid plant for phase 1 of the RTSF.

The objectives of the Scoping phase were the following:

- Conduct a desktop review of available documents;
- Gain an understanding of the project area through the inspection of available satellite imagery, including a visual inspection of every project component;
- Identification of socially relevant criteria for consideration in the SIA; and
- Development of a socio-economic baseline profile.

[2] Digby Wells Environmental, 2014: Sibanye Gap Analysis. Social Gap Analysis

3.3 Impact Assessment Phase

The objectives of the impact assessment phase are listed below. A detailed assessment methodology is provided in Section 10.

- Update the socio-economic baseline profile developed during the scoping phase;
- Identify, rank and assess the anticipated positive and negative social impacts of the proposed Project;
- Formulate mitigation measures and management actions to avoid and/or mitigate the anticipated negative social impact and enhance positive impacts; and
- Provide specialist input into the overall project EIA.

4 Methodology

Section 4 provides an overview of the study scope and method for the SIA.

4.1 Definition of Study Areas

The study area of environmental and social impact assessments is typically defined as the area that is likely to experience impacts arising from, or exerting an influence on, the project/ activity being assessed (IFC, 2012). In the case of SIAs, this task is complicated by the fact that many socio-economic impacts make themselves felt over different geographical areas. Generally, such impacts of a project can be divided into three broad categories:

- Impacts related to the physical intrusion of project infrastructure and project-related activities on the surrounding biophysical environment (which may include socio-economic impacts arising from noise, dust, vibration and changes in the visual characteristics of the landscape, and the disruption/restriction of movement). Such impacts typically extend to land uses and households within a few hundred metres from the edges of a project's footprint;
- Impacts related to the 'economic pull' exerted by the project (including job creation, influx of workers and job-seekers to the project area, increased pressure on services, concomitant risks of increased social pathologies and community conflict). Such impacts usually extend to populations residing in close proximity to the project – which may still be a considerable distance from the edges of the project footprint; and
- Indirect or induced impacts that are by-products or ripple-effects of the impacts in the foregoing two categories. These could include multiplier effects in/on the local and regional economy (such as employment creation and project-related expenditure), macro-economic benefits of the project, as well as benefits derived from corporate social investment (CSI) initiatives by the project. Generally, the geographical reach of such impacts tends to extend wider and may affect larger towns or cities elsewhere in the region where the project is to be situated.

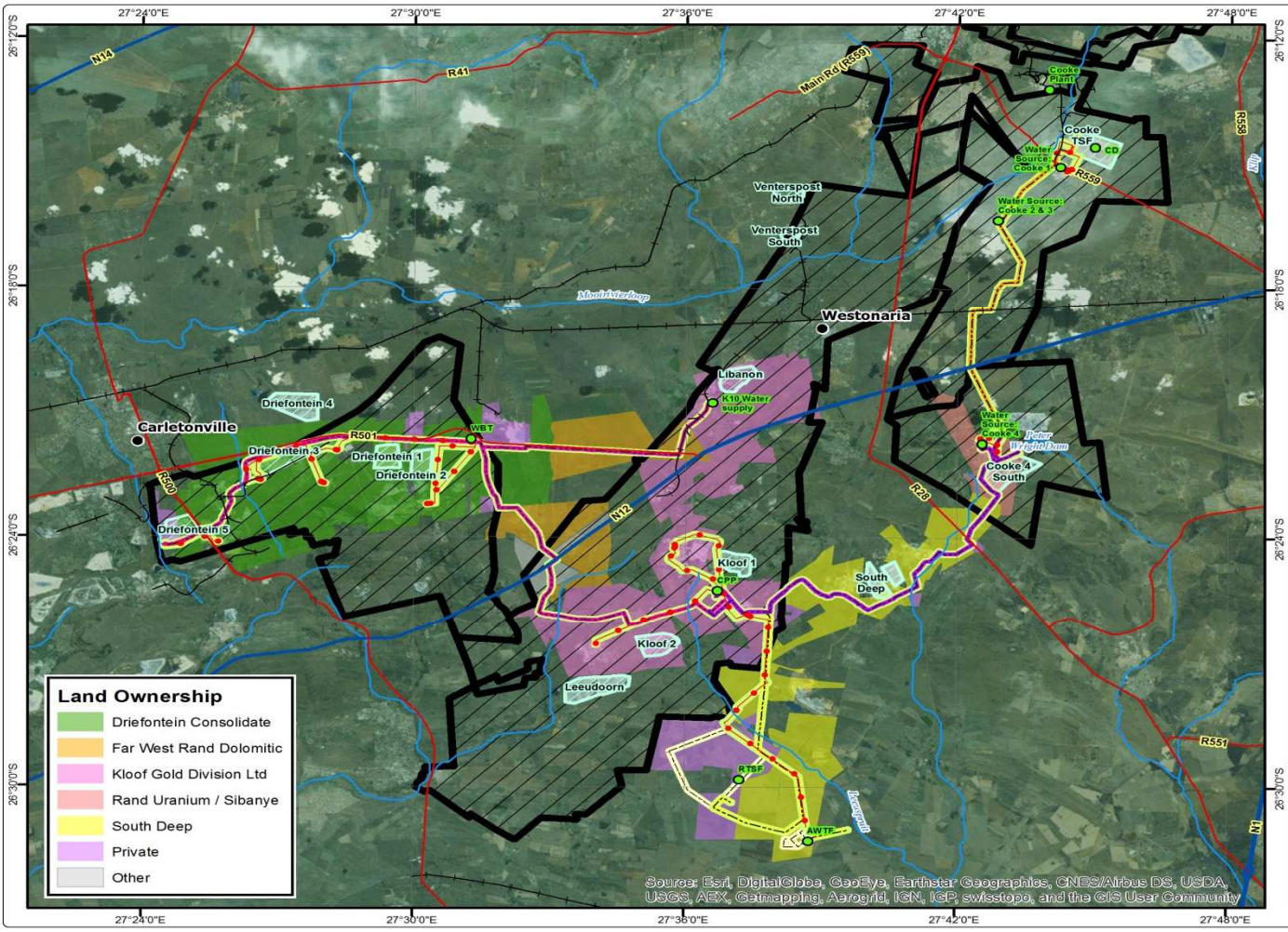
The relevance of this distinction for the definition of the study area stems from the fact that the type and level of baseline information required for the prediction of socio-economic impacts differs between these categories. Accordingly, three concentric and interdependent study areas were identified. Each study area roughly corresponds to the geographical extent of one of the three categories of impacts defined above. However, the manner in which publicly-available socio-economic data is aggregated was also taken into account.

As such, the three concentric study areas described below were defined to correspond with existing administrative boundaries in Gauteng Province, the sizes of which approximate the impact radii or areas discussed above. The three study areas are as follows:

- The primary study area – the geographical area likely to experience socio-economic impacts associated with the physical intrusion of project infrastructure and project-

related activities (i.e. up to a few hundred metres from the boundaries of the Project's footprint), defined as properties that coincide with:

A 100m buffer area surrounding (a) the existing mining infrastructure, and (b) proposed pipeline and transmission line infrastructure (



- Figure 4).
- A 500m buffer surrounding the CPP and associated infrastructure (Figure 5).

- The secondary study area – the area likely to experience social impacts related to the economic pull exerted by the Project (up to 25 km from the edges of the project footprint). This area was estimated as the geographical extent of those municipalities that encompass and surround the project footprint – namely the Westonaria Local Municipality (WLM) and the Merafong Local Municipality (MLM) (Figure 3).
- The tertiary study area – the area likely to experience the indirect or induced social impacts of the ultimate Project. The typical reach of such impacts includes most of the area within the West Rand District Municipality (WRDM) (Figure 2).

4.2 Data Collection

The information presented in this report was obtained through the following activities:

- Review of existing project-related socio-economic reports to assess the relevance and level of detail of available socio-economic information;
- A desktop review of available documents to obtain relevant baseline socio-economic information on the different study areas. Documents reviewed include the following:
  - Municipal Integrated Development Plans (IDPs), Local Economic Development (LED) Plans and Spatial Development Frameworks (SDFs);
  - Socio-economic and demographic statistics sourced from Statistics South Africa's (StatsSA) Census 2011 and Community Survey 2007 data; and
  - Existing SLPs and Mine Charter commitments.
- Site visits undertaken during May and June 2015 to assess stakeholder perceptions of the Project, verify baseline socio-economic data collected through desktop review, and identify potential social impacts of the Project on people's lives and livelihoods;
- Information from other specialist studies. Many specialist studies undertaken for the Project focus on impacts that could have significant social implications. Hence, the SIA report includes a review of the relevant specialist studies to assess the social impacts that derive from the impacts investigated by these studies; and
- Information from the public consultation process, including stakeholder meetings and associated *Comments and Response Report.*

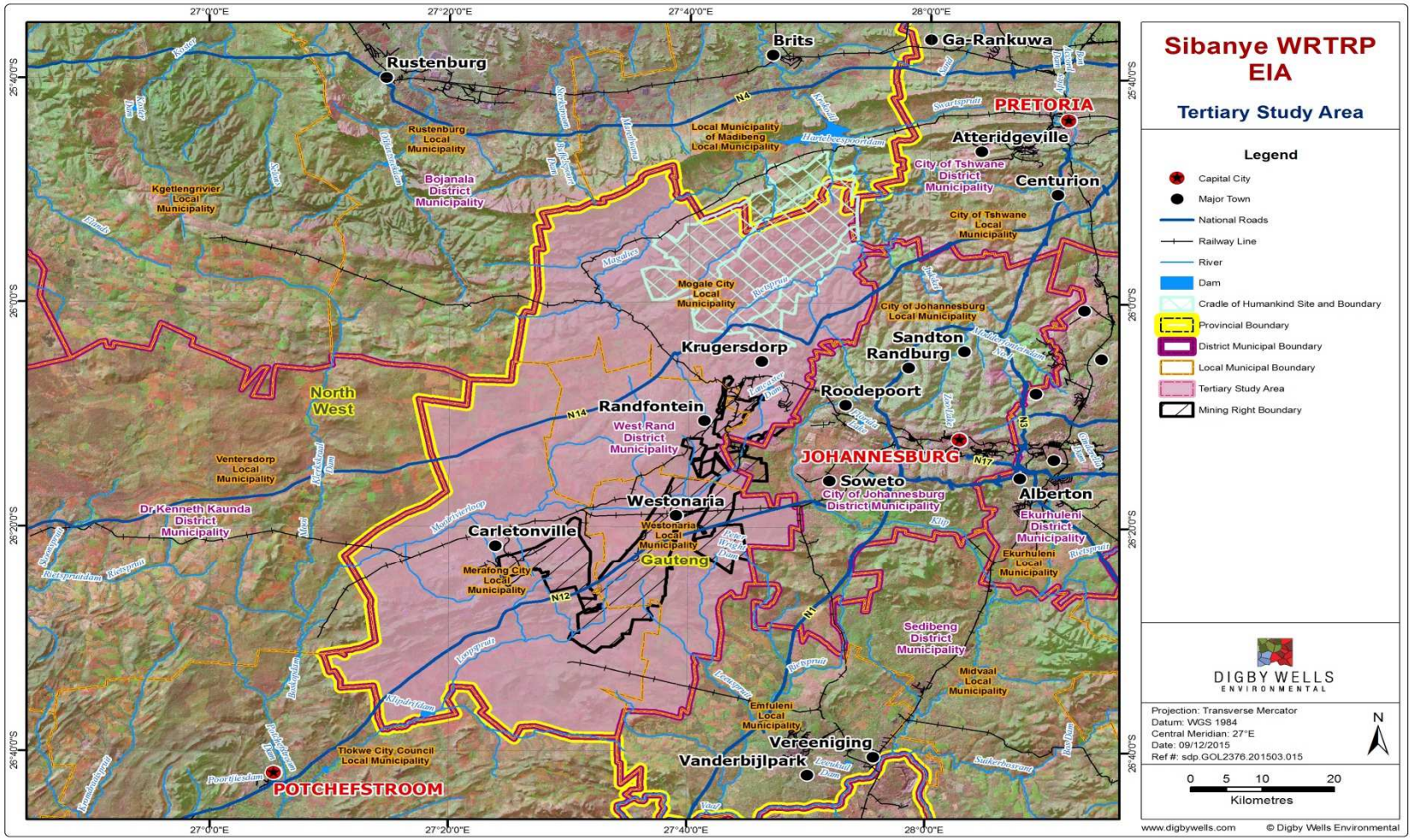


Figure 2: Tertiary Study Area

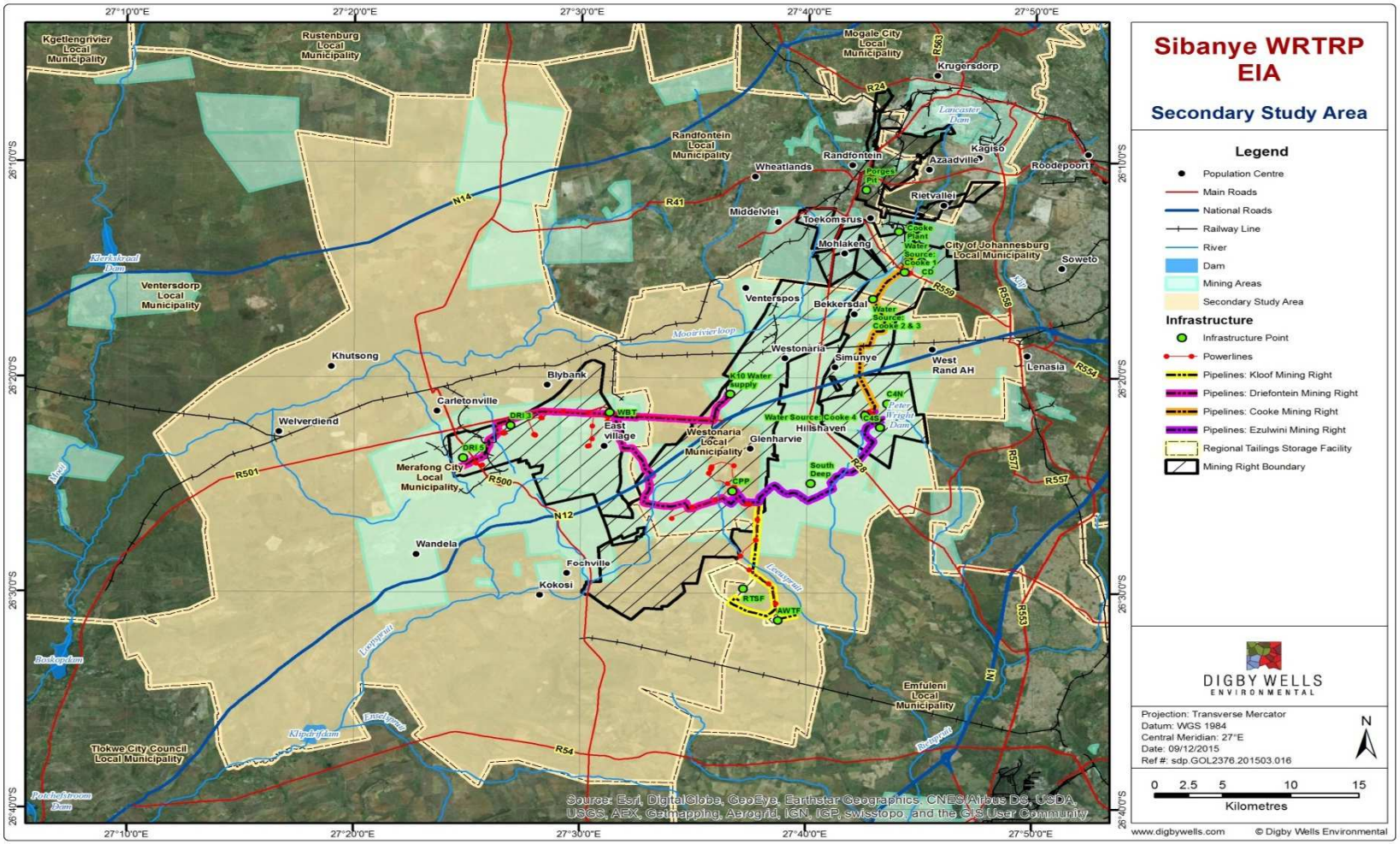


Figure 3: Secondary Study Area

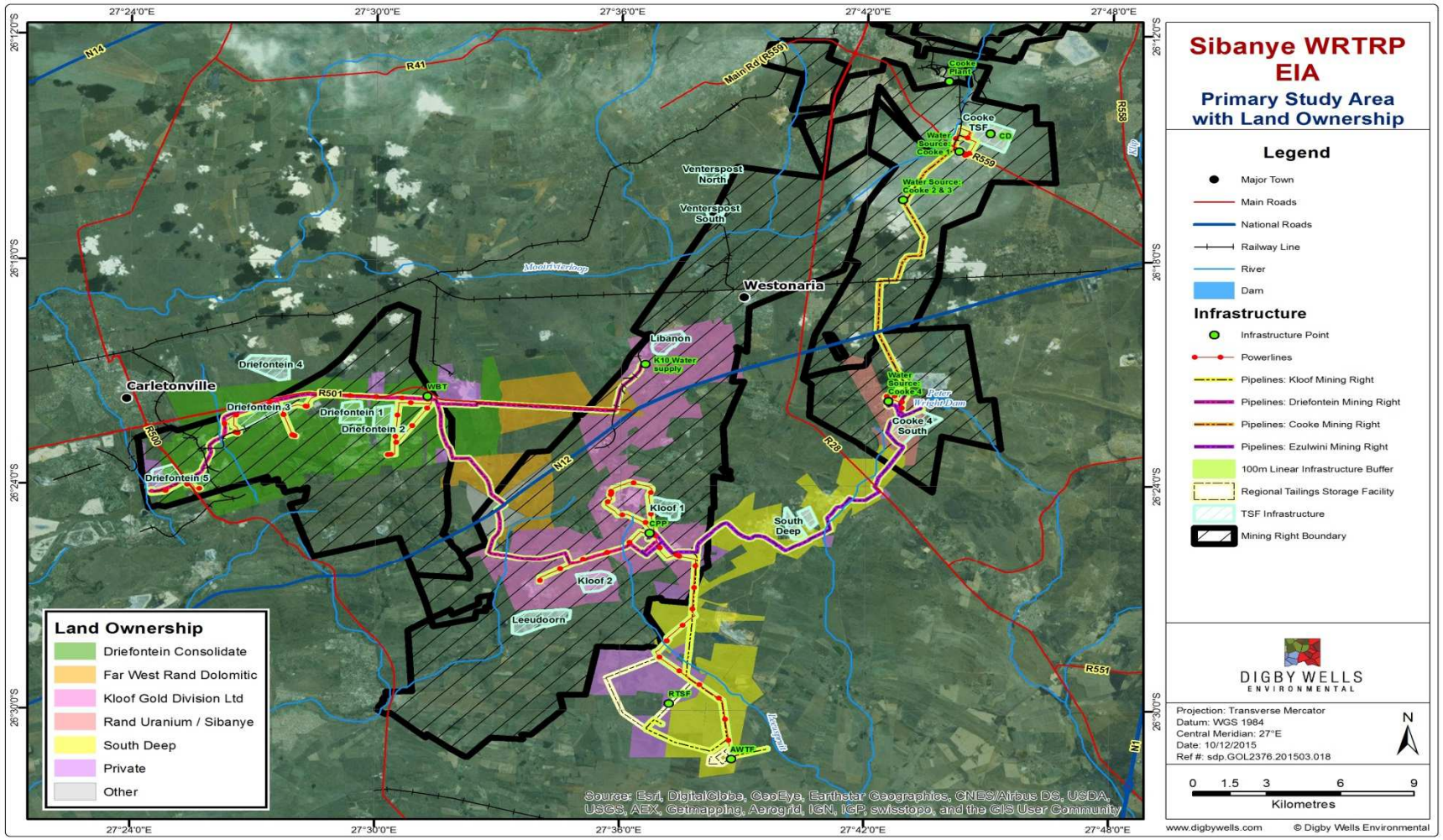


Figure 4: Primary Study Area: 100m Buffer around Linear Infrastructure

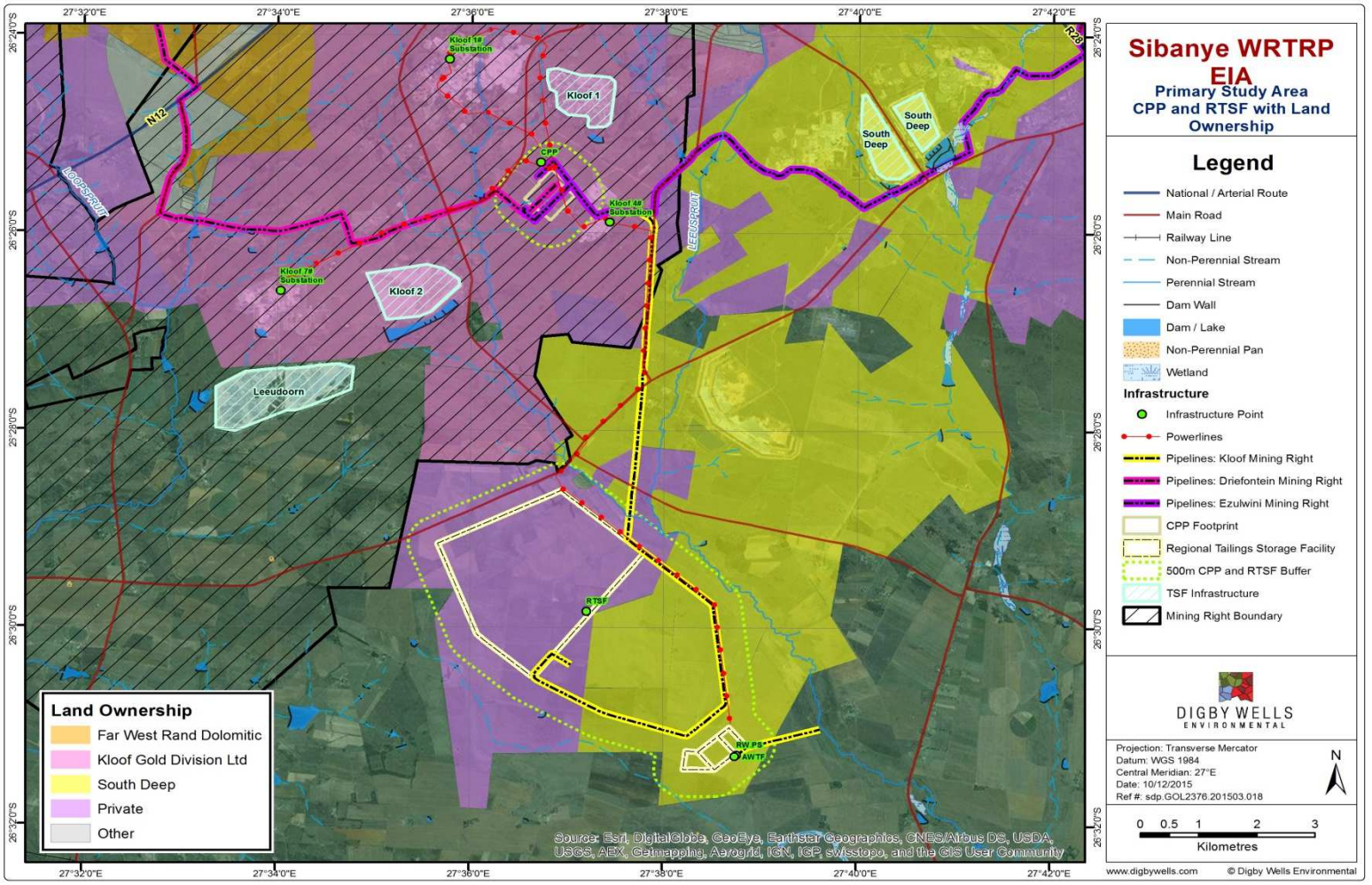


Figure 5: Primary Study Area: 500m Buffer around CPP and ancillary infrastructure

4.3 Screening Phase for the ultimate Project

The following activities were completed as part of the screening study of the ultimate Project:

- A desktop review of available documents to obtain basic socio-economic information describing the ultimate WRTRP area;
- Inspection of satellite imagery: A visual inspection of all project components (existing and proposed), superimposed on satellite imagery, was undertaken to gain a clear understanding of the physical characteristics of the each site, its location relative to social receptors and the surrounding social context.
- Identification of socially relevant ranking criteria: Screening assessment criteria were identified based on professional experience regarding the anticipated socio-economic impacts that may arise from a project of this nature and extent, as well as the likely variables that could mediate the probability or intensity of such impacts.

4.4 Scoping Phase for the initial phase of the Project

On the basis of the information collected through the above data collection activities, a socio-economic baseline profile was compiled for the three study areas (presented in Section 8). Topics considered as part of this profile include (but are not limited to) the following:

- Demographics, including population size and growth, and population distribution in terms of age, gender, race and education;
- Economic conditions and development;
- Levels of employment and employment sectors;
- Spatial development and land use;
- Infrastructure and services (e.g. housing, energy, water, sanitation and health); and
- Community needs and development.

4.5 Impact Assessment Phase

The following steps were undertaken as part of the impact assessment phase:

- ***Site visits*** undertaken during May 2015 and early June 2015. The site visits assisted in identifying potential mitigation measures (Table 15-1 lists the people interviewed).
- ***Updated socio-economic baseline:*** Based on the primary data collected during the site visits, an updated social baseline was developed, in particular for the 'greenfield' project components.
- ***Impact identification and assessment:*** This phase of the SIA study included the identification the social impacts and project benefits, while differentiating between the various project phases and activities. Impacts defined in the previous social studies for the project area were taken into consideration.

- ***Impact management:*** Feasible management measures were developed, aimed at mitigating (and where possible avoiding) negative social impacts, and optimising the benefits of positive social impacts.

4.6 Previous Studies

A large number of reports pertaining to existing and proposed projects initiated by Gold One (Rand Uranium), Gold Fields and SGL (undertaken primarily between 2007 and 2014), were reviewed during the Social Gap Analysis undertaken in 2014. Projects include the following:

- Site selection for a Central Treatment Plant (now referred to as the CPP);
- Historical Tailings Operation: Tailings Storage Facility;
- Cooke Uranium Project;
- Cooke Optimisation Project;
- Geluksdal Tailings Storage Facility;
- The West Wits Project; and
- Millsite Tailings Storage Facility.

The report on the site selection process for a proposed Central Treatment Plant (CTP) (as it was then called), was available for review during the Social Gap Analysis. This report is the May 2013 Golder Associates report entitled *"Site Selection for Central Treatment Process* Plant *Location."* This study conducted a site selection process to identify suitable CTP sites that would pose acceptable risk levels to the environment, public health and safety, as well as properties, which could be potentially mitigated effectively.

A desktop approach was followed, but included a single site visit to seven shortlisted sites. No intrusive fieldwork was conducted, and the report excludes an assessment of potential pipeline routes. The final assessment recommended a site located next to Kloof 4 Shaft as the preferred option. A second site near Leeudoorn Mine 7 Shaft was recommended as the next best option.

Several studies were previously undertaken to identify potential sites for a proposed Central Tailings Storage Facility (CTSF – as it was then called) and Rand Uranium's Geluksdal site. These studies were undertaken for different projects and at different times. However, it converged at a number of points, as the overall aim was to optimise the retreatment of a combination of TSFs (similar to that proposed for the WRTRP). The then preferred CTSF sites all fall within the same area, namely the greater Doornpoort/Geluksdal area.

In summary, the abovementioned independent processes resulted in the identification of a common area for the construction of a new RTSF that can accommodate the residue from the proposed CPP.

5 Assumptions and Limitations

The assessment of potential socio-economic impacts expected to arise as a result of a proposed Project is challenging for a number of reasons. Potential social impacts and the elements that combine to determine the socio-economic status of affected populations are generally multi-dimensional and interrelated. For example, insufficient access to services such as water, sanitation and healthcare is both a cause and an effect of poverty.

On the one hand, a lack of access to such services impacts negatively on health status, the opportunity to acquire market-related skills and the amount of time available for productive activities. On the other hand, poor people are regularly forced to live in areas where service delivery is limited or even absent. Hence, if a project increases the availability of services in an area, the ability of surrounding communities to take advantage of these services may, to some extent, depend on their current socio-economic status.

Secondly, the linkages between various potential project impacts are complex and can be mutually reinforcing. For example, in-migration and increased incomes can combine to put pressure on economies and public infrastructure. Impacts may also have both positive and negative dimensions. For example, employment creation is an important project benefit, but it may also contribute to social conflict or excessive in-migration.

Finally, many social impacts cascade. For example, in-migration could in itself be project-induced impact, but in turn may engender additional impacts, such as pressures on available services and natural resources. Although it is necessary to keep the complexity of social impacts in mind, it is also necessary to produce an SIA report that will be accessible to a non-specialist audience and meet the requirements of the Project.

It is advisable to conduct project environmental and social assessments early in the project planning cycle so that significant negative impacts and potential fatal flaws can be identified and plans modified to avoid or reduce them. However, the very fluidity of designs at the early stages of planning – which makes it possible to modify them in the light of stakeholder inputs and the outcomes of impact assessment – often imposes limitations on the degree of certainty that can be attached to the predictions of impacts. Such uncertainty is, however, considered to be preferable to a situation in which impacts or sensitivities in the social and/or biophysical environment are only identified after the mine plans are in an advanced stage of development and can only be changed with considerable difficulty.

6 Screening Assessment

This section briefly discusses the socio-economic screening exercise that was undertaken for the ultimate scope of the Project. The analysis included the identification of land uses and social receptors at existing project sites, as well as at the sites for proposed future facilities and infrastructure. The screening was based on an analysis of social sensitivities and social impacts identified in Section 9 and described in Section 11.

With adequate mitigation, none of the sensitivities and potential negative impacts identified for the ultimate Project, and thus also for project components that will be implemented in the future, would pose a fatal flaw for the Project from a social perspective. Conversely, there are several significant positive impacts associated with it, as described in Section 11.

However, it is highlighted that the largest section of commercial farming land that may be affected by the initial phase of the Project, is located within the proposed RTSF, RWD and AWTF sites. This is followed by the area around the proposed CPP site. Any changes to the currently proposed locations of the RTSF and CPP must take this aspect into consideration. In addition, some proposed pipeline routes encroach within 200m of existing settlements and businesses.

Finally, as will be discussed in Section 11.12 illegal mining, as well as illegal land occupation and informal settlements, are already occurring in the project area and could rapidly increase during the implementation of the various project phases. While it is not the responsibility of the Project to prevent/control illegal mining and informal settlement, the existence of informal settlements in close proximity to the Project will pose a risk to the Project in terms of political stability and community relations/support. It is the Project' best interest to take some shared responsibility (together with local authorities and key stakeholders) to jointly address project-induced in-migration to affected communities, as recommended in Section 11.12.2.

7 Legal and Policy Framework

This section provides the rationale for the SIA in the context of South African legal and policy framework and development plans. It also discusses the IFC PSs that informed the SIA.

7.1 Applicable Legislation

7.1.1 The South African Constitution, 1996

The proposed Project has to comply with South African constitutional and common law by conducting its construction, operational and closure activities with due diligence and care for the rights of others. Section 24 (a) of the South African Constitution states that everyone has the right to an environment that is not harmful to his or her health and well-being. This supersedes all other legislation.

7.1.2 National Environmental Management Act, 1998 (NEMA)

This Act provides that sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions so as to ensure that development serves present and future generations. The Act further sets out the process for public participation.

7.1.3 Mineral and Petroleum Resources Development Act, 2002 (MPRDA)

Upon the acceptance of an application for a mining right, the applicant is required to prepare an Environmental Management Programme (EMP) in accordance with requirements of the Environmental Impact Assessment Regulations, 2014[3], (EIA 2014 Regulations) promulgated in terms of NEMA, to mitigate both bio-physical and social impacts of the proposed development.

The MPRDA and NEMA require that mining companies assess the social impacts of their activities from start to closure and beyond. Companies must develop and implement a comprehensive Social and Labour Plan (SLP) to promote socio-economic development in their host communities and to prevent or lessen negative social impacts. It is a requirement of the MPRDA that the Project's SLP shall ensure, amongst others, training and career progression of its employees, and in particular, Historically Disadvantaged South Africans (HDSAs), as well as the participation of women in mining.

7.1.4 South African Mining Charter

The Mining Charter focuses on sustainable transformation of the mining industry. The Mining Charter seeks to achieve the following objectives:

[3] GN R982 in Government Gazette 38282 of 4 December 2014

- Promote equitable access to the country's mineral resources to all the people of South Africa;
- Substantially and meaningfully expand new opportunities for HDSAs to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources;
- Utilise and expand the existing skills base for the empowerment of HDSAs and to serve the community;
- Promote employment and advance the socio- economic welfare of communities and major labour sending areas;
- Encourage beneficiation of South Africa's mineral commodities; and
- Promote sustainable development and growth of the mining industry.

7.1.5 The Department of Mineral Resources (DMR) Consultation Guidelines

The above Guidelines were compiled for use by applicants for prospecting and mining rights. It provides that Interested and Affected Parties include, amongst others, host (or receiving) communities, land owners, traditional authorities, land claimants, lawful occupiers, any other person whose socio-economic conditions may be directly affected by proposed prospecting or mining activities. The EIA 2014 Regulations set out detail for the consultation process.

7.1.6 Mine Health and Safety Act, 1996 (Act 29 No. of 1996)

This Act is mainly administered by the Mine Health and Safety Inspectorate of the DMR. The sections of the Act applicable to socio-economic aspects are sections 2 and 5, which provide that employers must ensure and maintain a safe and healthy environment at the mine during construction, operation, decommissioning and closure.

7.1.7 White Paper on Local Government (1998)

This White Paper sets the framework for a developmental local government system that is committed to working with citizens, groups and communities to create sustainable human settlements which provide for a decent quality of life and meet social, economic and material needs of communities in a holistic fashion.

7.1.8 Municipal Systems Act, 2000 (Act No. 32 of 2000)

The Municipal Systems Act provides for the principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and to ensure universal access to essential services that are affordable to all. In accordance with this Act, all municipalities are required to develop and implement a five year IDP and SDF for their administrative areas.

Section 35 of the Act confirms the statutory status of the municipal IDPs and SDFs. The Act also states that, apart from serving as principal strategic planning instruments to guide and

inform municipal decisions on land use, the IDP binds the municipality in the exercise of its executive authority. However, where there is inconsistency between a municipality's policy and national or provincial legislation, national legislation (e.g. MPRDA) should prevail.

7.1.9 Municipal Structures Act, 1998 (Act No. 117 of 1998)

This Act states that district and local municipalities should support and co-operate with one another. The division of functions between local and district municipalities may be adjusted according to the Act. This allows local municipalities to take on more responsibilities from district municipalities, such as service provision.

7.1.10 Spatial Planning and Land Use Management Act, 2013 (Act No.16 of 2013)

The Spatial Planning and Land Use Management Act (SPLUMA), has been implemented on 1 July 2015. The Act aims to reform and guide legislation pertaining to spatial planning and land use management. It enables government to formulate policies, plans and strategies for land use and land development that addresses existing spatial, economic and environmental challenges. The Act also repeals the Development Facilitation Act of 1995. All municipalities are required to develop land use and zoning plans within five years.

7.1.11 Extension of Security of Tenure Act, 1997 (Act No. 62 of 1997) (ESTA)

This Act confers certain rights to non-landowning residents of a property, where such rights are linked to the period of time in which persons have been resident on the land. The Act applies to all rural areas in South Africa, regardless of whether the land is used for farming or mining purposes. No occupier[4] can be evicted unless the provisions of ESTA have been strictly followed and a Court Order has been obtained.

7.1.12 Labour Legislation

The following acts will be applicable with regard to employment policies of the Project:

- Employment Equity Act, 1998 (Act No. 55 of 1998);
- Basic Conditions of Employment Act, 1997 (Act No. 75 of 1997);
- Labour Relations Act, 1995 (Act No. 66 of 1995); and
- Skills Development Act, 1998 (Act No. 97 of 1998 as amended).

7.2 Development Policies

This section provides an overview of key initiatives and plans guiding national, provincial and district development, including plans pertaining to spatial and economic development.

[4] 'Occupier' refers to a person residing on land which belongs to another person and who has or had, on 4 February 1997 or thereafter, consent to do so.

7.2.1 National Development Plan (NDP)

Development in South Africa is guided by the NDP, which presents a long-term strategic framework within which more detailed development planning can take place to advance the long-term goals adopted in the NDP (National Planning Commission, 2011). The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and the reduction of inequality.

7.2.2 Accelerated and Shared Growth Initiative for South Africa (AsgiSA)

This Initiative was launched in 2003 with the vision to halve poverty and unemployment among the country's population. The Initiative is considered one of the key vehicles driving South Africa's economic policy and associated development plans. The primary aims of AsgiSA are to:

- Target specific sector strategies and initiatives (including mining) to further stimulate economic growth and job creation;
- Obtain balanced growth in the country's economy;
- Invest in infrastructure as a way to stimulate economic growth and job creation, and lay the foundation for fast-tracking expansion of the national economy;
- Invest in education and skills development;
- Eliminate the second economy (or the informal sector), by expanding women's access to economic opportunities;
- Promote small, medium and micro-sized enterprises (SMMEs); and
- Improve small business regulatory environment and promote youth development.

7.2.3 Comprehensive Sustainable Rural Development Programme (CRDP)

The CRDP (2009) aims to reduce rural poverty and food insecurity by maximising the use and management of natural resources to create vibrant, equitable and sustainable rural communities. The objectives of the Programme are to:

- Establish an institutional mechanism for managing rural development within national, provincial and local government;
- Establish a rural development role/function and funding for rural development within national, provincial and local government;
- Provide for the establishment of partnerships and collaborations in implementing rural development and funding;
- Establish a special support programme for development of emerging farmers;
- Renegotiate and redesign a funding model for rural development with institutions such as the Land Bank, etc.;
- Mainstream rural development into the national, provincial and local government; and

- Align with government policy and programmes at all levels.

7.2.4 The New Economic Growth Path Framework (New Growth Path)

The New Growth Path for South Africa was launched by Government in 2010. In short, the policy is aimed at enhancing and facilitating growth, employment creation and equity. The policy's principal target is to create five million jobs over the next decade.

Central to the New Growth Path is a massive investment in infrastructure as a critical driver of jobs across the economy. The framework identifies investments in five key areas namely: energy, transport, communications, water and housing. Sustaining high levels of investment in these areas will create jobs in construction, operation and maintenance of infrastructure. The New Growth Path sees infrastructure programmes as a trigger to build a local supplier industry for the manufacture of the components for the build-programme.

The Framework identifies five priority areas as part of the infrastructure programme to create jobs through a series of partnerships between the State and the private sector: mining forms one of the priority areas and the New Growth Path calls for increased mineral extraction and improving infrastructure and skills development. It focuses support for beneficiation in the manufacturing of consumer and capital goods, which could create large-scale employment. It foresees the establishment of a state mining company concentrating on beneficiation and enhanced resource exploitation in competition with a strong private mining sector.

7.2.5 National Infrastructure Plan

The South African Government adopted a National Infrastructure Plan in 2012. The primary objective of the Plan is to transform the country's economic landscape, while simultaneously creating significant numbers of new jobs, strengthen the delivery of basic services, and promoting integration with other African economies. In achieving this objective, 18 strategic integrated projects (SIPs) have been developed (Presidential Infrastructure Coordinating Commission, 2013). These SIPs include social and economic infrastructure development across all provinces, and comprises catalytic projects that should fast-track development and growth.

7.2.6 National Spatial Development Plan (NSDP)

In South Africa, spatial development planning is mainly guided by the NSDP. The SDFs for provinces and municipal areas are nested within the principles of the NSDP. In short, the principles of the NSDP state that spatial development should, if appropriate, accommodate and promote private economic ventures, such as mining, which could support sustainable economic growth, relieve poverty, increase social investment, and improve service delivery.

7.2.7 Provincial Growth and Development Strategy (PGDS)

The PGDS, of which there is one for each province, is aligned with the NDP, NSDP, National Infrastructure Plan, as well as any provincial policies that have bearing on development. The Gauteng Employment, Growth and Development Strategy guides provincial development

and aims to establish a prosperous, sustainable and growing provincial economy to reduce poverty and improve social development (Gauteng Province, 2003).

7.2.8 Gauteng Spatial Development Framework (GSDF)

The GSDF is used as a tool for forward planning to direct decisions within the domain of land development throughout the province. In broad terms, the GSDF:

- Indicates the spatial implications of the core development objectives outlined in the PGDS;
- Serves as a spatial plan that facilitates LED;
- Presents strategies, proposals and guidelines for sustainable development;
- Facilitates cross-boundary co-operation between municipalities and provinces;
- Serves as a guide for integration and standardisation of planning frameworks across all spheres of provincial government; and
- Informs district municipalities within the province regarding the location and nature of the physical development.

7.2.9 West Rand District Municipality Regional Spatial Development Framework (RSDF)

The aim of the WRDM's Regional Spatial Development Framework (RSDF) is to (a) assess the position of the District Municipality from a national and provincial perspective and (b) serve as a guide for the District's local municipalities to ensure that their spatial development links to the overall development perspective for the district. The RSDF endeavours to:

- Be a strategic, indicative and flexible forward-planning tool with to guide planning and decisions on land development;
- Develop an approach for the development of the area of jurisdiction, which is clear enough to allow decision-makers to deal with unanticipated / unexpected situations;
- Develop a spatial logic which guides private sector investment;
- Ensure the social, economic and environmental sustainability of the area;
- Establish priorities for public sector development and investment; and
- Identify spatial priorities and places where public-private partnership is possible.

Each local municipality is required to prepare a SDF which outlines the spatial development within their respective jurisdictions.

7.2.10 Integrated Development Plans

The IDP is a municipal-level planning document which aims to provide a developmental framework for district and local government in which municipalities must provide leadership,

management, budgeting and direction in the provision of services and infrastructure. The IDP must guide developmental planning and local community development. Municipal IDPs highlight local needs and priorities that could be considered by the proposed project.

7.3 International Best Practice Standards

7.3.1 International Finance Corporation Performance Standards

The IFC, a member of the World Bank Group, has adopted a suite of PSs on social and environmental sustainability. The IFC applies the PSs to manage project related social and environmental risks and impacts, and enhance development opportunities in its private sector financing. The IFC PSs are widely regarded as international best practice with regard to the management of impacts associated with large project developments.

Performance Standard 1: "Assessment and Management of Environmental and Social Risks and Impacts" underlines the importance of managing social and environmental performance throughout the life of the Project. The PS is applicable to all projects with social and environmental risks and impacts that should be managed both at the early stages of the Project, as well as on an on-going basis. Its objectives are to:

- Identify and assess social and environmental impacts, both positive and negative, in the project's area of influence;
- Avoid, minimise, mitigate or compensate for adverse impacts on communities and the environment;
- Ensure that affected communities are appropriately engaged on issues that could potentially affect them; and
- Promote improved social and environmental performance of companies through the effective use of management systems.

The management of environmental and social impacts are typically described in the project's Environmental and Social Management Plan (ESMP). The IFC's PS1 describes an ESMP as an instrument that describes the mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the Project. The Plan should describe desired outcomes and actions and monitor the implementation of these measures (IFC, 2012).

It is important to emphasise that the IFC Guidance Notes to the performance standards also refer to 'Third Party Impacts:' While the Project may have limited control over third parties, (such as the government department responsibility for controlling in-migration in the area), the Project's risks and impacts identification process should identify the roles of third parties and the potential impacts and risks from their actions or non-performance (IFC, 2012).

Performance Standard 4**:** "Community Health, Safety, and Security" provides that a project should avoid or minimize the potential for community exposure to water- and vector-borne diseases and communicable diseases that could result from project activities. In particular, a

project must avoid and/or minimize the transmission of communicable diseases that may be associated with the use of non-local project labour. In addition, many infectious diseases can be spread across national borders if the Project attracts a large influx of potential job seekers or source its workforce from out of the country. The PS recommends that the Project explore opportunities to improve environmental conditions that could help to minimize the incidence of diseases endemic in host communities.

The primary international standard applicable to involuntary resettlement is ***Performance Standard 5:*** "Land Acquisition and Involuntary Resettlement*."* The objectives of PS5 are to:

- Avoid, and when avoidance is not possible, minimise displacement by exploring alternative project designs;
- Avoid forced eviction;
- Anticipate and avoid, or where avoidance is not possible, minimise adverse social and economic impacts from land acquisition and/or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that all resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected;
- Improve, or restore, the livelihoods and standards of living of displaced persons; and
- Improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.

Project proponents are required to carry out a census and collect socio-economic baseline data to identify the people who will be displaced by the project and to determine who will be eligible for compensation and/or resettlement assistance, *as well as to discourage inflow of people who are not eligible for these benefits*. Where resettlement is the responsibility of the government, the project should collaborate with the responsible government agency. Where government capacity is limited, the project must play an active role in resettlement activities.

It is important to note that project-induced in-migration may have significant negative impacts on the implementation of resettlement planning and associated livelihood restoration, as well as on the living conditions at the resettlement site (IFC, 2009).

Performance Standard 6: "Biodiversity Conservation and Sustainable Management of Living Natural Resources" includes brief references to the potential impact of project-induced population influx on biodiversity conservation and the management of ecosystems.

Performance Standard 8 *("Cultural Heritage")* highlight the potential impact of population influx on the cultural and/or natural resources of host communities.

7.3.2 International Human Rights Guiding Principles

Human rights are fundamental, inalienable rights and freedoms to which all individuals are entitled. These rights are enshrined in the "Universal Declaration of Human Rights" of 1948, and are further codified in the International Covenant on Civil and Political Rights (1966) and

the International Covenant on Economic, Social and Cultural Rights (1966). Together these documents are referred to as the International Bill of Human Rights.

The United Nations has adopted a "Framework for Business and Human Rights," which is based on the following three pillars:

- The state's duty to protect against human rights abuses by third parties, including business;
- The corporate responsibility to respect human rights; and
- Greater access by victims to effective remedy - both judicial and non-judicial.

This Framework emphasises the corporate responsibility to protect human rights, address adverse impacts and establish adequate remedial mechanisms for addressing human rights violations. This requires that business should integrate human rights commitments into the company's decision making, periodically assess actual and potential human rights impacts of company activities and relationships, and to monitor and report performance in this regard.

The IFC also accepts the responsibility of business to respect human rights. Its Performance Standards requires that the dignity, human rights and welfare of project-affected people are protected. The IFC's Policy on "Environmental and Social Sustainability," as well as its PS 1 requires that companies must avoid infringing on the human rights of others and address the adverse human rights impacts that they may cause or contribute to. The IFC, furthermore, requires that credible and effective grievance mechanisms should be part of a framework for companies to address the human rights issues in their operations.

There are a number of guidelines which aim to assist companies in formulating their human rights objectives, and integrating these into their business processes and practises. Some of the more prominent guidelines applicable to the Project are the following:

- The United Nation's "'Protect, Respect and Remedy Framework" and the associated "Guiding Principles for Business and Human Rights" which emphasises the corporate responsibility to protect human rights, prevent adverse human rights impacts, and establish appropriate remedial mechanisms to address human rights violations. The Guiding Principles of the Global Compact Initiative involves 10 fundamental human rights principles which form part of a global corporate social responsibility initiative with regard to human rights.
- The IFC "Guide to Human Rights Impact Assessment and Management" (2010) has been developed to assist business enterprises in assessing and managing human rights risks and impacts of their business activities.

7.3.3 The King Report on Corporate Governance for South Africa, 2009

The King Report on "'Governance for South Africa" and the associated "Code of Governance Principles for South Africa" (King III, 2009) address aspects relating to corporate governance rules to improve the quality of leadership which boards are giving to their businesses. The

King Report follows a voluntary basis for governance compliance and addresses issues such as ethical leadership, corporate citizenship and sustainability.

The King Report states that responsible corporate citizenship includes an ethical relationship of responsibility between the company and the society in which it operates. Companies have obligations - such as legal and moral obligations - regarding the economic, social and natural environments within which they operate; as well as investment and sustainability obligations to protect and enhance the well-being of these environments. Companies must consider the environmental, social and governance impacts they have on the community in which they conduct their business.

7.4 Company Policies and Plans

7.4.1 Environmental Policy Statement

SGL is committed to conduct its activities in a manner that strives to minimise or rectify adverse impacts and maximise positive impacts of an environmental and/ or socio-economic nature. The company is committed to responsible stewardship of natural resources and the ecological environment for present and future generations.

7.4.2 Ethics and Corporate Governance Policy Statement

SGL is committed to ethical and fair business dealings and promotes a corporate culture which is non-sectarian, non-political, and socially and environmentally responsible. It subscribes to the core values of the company and the following principles:

- Fairness and integrity in all business dealings, including the ethical handling of actual or apparent conflicts of interests between personal and professional relationships;
- Respect for the human rights and dignity of others;
- Accept diverse cultures, religions, race, disability, gender and sexual orientation;
- Embarking on business activities in a manner that is free of bribery and corruption;
- Honesty and accountability; and
- Adherence to sound standards of corporate governance and applicable laws, and committed to working with relevant stakeholders to achieve appropriate public policy, regulations and procedures that facilitate contribution to sustainable development.

7.4.3 Existing Mine Social and Labour Plans (SLPs)

Kloof, Rand Uranium, Ezulwini and Driefontein mines respectively have submitted revised SLPs for the period 2012 to 2016. These SLPs will have to be reviewed at the end of 2016 for the next 5-year period. The SLP LED programmes are being developed, with some projects already being implemented. The SLPs indicate that the mines employ relatively few people from the Gauteng Province. The SLPs further state that the mines will endeavour to increase employment from local host communities.

The SLPs commit to participate in the socio-economic development initiatives of the relevant local municipalities through supporting IDP projects relating to the municipalities' priorities regarding people and infrastructure development. Currently the mines' LED activities focus on community development; education; agriculture/environment and health, especially in the mines' labour sending areas. Projects include: agricultural projects, waste management, tourism, enterprise development and entrepreneurial training, business support, eradication of invader tree species, and school infrastructure projects.

It is anticipated that, if the Project obtains all required regulatory and company approvals, it will proportionately contribute to the SGL's SLP initiatives when the SLP is reviewed in its 5 year cycle at the end of 2016.

8 Socio-Economic Baseline Conditions

The baseline profile of the receiving socio-economic environment is presented in this section, and according to the study areas defined in Section 4.1. The first two subsections focus on the tertiary and secondary study areas and Section 8.3 describes the primary study area.

8.1 Tertiary Study Area

The tertiary study area is defined as the WRDM, which comprises the municipalities of Randfontein, Westonaria, Merafong and Mogale City, with a land surface of 4 087 km^2. The District is one of five district municipalities comprising Gauteng Province and is bordered by the Bonjala District Municipality (DM) and City of Tshwane Metropolitan Municipality (MM) to the north and north east, the City of Johannesburg MM and Sedibeng DM to the east and south east, and Doctor Kenneth Kaunda DM to the south west. Some components of the initial project phase (e.g. Cooke TSF), fall within a small section of the City of Johannesburg MM, and this area is included in the discussion below. Thus, the tertiary study area covers the total area of the proposed ultimate WRTRP.

8.1.1 Demographic Characteristics

The population of the WRDM has experienced marginal growth during the last decade. According to 2011 census data, the population grew 1% annually since 2001 to reach just less than 821 000 in 2011 (StatsSA, 2013). Recent estimates show that the population growth rate has been contracting since 2011. This trend could be partially attributed to: (a) the HIV/AIDS[5] pandemic and associated illnesses, (b) declining fertility rates, particularly in urban areas, and (c) improving educational levels particularly amongst female youth (Urban-Econ, 2012).

In terms of distribution the District population is scattered across several urban centres, with the largest populations residing in Krugersdorp, Randfontein, Westonaria, Carletonville and ‘townships’ surrounding these towns. Population density indicates the potential pressure that human occupation might exert on natural resources and municipal services. The population density is estimated at 200 people per km^2, which is considerably lower than the provincial density (680 people per km^2) (WRDM, 2013; StatsSA, 2013).

The population’s age profile shows that almost 80% of individuals are aged between 15 and 64 years, followed by those younger than 14 years (17%). Gender distribution shows that males (52%) slightly outnumber females; racially the population comprises mostly Africans (79%), followed by Whites (17%).The most prominent language spoken in the area is Setswana (28%), followed by Afrikaans, IsiXhosa and Sesotho (StatsSA, 2013).

[5] Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS)

The level of education characteristically informs the employment and income potential of a population. The level of education among the District's population is comparatively high, with 32% having completed Grade 12 and 27% not completing primary school (StatsSA, 2013). Both in the case of the proportion of those who have no schooling, and those who completed Grade 12, the District's figures are superior to that of the Gauteng Province and the country as a whole (StatsSA, 2013).

8.1.2 Overview of the Economy

The WRDM boasts a diverse and growing economy, which in 2011, contributed 7% to Gauteng's Gross Domestic Product (GDP)[6] and 3% to the national GDP. In 2011, the WRDM GDP was recorded at R58 960 million (Urban-Econ, 2012). The District showed positive economic growth between 1995 and 2010, and the economy is expected to continue to grow. However, optimal growth has been hampered, mainly by a reduction in mining and quarrying output (WRDM, 2014; Urban-Econ, 2012).

The structure of the economy provides insight into the dependency of an area on specific economic sectors and its sensitivity to fluctuations in global and/or regional markets. The regional economy is service-based with community services and government, financial services, trade and manufacturing as the most prominent sectors (Urban-Econ, 2012). This economic structure is skewed towards the tertiary sector, which indicates that economic growth in the area is demand-driven. This suggests that the economy is prone to external shocks, which calls for increased efforts to diversify the economy beyond these sectors into resource based sectors, such as agriculture and mining.

8.1.3 Employment and Income

In 2011, the estimated economically active population (employed, or unemployed but looking for work) was 68%. Of the total population, 50% were employed, whereas 18% were unemployed. Unemployment was almost 10% higher among females. Employment was largely concentrated in the formal sector (88% of employed persons) (StatsSA, 2013). The mining sector was the primary employment industry, followed by the wholesale and retail trade, and government sectors (StatsSA, 2013; Urban-Econ 2012).

Regarding annual household income, 16% of households had no source of income and 40% of households earned less than R38 201 annually, or R3 183 monthly (StatsSA, 2013). Regarding individual monthly income, 45% of individuals had no source of income, whilst 16% earned less than R800 per month. Males tend to out-number females in higher income categories while females outnumber males with 5% among those who earn nothing.

[6] Gross Domestic Product (GDP) is defined as the market value of all final goods and services produced within a country in a given period of time. The size of an economy is usually measured by its GDP. The higher the GDP, the higher the income in the region

As a result of the high unemployment and low income levels, a considerable proportion of households cannot afford basic services, which places pressure on municipal resources due to higher demands for services among poverty stricken populations (WRDM, 2014).

8.1.4 Local Economic Development

Local economic development (LED) within the District is guided by several strategies and plans, which are briefly described below:

- The District Growth and Development Strategy, which aims to increase the socio-economic and development potential of the District by analysing the socio-economic environment, identifying potential growth sectors, and providing alignment to existing growth and development strategies;
- The WRDM LED Strategy, which identifies several key development thrusts, namely:
  - Expansion of agricultural sector;
  - Industrial and beneficiation development;
  - Waste recycling/ processing;
  - SMME development;
  - Green economy (which includes reducing the negative impacts of mining);
  - Human resources development; and
  - Tourism development.
- The Regional Tourism Strategy which aims to (a) analyse the tourism environment of the District, and (b) provide a strategic development framework for the sector's development, based on the identification of marketable development opportunities;
- The Economic Development Plan, which provides an assessment of all the relevant economic activities and development opportunities within the main economic sectors. The Plan identifies economic development nodes and corridors as well as sectors in which the WRDM has a potential comparative advantage; and
- The Rural Development Policy, which seeks to create capacity for the rural poor to ensure sustained self-development.

8.1.5 Service Delivery

According to WRDMs latest IDP (2014/2015), there are substantial infrastructure backlogs that prevent household access to water, sanitation and electricity supply. Housing backlogs, which are also a major concern, are largely limited to informal settlements, townships and those residing in rural areas. Outlying rural areas rely almost exclusively on piped borehole water and septic tanks/pit latrines, while electricity is provided by Eskom. The WRDM IDP and SDF for 2011-2016 list several strategies to address these backlogs systematically.

8.1.5.1 Access to Water, Sanitation and Energy

Most domestic water supply in the WRDM is provided by regional water schemes. Access to sanitation in urban areas is relatively good compared to rural areas, with just over 80% of households having access to flush facilities, with the remainder relying mostly on pit latrines (StatsSA, 2013).

With regard to energy usage, most households (82%) rely on electricity for lighting, with 78% and 69% using it for cooking and heating respectively (StatsSA, 2013). Many households, however, still have to rely on alternate energy sources (e.g. candles and paraffin) for lighting and cooking purposes (StatsSA, 2013).

8.1.5.2 Housing and Tenure

The majority of households (73%) within the tertiary study area reside in formal dwellings. The remaining households mostly reside in informal dwellings, which are an indicator of population influx and shortage of affordable housing (WRDM, 2013). WRDM is experiencing a substantial housing shortage and requires more than 100 000 new houses to eradicate the current backlog. The housing shortages in the area have resulted in the growth of existing informal settlements, as well as the establishment of new ones.

8.1.6 Spatial Development

Spatial development within the tertiary study area is guided by the WRDM's RSDF (2011-2016). The objectives of the RSDF are as follows:

- Containment of urban growth;
- Addressing the large infrastructure backlog throughout the District;
- Densification of urban areas;
- Addressing substantial housing backlog through the provision of different typologies of housing;
- Managing land according to integrated environmental management principles;
- Protecting high value agricultural land;
- Improving and rehabilitate mining areas; and
- Establishing niche tourism opportunities.

8.2 Secondary Study Area

The secondary study area comprises the Westonaria and Merafong Local Municipalities, and covers about 1 389km^2. Each municipality has an executive mayor, proportionally elected councillors, as well as ward councillors who are responsible for representing the needs of the people in the respective municipal wards. The WLM and MLM comprise 16 and 28 wards respectively. The WLM and the Randfontein Local Municipality are scheduled to merge in 2016, which would impact the governance structures of these areas (WLM, 2014).

The socio-economic trends within the secondary study area and its constituent municipalities are described in the remainder of this section.

8.2.1 Population Growth and Distribution

The population within the secondary study area decreased with 3% during the last decade, with 309 000 people residing in the area in 2011 (38% of the tertiary study area's population) (Table 8-1). Similar to the tertiary study area, the population within both municipalities has been growing at a slower rate since 2001. In 2011 the study area's population comprised 106 724 households, which equates to an average household size of three persons, which is similar to that of the tertiary study area (StatsSA, 2013).

Human settlement within the secondary study area is characterised by clustered settlement patterns, which was influenced by the mining activities concentrated along the gold mining belt traversing the study area (e.g. Blyvooruitzicht Mine, Doornfontein Mine, Deelkraal Mine, Driefontein Mine, Elandsridge Mine and Western Deep Levels Mine).

The vast majority of land in the study area is sparsely populated and land use within the area is limited to commercial farms. In contrast, high density areas (e.g. Carletonville, Khutsong, Wandela, Welverdiend, Fochville, Kokosi, Blybank, Westonaria, Glenharvie, Simunye and Bekkersdal) comprise less than 10% of the surface land in the secondary study area, but accounts for more than 90% of its population (StatsSA, 2013).

Table 8-1: Population Trends 2001-2011

Study Area	Year			Average Household Size (2011)
	2001	2011	Ave Annual Growth	
MLM	210 481	197 520	-0,64%	3,0
WLM	109 799	111 767	0,18%	
Secondary	320 280	309 287	-0,3%	
Source: StatsSA, 2013; StatsSA, 2001				

8.2.2 Age and Gender Distribution

Gender and age are important variables in terms of the labour-sending capacity of an area. Table 8-2 below presents the gender distribution in the secondary study area, and indicates that males tend to outnumber females with almost 10%, similar to the tertiary study area. The predominance of males can partially be attributed to the historical in-migration of males as result of the gold mining industry (Urban-Econ, 2012). However, this trend appears to be declining as a result of a down-turn in the mining sector (StatsSA, 2013; WRDM, 2014).

The gender distribution among households heads indicate that only 36% of households in the study area are headed by females (StatsSA, 2013). The age distribution shows that the majority of the population in the secondary study area falls within the 15-64 year age bracket

while a quarter are younger than 14 years (see Table 8-2). This trend is similar to the tertiary study area and indicates a potentially large labour force.

Table 8-2: Gender and Age Distribution, 2011

Study Area	Gender		Age Category (in years)		
	Female	Male	0-14	15-64	65+
MLM	46%	54%	18%	78%	4%
WLM	45%	55%	25%	73%	2%
Secondary	45%	55%	21%	76%	3%
Source: StatsSA, 2013					

8.2.3 Language and racial distribution

Similar to the tertiary study area, the population of the secondary study area is somewhat differentiated from a racial and language perspective, with several prominent languages (i.e. IsiXhosa, Setswana, Sesotho and Afrikaans) spoken in the area (Table 8-3). With regard to race, Black Africans constitute the overwhelming majority, followed by Whites (Table 8-4).

Table 8-3: Language Distribution, 2011

Language	Study Area		
	MLM	WLM	Secondary
IsiXhosa	25%	28%	26%
Sesotho	20%	19%	20%
Setswana	22%	15%	19%
Afrikaans	13%	8%	11%
IsiZulu	6%	11%	8%
Xitsonga	5%	11%	7%
Other	9%	8%	9%
Source: StatsSA, 2013			

Table 8-4: Racial Distribution, 2011

Race	Study Area		
	MLM	WLM	Secondary
Black African	87%	91%	88%
White	12%	7%	10%
Other	1%	2%	2%
Source: StatsSA, 2013			

8.2.4 Education

The level of education attained is used as an indicator of human capital, and is measured by the percentage distribution of the population older than 20 years and the highest level of schooling they completed. Education levels among the population of the secondary study area are presented in Table 8-5, which indicates a generally low level of formal education. More than two thirds of individuals have not completed secondary school, irrespective of their gender. This trend is similar to the tertiary study area, although the latter has a slightly higher proportion of people that have attained secondary and higher levels of education.

Illiteracy levels within the secondary study area are high, with just more than 30% of the population within WLM being illiterate, and 23% in MLM. To address the challenges posed by low education levels, the municipalities within the study area are implementing several 'Portable Skills Development Programmes' (WLM, 2014).

Table 8-5: Highest Level of Education (20 years and older), 2011

Education Level	Study Area		
	MLM	WLM	Secondary
None	6%	6%	6%
Some primary	25%	25%	25%
Completed primary	7%	6%	7%
Some secondary	37%	37%	37%
Completed secondary	21%	21%	21%
Tertiary	4%	5%	4%
Source: StatsSA, 2013			

8.2.5 Land Use and Spatial Development

The most significant land uses within the study area are mining, agriculture and residential. Of these land uses, agriculture covers the largest portion of the secondary study area, followed by mining and then residential uses (MLM, 2014; WLM, 2014). Spatial development

within the secondary study area is guided by the SDF for MLM and WLM, which is nested within the RSDF of the WRDM.

8.2.6 Economic Profile

The economy has been experiencing negative growth since 2011. It is expected to continue contracting, but likely at a lower negative rate (Urban-Econ, 2012). Carletonville, Fochville, Khutsong and Westonaria are regarded as the main economic centres in the study area and provide services to consumers on mostly a local and district level.

The mining sector is the largest contributor to the GDP, with the total contribution of this sector exceeding 52%. A high mining contribution within an area renders the economy of the area dependant on the global demand for the commodity (Urban-Econ, 2012).

It terms of economic structure, the tertiary sector makes a considerable contribution to the economy at 42%, followed by the secondary sector (24%). The local manufacturing sector is comparatively small, which may suggest that locally mined commodities do not undergo extensive processing and beneficiation within the study area (WLM, 2014).

Although the secondary study area is endowed with relatively large areas of arable land, the agricultural sector makes a marginal contribution to the area's economy compared to mining. Similar to mining, employment within this sector has been in decline since 2001 (MLM, 2014; WLM, 2014). Given the current low contributions by the agricultural sector to the local economy and the high agricultural potential, this sector has significant potential for growth.

8.2.7 Employment

In 2011, the employment rate among the secondary study area's labour force was 48%. Employment was mostly provided within the formal sector (Table 8-7), which is centred on activity within mining, agricultural and government sectors. Although agriculture contributes only slightly to the local economy, the sector is considered a major source of employment within the area. However, employment within this sector is usually seasonal and with low remuneration.

Unemployment[7] among the economically active population (18%) is relatively high. The level of unemployment amongst females is 11% higher than for males (StatsSA, 2013). There is also a greater percentage of females than males who are categorised as non-economically active. These women would regularly rely on some type of informal or subsistence business activity to provide income for their households. Just more than 10% of people in the study area are employed in the informal sector.

High unemployment within the secondary study area is partially attributed to the economy's dependence on the mining sector, which has been contracting since 2001 (Urban-Econ, 2012). The closing down of several mines from the mid-nineties onwards had a considerable

[7] *Unemployment* is defined as the percentage of the economically active population who want to work and are not unemployed by choice, and are actively taking steps to find or start some form of work.

effect on the labour force composition of the study area, with people within the study area migrating to areas with greater opportunities for employment (Urban-Econ, 2012).

The consequences of such high unemployment levels are that communities often cannot pay for basic services, which places pressure on municipal resources due to higher demands for services among poverty stricken populations.

Table 8-6: Employment Status, 2011

Employment category	Study area		
	MLM	WLM	Secondary
Not economically active	33%	26%	30%
Discouraged work-seeker	3%	4%	4%
Economically active	64%	70%	66%
Employed	*47%*	*50%*	*47%*
Unemployed	*17%*	*20%*	*19%*
Source: StatsSA, 2013			

Table 8-7: Employment sector, 2011

Sector	Study area		
	MLM	WLM	Secondary
Formal	91%	85%	89%
Informal	9%	15%	11%
Source: StatsSA, 2013			

8.2.8 Income

People's living standards, their ability to afford basic services (such as water, sanitation and health care), are often indicated through income levels. Table 8-8 shows the monthly income distribution, as well as the proportionate breakdown, across genders for the secondary study area's population. Generally, income levels are low, with more than 50% of people earning less than R800 per month.

The proportion of people earning no income is also relatively high. Of those not earning any income, females outnumber males with 9% (Table 8-8). These households are dependent on state grants, charity and possibly support from extended family for survival. Most of these families reside in rural areas or townships (MLM, 2014; WLM, 2014; Urban-Econ, 2012).

A large number of people who have no income (45%), and a small number (4%) of people who earn more than R12 801 per month, is indicative of a high Gini-coefficient[8] (measure of inequality). The majority of the secondary study area is affected by inequality, with the Gini-coefficient estimated at 0.58 (StatsSA, 2013). This inequality is also reflected in the study area's rating on the global Human Development Index[9] which is 0.58, and which is below the national figure of 0.72. This indicates a clear pattern of unequal development and inequality between different population groups (with Whites tending to have a higher socio-economic status compared to other racial groups).

Table 8-8: Individual Monthly Income, 2011

Study Area	Income Category (Rand per month)	General Proportion	Gender Proportion	
			Male	Female
WLM	None	46%	20%	26%
	R1-800	18%	9%	9%
	R801-3200	16%	11%	5%
	R3201-R12800	17%	14%	3%
	R12801-204801+	3%	2%	1%
MLM	None	44%	18%	26%
	R1-800	18%	9%	9%
	R801-3200	16%	9%	7%
	R3201-R12800	18%	14%	4%
	R12801-204801+	4%	3%	1%
Secondary	None	44%	18%	26%
	R1-800	18%	9%	8%
	R801-3200	16%	10%	6%
	R3201-R12800	18%	14%	4%
	R12801-204801+	4%	3%	1%
Source: StatsSA, 2013				

[8] The Gini-coefficient, developed in 1912 by Italian statistician Corrado Gini, is a mathematical measure of income inequality. Its theoretical maximum value is 1 – which would imply that a single person receives 100% of the total income and the remaining people receive none – and its theoretical minimum value is 0 – in which case everyone receives exactly the same income.

[9] The Human Development Index (HDI) was developed by the United Nations Development Programme to indicate the socio-economic development status of a population. The HDI is seen as a measure of people's ability to live a long and healthy life.

8.2.9 Socio-Economic Development

Economic development within the secondary study area is guided by the LED plans for both the MLM and WLM, which is incorporated into the IDPs for the respective municipalities.

The LED Plan for MLM outlines the following key development areas:

- Local beneficiation of gold and gold mining by-products;
- Development of side-stream support industries for the gold mining sector;
- Development of economic clusters and industry attraction that is focused on non-mining economic activities;
- Rural economic development; and
- Maximising the value of developed infrastructure that will be left behind after mining activities have ceased.

The WLM LED Plan aims to stimulate economic development, growth and transformation and to reduce the cost of doing business in the municipal area. It actively encourages competitiveness, employment creation, skills development and poverty alleviation through the following initiatives:

- Small business support and co-operative development;
- Agricultural support and development;
- Economic diversification by means of investment attraction, facilitation and business retention; and
- Local business support through local procurement.

In addition to LED projects, both municipalities have active programmes to promote social development. The objectives of these programmes are to improve the quality of life and wellbeing of individuals, especially among vulnerable groups (e.g. children, elderly, females, youth, disabled and those with HIV/AIDS). In addition to public socio-economic development programmes, a large number of mining companies in the study area are implementing or planning socio-economic development programmes for communities within the area (WLM, 2014; MLM, 2014).

8.2.10 Housing and Informal Settlements

In general, housing types vary according to settlement type. There are, for example, a higher proportion of informal houses in rural areas, while formal houses are predominantly a feature of the urban environment. The majority of households (75%) within the secondary study area reside in formal dwellings (Table 8-9), meaning that a quarter of all households still reside in informal dwellings. This figure is considerably larger in the WLM, where informal settlements are present in areas such as Bekkersdal and Simunye. Within the MLM, informal settlements are situated in the areas of Carletonville, Welverdiend, Khutsong, Kokosi, and Wedelia. A

significant proportion of populations residing within informal settlements comprise mining employees, as well as prospective and former employees, many of them foreigners (MLM, 2014).

Housing type is also linked to ownership. Security of tenure contributes to more permanent and conventional housing types, while lack of security of tenure tends to bring about informal dwellings. The largest proportion of households within the study area rent their dwellings. Only 30% of dwellings in the secondary study area are privately owned, of these the majority have been fully paid off. Another 22% of households occupy their homes on a rent-free basis, which corroborates the number of households residing in informal structures.

The SDFs for both the tertiary and secondary study areas identify a major need for housing. Two types of housing developments are underway to address this need, namely market-driven housing and public housing (MLM, 2014; WLM, 2014).

Table 8-9: Type of Housing, 2011

Study Area	Type of Housing		
	Formal	Informal	Traditional
MLM	75%	21%	4%
WLM	59%	39%	2%
Secondary	69%	28%	3%
Source: StatsSA 2013			

Table 8-10: Type of tenure, 2011

Study Area	Tenure Status			
	Private Ownership		Rented	Occupied Rent-Free
	Paid off	Not paid off		
MLM	25%	6%	50%	19%
WLM	20%	7%	51%	22%
Secondary	23%	6%	50%	21%
Source: StatsSA 2013				

8.2.11 Community Health

Access to health services and facilities is an important aspect of socio-economic well-being. The secondary study area is serviced by several hospitals, health care centres, clinics and mobile clinics; with the latter focussing on isolated and deep rural areas.

South Africa is experiencing a severe generalised HIV/AIDS epidemic, which is affecting the social and economic fabric of the country. The causes are multifactorial, but poverty, lack of education and vulnerability are important contributing factors. In 2008, approximately 10% of the secondary study area's population were affected by this condition. More recent estimates show that the prevalence rate, albeit still low, will steadily increase by 0.75% on an annual basis.

Tuberculosis (TB) management remains a challenge in South Africa and in the study area; especially its co-morbidity with HIV/AIDS. Diseases of poverty, mostly infectious diseases, are resulting in high infant and maternal mortality in the rural pockets of the study area.

8.2.12 Service Delivery

This section reports on household access to municipal service delivery within the secondary study area. In general, formalised areas, including townships, have access to most services; whereas informal and rural settlements are almost exclusively affected by a lack of, or malfunctioning, services (MLM, 2014; WLM, 2014). It should be noted that several service delivery protests have recently been launched in the study area, especially in areas such as Bekkersdal, Mohlakeng and Khutsong.

8.2.12.1 Water and Sanitation

Safe drinking water and adequate sanitation is a necessity for good health, as households without safe drinking water and adequate sanitation systems are more vulnerable to water borne diseases.

Government water schemes provide 95% of households in the study area with piped water. However, a number of households still depend on groundwater resources for domestic and agricultural use (Table 8-11). Rural communities and those residing in informal settlements are almost totally dependent on piped ground water abstracted from boreholes.

Just more than half of the households have access to flush sanitation, followed by 21% who rely on pit facilities (Table 8-12). The proportion of households depending on pit toilets within the study area is increasing due to the growth of informal settlements (WRDM, 2013).

Table 8-11: Household Water Supply, 2011

Water Source	Study Area		
	MLM	WLM	Secondary
Regional/local water scheme	95%	96%	95%
Borehole	2%	2%	2%
Other	3%	2%	3%
Source: StatsSA, 2013			

Table 8-12: Household Sanitation Facilities, 2011

Facility	Study Area		
	MLM	WML	Secondary
Flush toilet (connected to sewerage system)	84%	64%	76%
Pit toilet	14%	32%	21%
None	1%	3%	2%
Other	1%	1%	1%
Source: StatsSA, 2013			

8.2.12.2 Energy Source used for Lighting, Cooking and Heating

The majority of households in the secondary study area use electricity for lighting, cooking and heating purposes; with candles and paraffin being the second most common energy sources for lighting and cooking, respectfully (Table 8-13).

Table 8-13: Energy Used for Lighting, Cooking and Heating, 2011

Energy Source and Purpose	Study Area		
	MLM	WLM	Secondary
Energy used for Lighting			
Electricity	83%	64%	76%
Candles	12%	21%	16%
Paraffin	4%	14%	7%
Other	1%	1%	1%
Energy used for Cooking			
Electricity	76%	63%	71%
Paraffin	20%	33%	25%
Wood	1%	1%	1%
Gas	2%	2%	2%
Other	2%	2%	2%
Energy used for Heating			
Electricity	67%	61%	65%
Paraffin	13%	18%	15%

Energy Source and Purpose	Study Area		
	MLM	WLM	Secondary
None	12%	8%	10%
Wood	5%	10%	7%
Other	3%	3%	3%
Source: StatsSA, 2013			

8.2.12.3 Road Networks and Transport

Transport corridors formed by road networks commonly play a pivotal part in facilitating and supporting economic activities and development initiatives. The secondary study area has a fairly good road network connecting it to population and economic hubs within neighbouring municipalities and provinces. Therefore, goods and produce can reach markets and airports fairly easily without sacrificing loss of quality or excessive transport costs. The N12 and the R28 national and provincial roads, together with rail infrastructure, form the main transport arterials in WLM.

The N14 and N12 national roads traverse the northern and southern areas of MLM. These roads provide east-west mobility and link the municipal area to higher-order centres, such as Pretoria and Johannesburg. The R500 provides north-south mobility and links Carletonville and Fochville to each other, as well as to the N14, Parys and Vereeniging. The R501 links Welverdiend-Khutsong-Carletonville to Randfontein, as well as to Potchefstroom. The D1648 and K156 link Wedela and Kokosi to Fochville and Carletonville. The MLM is also served by two railway lines, both traversing the municipal area in an east-west direction.

There is concern with the municipalities about the rapid degrading of many roads throughout the study area, especially in rural areas, due to a combination of heavy vehicle traffic and a lack of maintenance and rehabilitation (WRDM, 2014; MLM, 2014).

Public transport is well-established throughout the secondary study area, with most people having access to bus or mini-bus services (WRDM, 2014). In terms of travelling patterns, there is a strong movement of people between Fochville and Carletonville. It is anticipated that the strong movement of people between the Welverdiend, Khutsong and Carletonville axis will increase considerably due to residential expansion in these areas. The road network connecting Wedela, Kokosi and Fochville forms another prominent movement axis in the region (WLM 2014; MLM, 2014).

8.2.13 Poverty and Vulnerable Groups

Individuals or groups can be classified as vulnerable for a number of reasons. Often they are classified according to demographic and social profiles. Vulnerable people are those who by virtue of gender, ethnicity, age, physical and/or mental disability, economic disadvantage, or

social status may be more adversely affected by project impacts than others, and who may be limited in their ability to claim or take advantage of project related benefits (IFC, 2012). The most common groups identified as vulnerable are children, the elderly, child or female headed households, the poor and the disabled. Other socio-economic aspects also make certain people and groups more vulnerable, such as low levels of education and high levels of unemployment and diseases.

The low average monthly income, combined with high unemployment rates and a relatively low level of education especially among rural populations, implies high levels of poverty and vulnerability among households within the secondary study area (MLM, 2014; WLM, 2014; WRDM, 2014). These factors, together with an increasing prevalence of HIV/AIDS and the number of households who are indirectly affected by the disease, increase the vulnerability of many families, especially in economically depressed areas in the study area.

8.3 Primary Study Area

Table 8-14 provides an overview of land ownership in the primary study area, which is defined as the surface land area that fall within (a) a 500m buffer area around the proposed RTSF, CPP and water pump station facilities, and (b) the 100m buffer area surrounding pre-existing infrastructure, as well as the proposed pipeline and transmission line routes. The table also indicates land use activities, any occupants living on, and structures built on, the sections of the properties that fall within the respective buffer areas.

8.3.1 Land Use and Infrastructure

Major land uses within the primary study area include agriculture, grazing, residential, mining and business uses. Residential land use comprises both formal and informal uses. Formal structures are either occupied by land users who rent properties from mining companies and farm owners, or landowning families farming on privately owned property. Informal structures are commonly occupied by farm workers and their families, as well as illegal occupants. All the proposed infrastructure options, except for the pipeline and transmission lines from the CPP to Ezulwini coincides with residential land use, with the largest encroachment along the transmission line connecting the East Drie Substation to the WBT and BWSF.

Agricultural activities within the study area comprise commercial maize and soya farming, as well as livestock grazing. The largest section of commercial farming land coinciding with the primary study area is located within the proposed RTSF, RWD and pump station sites. This is followed by the area within the proposed CPP site. Livestock, mostly cattle, also graze throughout the primary study area.

Sensitive heritage areas, including graves, are found inside this study area. Known sites are located within the proposed RTSF site and along several of the pipeline routes. For more detailed information regarding the location and nature of these sites, reference can be made to the Heritage Impact Assessment compiled for the Project.

Infrastructure and facilities in the study area include formal and informal dwellings, buildings used for business purposes (e.g. commercial farming infrastructure, mine infrastructure and roadside shops), privately owned infrastructure (e.g. access roads, boreholes and dams), public infrastructure (roads and transmission lines), mine accommodation, as well as several abandoned residential structures. A large number of roads traverse the study area including both tarred and gravel roads. These roads are used on a daily basis to commute between farms and mines, as well as to and from urban centres such as Carletonville and Fochville.

As was mentioned, mining is another prominent land use in the primary study area. Existing mining activities coincide with several sections of the primary study area (Table 8-14).

Table 8-14: Farm Portions and Land Uses comprising the Primary Study Area

Infrastructure	Affected Properties		Land Ownership								Current Land Use on Property within Buffer						Occupants			Structures					
	Farm name	Portion	South Deep	Private ownership	Kloof Gold Division	Rand Uranium/Sibanye	Kloof gold mining company	Far west rand dolomitic water association	Driefontein consolidated	If private, name of landowner/s	Residential	Business	Government	Commercial cultivation	Livestock (cattle)	Mining	Landowner households	Tenants	Vulnerable households	Formal residential	Informal residential	Business	Water infrastructure	Access roads	Mining infrastructure
RTSF and ancillary infrastructure	Cardoville 364	13	x								x			x	x			x	x	x	x	x	x	x	
		8	x											x											
		RE/6	x											x											
		11	x								x			x	x				x				x		
		RE/5	x											x	x										
		RE/3	x											x	x										
		7		x						J Badenhorst	x	x		x	x		x	x	x	x	x	x	x	x	x	
	Kalbasfontein 365	RE/1	x											x	x										x	
	Cardoville 358	3		x						J Badenhorst				x	x										x	
		4		x						J Badenhorst				x											x	
		2		x						J Badenhorst				x	x										x	
		0		x						J Badenhorst				x	x										x	
	Droogheuwel 512	2		x						J Badenhorst				x	x											
	Wildebeestkuil 360	7		x						De Akker Trust				x	x											
		5		x						De Akker Trust				x	x											
		18		x						De Akker Trust	x	x		x	x		x	x	x	x	x	x	x	x	x	
		7		x						J Oosthuizen	x			x	x			x	x		x				x	
		6		x						F de Bruin	x															
RWD	Kalbasfontein 365	51	x											x	x								x			
	Cardoville 364	13	x								x			x	x		x	x	x	x	x	x			x	
		8	x											x												
Power and pipelines from CPP – RSFT	Wildebeestkuil 360	7		x						J Oosthuizen	x			x				x	x		x				x	
	Doornpoort 347	1	x																							
		1	x										x	x											x	
		1	x								x				x			x	x		x					
		1	x								x				x			x	x		x					
		19	x																							
		18	x																							
		11	x												x											
		5	x											x	x										x	
		37		x						Unknown				x											x	
	Davonia 363	RE		x						Unknown																
		73			x										x										x	
CPP and ancillary infrastructure	Rietfontein 349	42			x									x											x	
		41			x									x												
		9			x						x							x		x						
		34			x									x												
		76			x																					
		16			x																					
		74			x																					
		32			x																					
		20			x																					
		7			x																					
		19			x																					
		4			x									x												
		39			x																				x	
		5																								
		35									x	x		x	x			x	x	x	x	x	x	x	x	
	Doornkloof 350	R			x						x			x				x							x	
		10			x																				x	
Pipeline from CPP – Ezulweni mining complex	Rietfontein 349	41			x																				x	
		42			x																					
	Doornpoort 347	29		x						Unknown					x										x	
		26			x																					
		12	x																						x	
		2	x																						x	
		7	x													x									x	X
		39	x													x									x	X
		40	x													x									x	X
		35	x																						x	
	Modderfontein	69	x																						x	
		52	x													x									x	X

		60		x						Unknown		x			
		RE	x												
		23	x												x
		28	x												x
	Waterpan 292	24				x									
		RE/4				x									
		13				x									
		26				x									
Pipeline from WBT to CPP (1)	Doornkloof 350	R			x										
		4			x										
		12			x										x
		33			x							x	x		
		21					x								
		RE/1					x								
		22		x						Unknown		x	x		
		34						x				x	x		
		RE/6		x						Unknown					
		5						x							x
	Leeuwpoort 356	71						x							x
		70													x
	Leeudoorn 351	X			x										
	Driefontein 355	22							x						
		4													
Pipeline WBT to CPP (2)	Rietfontein 349	14			x							x			
		13			x							x			
		12			x							x	x		
		47			x							x			
		21			x							x	x		
		2			x							x			
	Uitval 280	RE					x								x
		9					x								x
		8					x								x
	Driefontein 355	22													x
Pipeline (K10 to BWSF)	Libanon 28	R			x							x	x	x	
	Uitval 280	RE					x								x
		9					x								x
		8					x								x
	Driefontein 355	22					x								x
Pipelines (BWSF-DRI3; DRI3-WBT)	Driefontein 355	11							x						
		15							x						
		8							x						
		21							x						
		2							x						
	Driefontein 133	RE/1							x						
Pipelines (BWSF-DRI5; DRI3-DRI5)	Driefontein 133	RE/1							x			x	x		
	Blyvooruitzicht 116	6							x						
		7							x						
		8		x						Unknown					
		24		x						Unknown					
		9		x						Unknown					
Powerline (East Drie Substation-WBT&BWSF)	Driefontein 355	11							x						
		10							x						
		15							x						
		2							x			x			
Powerline (Drie 3-West Drie 6- substation)	Driefontein 113	RE/1							x						
		2							x						
Powerline (West Drie gold substation – DRI5)	Blyvooruitzicht 116	7							x						
		6							x						

8.3.2 Land Ownership

Figure 6 indicates land ownership within the primary study area. Several mining companies own the majority of land within the primary study area. These include:

- South Deep;
- Rand Uranium – Sibanye;
- Kloof Gold Mining Company;
- Far West Rand Dolomitic Water Association; and
- Driefontein Consolidated Ltd.

Privately owned land is concentrated within the proposed RTSF and AWTF sites, with the most prominent land owners being Mr. J. Badenhorst, De Akker Trust and Mr. J Oosthuizen. In instances where a landowner owns several properties, these are often managed as one business unit. Therefore, the sale of one farm will likely affect the business operations of all farms held by that owner. It has been established during the fieldwork for the SIA that a number of farmworker households reside within the primary study area. In some instances farmworkers enjoy free accommodation on the farm as part of their employment agreement.

Illegal mining activities, and associated informal settlement, were also encountered in the project area. In terms of the Extension of Security of Tenure Act, 1997 (Act No. 62 of 1997) (ESTA), any illegal land occupiers may also be entitled to certain tenure rights, which could prevent landowners and government from evicting them unless the provisions of ESTA have been met.

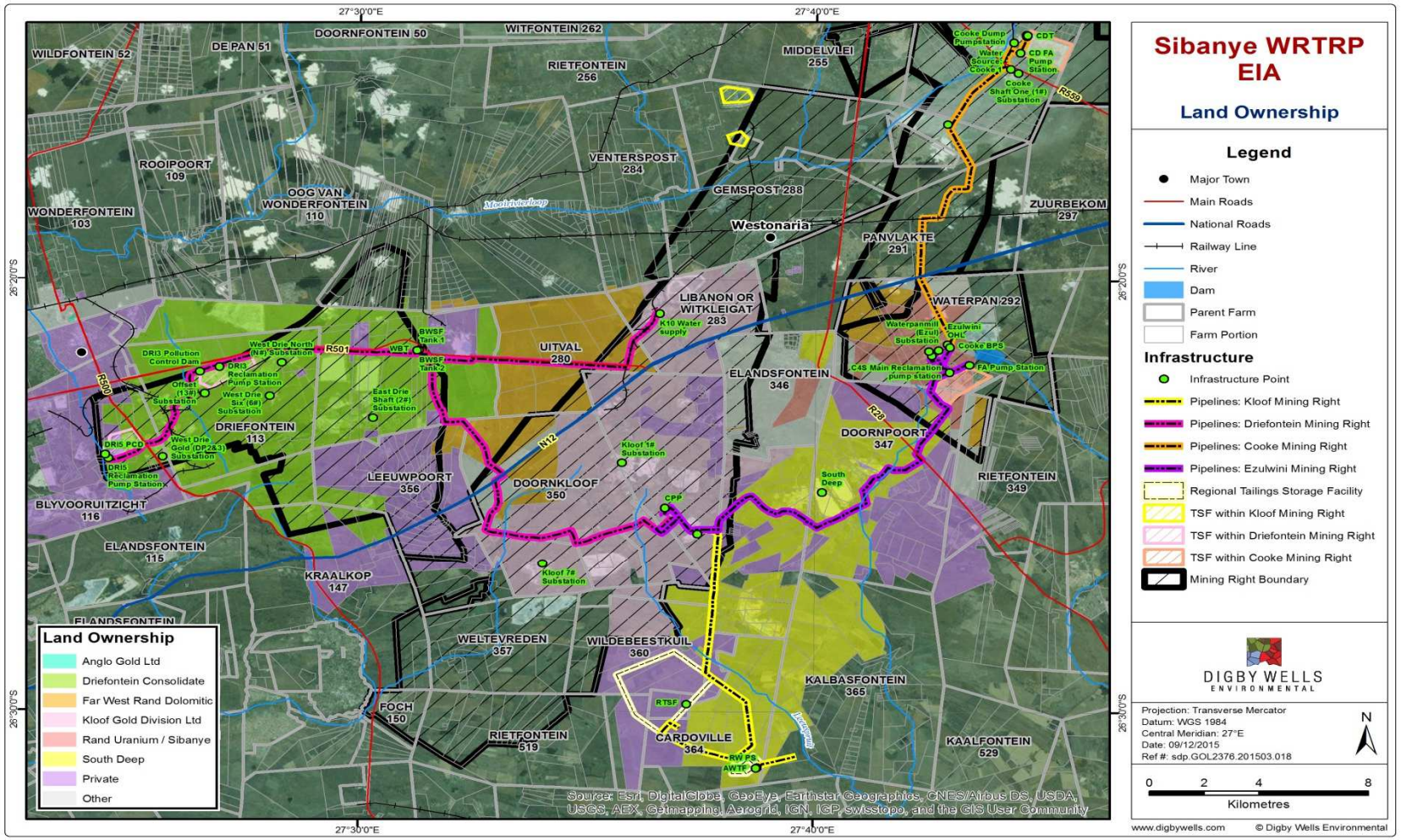


Figure 6: Landownership within the Primary Study Area

8.3.3 Socio-Economic Characteristics and Livelihoods

Several households within the primary study area rely on the land located within the project footprint for their livelihoods, especially those involved in commercial agriculture. Apart from agriculture related livelihoods, it is expected that a large number of those who are employed within the study area are working in surrounding mines and/or towns such as Carletonville or Fochville. Table 8-14 below shows that a large proportion of land in the primary study area is owned and used by mining companies. However, large portions of this mine-owned land are leased to local farmers for agricultural and/or other agreed-upon purposes.

The majority of respondents interviewed during the SIA study own some land in the primary study area; four respondents are land users (tenants) only. However, about one-third of the respondents do not live on their farms. There are a number of farmers who own and operate businesses on their farms. These include (but are not limited to) a butchery, milking parlour, trucking business, Information Technology (IT) business, guesthouse and a tavern. Others own and operate businesses in surrounding towns such as Fochville and Carletonville.

Respondents commented that the farming community (around the proposed CPP and RTSF areas) is a close knit community which provides essential support networks to its members. Most farmers who grew up in the area have strong ties to land, and some are hoping that their children would continue farming on their farms. In general, the relationships between White and Black farmers were described as good.

According to one respondent, his family has been residing in the project area since the late 1880s. He is of the view that farming in this area has been highly profitable in the past, with fertile soils and good quality groundwater, while it's close proximity to the economic heart of Gauteng (Johannesburg) also contributed to the profitability of the area. This area is one of the few remaining farming areas near Johannesburg and still is a profitable area for farming. Local farmers who grew up in the area have strong views about the mining industry and the way in which mines in the area operate.

According to one respondent, the history of the primary study area includes an important historical carriage route between Potchefstroom and Lydenburg (dating back to the 1860s). Some of the old carriage tracks can still be seen on the farm Cardoville. The ruins of one of the first Christian National Education schools to be built in the then Transvaal (dating back to 1894), can also be found on Cardoville. The secondary study area is reportedly home to the first mine in the West Wits area, namely Blyvooruitzicht Mine which was established in 1937.

The majority of farm workers employed by respondents come from surrounding areas. This local workforce is fairly evenly distributed between those residing in nearby settlements and those residing on the farms they are employed at. The families of almost half of the workers living on these farms reside with them. However, the families of many farmworkers live in surrounding towns or further afield, with some originating from outside Gauteng Province. The majority of respondents reported good relations with their workers. Two respondents reported a high employee turnover; the main reasons for this were theft and alcohol abuse. One respondent reported that his workers are allowed to keep cattle on the farm.

The most common structures (houses and buildings) noted on the farms visited were:

- Main structure (typically the landowner's family home);
- Business offices and/or buildings;
- Employee living quarters (number of structures ranged between three and six);
- Sheds and storage facilities/workshops;
- Boreholes and related infrastructure such as dams and windmills; and
- One or more cattle kraals.

Borehole water is reportedly of high quality and cleaner than municipal water. Two farmers reported that they do not have any boreholes located on their property. One farmer receives water from Rand Water. The other farmer supplies his employees with bottled water, while his livestock drink from a stream that runs through his property. None of the farmers reported the existence of land claims on their property.

Photograph 1: View in the Vicinity of the Proposed RTSF Site

Photograph 2: Guest House located on Farming Premises

Photograph 3: Tavern Located on Tenant Premises

The general land use (other than mining) is commercial crop farming (largely maize, as well as soya, grain, sunflower and oats), and livestock production. It is common for farmers to cultivate Lucerne for feed during the dry months. Cattle are the main livestock, in addition to sheep, goats and pigs. Hectares planted could range from 100ha to 1200ha.

The socio-economic characteristics of households within the primary study area are likely to be similar to that of the secondary study area (Section 8.2), which suggests that households residing in temporary or informal structures within the relatively rural primary study area are likely to be impoverished and vulnerable, with limited access to public services. Households residing in formal structures within the area are likely to have a higher socio-economic status and access to services. Education and skills levels among the population in the study area are expected to be lower than the regional average.

8.4 Summary

Table 8-15 provides a summary of the baseline profile of the overall study area in which the proposed ultimate WRTRP is to be located. It highlights features and trends within the study area that may have relevance for SGL in terms of possible opportunities and challenges.

Spatial development within the tertiary study area is guided by the WRDM's RSDF (2011-2016). Some of the objectives of the RSDF have a direct bearing on the Project in terms of potential opportunities for collaboration and partnering. These include:

- Addressing the large infrastructure backlog throughout the District;
- Addressing housing backlogs through the provision of different typologies of housing;
- Protecting high value agricultural land; and
- Improving and rehabilitate mining areas.

Similarly, the LED Plan for the MLM has prioritised, amongst other things, local beneficiation of gold and gold mining by-products, the development of side-stream support industries for the gold mining sector, rural economic development, and maximising the value of developed infrastructure that will be left behind after mining activities have ceased.

Table 8-15: Summary of the Socio-Economic Baseline Profile

Socio-Economic Attribute	Supporting Data	Relevance to the Project
Opportunities and Benefits		
District and local municipal development plans are in place	Local and district municipal IDPs, LED plans, and SDFs	Opportunity for the Project to align future socio-economic development programmes or SLP projects with existing municipal development plans; this will increase sustainability and relevance of initiatives.
Several large mining operations are situated within the secondary study area	Municipal SDFs; investigation of available spatial data	Opportunity to synergise LED initiatives with initiatives of existing mines
Commercial farming is a popular land use in the secondary and primary study area	Visual inspection of aerial imagery; Local and district municipal SDFs	Opportunity for SGL to pursue future SLP projects, which are focussed on agriculture. This will contribute towards any drive aimed at diversifying the economy. District and local level economic development plans also identify agriculture as a key development area for economic diversification.
Large potential labour force	The youth comprises the largest age cohort in the secondary study area; high unemployment, especially among rural households; although most people have a relatively low skill level	SGL and appointed contractors can likely meet local recruitment targets, especially for semi-unskilled positions
Mining is by far the dominant sector across all study areas	Statistics South Africa (StatsSA) 2013: mining is the primary contributor to the regional economy (Gross Domestic Product-50>%); mining employed the largest number of people in the tertiary study area	Procurement could potentially be from suppliers located within the secondary study area who are currently servicing mines in the area It is likely that some individuals with mining related skills will reside in the secondary study area, which will assist the project or contractor in meeting local recruitment and procurement targets

Socio-Economic Attribute	Supporting Data	Relevance to the Project
General backlog of basic service delivery infrastructure (water, sanitation, electricity and tarred roads).	Stats 2013 and MLM IDP: ▪ Rural households within the local study area mostly rely on community standpipes and pit toilets ▪ Considerable housing backlogs ▪ Several service delivery protest in the area in 2014/2015 period	Provides opportunities to continue contribution to infrastructure development as part of drive towards LED (but may also hinder the productivity of the local workforce)
Gender disparity in employment rates – financial vulnerability among females	StatsSA, 2013 - Unemployment amongst females is significantly higher than males. Furthermore, when women do generate income, it is likely to be less than males	The project could contribute to gender equity by implementing higher female employment targets for contractors – this requirement, if feasible, could be formalised by incorporating it into the contractor's conditions of contract. That is if any contractors are appointed as part of the project.
High levels of inequality and poverty within rural areas and townships	StatsSA, 2013 and LM and DM IDPs: ▪ High unemployment rate combined with low levels of income throughout the tertiary study area ▪ Gini-coefficient throughout the secondary study area is at 0,68	Local procurement and job creation will have a major positive effect on local businesses their employees and dependants, as well as on successful job-applicants and their dependants
Constraints or Challenges		
Substantial housing shortage throughout the secondary and tertiary study area	Stats, 2013, and DM and LM IDPs: Growth in the percentage of informal settlements in both urban and rural areas	Any project-induced influx may place additional pressure on limited housing

Socio-Economic Attribute	Supporting Data	Relevance to the Project
Current land use on proposed project sites include commercial agriculture, residential and business uses	Inspection of aerial imagery, and municipal SDFs	SGL could consider that the physical and economic displacement of several vulnerable households would require detailed resettlement planning, which may have substantial time and cost implication for the project Land would likely have to be rezoned to allow for mining activities, which could have timing implication for the implementation of the proposed operation
The economy of the tertiary study area is very dependent on mining	Mining contributed to 50 % of the GDP; Mining is the primary driver behind employment in the secondary study area; DM and LM IDPs	The project will likely contribute to increasing dependency on mining among local communities LED activities should preferably be aimed at establishing economic development outside the mining sector
Commercial farming is common	IDP for Local and District Municipalities;	Agricultural activities may potentially be directly affected by the proposed project if it affects the quality of water, this would likely result in stakeholder issues

9 Sensitivity Analysis and No-go Areas

The receiving socio-economic environment that will likely be impacted on by the WRTRP was described in Section 8. In particular, Section 8.3 provided a detailed overview of existing land uses, the extent of occupation, and proximity of sensitive social receptors for proposed infrastructure options for the WRTRP. In light of this information, each existing and proposed project component were evaluated according to three criteria (namely Habitation, Proximity of Sensitive Receptors and Current Land Use) and assigned a score indicating the likelihood of triggering significant negative impacts resulting from the ultimate Project.

Project components were evaluated to identify potential fatal flaws and key sensitivities that might be triggered by these components. Each component was evaluated using a five-level scoring system, with lower scores indicating higher potential for triggering negative impacts (see Table 9-1). The three criteria are discussed in more detail below:

- ***Habitation:*** This criterion refers to the presence of human settlement/occupation on existing and proposed infrastructure sites, and includes legal and illegal, as well as formal and informal settlements. Prior to being able to utilise a proposed location, individuals residing on this site would have to be relocated, which has time and cost implications for the Project, and is frequently associated with adverse social impacts. A site void of settlements would be least likely to trigger negative impacts.
- ***Proximity of sensitive receptors:*** This criterion is mainly concerned with the social environment surrounding an existing or proposed infrastructure site, particularly the presence of settlements in the vicinity of the site. The closer these receptors are to a site, the more likely and significant certain impacts (especially disruption and physical impacts), associated with the Project will be. Conversely, the further these receptors are from a project site, the less likely it is that certain negative impacts will transpire.
- ***Current land use:*** Utilising a site that is already being used for mining and related purposes (as opposed to, for example, agricultural or residential purposes), will likely result in fewer and less significant socio-economic impacts than will be the case if the proposed project will necessitate a change in current land use. A change in land use could (a) cause a higher degree of disturbance to the way of life of the surrounding communities, (b) may result in economic displacement (which implies time and cost implications for the project), (c) may decrease food security of vulnerable populations (in the case of subsistence farming), and (d) may impact on the local economy (e.g. farming and other business operations closing down resulting in loss of employment and decrease in disposable income).

The findings of the sensitivity analysis are presented in Table 9-2. The project components with the highest sensitivity and risk features are highlighted in the table.

Table 9-1: Site-rating index

Score	Likelihood of triggering negative impacts
5	Highly unlikely
4	Unlikely
3	Uncertain
2	Likely
1	Highly likely

The following sensitivities have been identified for the ultimate WRTRP:

- ***Displacement***: occupation of properties and business/agricultural uses on properties earmarked for infrastructure development (such as the RTSF, CPP and associated infrastructure) will result in the physical displacement of some households, as well as economic displacement resulting from the acquisition of land that is currently used for agriculture or other livelihood purposes.
- ***Residential areas and schools*** close to existing and proposed project components. Regardless of the settlements' nature, human presence represents a key sensitivity from a social perspective, and gives rise to safety and security risks. Additionally, during the construction of new infrastructure, these receptors will be exposed to, amongst others, noise, dust and disturbance impacts. During the operational phase, a significant impact will be the visual impact of the RTSF, CPP and surface pipelines, (in addition to health impacts), which may contribute to a negative change to sense of place. The significance of the latter impact might be low, as old mining infrastructure is present throughout the entire project area.
- ***Agricultural land***: The Project could meet resistance from farmers currently using land surrounding several existing and proposed infrastructure sites. Farmers may be concerned about aspects such as increased dust, health impacts and changes in the quality and quantity of groundwater as a result of the Project. These changes could affect property values and the viability and profitability of cultivating the land, thereby placing farmers' livelihood and financial well-being at risk.

As was mentioned, with adequate mitigation, none of the sensitivities and potential negative impacts mentioned above would pose a fatal flaw for the Project from a social perspective. However, project planning and design should take into consideration the areas highlighted in the table below when finalising facility placement and pipeline corridors. It is recognised that the preferred locations of the proposed RTSF and CPP will require the acquisition of this land or large portions thereof.

Table 9-2: Social sensitivity analysis

Criteria	Project infrastructure for Phase 1-4 of WRTRP											
	Existing infrastructure – sites and clustered TSFs						Proposed new infrastructure					
	Millsite TSF complex	Venterspost TSFs (North and South)	Driefontein (DR) TSFs (1-5)	Libanon TSF	Cooke TSF	Cooke plant	Ezulwini complex	Kloof 1, 2 & 4 and Leeudoorn TSF	RTSF	CPP	Pipeline routes	Power line routes
Habitation												
Score	5	5	5	5	5	5	5	5	2	2	3	3
Motivation	Habitation on site highly unlikely	Habitation on both sites highly unlikely	Habitation on all sites highly unlikely	Habitation on site highly unlikely	Habitation on site highly unlikely	Habitation on site highly unlikely	Habitation limited to mine employees	Habitation on Kloof 1, 2, 4 and Leeudoorn sites unlikely	Land occupied by farmer and farmworkers	Several land occupants	All pipeline routes encroach within 50m of residences	Power line routes encroach within 50m of residences
Receptors												
Score	3	2	2	4	3	4	4	4	3	3	3	3
Motivation	Greenhills residential area,1,2km south of TSF	Venterspost primary school situated 450m south west of Northern site. Venterspost smallholdings – 400-500m west-south-west of both Southern and Northern sites	Residential areas located immediately south to DR3 Informal settlement - 350m south of DR5 DR 1,2,4 – residential areas situated within 600-700m	Westonaria town situated 1km north-west of site	Several smallholdings located 200m north of site	Toekomsrus settlement situated 1km west of plant	Mining complex is surrounded by commercial farming community	Kloof 1, 2 ,4 and Leeudoorn surrounded by farming community	Proposed site is surrounded by farming community (e.g. Kalbasfontein and Cardoville which are adjacent to the CPP and associated infrastructure)	Proposed site is located on land currently used for agriculture. The site is surrounded by farming activities (adjacent to the site), as well as nearby mining activities	Most pipeline routes encroach within 200m of settlements and/or farming activities (e.g. Doornpoort, Leeudoring & Doornkloof)	Most routes encroach within 200m of established settlements, farming activities and businesses (e.g. on Driefontein, Cardoville and Doornkloof)
Land use												
Score	5	4	5	4	5	4	5	5	2	2	3	4

Criteria	Project infrastructure for Phase 1-4 of WRTRP											
	Existing infrastructure – sites and clustered TSFs						Proposed new infrastructure					
	Millsite TSF complex	**Venterspost TSFs (North and South)**	**Driefontein (DR) TSFs (1-5)**	**Libanon TSF**	**Cooke TSF**	**Cooke plant**	**Ezulwini complex**	**Kloof 1, 2 & 4 and Leeudoorn TSF**	**RTSF**	**CPP**	**Pipeline routes**	**Power line routes**
Motivation	Site used for mining activities (old TSF site).	Sites used for mining activities (old TSF site). Small probability that surrounding area is used for grazing cattle.	Sites used for mining activities (old TSF sites) limited uses surrounding each site	Site used for mining activities (old TSF site), area to west is used for agriculture	Site used for mining activities (old TSF site)	Site used for mining activities, area to west is used for agriculture	Site used for mining activities	Sites are used for mining activities (old TSF sites)	Agriculture, grazing and residential uses	Agriculture, grazing and residential	All routes coincide with mostly agricultural uses; and limited residential use	All routes coincide with mostly agricultural uses
Total	**13**	**11**	**13**	**13**	**13**	**13**	**14**	**14**	**7**	**7**	**9**	**10**

10 Impact Assessment Methodology

The impact and mitigation process and methodology undertaken for the SIA are discussed below. Section 10.1 provides a summary of the social impacts that were identified, while the subsequent sections describe the assessment methodology.

10.1 Identification of Impacts

A range of potential social impacts of the Project were identified based on information from previous studies, the SIA baseline study, the EIA public participation process, additional consultations during the SIA assessment phase, a review of project activities, and specialist opinion. Impacts are categorised according the project phase in which they are likely to be most pronounced.

Table 10-1 lists the social impacts that were identified for the Project. Impacts related to the loss of graves and archaeological sites are addressed in the Heritage Impact Assessment. Hence, this impact is only briefly discussed. Similarly, impacts related to air, noise, dust and water pollution are only briefly referenced in the SIA report as the mitigation of these impacts are addressed in other specialist studies and in the EIA report.

The Project will be implemented in phases over a period of approximately eight years and will involve the construction and operation of several components that vary considerably in terms of construction requirements, implementation schedules and the number of people who will be employed during construction and operation respectively. Many of the social impacts are applicable to both the construction and operational phase of the Project. These impacts are, therefore, not discussed separately.

Project impacts may be conceptualised as arising from interactions between the Project activities and the receiving environment. In contrast with environmental impacts, however, social impacts can usually not be tied to any particular project activity. The positive social impact of employment creation, for instance, arises from the need to appoint a construction and operational workforce – and this need is common to all project activities. Table 10-1 therefore also lists the project activities and interaction with the socio-economic environment that give rise to the identified impacts. Where these impacts cannot be traced to specific activities, the corresponding entry in the “Activity” column reads “All Project activities.”

Table 10-1: Overview of Potential Impacts

Project Phase and Impact Type		Impact Name	Project activity	Interaction
Construction	Positive	Local employment creation	All Project Activities	Appointment of workforce
		Skills development and capacity building	Project SLP commitments	Skills development of employees and host communities
		Local procurement of goods and services	All Project Activities	Procurement of goods and services
		Local & regional economic development	All Project Activities	Investment in the local economy
	Negative	Community health, safety & security	Retreatment of TFSs and Development and Operation of CPP and RTSF	Workers and communities in close proximity to potentially hazardous activities
		Displacement impacts (pre-construction)	Project-related Land Purchases	Relocation of existing inhabitants
		Disruption of movement patterns	Construction Activities	Traffic and temporary obstruction of some movement routes
		Impacts on surrounding farms	Development and Operation of CPP and RTSF	Neighbouring farmers being in close proximity to Project activities
		Water quality impacts	Development and Operation of the RTSF	Abstraction from local groundwater sources
		Project-induced population influx	All Project Activities	Appointment of workforce
Operation	Positive	Local employment creation	All Project Activities	Appointment of workforce
		Skills development and capacity building	Project SLP commitments	Skills development of employees and host communities
		Local procurement of goods and services	All Project Activities	Procurement of goods and services
		Local & regional economic development	All Project Activities	Investment in the local economy
		Improved quality of life	Tailings Reclamation	Rehabilitation of existing TSFs
		Increased access to land	Tailings Reclamation	Rehabilitation of existing TSFs
	Negative	Water quality impacts	Development and Operation of the RTSF	Abstraction from local groundwater sources
		Impacts on surrounding farms	Development and Operation of CPP and RTSF	Neighbouring farmers being in close proximity to Project activities
		Community health, safety & security	Retreatment of TFSs and Development and Operation of CPP and RTSF	Workers and communities in close proximity to potentially hazardous activities
		Project-induced population influx	All Project Activities	Appointment of workforce

Project Phase and Impact Type		Impact Name	Project activity	Interaction
Decom-missioning	Negative	Dependency on the Project for sustaining the local economy	All Project Activities	Appointment of workforce and investment in the local economy

10.2 Rating of Impacts

The impact rating process was designed to provide a numerical rating of the identified social impacts. The significance rating process follows an established impact assessment formula, as shown below:

Significance = consequence of an event x probability of the event occurring

Where:

Consequence = Type of impact x (Intensity + Spatial Scale + Duration)

And:

Probability = Likelihood of an impact occurring

In the formula for calculating consequence:

Type of impact = +1 (for positive impacts) or -1 (for negative impacts)

The weight assigned to the parameters for positive and negative impacts in the formula is presented in Table 10-2.

Table 10-2: Impact assessment parameter ratings

RATING	INTENSITY/REPLACEABILITY		EXTENT	DURATION/REVERSIBILITY	PROBABILITY
	Negative impacts	**Positive impacts**			
7	Irreplaceable loss or damage to biological or physical resources or **highly** sensitive environments. Irreplaceable damage to **highly sensitive** cultural/social resources.	Noticeable, on-going natural and / or social benefits which have improved the overall conditions of the baseline.	International The effect will occur across international borders.	Permanent: The impact is irreversible, even with management, and will remain after the life of the project.	Definite: There are sound scientific reasons to expect that the impact will definitely occur. >80% probability.
6	Irreplaceable loss or damage to biological or physical resources or **moderate to highly** sensitive environments. Irreplaceable damage to cultural/social resources of **moderate to highly** sensitivity.	Great improvement to the overall conditions of a large percentage of the baseline.	National Will affect the entire country.	Beyond project life: The impact will remain for some time after the life of the project and is potentially irreversible even with management.	Almost certain / Highly probable: It is most likely that the impact will occur. <80% probability.

RATING	INTENSITY/REPLACEABILITY		EXTENT	DURATION/REVERSIBILITY	PROBABILITY
	Negative impacts	Positive impacts			
5	Serious loss and/or damage to physical or biological resources or **highly** sensitive environments, limiting ecosystem function. Very serious widespread social impacts. Irreparable damage to highly valued items.	On-going and widespread benefits to local communities and natural features of the landscape.	Province/ Region Will affect the entire province or region.	Project Life (>15 years): The impact will cease after the operational life span of the project and can be reversed with sufficient management.	Likely: The impact may occur. <65% probability.
4	Serious loss and/or damage to physical or biological resources or **moderately** sensitive environments, limiting ecosystem function. On-going serious social issues. Significant damage to structures / items of cultural significance.	Average to intense natural and / or social benefits to some elements of the baseline.	Municipal Area Will affect the whole municipal area.	Long term: 6-15 years and impact can be reversed with management.	Probable: Has occurred here or elsewhere and could therefore occur. <50% probability.

RATING	INTENSITY/REPLACEABILITY		EXTENT	DURATION/REVERSIBILITY	PROBABILITY
	Negative impacts	Positive impacts			
3	Moderate loss and/or damage to biological or physical resources of **low to moderately** sensitive environments and, limiting ecosystem function. On-going social issues. Damage to items of cultural significance.	Average, on-going positive benefits, not widespread but felt by some elements of the baseline.	Local Local extending only as far as the development site area.	Medium term: 1-5 years and impact can be reversed with minimal management.	Unlikely: Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur. <25% probability.
2	**Minor loss and/or effects** to biological or physical resources or low sensitive environments, not affecting ecosystem functioning. Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected.	Low positive impacts experience by a small percentage of the baseline.	Limited Limited to the site ar its immediate surroundings.	Short term: Less than 1 year and is reversible.	Rare / improbable: Conceivable, but only in extreme circumstances. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures. <10% probability.

RATING	INTENSITY/REPLACEABILITY		EXTENT	DURATION/REVERSIBILITY	PROBABILITY
	Negative impacts	Positive impacts			
1	**Minimal to no loss** and/or effect to biological or physical resources, not affecting ecosystem functioning. Minimal social impacts, low-level repairable damage to commonplace structures.	Some low-level natural and / or social benefits felt by a very small percentage of the baseline.	Very limited/Isolated Limited to specific isolated parts of the site.	Immediate: Less than 1 month and is completely reversible without management.	Highly unlikely / None: Expected never to happen. <1% probability.

Table 10-3: Probability/Consequence Matrix

Probability	Significance																																										
7	-147	-140	-133	-126	-119	-112	-105	-98	-91	-84	-77	-70	-63	-56	-49	-42	-35	-28	-21	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147
6	-126	-120	-114	-108	-102	-96	-90	-84	-78	-72	-66	-60	-54	-48	-42	-36	-30	-24	-18	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126
5	-105	-100	-95	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105
4	-84	-80	-76	-72	-68	-64	-60	-56	-52	-48	-44	-40	-36	-32	-28	-24	-20	-16	-12	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84
3	-63	-60	-57	-54	-51	-48	-45	-42	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63
2	-42	-40	-38	-36	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
1	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Consequence

Impacts are rated prior to mitigation and again after consideration of the proposed mitigation measures. Each impact is then determined and categorised into one of eight categories, as presented in Table 10-4 below. The relationships between consequence, probability and significance ratings are graphically depicted in Table 10-3 above.

Table 10-4: Significance ratings

Score	Description	Rating
109 to 147	A very beneficial impact which may be sufficient by itself to justify implementation of the project. The impact may result in permanent positive change.	Major (positive)
73 to 108	A beneficial impact which may help to justify the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term positive change to the (natural and/or social) environment.	Moderate (positive)
36 to 72	An important positive impact. The impact is insufficient by itself to justify the implementation of the project. These impacts will usually result in positive medium to long-term effect on the social and/or natural environment.	Minor (positive)
3 to 35	A small positive impact. The impact will result in medium to short term effects on the social and/or natural environment.	Negligible (positive)
-3 to -35	An acceptable negative impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in negative medium to short term effects on the social and/or natural environment.	Negligible (negative)
-36 to -72	An important negative impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in negative medium to long-term effect on the social and/or natural environment.	Minor (negative)
-73 to -108	A serious negative impact which may prevent the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term change to the (natural and/or social) environment and result in severe effects.	Moderate (negative)
-109 to -147	A very serious negative impact which may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects.	Major (negative)

10.3 Mitigation Measures and Recommendations

Appropriate mitigation measures were formulated to avoid and/or ameliorate negative social impacts and enhance positive impacts. The criteria for the selection of mitigation measures require that they should be effective in ameliorating impacts without having severe negative secondary consequences term, and they must be practically feasible and cost-effective.

After appropriate mitigation measures were identified for each impact, the rating procedure described above was repeated so as to assess the expected consequence, probability and significance of each impact after mitigation. This post-mitigation rating gives an indication of the significance of residual impacts, while the difference between an impact's pre- and post-mitigation ratings represents the degree to which the recommended mitigation measures are expected to be effective in reducing or ameliorating that impact.

10.4 Presentation of Assessment Results

The structure according to which each impact is discussed is as follows:

- Narrative description of the impact;
- Discussion on mitigation measures to avoid and/or ameliorate negative impacts and enhance positive ones; and
- A table presenting the rating of the impact before and after recommended mitigation or enhancement measures, a brief summary of these measures, and motivation for assigning particular ratings.

The first row of the rating table indicates the project phase/phases during which the impact is likely to occur, followed by rating the impact pre-and post-mitigation – see example below. It should be noted that subsequent columns ('Dimension,' 'Rating,' 'Motivation,' "Consequence' and 'Significance') do not necessarily align with the column presenting the project phase.

Table 10-5: Example of the impact rating table

<table>
<tr><td colspan="5">Impact Description: Job Creation During Operation</td></tr>
<tr><td>Predicted for project phase:</td><td>Pre-construction</td><td>Construction</td><td>Operation</td><td>Decommissioning</td></tr>
<tr><td>Dimension</td><td>Rating</td><td colspan="3">Motivation</td></tr>
<tr><td colspan="5">Pre-Mitigation</td></tr>
<tr><td>Duration</td><td></td><td></td><td rowspan="4">Consequence</td><td rowspan="4">Significance</td></tr>
<tr><td>Extent</td><td></td><td></td></tr>
<tr><td>Intensity x type of impact</td><td></td><td></td></tr>
<tr><td>Probability</td><td></td><td colspan="2"></td></tr>
<tr><td colspan="5">Mitigation Measures</td></tr>
</table>

Post-Mitigation				
Duration				
Extent				
Intensity x type of impact				
Probability				

10.5 Residual Impacts and Cumulative Impacts

Complete mitigation of an impact cannot always be achieved. A residual impact is the impact that is predicted to remain once mitigation measures have been designed into the intended activity. For this SIA, the measures that have already been built into the planning and design of project activities, together with those measures that would be expected as part of good industry practice.

The anticipated cumulative impacts associated with the Project are discussed in Section 12. Cumulative impacts are defined as impacts arising from the combined effects of two or more projects or actions. The importance of identifying and assessing cumulative impacts stems from the fact that, in social as well as natural systems, the whole is often more than the sum of its parts – implying that the total effect of multiple stressors or change processes acting simultaneously on a system could be greater than the sum of their effects when acting in isolation (e.g. population influx into an area, for instance, might not just double the pressure on local infrastructure and services – it may cause them to collapse completely).

11 Assessment Results

This section provides a description of each impact, followed by the assessment rating and proposed mitigation measures for that impact. The project phase(s) relevant to a particular impact are indicted in the impact rating table and discussed in the impact description where possible. However, the multi-faceted and multi-phased characteristics of the Project, as well as the limited information currently available, did not always allow for a clear distinction between phases.

The WRTRP has the potential to contribute to a cleaner environment in the project area, and thus, to community health and safety aspects following the retreatment of existing tailings. This impact is discussed separately to not distract from its potential positive significance (see Section 11.5). However, the construction and operation of the CPP and RTSF in particular will give rise to significant health impacts, which are discussed in Section 11.8.

Finally, although many of the identified social impacts are, to a greater or lesser extent, also relevant for the closure and decommissioning phases of the Project, a detailed assessment of these impacts frequently tends to be highly speculative. Hence, this report only focuses on the most significant mine closure impacts, namely economic dependency on the Project and *"social"* closure impacts, such as loss of permanent employment.

11.1 Local Employment Creation

11.1.1 Impact Description

The secondary and primary study areas are characterised by high unemployment rates and low income levels. Thus, a considerable proportion of households in local communities face significant socio-economic challenges. There would be widespread expectations that the Project should provide employment opportunities to local communities and contribute to the socio-economic upliftment of these communities. Representatives of local municipalities expressed similar expectations during the public participation process for the EIA. The MPRDA also requires that host communities should share in project benefits.

11.1.1.1 Construction Phase

It is expected that a proportion of the workforce will be derived from within the borders of the local municipalities, both during project construction and operation. Varying degrees of skills will be required for various project activities and phases. It is not currently known if SGL, or its contractors, will use their existing workforce[10], i.e. employees who are currently employed on other SGL mines and/or with established construction companies. Thus, it also not known how many workers will be sourced from communities located closest to the Project. These aspects will have to be addressed in the SLP of the Project.

[10] Some existing SGL operations employ relatively few people from the Gauteng Province (some operations as low as 20% of the total workforce in 2013). Current employees may be redeployed on the Project when existing SGL mines close.

Many construction employment opportunities will only last for a short period. However, the Project will be implemented in phases lasting several years, with each phase providing new employment opportunities. It is evident that the number of employment opportunities will differ depending on the project components to be constructed. However, the overall initial phase of the WRTP could provide an estimated 2 000 employment opportunities during the initial construction phases.

It is important to note that temporary employees may find themselves worse off after the construction phase, as they may cease to be able to uphold the elevated quality of life they would have become accustomed to. While short term employment of less skilled individuals will provide temporary refuge from financial poverty, it may well leave them worse off once construction ends.

Local employment during the construction phase of the Project is, nevertheless, regarded as a significant positive impact. It is also a direct project benefit.

11.1.1.2 Operational Phase

The initial phase of the WRTRP will provide and estimated 500 permanent positions over the life of the operation. Permanent employment on the Project will also differ depending on the relevant project component.

In addition to creating direct local employment opportunities, the Project could also lead to indirect employment in both the formal and informal sectors following project operational expenditure in the local area and through the creation or expansion of local businesses to serve the Project and its workforce. Therefore, the Project could also lead to employment creation through a multiplier effect (see Section 11.4).

11.1.2 Recommended Enhancement Measures

Given that communities in the vicinity of the Project will be most affected, it is consistent with national legislation and international best-practice standards that these host communities are given special consideration in terms of benefits arising from the Project. Failure to provide employment opportunities to host communities may also hold serious risks for the Project. Factions in these communities may choose to engage in physical protest if their expectations regarding local employment (and sharing in other project benefits) are not met.

The following enhancement measures are proposed:

- Ensure/increase local employment during the construction and operational phases of the Project. Use labour-intensive construction methods for suitable project activities (e.g. digging of trenches), as this would increase opportunities for employing people from the local communities;
- Recruitment policies must be clearly defined and publicised to avoid unfair practices;
- Ensure that contractors comply with the company's employment policies;

- Identify suitable candidates for available opportunities from own and other job seeker databases. If required, establish a new database for the Project;
- Identify core skills required for the relevant project phase and assess the prevalence of these skills in local communities by means of a skills survey;
- Structure skills development endeavours (as part of the Project's SLP commitments) according to the requirements of the Project and the findings of the skills survey;
- Formalise preferential employment of women in the company's recruitment policy. Performance indicators for promoting the employment of women and youth should be developed and implemented for the Project and its contractors.
- Ensure that local communities are made aware of the employment opportunities that will be available during operation; by means of a structured stakeholder engagement programme;
- Clearly advertise the nature and numbers of jobs available during the various project phases and ensure that local communities understand the Project's recruitment and employment procedures;
- Recruitment should be coordinated through local offices of the Department of Labour (DoL) and/or bona vide recruitment agencies. If this is not feasible, locate recruitment offices at a central point (but not on-site), to control the access and movement of jobseekers. A recruitment registry should be created for job-seekers to document relevant qualifications, work experience and contact details;
- The Project could consult neighbouring mining/business enterprises to determine if they would be willing to make their skills registers and databases available for use by the Project. This could be investigated during the development of the Project SLP;
- To promote employment opportunities for women and the youth, it is recommended that a percentage of local employment opportunities be reserved for women and younger persons. These positions must preferably only be filled with persons outside of these categories if/when no suitable persons are recorded in the skills registry to fill these positions;
- Establish a monitoring system to ensure that contractors honour the relevant project employment policies. (Experience has shown that contractors routinely make use of an existing workforce, which frequently does not originate from the project area.);
- Where feasible, offer suitable training and skills development to improve the ability of local community members to take advantage of employment opportunities arising through the Project;
- The Project's database of the local labour pool should be updated to include people who were employed by the Project. This will assist with the recruitment of workers required during the operational phase of the Project; and

- Provide local employees with reference letters that they can submit to gain further employment. Also, provide certificates of completion for on-the-job training.

These enhancement measures, together with effective implementation of company policies regarding local employment, could also contribute (although only to a limited extent) to the management of project-induced population influx through minimising the need for a non-local workforce (see Section 11.12).

11.1.3 Management Objectives

The objective of this enhancement measure is to maximise the proportion of employment opportunities created by the Project that will be allocated to members of host communities (as opposed to persons from elsewhere in the country or internationally).

11.1.4 Management Targets

Of unskilled positions made available during construction or operation of the project, at least 40% should go to neighbouring communities, another 40% to people residing in the relevant Local Municipality, and 20% to people residing in the relevant District Municipality.

11.1.5 Impact Rating

Activity and Interaction (All Project Activities require appointment of workforce)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Local employment creation			
Prior to mitigation/ management			
Duration	Project Life (5)	Construction and operational phases	Minor - Positive (60)
Extent	Local (3)	Some positions will be filled by persons living in the project area; some from elsewhere in the district and country	
Intensity x type of impact	Moderately high - positive (4)	About 2 000 jobs during construction & 500 during operation	
Probability	Likely (5)	Without appropriate mitigation, potential for local recruitment might not be achieved	
Nature	Positive		
Mitigation/ Management actions			
Refer to Section 11.1.2			
Post- mitigation			
Duration	Project Life (5)	As for pre-mitigation	Moderate - Positive (96)
Extent	National (6)	As for pre-mitigation	
Intensity x type of impact	High - positive (5)	Mitigation will maximise local job creation which will financially benefit employees and their dependants, and improve their standard of living	
Probability	Highly probable (6)	Mitigation will ensure that local recruitment potential is achieved and local benefits optimised	

Nature	Positive		

11.2 Skills Development and Capacity Building

11.2.1 Impact Description

The Project's receiving environment is characterised by low education and skills levels, partially because of the socio-economic circumstances in the project area, combined with insufficient government services. However, the West Rand is also home to many people who historically migrated from non-urban areas where the lack of education facilities was the norm.

The Project's SLP commitments will include skills development, basic education (literacy and numeracy) and capacity building of its employees. Thus, in addition to having acquired work experience, local employees in permanent positions on the Project will benefit from these SLP commitments, contributing towards improving the skills levels amongst the population in the local study area. A small number of non-employees may be granted the opportunity to further their education and improve their skills through learnerships and/or graduate training programmes.

It is a requirement of the MPRDA that the Project's SLP shall ensure, amongst other things, training and career progression of employees, and in particular Historically Disadvantaged South Africans (HDSAs), as well as participation of women in mining. Similar requirements will be applicable to permanent contractors and certain categories of suppliers.

It is expected that temporary employees on the Project will not have the same opportunities as permanent employees to benefit from training programmes. While many construction opportunities will only involve unskilled or semi-skilled positions, the acquisition of new skills during their employment will make these workers more employable in the future. Therefore, it is important that the Project implement appropriate measures to ensure that members of host communities benefit from employment on the Project.

11.2.2 Recommended Enhancement Measures

The measures below are recommended to enhance the potential positive impact of the Project with regard to skills development and capacity building of employees, including local jobseekers who gained permanent employment on the Project. SGL should also consider expanding its skills development programmes to include members of the local communities.

- Prepare a detailed skills inventory for the Project. Skills database should be updated with personal training data;

- Establish training programmes based on the skills needs and gaps identified for the Project. Training should preferably be NQF[11] accredited and training providers must be registered with the relevant Sector Education and Training Authority (SETA);
- Develop and implement an Adult Basic Education and Training (ABET) Programme, for both workers and people from local communities. Such a programme could be incorporated into the SLP. Prioritise inclusion of women and vulnerable people in ABET programmes and other training programmes available to local community.
- Provide opportunities for those locals who received training to be employed on the Project or are considered for procurement contracts with the Project; and
- Identify suitable students from local schools to participate in company bursaries and internships programmes, through extending the SLP Skills Development Plan to include people from the local area.

11.2.3 Management Objectives

The objective of this enhancement measure is to give effect to the commitments regarding skills development documented in the Project's SLP.

11.2.4 Management Targets

Targets regarding numbers of people to be trained are defined in the SLP.

11.2.5 Impact Rating

Activity and Interaction (Project SLP commitments require skills development of employees and host communities)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Skills development and capacity building			
Prior to mitigation/ management			
Duration	Project Life (5)	Construction and operational phases	Minor - Positive (60)
Extent	Municipal Area (4)	Some internal training will take place, as well as on-the-job training for selected employees	
Intensity x type of impact	Moderate - positive (3)	Limited training for temporary workers. SLP-required training for permanent workers	
Probability	Likely (5)	Without appropriate enhancement training and skills development will be limited to permanent staff	
Nature	Positive		
Mitigation/ Management actions			
Refer to Section 11.2.2			
Post- mitigation			
Duration	Project Life (5)	As for pre-mitigation	Moderate - Positive (78)

[11] National Qualifications Framework

Extent	Municipal Area (4)	Skills development and training will be extended to temporary workers and possibly to members of local communities	
Intensity x type of impact	Moderately high - positive (4)	With enhancement more people will better skilled for future employment. Local labour pool will grow and improve	
Probability	Highly probable (6)	Training and capacity building opportunities will be maximised	
Nature	Positive		

11.3 Local Procurement of Goods and Services

11.3.1 Impact Description

The construction and operation of the WRTRP will require the purchase of equipment and will generate large contracts. Many of these will be for highly specialised and technical work which will be provided by specialist providers of goods and services. However, there will still be potential for local businesses to feed into the supply chain by supplying goods or services to the Project.

Services that could be provided by local providers include mechanical services/supplies, small to medium engineering services, catering services, food supply, maintenance services for non-technical components, buildings and facilities maintenance, vehicle maintenance and employee transport. For those companies that do get the opportunity to be part of this supply chain, there will be significant benefits for the businesses and their employees.

Thus, it is likely that the benefits of the Project will extend to its service providers/suppliers through the procurement of products and services. In terms of current legislation, the Project and its contractor must consider the use of HDSA companies in their procurement practices. To maximise the empowerment of HSDA companies (and sharing in project benefits by disadvantaged communities in general), the Project should attempt to procure from local suppliers throughout the life of the Project.

11.3.2 Recommended Enhancement Measures

The following measures are proposed to realise the potential benefits of local procurements:

- Include local procurement targets in the Project's procurement policy and contractor agreements. Monitor procurement practices of contractors and enforce requirements;
- Develop procedures for the procurement policy to ensure preferential procurement in accordance with BBBEE[12] and the Mining Charter requirements;
- Develop a Procurement Progression Plan as required in terms of the SLP;

[12] Broad-based Black economic empowerment

- Develop skills development and training targets for local procurement and include these in contractor management plans;
- Compile a database of local and district service providers and issue new contracts to these service providers. A business survey could be conducted in parallel with the proposed skills survey. Where applicable, use databases of surrounding projects and municipalities;
- Update the Project's existing supplier database to include suppliers that may qualify for procurement opportunities after receiving training/support. Identify procurement opportunities and goods/services that could be supplied by local contractors;
- Develop internal mechanisms for unbundling contracts where possible to realise the above opportunities; and
- Ensure that local businesses are aware of the procurement needs of the Project and have sufficient information to prepare tenders.

11.3.3 Management Objectives

The objective of this enhancement measure is to maximise the proportion of goods and services required by the Project that are purchased from local service providers.

11.3.4 Management Targets

At least 40% of all goods and services procured by the Project should be procured from businesses located in the relevant Local Municipality, 30% from businesses in the relevant District Municipality, and 20% from businesses in the Province.

11.3.5 Impact Rating

Activity and Interaction (All Project Activities require procurement of goods and services)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Local procurement of goods and services			
Prior to mitigation/ management			
Duration	Project Life (5)	During construction and operational phases	Minor - Positive (70)
Extent	Province/ Region (5)	Most procurement opportunities will go to large established service providers from outside local area. Some opportunities may exist for local suppliers	
Intensity x type of impact	Moderately high - positive (4)	Those local service providers who enter the Project supply chain will benefit financially	
Probability	Likely (5)	Without appropriate mitigation, local procurement will be minimal	
Nature	Positive		
Mitigation/ Management actions			
Refer to Section 11.4.2			
Post- mitigation			

Duration	Project Life (5)	As for pre-mitigation	Moderate - Positive (90)
Extent	Province/ Region (5)	As for pre-mitigation	
Intensity x type of impact	High - positive (5)	Local/district suppliers will gain financially which also benefit their families and their workers	
Probability	Highly probable (6)	Mitigation will increase local recruitment and local benefits	
Nature	Positive		

11.4 Local and Regional Economic Development

11.4.1 Impact Description

It is anticipated that the Project's multiplier effect on the local economy will be significant in terms of total value of business sales leveraged by the Project's capital investment, as well as through indirect and induced employment. Moreover, the Project's SLP, and associated LED Plan, will also provide benefits to the local economy by stimulating the growth of small businesses and contributing towards skills development. Local businesses that supply the Project will possibly be able to expand their businesses. A greater number of consumers (due the presence of the Project's workforce, multiplier effects and general population influx) will increase the earnings of retail businesses, traders and consumer services in the local area.

The Project will involve a substantial regional investment during the initial phases of the Project. The government will receive royalty and tax payments from the Project and it is expected that a proportion of these funds will be used to stimulate regional economic growth by re-investing these funds for infrastructure development in the broader project area. Local municipalities may also benefit from rates and taxes imposed on the Project, as well as from a marginally increased tax base. Such an injection into local municipalities could contribute to the development of municipal areas, thereby creating conditions conducive to economic growth.

The Project will likely trigger population influx into the local area, which is mostly associated with negative socio-economic consequences (see Section 11.12). It will, however, also have some positive effects on the local economy. The increased activity and increased population will result in increased demand for goods and services in some local areas. This is likely to cause a flow of goods and services to these areas, thus resulting in economic development.

The enhancement of local employment and procurement opportunities by the Project (as presented in the previous sections), will contribute to economic development at the local and district levels. It is expected that the Project will employ a sizable workforce and the monthly wage and procurement bill will result in a substantial injection of cash into the local economy. This will stimulate the formal and informal retail and service sectors and other downstream secondary industries.

The Economic Impact Assessment for the EIA (Urban-Econ, 2015) investigated the Project's potential impact on production during the construction and operational, which is discussed in more detail below.

11.4.1.1 Impact on Production during the Construction Phase

The Project will initially invest a total of R9 141 million in 2015 prices for construction activities of the gold and uranium recovery components. Of the total capital investment, R4 336.3 million (in 2015 prices) will be required for construction of the gold recovery component which will increase the production output of the national economy by R12 561.3 million (2015 prices). Almost 35% of the total increase in business output resulting from the construction phase will be largely influenced by companies that will be involved in the construction of the Project, i.e. contractors and engineering firms. The remainder will be generated through production and consumption induced effects (Urban-Econ, 2015).

Of the production output generated as a result of construction activities for the gold recovery component, approximately R5 358.1 million (43%) (2015 prices), will be stimulated through production-induced effects. This means that local businesses supplying goods and services for the construction activities at the proposed facility will experience an increase in business sales to the value of R5 358.1 million. The indirect effects during the construction period will be distributed throughout the country depending on the location of participating suppliers. The biggest increase in business sales during the construction period will be experienced by manufacturing industries, the trade sector and the real estate and business services sector (Urban-Econ, 2015).

The increase in production stimulated by the construction activities will create temporary employment opportunities through direct and indirect effects, which, in turn, will increase disposable income of the directly and indirectly affected households. This income, which will be spent on the purchase of household goods and services, will create another round of effects which are referred to as induced effects. Induced effect will stimulate the production of industries and sectors that manufacture consumer goods and provide services to households. It is estimated that R2 866.9 million of the production output generated by the Driefontein component's construction activities will be as a result of consumption induced effects. Sectors and industries that are expected to benefit the most from this increased expenditure include trade, insurance, business activities, food, beverages and tobacco, chemical and chemical products, and transport services (Urban-Econ, 2015).

11.4.1.2 Impact on Production during the Operational Phase

During the operational phase, the Project will generate R72 087 million of turnover. Annual production impact variations will be between a minimum of R950 million, and a maximum of R6 045 million in 2015 prices. The annual impact on production during the 17-year operating period will vary year on year. It is estimated that the impact on new business sales will begin at R950 million in 2015 prices, increasing to R5 296 million (2015 prices) and decreasing to R2 783 million in 2030. Approximately 56% of the turnover to be generated by the Project will be created directly by mining activities, while the rest will be stimulated through multiplier

effects. If it is assumed that the production will be accounted in the same municipality where the Project's output is generated, the proposed reclamation activities will significantly alter the structure of the local economies (Urban-Econ, 2015).

The majority of new business sales will be generated through direct effects, i.e. through the extraction and sale of gold and uranium. It is estimated that in 2018, R586.6 million in sales revenue will be derived by the TSFs. In addition to new business sales attributable to direct impacts, additional new business sales averaging R259.9 million per year will be created as a result of the indirect multiplier effect stimulated by the operating activities of the TSFs. The sectors that will benefit the most from these production impacts are chemical and chemical products manufacturing, electricity, real estate, business services, trade and transport.

Furthermore, sectors that will benefit as a result of an increase in household income and the subsequent increase in demand for consumer goods and services include manufacturing, business services, transport and trade and accommodation. In 2022, retreatment operations will generate at total of R5 799 million (2015 prices) in new business sales. Of this, R3 473 million (2015 prices) will be created through direct impacts and an additional R2 321 million will be created through multiplier effects (Urban-Econ, 2015).

11.4.2 Recommended Enhancement Measures

The measures proposed above (to maximise local employment and procurement through the Project), will also serve to enhance the positive impacts of the Project on the local economy. In addition, it is proposed that the SLP and associated LED projects include the following:

- The establishment and upgrading of services and infrastructure, where feasible;
- Supporting housing development through promoting house ownership for employees;
- Creating improved economic opportunities through entrepreneurship development and the development of skills supporting employment and economic development.
- Implementing selected poverty eradication, infrastructure development and welfare creation projects that meet the criteria of the company, and other legislation. These measures could include providing financial support to higher education institutions (including bursaries);
- Empowering local black businesses, and undertaking and/or supporting development initiatives in the Project's labour sending areas and in affected communities, where these are feasible/appropriate;
- Developing a register of local small, medium and micro-sized enterprises (SMMEs), and the types of goods and services they provide, and work with local municipalities to develop SMMEs through their relevant forums and working committees.
- Where SMMEs do not exist locally, investigate the possibility of launching a training/ skills development initiative under the auspices of the skills development programme required for the SLP;

- Establishing linkages with institutions involved in skills and SMME development, such as community-based development projects and non-governmental organisations (NGOs) active in the broader project area. This could include creating synergies with other mining companies' LED projects;
- Addressing the priority needs of employee and their households who do not live in mine accommodation (basic services, housing, road infrastructure, etc.) through implementing infrastructure development projects and increasing access of employee households to development credit and assets (e.g. housing)
- Complying with legislation through implementing portable skills programmes that will contribute to the empowerment of employee households and community members (particularly the unemployed, women and the youth) so as to encourage sustainable development.
- Continually assessing projected IDP and LED initiatives of the municipality to ensure that the SLP commitments remain relevant in terms of the above initiatives;
- Developing a clear strategy for corporate social investment (CSI) and communicating that to local communities. This will also help to manage community expectations with regard to the Project's role in providing infrastructure and services; and
- Appointing a SLP/Social Development Manager (or similar function), to interact with communities regarding community development priorities that could be incorporated in SLP/LED and corporate social responsibility programmes.

The Project must also liaise with the development planning directorates of the relevant local municipalities given that they are responsible for integrated development planning, land use management, local economic development, tourism development, as well as coordinating SMME development within their areas of jurisdiction.

It is expected that Project, through its CSI, will invest in local development programmes and provide sponsorship for community initiatives. While these projects are often awarded based on the holding company's approved CSI policy/principles, it is recommended that the Project participate in activities that will contribute to addressing underlying development issues such education and health. It is recommended that the above initiatives make special provision for including vulnerable groups in these projects.

11.4.3 Management Objectives

As for enhancement of local employment and local procurement of goods and services

11.4.4 Management Targets

As for enhancement of local employment and local procurement of goods and services

11.4.5 Impact Rating

Activity and Interaction (All Project Activities require investment in the local economy)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Local & regional economic development			
Prior to mitigation/ management			
Duration	Project Life (5)	LED will start during construction but only reach its peak during operation.	Minor - Positive (70)
Extent	Municipal Area (4)	Benefits will most likely accrue to local municipalities and local communities. District municipality may receive benefits from taxes and royalties	
Intensity x type of impact	High - positive (5)	Without mitigation, benefits will be limited and may not be sustainable	
Probability	Likely (5)	Without appropriate mitigation, benefits will be ad hoc and unsustainable	
Nature	Positive		
Mitigation/ Management actions			
Refer to Section 11.4.2			
Post- mitigation			
Duration	Beyond project life (6)	As for pre-mitigation	Major - Positive (119)
Extent	Province/ Region (5)	As for pre-mitigation. With mitigation district authorities will also benefit from infrastructure projects	
Intensity x type of impact	Very high - positive (6)	Livings standards of a large number of households will be improved	
Probability	Certain (7)	With mitigation the impact will definitely occur	
Nature	Positive		

11.5 Improved Quality of Life

11.5.1 Impact Description

The successful retreatment of the large number of TSFs will have important positive impacts for surrounding communities in that the completion of this process will contribute to a cleaner environment and, thus, improved health and quality of life in the medium- to long-term. While the actual reclamation process will initially involve negative community health impacts, the completion of this process will contribute to a decrease in air-quality impacts (both general and radioactive dust), as well as reducing negative water quality impacts in the project area.

It is generally accepted that tailings deposition negatively affects the agricultural potential of surrounding areas. Hence, the removal of tailings in the project area may have a positive impact on the quality of agricultural produce (both crops and meat) originating from the areas

surrounding the retreated TSFs. However, it is important to recognise that certain negative impacts associated with tailings deposition (e.g. historical leaching of toxic substances which pollute both soils and water), cannot be fully reversed through the retreatment of tailings and the rehabilitation of these sites.

The successful completion of the Project could also contribute towards curtailing population influx, growth of informal settlements and illegal mining activities in the areas surrounding the old TSFs. This, in turn, could result in a decrease in crime such as housebreaking, stock theft and theft of mining and farming material or equipment. In combination, these improved conditions would also improve the quality of life of local communities. It stands to reason that measures should be implemented to prohibit uncontrolled land uses at the retreated sites.

The successful removal of existing TSFs will include a positive visual impact for surrounding communities, provided that adequate rehabilitation is implemented. It is recognised that the presence of mainly the CPP and RTSF will have the opposite effect, and that the quality of life of surrounding farmers and local residents will be negatively impacted (see Section 11.8 and Section 11.10).

The Project could have numerous knock-on positive effects on the physical environment, such as improvement of access roads. Such improvements could lead to reduced travelling time and better access to services such as schools, shops and other amenities. The Project may also contribute to community services and facilities. However, this is largely dependent on the technical requirements of the Project, and on its SLP and LED commitments. Hence, it is not feasible to propose specific measures to enhance this impact at this stage of project planning as only limited information is currently available.

11.5.2 Recommended Enhancement Measures

The following measures are recommended to enhance the quality of life of local communities through the retreatment of tailings:

- Fully comply with the relevant legislation pertaining to environmental protection and in particular gold mine closure and residual risks;
- Implement the recommendations of the relevant specialist studies;
- Successfully complete the removal of all TSFs and the rehabilitation of the remaining footprints to prevent the creation of new/more contaminated areas;
- Implement long-term monitoring programmes for monitoring soils and water sources in affected areas to establish to what extent the natural resources have recovered;
- Consult other mines/business enterprises in the project area to identify opportunities for collaboration on ***selective***[13] infrastructure projects;

[13] It is not suggested that the Project should take over the responsibility of local authorities in this regard. However, there will be opportunities for the Project to contribute to infrastructure development through its LED programme.

- Collaborate with other mines in, for example, upgrading public amenities that will also be used by employees of these developments, and
- Maintain concurrent rehabilitation practices on the RTSF.

11.5.3 Management Objectives

To maximise the environmental benefits of the reclamation of existing tailings facilities

11.5.4 Management Targets

Full compliance with the relevant legislation and recommendations of the relevant specialist studies

11.5.5 Impact Rating

Activity and Interaction (Tailings Reclamation require rehabilitation of existing TSFs)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Improved quality of life			
Prior to mitigation/ management			
Duration	Long term (4)	Benefits will only materialise during the operational phase	Minor - Positive (66)
Extent	Local (3)	Will affect some areas in the West Rand	
Intensity x type of impact	Moderately high - positive (4)	Moderate benefits for selected areas	
Probability	Highly probable (6)	Without mitigation, very limited benefits will be realised	
Nature	Positive		
Mitigation/ Management actions			
Refer to Section 11.5.2			
Post- mitigation			
Duration	Beyond project life (6)	As for pre-mitigation. Some benefits will remain after the life of the project	Moderate - Positive (90)
Extent	Municipal Area (4)	Will affect large areas in the West Rand, and possibly further afield	
Intensity x type of impact	High - positive (5)	Mitigation will significantly improve the quality of life of farm residents and local communities	
Probability	Highly probable (6)	With mitigation it is possible that more people will benefit	
Nature	Positive		

11.6 Increased Access to Land

11.6.1 Impact Description

Regulation 56 of the MPRDA Regulations provides that mining sites should be rehabilitated as far as is practicable to its natural state – or to a predetermined and agreed standard or land use which conforms with the concept of sustainable development.

Following the retreatment of tailings and the subsequent rehabilitation of TSF sites, land will progressively become available for land uses other than mining. However, large portions of this land may be irreversibly transformed, meaning that the full restoration of this land will not be possible. Nevertheless, it is consistent with legislation that alternative end-land uses are considered as part of mine closure planning. These could include land uses suitable for both interim and permanent end uses.

The SIA study team does not have the knowledge or expertise to evaluate the potential land uses of retreated TSFs. The reader is, therefore, referred to the relevant specialist studies in this regard (in particular the soils and water studies, as well as the Land Rehabilitation Plan). The discussion below mainly relates to those aspects of alternative end-land uses that may be of significance in terms of the economic benefits to, and the health and safety of, host communities.

The allocation of approved reclaimed land to local communities (through their respective municipalities), may provide them with new economic opportunities and financial gains if this land is used productively. Most of this land belongs to SGL and other mining companies, and their involvement in the re-allocation of land will, therefore, be inevitable. However, the availability of reclaimed land would be contingent on the required mine closure permits, while the relevant municipalities cannot be made responsible for remaining liabilities with regard to residual contamination.

It is acknowledged that realising the above benefit will require considerable effort and careful planning. However, the consideration of land use alternatives is one of the cornerstones of community planning and development. The main land use categories that encompass basic functions are residential, commercial, industrial, recreational, institutional and agriculture.

It is possible that reclaimed land will not be suitable for residential use and/or the production of food crops due to residual contamination levels and/or unstable soils. Some of this land may also not be suitable for livestock grazing. Options for alternative human end-uses may, therefore, be limited. Potential end-land uses may include industrial sites, renewable energy projects, landfills, graveyards, sewage disposal and some farming activities. However, the use of reclaimed land may be contingent on the release of this land by the National Nuclear Regulator.

Decisions regarding end-land uses for reclaimed TSF sites would require a systematic and consultative decision-making process. It is important to note that where no suitable ***human*** land uses are identified, affected areas may still attract undesirable land uses at, or near, the reclaimed sites. These could include informal settlement, as well as illegal mining activities. Such practices may hold severe health and safety risks for those actors, and it is, therefore, essential that access to this land is access prohibited and prevented.

It is recognised that the above positive impact is to some extent offset by land acquisition for new project facilities (in particular the CPP, although land will ultimately be recoverable), the RTSF (involving permanent loss of land from an agricultural point of view), and land lost to some pipelines and power line servitudes (mostly recoverable).

11.6.2 Recommended Enhancement Measures

The following recommendations are recommended:

- Ensure that reclaimed land is made safe for both humans and animals. Ground- and surface water must be fit for approved future land uses;
- Comply with the requirements of MPRDA which provides that interested and affected parties must be involved in decision-making regarding future land uses;
- Implement the recommendations of the relevant specialist studies (in particular the Soil Study and Rehabilitation Plan);
- Assess end-land uses for each individual rehabilitated site. Rehabilitation must be consistent with the relevant end land-use objectives of closure plans;
- Reclaimed land areas not suitable for human settlement, crop cultivation or livestock production, must be clearly demarcated as such and illegal settlement on, and use of this land must be prohibited, monitored and controlled;
- If particular development opportunities on reclaimed land are approved, these should be discussed with relevant local municipalities for possible integration into IDPs and SDFs; and
- Investigate if, and how SGL could contribute to the development of reclaimed land for the benefit of local communities. This could take the form of partnerships with local authorities and other mining companies, and/or including such development projects in the SLP/LED programme of the Project.

11.6.3 Management Objectives

To maximise the extent to which reclaimed tailings facilities may be used for other purposes after reclamation.

11.6.4 Management Targets

Maximum diversity of post-reclamation land uses on reclaimed site, within limits determined by environmental health and safety conditions of reclaimed land.

11.6.5 Impact Rating

Activity and Interaction (Tailings Reclamation require rehabilitation of existing TSFs)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Increased access to land			
Prior to mitigation/ management			
Duration	Permanent (7)	Benefit will commence during operation and will remain after project closure	Moderate - Positive (90)
Extent	Municipal Area (4)	Benefits will accrue to some individuals/institutions in the local/district municipalities	
Intensity x type of impact	Moderately high - positive (4)	Significance of this impact for farmers and local communities will depend on the sustainable implementation of mitigation measures	
Probability	Highly probable (6)	Without appropriate enhancement very few local stakeholders will benefit	
Nature	Positive		
Mitigation/ Management actions			
Refer to Section 11.6.2			
Post- mitigation			
Duration	Permanent (7)	As for pre-mitigation	Major - Positive (112)
Extent	Municipal Area (4)	Local communities & authorities, as well as some farming sectors	
Intensity x type of impact	High - positive (5)	Local government & communities will benefit from additional land for community development and other land uses.	
Probability	Certain (7)	Enhancement will ensure that some benefits are secured	
Nature	Positive		

11.7 Disruption of Movement Patterns during Construction

11.7.1 Impact Description

The construction of project facilities and/or infrastructure will impact on the daily movement patterns and the mobility of people and livestock, both in terms of movement between farms and the use of existing access routes to surrounding settlements. Construction activities may also temporarily obstruct farming activities, as well as livestock's access to 'kraals' and water points. Temporary disruption could extend to the national roads leading to larger towns and cities depending on the main access roads that will be used during construction. Access to agricultural fields further afield could also be temporarily disrupted.

Construction activities and related increased traffic volumes may cause temporary delays and disruption of traffic along these roads. In addition, heavy traffic caused by construction vehicles may increase the number of road accidents, and result in the deterioration of roads.

Activities associated with the construction of pipelines connecting main project facilities may impact negatively on the movement of local residents and livestock.

Disruption of movement patterns could also result from the fencing-off of construction sites, and project facilities, such as the CPP and RTSF. In instances where infrastructure will be permanently fenced, alternative access will have to be provided. It is anticipated that pipeline corridors will not be fenced, while slurry pipelines and power lines will, as far as possible, run within or along existing servitudes and roads. However, this infrastructure will be permanent (or at least for the duration of the Project) and alternative access will have to be provided if existing access is lost.

11.7.2 Recommended Mitigation Measures

The following measures will mitigate impacts associated with traffic disruptions, construction activities and the permanent loss of access routes at project facilities:

- Implement suitable consultation procedures to ensure that local communities are:
  - Informed about pending construction activities;
  - Involved in the formulation of mitigation measures where appropriate; and
  - Implement appropriate grievance procedures and compensation measures.
- Ensure that the alignment of construction roads, pipelines and power lines avoid loss of access to properties, livelihood resources and livestock infrastructure. Where this is unavoidable, alternative access must be provided. Any assets lost as a result must be compensated for in an appropriate manner;
- Erect suitable traffic and construction signage to control traffic, raise awareness of potential risks/hazards and indicate alternative access routes;
- Implement suitable measures to provide continued access to assets and livestock, and minimise traffic disruptions. These measures could include temporary pedestrian crossings (on main access roads), road diversions and cattle crossings;
- Ensure that access to grazing areas are uninterrupted through providing alternative access routes and/or cattle corridors and access points during construction activities;
- Ensure acceptable repair of road networks after construction activities are completed. Where this is not possible, alternative access roads should be constructed; and
- Where the fencing of project facilities and infrastructure will be permanent, alternative access must be provided if access to properties is lost.

11.7.3 Management Objectives

Minimisation of disruption of daily movement patterns of host communities and surrounding landowners.

11.7.4 Management Targets

Disruption of daily movement patterns should be within minimum practical limits.

11.7.5 Impact Rating

Activity and Interaction (Construction Activities require traffic and temporary obstruction of some movement routes)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Disruption of movement patterns			
Prior to mitigation/ management			
Duration	Medium term (3)	Mainly during construction phase with some disturbance during operation	Minor - Negative (-56)
Extent	Local (3)	Project area and surrounding communities	
Intensity x type of impact	Low - negative (-2)	Disruption may be intense for local farmers	
Probability	Certain (7)	Impact will definitely occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.7.2			
Post- mitigation			
Duration	Medium term (3)	As for pre-mitigation	Minor - Negative (-42)
Extent	Limited (2)	As for pre-mitigation	
Intensity x type of impact	Very low - negative (-1)	Nuisance factor for road users. Disruption may affect productivity of farming businesses	
Probability	Certain (7)	Mitigation will reduce disruption and provide alternative routes	
Nature	Negative		

11.8 Community Health, Safety and Security

11.8.1 Impact Description

Both the retreatment of TFSs and the development and operation of the CPP and RTSF will result in exposure to industry-related health impacts (associated with the production of gold and uranium, as well as acid), for communities and farm residents in the vicinity of these operations. There are also several existing mine accommodation facilities in the project area. These residents could become exposed to the health impacts described in this section. Should additional accommodation be required for the WRTRP workforce, SGL must take these health impacts into consideration.

Sections of the proposed pipeline from the Cooke Plant are surrounded by relatively densely populated areas (such as Randfontein, Rietvallei Mohlakeng and Bekkersdal). Although it is not expected that these settlements will be *directly* affected, it is important that the potential health and safety impacts on these communities be considered.

The health impacts associated with the Project are numerous and include air-quality impacts (in particular radioactive dust), exposure to residual contamination and water quality impacts (including acid mine drainage, especially downstream of historical mining sites). Of particular importance, is the potential health impacts associated with dust fallout during the retreatment of existing TSFs and, eventually, the operation of the RTSF.

While it is standard industry requirements (and practice) to implement dust suppression and related measures, visits to the project area during the SIA study the specialist witnessed significant dust generation from existing TSFs. Dust fallout also represented one of the most important concerns of respondents, both in terms of its health impacts on people and animals, and its effect on agricultural crops.

An in-depth assessment of health impacts falls outside the scope of this SIA. These impacts are assessed in the relevant specialist studies undertaken as part of the EIA. This section, therefore, discusses general aspects of ***community health, safety and security*** associated with the development of the Project. It is emphasised that the impacts discussed below are applicable to all project components and phases, albeit at different levels of significance.

Impacts that could negatively affect the health and safety of local communities relate to the following aspects:

- Air, dust and noise pollution due to construction activities;
- Exposure to contaminated sites, resources (e.g. water) and materials (e.g. slurry);
- Safety risks during the construction of trenches, roads and power lines;
- Increased traffic volumes and associated traffic risks and vehicle accidents;
- Increase in community violence and social pathologies; and
- Increase in the spread of communicable diseases, such as HIV/AIDS as a result of the presence of a construction workforce and jobseekers.

The development and operation of the Project will contribute to air, noise and dust pollution, especially during the construction of project facilities and infrastructure. Dust fall-out will be a significant negative health impact during tailings retreatment, as well as at the RTSF. Dust in construction areas will also present a health hazard to the workforce.

Construction activities will cause a temporary increase in traffic volumes. The transportation of machinery and construction materials on roads that are also used by private motorists pose a risk to the safety of all road users due to increased traffic volumes and the presence of heavy motor vehicles on the roads. This could lead to increases in road accidents, which could endanger the lives of road users, as well as livestock.

Increased traffic could also lead to damage of roads and speeding through residential areas, thereby impacting on the safety of communities situated along these roads. Larger traffic volumes could prompt people to use alternative routes, often via deteriorated tertiary roads. This increased traffic volumes, combined with the lack of traffic carrying capacity on these smaller roads can further increase the risk to road users.

Health and safety impacts could emanate from project activities such as blasting, stockpiling, storage of hazardous products and the transportation of slurry (e.g. leaking of slurry due to damaged pipelines). It must be noted that sections of the proposed pipeline routes will run within 200m from existing residences, businesses and, potentially, informal settlements.

Open trenches dug in preparation of pipeline instalment will increase health and safety risks for local residents and livestock due to the nature of the construction sites. The presence of construction teams, jobseekers and other newcomers could increase the incidence of veld fires in the project area, which could endanger the lives of people and animals.

The influx of construction workers and jobseekers to the area could increase the incidence of communicable diseases, HIV/AIDS, sexually transmitted diseases (STDs), as well as other social pathologies, such as an increase in sex workers, substance abuse and crime. The presence of construction workers could draw people to the project area with the intention of providing sexual services to workers (and others), and establishing outlets for the supply of food, clothes and refreshments (including alcohol) to construction workers and newcomers. In such an environment, the spread of HIV is expected to be a significant health risk both to workers and local residents.

It is noted that, according to current planning, there will be no construction camps on project sites. Until this has been confirmed it is deemed necessary to highlight the potential negative impacts associated with construction camps/workforce accommodation. As has been well-documented for major development projects, construction camps are often a major concern for land/property owners and nearby communities, and also pose a security related risk. Specific potential impacts in this regard include:

- Negligence with regard to starting fires around the construction site which could pose a fire hazard to people, animals and harvests;
- Loss of livestock/game due to poaching by construction workers;
- Lack of control over the movement of contract employees in terms of unauthorised access to property;
- Perceived safety/security risks and increases in crime emanating from the presence of construction workers;
- Littering and loitering by construction workers;
- Construction camps are predominately inhabited by single men who often engage in antisocial behaviour such as substance abuse, prostitution, teenage pregnancies and criminal activities; and
- Once construction is complete and the camp is vacated, it may be illegally occupied by squatters.

It is conceivable that risky behaviour, such as substance abuse and sexual promiscuity could increase as a result of irresponsible spending related to newly available disposable income. An influx of a non-local workforce and job-seekers may also be accompanied by an increase

in crime as many job-seekers are usually left unemployed or underemployed. Residents of adjacent farms were particularly concerned that an influx of people would lead to an increase in crime in the project area and would compromise the safety of farm residents.

Conflict might also arise between newcomers and local residents as a result of competition for new employment opportunities and perceptions that the Project is not providing sufficient employment to the affected communities. Such conflict would negatively affect the safety and well-being of the local community, especially if conflict becomes violent.

An influx of people into the project area may place pressure on the limited local infrastructure and services, such as medical and police services, which could put local people's health and safety at risk. Population influx may also result in the establishment of new settlements that do not have the necessary services and facilities. This situation could create new reservoirs and breeding areas for vector-borne diseases, in addition to soil- and water-borne diseases.

Groundwater use in the primary study area is extensive, with a high reliance on groundwater sources on farms at the proposed CPP and RTSF sites. Pressure on, and contamination of, groundwater sources will, therefore, impact negatively on the health of local residents and animals. Water abstraction from existing shafts and the subsequent release of waste water may contaminate surface water sources. Respondents were particularly concerned about existing pollution levels in the Leeuspruit and the potential negative impacts of the Project on downstream users.

11.8.2 Recommended Mitigation Measures

It is recommended that the Project develop and implement a Community Health, Safety and Security Plan. At a minimum the Project should:

- Implement the mitigation measures of other relevant specialist studies;
- Evaluate the project-induced risks and impacts to the health and safety of the local communities during the design, construction, operation and decommissioning of the Project;
- Establish preventive measures to address them in a manner commensurate with the identified risks and impacts. These measures should favour the prevention and/or avoidance of risks and impacts over minimisation and reduction;
- Where the Project poses risks to, or adverse impacts on, the health and safety of affected communities, this should be disclosed to enable the affected communities and relevant government agencies to understand these risks and impacts;
- Engage affected communities and agencies on an ongoing basis. This should include awareness raising of the risks associated with the illegal use of contaminated sites; and
- Design, construct, operate and decommission the structural elements/components of the project in accordance with good international industry practice.

In addition, it recommended that the Project implement:

- A safety and educational awareness programme during and after the construction phase to alert people to the potential dangers of road usage;
- An awareness programme focusing on the dangers of STDs for employees and local residents;
- Work closely with provincial/district/local health services and HIV/AIDS organisations in monitoring changes in levels of community health and wellbeing;
- Explore partnerships with these institutions to address such changes; and
- Do not provide accommodation for contract workers on site.

Finally, the Project should implement the standard measures related to safe travelling times, speed limits, dust suppression, traffic calming measures, construction signage, maintenance of project vehicles, save road diversions and appropriate pedestrian and livestock crossings.

11.8.3 Management Objectives

Compliance with the objectives to be defined in the Community Health, Safety and Security Plan

11.8.4 Management Targets

Compliance with the targets to be set in the Community Health, Safety and Security Plan

11.8.5 Impact Rating

Activity and Interaction (Retreatment of TFSs and Development and Operation of CPP and RTSF require workers and communities in close proximity to potentially hazardous activities)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Community health, safety & security			
Prior to mitigation/ management			
Duration	Beyond project life (6)	Mainly during construction and operational phase	Moderate - Negative (-105)
Extent	Local (3)	Project sites and surrounding communities	
Intensity x type of impact	Very high - negative (-6)	Impact will be intense negative for affected individuals and their households	
Probability	Certain (7)	Without appropriate mitigation, impacts will definitely occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.8.2			
Post- mitigation			
Duration	Beyond project life (6)	As for pre-mitigation	Moderate - Negative (-78)
Extent	Limited (2)	As for pre-mitigation	
Intensity x type of impact	High - negative (-5)	Impact will remain intense for affected individuals/households but the incidence may be reduced	
Probability	Highly probable (6)	Impact will occur even with mitigation	
Nature	Negative		

11.9 Displacement Impacts

11.9.1 Impact Description

Projects with a considerable physical footprint inevitably require a land acquisition process. One of the most significant socio-economic impacts resulting from such land acquisition is the *displacement* of persons residing on or making use of that land. Displacement-related impacts encompass both ***physical*** displacement (the loss of a home and the necessity of moving elsewhere) and/or ***economic*** displacement (the loss of productive assets such as cultivated fields or business stands). Due to its nature and location, the Project will result in both physical and economic displacement.

Land ownership and land uses in the project area are presented in Table 8-14. Large portions of land that would be affected by the Project are owned by SGL or other mining companies. This includes land that is currently being used for agricultural activities by farmers who are leasing this land from mining companies. However, a significant proportion of land at the RTSF site is privately owned, as well as some land that is proposed for pipelines to and from the CPP. Most land identified for the CPP site belongs to SGL/South

Deep, but land use at this site and surrounding areas are mainly commercial agriculture and grazing. Section 8.3 described the baseline conditions in the above areas.

It is difficult to assess, at this point, if the *overall* extent of grazing land lost due to the Project will be significant. However, grazing land will be lost due to land acquisition for the CPP and RTSF. It is also anticipated that some land will be lost to pipeline servitudes that will traverse agricultural land. It is anticipated that the construction of the Project will not require external sourcing of construction material (other than within the CPP and RTSF sites).

It is not currently possible to assess the extent of physical displacement until reliable information is available on what land will (have to) be acquired for the Project. This is largely dependent on the Project obtaining regulatory permissions and SGL board approval. This includes land that will be required to comply with legislation pertaining to community health hazards, blasting zones and infrastructure servitudes. However it is likely that the Project will result in some physical displacement, mainly of farm owners and farm residents located on the proposed CPP and RTSF sites. Table 11-1 provides a ***preliminary*** indication of the extent of displacement.

For some affected farm owners and farm tenants, farming is the only livelihood they know and it has been that way for generations. Those who may have to sell their farms could have difficulty engaging in alternative livelihoods. They may not be able to re-establish themselves to the same living standards as the resale value of their land may not fully compensate for the input costs required to start farming again. It is important to note that agricultural land is increasingly being encroached upon by various mines, making farmers increasingly hostile towards the industry and increasingly protective of their livelihoods.

Table 11-1: Preliminary Estimate of Displacement Impacts

Project component	Property	Distance	Number of people living on the farm		Types of structures located on farm
			Farmer + family members	Workers + family members	
CPP	Doornpoort 348	+- 2km	-	-	-
RTSF	Wildebeeskuil 360	On property	-	-	-
RTSF	Cardoville 358	On property	-	8 (2x 4 people per family)	Two residential structures
RTSF	Cardoville 358	On property	-	3 workers	Farm house, workers quarters, kraal, storage facility and dilapidated building
RTSF	Droogheuwel 521	On property	-	-	Dilapidated buildings
RTSF	Rietfontein 519	+- 800m	-	-	Dilapidated buildings
RTSF	Wildebeetkuil 360	+- 600m	1	-	Farm house, workers quarters, storage facilities and kraal
RTSF	Wildebeetkuil 360	+-1.2km	-	-	Farm house, worker quarters, kraal, stables and wagon storage facility
RTSF	Cardoville 358	+- 200m	-	-	-
RTSF	Geluksdal 396	+- 500m	-	-	-
RTSF	Barnardsrus 628	+-300m	-	-	-
RTSF	Raatskraal	+-1.5km	-	-	-
Slurry Pipeline	Doornkloof 350	On property	5	24 (4x families)	Farm house,4 workers quarters, 2 storage facilities and 2 kraals
Slurry Pipeline	Doornkloof 350	On property	-	-	-
Slurry Pipeline	Leeuwpoort 356	On property	-	-	-
Slurry Pipeline	Blyvooruitzicht 116	On property ***but not necessarily in pipeline corridor***	4	16 (4x families)	Farm house, 4 worker quarters; kraal and storage facility

Some of the affected farmers have invested all their money and savings in the development of their land to make it suitable for agricultural development. These farms are essentially run as businesses. It should, therefore, be kept in mind that land transactions between SGL and affected land owners may not simply be around the sale of their property but also the loss of businesses. The displacement and loss of farming livelihoods also leads to farm workers losing their jobs and, for those that live on the farms, their homes.

Many land owners have a deep emotional attachment to their farms, having often inherited it from their parents and hoping to pass it on to their children. Family histories are generally evident on the farm landscapes through graves and historic buildings (also see the Heritage Impact Assessment). This is relevant not only for farm owners but also their workers, who after living on the lands for many years and, in some cases, several generations, have made the farms their homes.

Although the financial and emotional loss for farm owners whose lands are acquired will be significant, the financial compensation received (and possibly alternative resources such as businesses), would assist them in re-establishing their livelihoods and homes. This may not be the case for some residents working and living on the farms. As discussed in Section 8.3.3, most of the affected farm owners (and farm tenants) employ farm workers who may lose their jobs once the farms are acquired. Those who cannot move with their employers will be forced to search for alternative employment, which could take a long time to secure. Farm workers are vulnerable in that they often do not own land and they do not have access to backup financial resources. Those who do not find alternative employment will most likely have to rely on relatives or friends to sustain them, thereby extending the impact to indirectly affected parties.

It is anticipated that directly affected property owners will be compensated at market-related prices, if their properties are purchased by SGL. Fair compensation does not, however, mean that current land owners and occupants will not experience a significant impact when the land is acquired. This is true, not only in terms of the stress associated with the physical relocation of persons and families who are resident on these properties, but also in terms of adapting to new living environments and livelihoods, as well as integration into their new communities. Employees could lose their positions and livelihoods with no guarantees that they will be able to re-establish their living conditions and livelihoods elsewhere.

It is important to point out that, based on Digby Wells' experience with other large projects farmworkers are often not compensated and/or provided with alternative accommodation by farm owners if the farms on which they reside are acquired by the Project. Moreover, project proponents often insist that they are not responsible for the wellbeing of farmworkers who may be directly affected following the sale of a property according to the willing buyer willing seller principle.

The Heritage Impact Assessment has recorded 22 heritage resources that were identified within the development footprints of the proposed linear infrastructure outside existing servitudes, and within the development footprints of the CPP and RTSF. These are:

- One Late Farming Community site with negligible significance;
- Eight structures with negligible significance;
- Eleven homesteads (“werwe”) with negligible significance; and
- Two burial grounds with high significance and will be directly impacted upon by the proposed construction of the RTSF.

Finally, it is noted that property owners of adjacent farms that are not acquired by the Project may decide to sell their properties, which could increase the number of occupants who will be displaced. While the Project is not directly responsible if adjacent property owners decide to sell their properties, the impacts will be similar – and most likely worse as these property owners will not receive financial compensation from the Project. While they will receive the revenue from selling their property, it is possible that property values may become deflated.

11.9.2 Recommended Mitigation Measures

To minimise the adverse impacts resulting from physical and economic displacement, the following is recommended:

- The sales agreement of land must reflect the full value of the land (including business value and investments/improvements made to the property) and must also consider the potential relocation cost of commercial farms and business operations on a case by case basis;
- Prior to finalising sales agreement of land, it should be clear who will assume responsibility for the resettlement of vulnerable households located on the property – existing land owner, or the Project. International best practice requires that these households are compensated. It is proposed that the sales agreement should makes provision for suitable compensation and support for households so affected;
- If the Project assumes responsibility for physically displaced vulnerable households, a Resettlement Action Plan (RAP) may have to be developed in consultation with the affected households. The RAP will set resettlement and compensation principles and procedures to be followed and will have to be implemented prior to the start of construction
- Prior to the development of the RAP, the Project must determine an “exclusion’ zone (based on the final footprint of the Project), within which no human settlement will be allowed. This will inform the extent of resettlement;
- The physical and economic displacement of households and individuals should be considered on a case-by-case basis. Ideally the Project must negotiate a favourable solution with each displaced household. The extent of economic displacement should be investigated by a suitably qualified professional. The proponent should consider the recommendations made by such a professional and reach a favourable solution with each economically displaced individual; and

- Implement mitigation measures of other specialist studies (e.g. Heritage Study).

11.9.3 Management Objectives

No person should be worse off (in terms of livelihood or socio-economic or psychological well-being) after relocation than before.

11.9.4 Management Targets

Compliance with standards set in IFC Performance Standard 5 on Land Acquisition and Involuntary Resettlement regarding management of physical or economic displacement.

11.9.5 Impact Rating

Activity and Interaction (Project-related Land Purchases require relocation of existing inhabitants)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Displacement impacts			
Prior to mitigation/ management			
Duration	Permanent (7)	People and assets to be displaced must be relocated prior to the start of construction	Major - Negative (-112)
Extent	Limited (2)	Extend will be limited to few farm owners and occupiers	
Intensity x type of impact	Extremely high - negative (-7)	Impact will be intense for persons/households so affected	
Probability	Certain (7)	The impact will occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.9.2			
Post- mitigation			
Duration	Permanent (7)	As for pre-mitigation	Moderate - Negative (-84)
Extent	Very limited (1)	As for pre-mitigation	
Intensity x type of impact	Moderately high - negative (-4)	Mitigation will provide financial compensation and possibly some assistance (for farmworkers). However, displacement involves many negative qualitative impacts	
Probability	Certain (7)	The impact will occur	
Nature	Negative		

11.10 Impacts on Surrounding Farms

11.10.1 Impact Description

Farm owners and occupiers on farms located adjacent to the CPP and/or RTSF will be faced with the prospect of living with the Project's impacts or else relocate at their own expense. Some adjacent farm owners and the Project could agree (through lease agreements) that

certain farming activities can continue on portions of land that is required by the Project, but do not fall within the project footprint. Such arrangements would mean that these farmers and farm residents have to live with the impacts of the Project, while their sense of security and sense of place may be negatively affected.

The manner in which surrounding farms (those not acquired by SGL) could be impacted by the Project, are numerous and inter-related:

- Project activities may lead to a reduction in the quantity and quality of water sources;
- Construction activities will lead to noise, dust and traffic hazards;
- The above impacts, combined with visual impacts of surface infrastructure will alter the area's sense of place. "Sense of place" refers to the identity and character of a landscape felt by local inhabitants. This attribute is mainly derived from the natural environment and a mixture of natural and cultural features in the landscape, and it includes the people who occupy the place; and
- The Project will result in specific health impacts which include exposure to harmful dust fallout, contaminated areas, radiation, etc.

The quantitative assessment of hydrological, acoustic, visual, traffic and health impacts of the Project is the subject of separate specialist studies and will not be repeated here (refer to the main EIA report). As was mentioned, biophysical impacts (in particular dust fallout) could also negatively impact on crop and livestock production. Moreover, the actual or perceived changes in safety and security could negatively affect the quality of life of farm owners and occupants.

Not all surrounding farms, and not all persons on these farms, will experience these impacts in the same way, or to the same degree. With regard to impacts on the profitability or farming operations, this will largely depend on a farm's distance from the Project, with closer farms being more severely affected. With regard to sense of place, additional factors need to be considered. One of these factors is the *current state of the landscape*. The impact of a large and visible artificial structure on the sense of place will be correspondingly larger than if the landscape already bears the marks of development. Although mining already constitutes important activities in the region, the properties immediately adjacent to the RTSF and CPP have maintained a mostly rural character, with the exception of the South Deep Doornpoort TSF.

Another factor is the *meanings* and feelings that people attach to the anticipated changes. If a development promises to offer tangible benefits to surrounding communities (for example job creation), it is unlikely that its impact on the character of the landscape will be perceived in a negative light by most community members – even if that impact is substantial from an aesthetic point of view.

It is possible that some farmworkers will leave their current jobs in the hope of securing more lucrative positions at the Project. It is recognised that farm owners may suffer some negative impact as a result, as they may have to recruit new workers and/or increase wages to keep

their workers. However, it must be noted that the local labour pool is unlikely to be depleted because of the Project as the number of employment opportunities on the farms that would become available (due to existing workers leaving), will be far smaller than the number of unemployed persons in the area. Furthermore, people have a constitutional right to take up work where they please and it is hence not possible to prohibit farm workers from seeking more lucrative work elsewhere.

In combination, the above impacts could influence property values of adjacent farms and the profitability of farming operations. It is noted that when (big) companies purchase land in a particular area, the result can either be positive or negative. It could increase the demand for some surrounding properties and lead to an increase in property values in the project area. The opposite may occur if the proposed development has negative impacts and perceptions associated with the project, such as noise, water pollution, traffic congestion, visual and health impacts, thereby reducing the value of the property. Many respondents have voiced concerns to that effect with regard to the proposed locations of the CPP and RTSF.

The Economic Impact Assessment notes that potential changes in property values will have a limited direct impact on local economies in terms of development. These changes will, however, affect the value of real estate and subsequently the loans that could be applied for by affected farmers, the revenue that could be derived from the sale of these properties, and overall their future income security (Urban-Econ, 2015).

The effects on property values are expected to present themselves during the construction phase, and even at the pre-construction phase when the knowledge about the proposed mining activity spreads. During this time, the decline in property values could be greater than expected due to the uncertainty in the market regarding the actual extent of environmental impacts that can ensue from construction activity. The negative effects on property values during operation usually continue. However, the extent of the impact could change (reduced or increased) depending on the actual changes that the construction of the facility and its operation brought to the surrounding environment. In some cases, the negative impact could be reduced and more so for properties located further away from the site, and in some cases it could be increased if the perceived impacts were underestimated or new impacts occur (Urban-Econ, 2015).

11.10.2 Recommended Mitigation Measures

The Economic Impact Assessment recommends that the mitigation measures proposed by other specialists should be implemented in order to minimise the probability and intensity of noise, visual and dust pollution in the project area, which could affect the sense of place and impact on property values.

Few measures (in addition to recommendations from other specialist studies), could serve to lessen the impacts described above. The measures described below primarily relates to the implementation of these recommendations.

- Planning and design of project facilities and infrastructure should attempt to avoid or minimise negative impacts on adjacent farms. Consult adjacent property owners on additional measures that can be implemented to lessen or compensate for negative impacts;
- Provide appropriate communication channels and grievance mechanisms to address the concerns and grievances of adjacent farmers;
- Successfully implement the mitigation measures to ameliorate hydrological, acoustic, visual, traffic and health impacts of the Project, as proposed in this report and other specialist reports undertaken as part of the EIA for the Project; and
- Consider the requests from some affected property owners to purchase *immediately* adjacent farms that will be severely affected by the Project.

11.10.3 Management Objectives

To minimise Project-induced impacts that could affect the desirability and market values of surrounding properties.

11.10.4 Management Targets

Successfully implement the mitigation measures as proposed in this and other specialist reports.

11.10.5 Impact Rating

Activity and Interaction (Development and Operation of CPP and RTSF require Neighbouring farmers being in close proximity to Project activities)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Impacts on surrounding farms			
Prior to mitigation/ management			
Duration	Project Life (5)	Most impacts will seize at project closure. Some impacts (e.g. water quality impacts) may remain	Moderate - Negative (-84)
Extent	Limited (2)	Mostly limited to surrounding farms. Some impacts will be felt in surrounding settlements (e.g. visual, noise)	
Intensity x type of impact	High - negative (-5)	Impact will be severely negative for farmers immediately adjacent to the project	
Probability	Certain (7)	Impact will occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.10.2			
Post- mitigation			
Duration	Project Life (5)	As for pre-mitigation	Moderate - Negative (-77)
Extent	Limited (2)	As for pre-mitigation	
Intensity x type of impact	Moderately high - negative (-4)	Mitigation will only slightly	
Probability	0	reduce the significance of the impacts (e.g. dust repression)	
Nature	Negative		

11.11 Water Quality and Quantity

11.11.1 Impact Description

Groundwater impacts are generally rated in terms of resource losses and/or deterioration of quality. Impacts range from lowering of groundwater levels to total dewatering of aquifers. This can impact on existing groundwater users. The key socio-economic impacts related to changes in access to water as a result of the Project include a potential reduction in the yield of private boreholes, as well as pollution of ground- and water sources in the vicinity of the CPP and in particular the RTSF.

The abovementioned impacts also include impacts on local rivers and their downstream users. Seepage from the RTSF could potentially influence the groundwater quality in the underlying aquifers during the operation phase and could impact on down-gradient riverine ecosystem and communities.

11.11.2 Recommended Mitigation Measures

Recommendations concerning the above impact are discussed in the Groundwater specialist report. In addition, the following measures should be implemented:

- Include water conservation awareness into stakeholder engagement strategies;
- Adequately compensate for boreholes negatively affected by the Project. Where applicable, provide alternative water sources to compensate for water lost;
- Supply equal or better quality water to affected parties who rely on groundwater;
- Monitor and control water use by construction and maintenance workers, as well as illegal use of boreholes by cattle owners and residents.

11.11.3 Management Objectives

To minimise the project-induced impact on the quantity and quality of local groundwater resources

11.11.4 Management Targets

Compliance with targets defined in the Groundwater specialist report.

11.11.5 Impact Rating

Activity and Interaction (Development and Operation of the RTSF require abstraction from local groundwater sources)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Water quality impacts			
Prior to mitigation/ management			
Duration	Permanent (7)	The impact will most likely be permanent	Moderate - Negative (-105)
Extent	Municipal Area (4)	Impact may extend beyond surrounding farms and communities	
Intensity x type of impact	Moderately high - negative (-4)	Impact will be severe for farmers and those dependent on natural water sources	
Probability	Certain (7)	The impact will occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.11.2			
Post- mitigation			
Duration	Beyond project life (6)	As for pre-mitigation	Minor - Negative (-72)
Extent	Local (3)	As for pre-mitigation	
Intensity x type of impact	Moderate - negative (-3)	Mitigation may reduce the severity of contamination and the extend of water pollution	
Probability	Highly probable (6)	The impact will occur	
Nature	Negative		

11.12 Project Induced Population Influx

11.12.1 Impact Description

As news of the Project spreads, and when project activities increase, expectations regarding possible employment opportunities at the Project will increase. Consequently, some areas surrounding project sites (in particular at the CPP and RTSF) and neighbouring settlements may experience an influx of job seekers from surrounding settlements and further afield. The magnitude of this impact will be influenced by the severity of poverty and unemployment in surrounding areas.

Poverty and unemployment are major challenges in the surrounding communities and are widespread throughout the primary and secondary study area. It is likely that many job seekers (and sometimes whole families) and entrepreneurs will move to project areas where main facilities will be developed. This impact may commence prior to construction, and is likely to continue after construction has been completed. However, unsuccessful job seekers from outside the project area may decide to settle in the project area.

In the event that a portion of the project workforce is recruited from outside the local area, their presence will constitute an additional influx of people. This impact will likely be limited to the construction phase. However, influx of construction workers, job-seekers, illegal miners and others could have a variety of social consequences:

- On the positive side, population influx could present improved opportunities for local entrepreneurs, and could offer other benefits for the economy. Construction workers and job seekers will require consumable items (food and clothes), entertainment, as well as accommodation – to which local residents will likely respond by renting out rooms on their properties. Owners of accommodation facilities (e.g. guest houses) may build additional rooms to accommodate short- to medium term workers and/or service providers. Taxi operators may expand their fleet. These are opportunities for new businesses to emerge and for existing ones to reposition themselves according to changing market requirements. This will particularly be the case if migrants have higher-level occupations and relatively high disposable incomes.
- On the negative side, the presence of a large workforce that does not originate from the project area, may require the establishment of construction camps (although SGL has indicated that no such camps will be built), which can have a variety of negative consequences, especially if these camps are located near project facilities. While circumstances in the construction camp (where applicable) can be monitored, it will generally not be possible to control the interaction between workers and locals.
- General population influx, resulting from increased economic activities in the project area, could lead to increases in social pathologies, conflict and competition between locals and newcomers and the growth of informal settlements and/or influx hotspots, especially in the vicinity of the CPP and RTSF.

- An influx of job-seekers will place pressure on local infrastructure and services, such as housing, schools, police, clinics and sewage systems. This will be compounded by the fact that local municipalities are already experiencing backlogs in the provision of services.

Thus, while many of the social consequences of population influx could be negative, it could also have positive effects on the local economy. Both the nature and magnitude of impacts associated with population influx would depend on the number of people involved, their skill sets, behaviours, employment expectations and family status, as well as the response of people in the local study area.

It is not currently known where the construction workers would be accommodated. However, if a significant portion of the workforce is recruited from outside the local study area, it could be necessary to find temporary accommodation for them on, or in the vicinity of, the project site.

As was mentioned, influx of people could lead to an increase in social pathologies, including substance abuse, prostitution, domestic violence, teenage pregnancies, crime and the incidence of STDs. These pathologies will be already present in communities; however, uncontrolled population influx is likely to worsen the situation, which is a particular concern in settlements (including farmworker households) where community services and facilities are limited or under pressure. This impact could be aggravated by the presence of a temporary construction workforce with its predominantly male population. It is also reasonable to expect that an increase in social pathologies will also impact on the social fabric/social cohesion of affected communities.

It is expected that at least a proportion of the construction workforce will be locals, while the remainder will be sourced from elsewhere in South Africa. It is possible that conflict could arise between newcomers and locals, especially when newcomers include foreigners (as this may lead to xenophobia), and if the non-local workforce experiences labour- and living conditions (including remuneration) that are substantially better than those of local residents.

Another possible reason for such conflict may be the perception amongst locals that the outsiders are taking up positions that could have gone to members of the local community. Furthermore, if outsiders (including the non-local workforce) instigate sexual relationships with the wives/girlfriends/daughters of locals, this would certainly exacerbate the problem, particularly in the rural areas.

Political and community demands for sharing in project benefits by local communities are particularly blatant within the mining sector. Similarly, local municipalities sometimes claim that affected local municipalities are disproportionally benefiting, or not benefitting at all, from mining in comparison to district municipalities and provinces at large. It is not unrealistic to expect that these demands will appeal to sections of affected local communities, which could become battlefields for community- and labour unrest, political electioneering and community upheaval.

It should be clear that it is not the responsibility of the Project to control informal settlement or provide public services and facilities in these areas. However, the existence of informal settlements in close proximity to the Project will pose a risk to the Project in terms of political stability and community relations/support. Furthermore, in terms of IFC requirements, the project proponent has a shared responsibility (together with the relevant local authorities and key stakeholders) to address project-induced in-migration to affected communities.

As was mentioned, farmers in the project area are becoming increasingly hostile towards the mining industry and their reactions may contribute to already tense community relations and dynamics.

Finally, it is expected that the Project's workforce, whether local or non-local, will be aware of working conditions, salary levels and labour demands at other large projects in the area. This knowledge may be used to pressure SGL to provide the same level of benefits and may instigate community resistance.

11.12.2 Recommended Mitigation Measures

The following measures are recommended to address the aforementioned impacts:

- Measures to address population influx:
  - Recruitment of employees and contractors should be executed as discussed in Section 11.1 (especially in terms of preferentially employing from the local study area), thereby discouraging loitering near the project. Ensure that the intention of giving preferential employment to locals is clearly communicated, to discourage in influx of job-seekers from other areas;
  - Involve local community structures to assist in communicating the intention to give preference to local labour, and also to assist in identifying the local labour pool;
  - It is strongly recommended that the Project liaise with the municipalities to ensure that expected population influx is taken into account in infrastructure development planning of the municipal areas;
  - The Project, should in consultation with local municipalities and their development forums, investigate if its SLP and LED initiatives can contribute to the relevant infrastructure and delivery priorities of the municipal areas; and
  - The Project should consider promoting development projects, which includes low cost housing options, by including them in its SLP/LED and CSI programmes.
- Measures to address social pathologies:
  - Implement HIV/AIDS and alcohol abuse campaigns in the communities and make AIDS and STD awareness and prevention programmes a condition of contract for suppliers and sub-contractors. Provide an adequate supply of free condoms to workers;

- A voluntary counselling and testing (VCT) programme must be introduced during construction and continued during operation.
- It is recommended that contractors undertake HIV/AIDS and STD prevalence surveys amongst its workers on a regular basis. This will involve a voluntary test which is available to 100% of the workforce. The results of the survey will help to determine a HIV/AIDS and STD strategy. If statistically representative, the results of this survey should be made available to both management and workers at the same time. Survey results should be presented in statistical terms to ensure confidentiality;
- Access to the construction labour force must be controlled to prevent sex workers and petty traders from visiting and loitering at, or near workers' accommodation and other project sites; and
- Financially support (through CSI donations) appropriate government agencies, local clinics and NGOs involved in raising community awareness and education with regard to STDs and substance abuse.

- Measures to address crime:
  - Construction workers should be clearly identifiable by wearing construction uniforms displaying the logo of the construction company; this will decrease the number of opportunistic people wandering the construction site, under the guise of being project employees;
  - Liaison structures/forums should be established with local police to monitor social changes in crime patterns during the construction phase. Liaison should also be established with existing crime control organisations, such as community policing forums, private security companies and other crime prevention organisations.
  - Through the abovementioned forums, identify if recorded criminal activities (e.g. rape, housebreaking and stock theft) involve members of the Project's workforce, and act accordingly;
  - The Project must enforce clear rules and regulations for access to the project site to control loitering. The Project should consult with the local police service to establish standard operating procedures for the control and removal of loiterers.
  - The presence of a construction workforce is generally a major concern for local property owners and surrounding communities, and could pose security-related risks. If possible, construction workers should be housed on the premises of existing mine accommodation or bussed in.

- Measures to address potential conflict between locals and non-locals:
  - The Project's recruitment policy must be fair and transparent, and communicated to residents in the local study area;

- Establish a community liaison office and grievance mechanism at a location that is accessible to aggrieved members of the surrounding communities;
- Project security should be empowered in terms of resources and facilities to effectively manage security issues relating to incidents of community unrest at/near the Project site. However, care should be taken that the human rights of all people involved are respected;
- Develop standby procedures with the local police service to assist with crowd control; and
- Comply with the international 'Voluntary Principles on Security and Human Rights', for the extractive industry, which emphasises the need for, and value of, effective risks assessment to address human rights issues, and establish appropriate relations with public and private security structures.

11.12.3 Management Objectives

As for maximising local employment and procurement of goods and services

11.12.4 Management Targets

As for maximising local employment and procurement of goods and services

11.12.5 Impact Rating

Activity and Interaction (All Project Activities require appointment of workforce)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Project-induced population influx			
Prior to mitigation/ management			
Duration	Beyond project life (6)	Influx may commence when information about the project becomes known. The impact will gain momentum during construction. Influx may seize during operation but some impacts will continue (e.g. HIV/Aids)	Moderate - Negative (-84)
Extent	Municipal Area (4)	In vicinity of some project sites and at surrounding settlements	
Intensity x type of impact	Moderately high - negative (-4)	Intensity will vary for different individuals and groups. Residents near project sites will be most severely impacted	
Probability	Highly probable (6)	The impact will likely occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.12.2			
Post- mitigation			
Duration	Project Life (5)	As for pre-mitigation	Minor - Negative (-55)
Extent	Local (3)	As for pre-mitigation	
Intensity x type of impact	Moderate - negative (-3)	Mitigation will reduce the scope and intensity of the impact, minimise construction workforce impacts and assist local structures	
Probability	Likely (5)	The impact my still occur, even with mitigation	
Nature	Negative		

11.13 Dependency on the Project for Sustaining the Local Economy

11.13.1 Impact Description

Any predictions concerning the characteristics of the receiving socio-economic environment at the time of eventual project decommissioning are subject to a large margin of error, which will significantly reduce the accuracy of the impact assessment. However, several socio-economic impacts could arise when the operation is decommissioned and should therefore form part of the EIA for decommissioning of the Project.

Socio-economic issues that should be investigated include:

- Impacts on the workforce – Psychological issues (distraction from normal activities, with a negative impact on performance and safety), and personal and family income issues (e.g. concerns about the effect of reduced income on family life);

- Impacts on the local community – Economic dependency (if new jobs are created, but at remuneration levels lower than those in the mining industry, this might impact negatively on the local economy), demographic changes (e.g. migration of skilled workforce from the area); and dependency on SLP initiatives (e.g. financial support to development programmes may be withdrawn by the Project);
- Impacts on the wider community - Financing of decommissioning (adequate funds may not have been provided for site rehabilitation), and maintenance of infrastructure (e.g. the Project's assistance with road maintenance);
- Impacts on surrounding district and local governments – Municipalities will no longer receive tax and royalty payments; and
- Impacts on land use - The potential use of the Project sites for other land uses post-closure (Section 11.6).

When the Project is decommissioned, there will be a reduction in the economic stimulus to maintain the current state of the local economy, and for further growth. This impact will be cumulative with regard to job losses, the closing down of businesses, and decrease in local investment and spending resulting in an overall economic slow-down.

It is not known if the Project's workforce will be transferred to other SGL projects when the WRTRP is decommissioned. However, it is likely that local employment at the Project will be lost at closure. Those employed from the project area are likely to be mainly skilled or semi-skilled employees. It will be more difficult for them to secure other jobs once they have been retrenched. If they have accumulated sufficient work experience and have benefitted from training and mentorship, they will be more employable and more likely to obtain similar work elsewhere, possibly at another mine. If, however, they are unable to secure alternative employment, the loss of work will mean the loss of a stable income source for their families.

Retrenchments are possible as a result of external forces that reduce profitability, and/or technical innovation or changes to the Project's strategic business plan. Retrenchments would lead to a loss of income and local expenditure, particularly if other projects in the area also approach the end of their economic life at about the same time, and if no new mines are developed. Retrenched staff may be unable to maintain their lifestyle and see their level of indebtedness increasing. Inability to find alternative employment could also lead to an increase in social pathologies such as alcohol, drug abuse and crime.

Locally, suppliers could also be affected as the opportunity to sell goods and services to the Project will be lost. This will also affect those companies that supply these businesses with goods and services. This impact will mostly be felt by suppliers at regional or municipal level.

It is anticipated the Project's LED initiatives will contribute to the diversification of the local economy, as well as creating an environment that will foster sustainable community-based development. However, the Project's LED initiatives could increase, rather than reduce dependency of the local economy if they are not planned and managed in such a way to ensure their sustainability beyond the life of the Project.

11.13.2 Recommended Mitigation Measures

An important approach to mitigating economic dependency on the Project is to develop alternative and sustainable livelihoods so that local communities and businesses are able to support themselves through other economic sectors at the time of project closure.

The Project, along with other mines, must work through the local municipalities and relevant government agencies to support the diversification of the local economy so that, by the time the project and other developments in the area close down, non-mining sectors are able to continue supporting the local economy. Generally, these mitigation measures would be more effective if implemented in partnership with local authorities and developers in the project area.

The MPRDA requires that the Project's SLP provide strategies and measures that could prevent job loss in the event of circumstances threatening guaranteed employment. These include the establishment of Future Forums to manage downscaling and retrenchments. Certain processes must be followed when economic conditions cause the profit-to-revenue ratio of a mine to drop below 6% on average for a continuous period of 12 months, or where the above scenarios occur.

In the event of retrenchments becoming unavoidable as a result of downscaling or closure, alternatives to save jobs/avoid downscaling should be investigated beforehand. These could include developing and implementing turnaround strategies and mechanisms. The Project must, therefore, develop and implement strategies to introduce measures that may prevent job loss in the event of circumstances threatening permanent employment.

In accordance with legislative requirements, a Closure Plan (which include socio-economic measures), will be developed at the start of the operation and may include a social impact assessment and stakeholder consultation process. According to the MPRDA, the Closure Plan must be audited annually. The Closure Plan should include:

- Predicting the likely socio-economic impact of closure on employee households, local communities and the region, and recommended measures to address these impacts;
- Identifying critical issues which could affect the on-going sustainability of employees and communities during closure, by means of a detailed consultation process;
- Identification of alternative livelihood and socio-economic development opportunities for employees, as well as community-based projects which may become sustainable over the long term; and
- Providing financial and/or technical support for the establishment of sustainable community projects.

The Project should make every effort to proactively assess and mitigate/manage the social and economic impacts on individuals, regions and economies where retrenchment and/or closure of the Project are certain. When downscaling and/or retrenchment take place, the Project should assist affected employees in finding alternative employment or livelihood

opportunities. This should be done if workers cannot be integrated or redeployed to other operations, or where they are not of a retirement age.

Specific consultative measures to be defined in the SLP should include:

- Establishment of a Future Forum for the purposes of:
  - Promoting on-going discussions between employer and employee regarding the future of the Project;
  - Identifying solutions to problems/challenges which could arise and impact on the operation of the Project;
  - Discussing issues concerning retrenchment and downscaling, and identifying turnaround strategies;
  - Developing and implementing prevention and/or redeployment strategies in the management of retrenchments;
  - Coordinating the notification process during retrenchments or closure; and
  - Mobilising the DoL's Social Plan Services for technical assistance on job advice, and retrenchment during retrenchment and closure.
- Implementation, in accordance with Section 52 (1) of the MPRDA, of a consultation process in terms of Sections 189 and 189 (A) of the Labour Relations Act. This consultation process will commence when the Project identifies a need to reduce its operations. Project management and members of the Future Forum will administer this consultation process;
- Approaching the DoL for the utilisation of its resources and support services, such as counselling services and placement services offered by its Labour Centres; and
- Informing affected areas, such as the local municipality and labour sending areas, of imminent retrenchments. The full impact of such retrenchments will be disclosed to the municipalities and possible solutions discussed.

As is required by law, the Project should, in partnership with the relevant government departments, jointly manage any process of this nature. The integration of the workforce into various LED projects, if required, will be done in collaboration with local municipalities, and other stakeholders serving on the LED Forum. Where workers cannot be absorbed into LED initiatives, they should be furnished with skills training opportunities, enabling them to find alternative employment after decommissioning or retrenchment. Other initiatives could focus on assessment and counselling services for affected individuals.

In particular, the Project could:

- Liaise with institutions such as the National Productivity Institute[14] to identify other economic sectors and ventures that could absorb employees. This would involve the development of alternative livelihoods over a number of years to ensure that these livelihoods are well developed by the time the Project is decommissioned;
- Partner with LED programmes of other mines and the local municipalities as this will strengthen project initiatives, whereas initiatives funded by the Project alone may not be as effective;
- Ensure that employees are trained in alternative skills, and link this training to the initiatives described above; and
- Provide financial life skills to employees.

11.13.3 Management Objectives

Compliance with the objectives defined in the section on Management of Downscaling and Retrenchment in the Project's SLP, as well as with objectives to be defined in the Project Closure Plan.

11.13.4 Management Targets

Compliance with the targets defined in the section on Management of Downscaling and Retrenchment in the Project SLP, as well as with targets to be defined in the Project Closure Plan.

[14] The National Productivity Institute works towards ensuring that sustainable productivity performance in sectors and organisations is achieved in an inclusive, collaborative manner.

11.13.5 Impact Rating

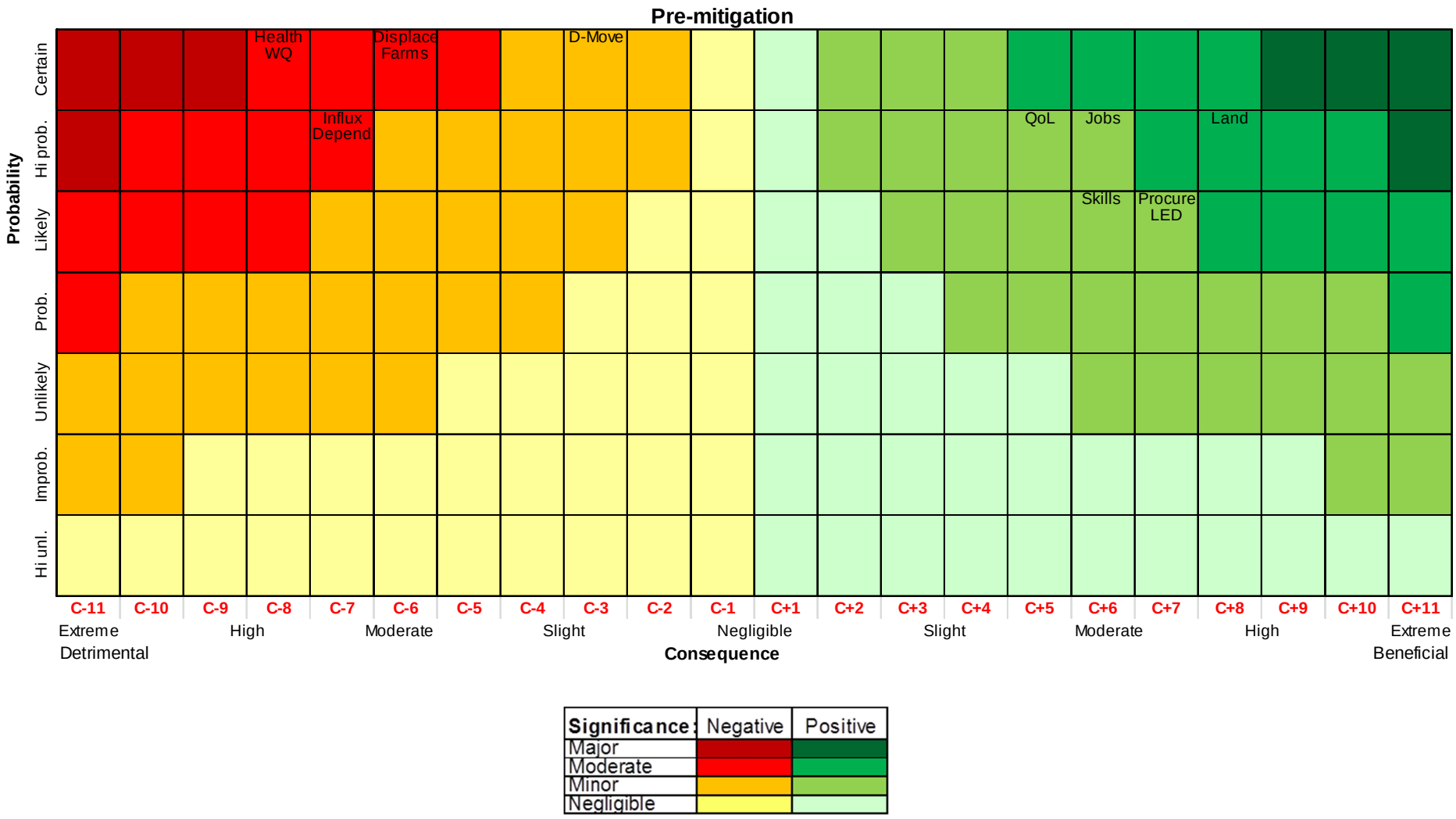
Activity and Interaction (All Project Activities require appointment of workforce and investment in the local economy)			
Dimension	**Rating**	**Motivation**	**Significance**
Impact Description: Dependency of the Project for sustaining local economy			
Prior to mitigation/ management			
Duration	Beyond project life (6)	Some impacts (e.g. retrenchments) may occur during operation. However, most impacts will be felt after closure	Moderate - Negative (-84)
Extent	Municipal Area (4)	Impact will affect workers as well as local municipalities and communities	
Intensity x type of impact	Moderately high - negative (-4)	Without appropriate mitigation, impact will undermine many of benefits achieved under LED. Retrenched workers and their families will be severely impacted	
Probability	Highly probable (6)	The impact will most likely occur	
Nature	Negative		
Mitigation/ Management actions			
Refer to Section 11.13.2			
Post- mitigation			
Duration	Beyond project life (6)	As for pre-mitigation	Minor - Negative (-60)
Extent	Municipal Area (4)	As for pre-mitigation	
Intensity x type of impact	Low - negative (-2)	Mitigation will soften impacts on individuals/households and will capacitate local municipalities to sustain benefits	
Probability	Likely (5)	The impact will most likely occur, albeit not all negative components	
Nature	Negative		

11.14 Summary of Findings

The pre- and post-mitigation ratings assigned to the various impacts discussed in the report are summarised in Table 11-2 and graphically represented in in Figure 7 below. In Table 11-2, the entries in the various coloured cells correspond to the codes given for impacts in the first column of the same table.

Table 11-2: Summary of Pre and Post Mitigation Ratings

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Conse-quence	Probability	Signifi-cance	Duration	Extent	Intensity	Conse-quence	Probability	Signifi-cance
Jobs	Local employment creation	Project Life	Local	Moderately high - positive	Moderately beneficial	Highly probable	Minor - positive	Project Life	National	High - positive	Highly beneficial	Certain	Major - positive
Skills	Skills development & capacity building	Project Life	Municipal Area	Moderate - positive	Moderately beneficial	Likely	Minor - positive	Project Life	Municipal Area	Moderately high - positive	Moderately beneficial	Highly probable	Moderate - positive
Procure	Local procurement of goods & services	Project Life	Province/ Region	Moderately high - positive	Highly beneficial	Likely	Minor - positive	Project Life	Province/ Region	High - positive	Highly beneficial	Highly probable	Moderate - positive
LED	Local & regional economic development	Project Life	Municipal Area	High - positive	Highly beneficial	Likely	Minor - positive	Beyond project life	Province/ Region	Very high - positive	Highly beneficial	Certain	Major - positive
QoL	Improved quality of life	Long term	Local	Moderately high - positive	Moderately beneficial	Highly probable	Minor - positive	Beyond project life	Municipal Area	High - positive	Highly beneficial	Highly probable	Moderate - positive
Land	Increased access to land	Permanent	Municipal Area	Moderately high - positive	Highly beneficial	Highly probable	Moderate - positive	Permanent	Municipal Area	High - positive	Highly beneficial	Certain	Major - positive
D-Move	Disruption of movement patterns	Medium term	Local	Low - negative	Slightly detrimental	Certain	Minor - negative	Medium term	Limited	Very low - negative	Slightly detrimental	Certain	Minor - negative
Health	Community health, safety & security	Beyond project life	Local	Very high - negative	Highly detrimental	Certain	Moderate - negative	Beyond project life	Limited	High - negative	Moderately detrimental	Highly probable	Moderate - negative
Displace	Displacement impacts	Medium term	Limited	Extremely high - negative	Moderately detrimental	Certain	Moderate - negative	Short term	Very limited	Moderately high - negative	Slightly detrimental	Certain	Minor - negative
WQ	Water quality impacts	Permanent	Municipal Area	Moderately high - negative	Highly detrimental	Certain	Moderate - negative	Beyond project life	Local	Moderate - negative	Moderately detrimental	Highly probable	Minor - negative
Influx	Project-induced population influx	Beyond project life	Municipal Area	Moderately high - negative	Highly detrimental	Highly probable	Moderate - negative	Project Life	Local	Moderate - negative	Moderately detrimental	Likely	Minor - negative
Farms	Impacts on surrounding farms	Project Life	Limited	High - negative	Moderately detrimental	Certain	Moderate - negative	Project Life	Limited	Moderately high - negative	Moderately detrimental	Certain	Moderate - negative
Depend	Dependency of the Project for sustaining local economy	Beyond project life	Municipal Area	Moderately high - negative	Highly detrimental	Highly probable	Moderate - negative	Beyond project life	Municipal Area	Low - negative	Moderately detrimental	Likely	Minor - negative



Significance:	Negative	Positive
Major		
Moderate		
Minor		
Negligible		

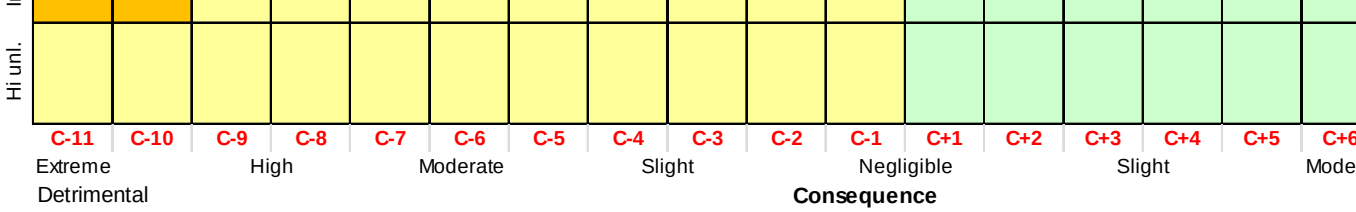


Figure 7: Graphical summary of pre- and post-mitigation rating

12 Cumulative Impacts

The IFC PS1 describes “the broader project area” to include areas potentially impacted by cumulative impacts from further planned development of a project, any existing projects or condition, and other project-related developments that may occur during the life of a project.

A list of potential cumulative impacts associated with the Project is provided in Table 12-1. It is anticipated that the Project’s contribution towards cumulative impacts will be incremental based on the development and implementation of the various project components over time. Actual impacts will also vary in terms of project phases (construction, operation and closure). Hence, the list below is of a generic nature with a focus on significant issues for the Project and host communities, and how these issues may increase/be influenced by the impacts of other developments.

Table 12-1: Potential Cumulative Impacts

Nature	Direction of change	Extent of impact
Improved standard of living through increased employment, local business development and improved public infrastructure and community services and facilities (the latter will be dependent on government and private-sector contributions)	Positive	Local and district
Improved quality of live and community health through contributing to a cleaner environment	Positive	Local and district
Urban sprawl, housing backlog and/or growth of informal settlements.	Negative	Local and district
Added pressure on local public service delivery and infrastructure, including roads, water and sewage treatment works, schools, police services and waste management facilities.	Negative	Local and district
Community disruption and impact on social cohesion as a result of population influx, the presence of a non-local workforce, lack of services and facilities, and potential political dynamics/leadership challenges.	Negative	Local and district
The use of non-local labour, due to unavailability of local skilled workers causing tension in local communities as a result of the expectation that the Project should provide local employment.	Negative	Local
Greater competition for natural resources, in particular water and agricultural land.	Negative	Local
Possible increase in poverty in the area due to water scarcity/pollution, greater influx of job seekers and inability of the economy to absorb job seekers or to generate local employment.	Negative	Local and district

Nature	Direction of change	Extent of impact
The visual impact of mining and industrial developments, and associated changes in land use, are significant and imprint an industrial character onto the rural landscape.	Negative	Local and district
Increased pressure on water resources to maintain the reserves required to supply basic human and ecological needs.	Negative	Local and district
Compounded effects of lighting, noise, traffic, water and groundwater abstraction and physical reduction in habitat has cumulative impacts on the social and biophysical environment.	Negative	Local and district
Potential impact on climate change	Negative	Local, regional and national

It is anticipated that the Project will contribute towards improving the overall environmental conditions in the project area and its surroundings. The cumulative contribution of this impact is, however, dependent on the impacts of other existing and future developments in the area, as well as the success of government programmes and projects aimed at the protection of the environment, and the socio-economic development of historically disadvantaged local communities. Cooperating and partnering with the relevant government departments, mining companies and industries is therefore imperative.

It is also expected that the Project will contribute to employment, local procurement and the production of high value products by the Project. This will facilitate income growth, capacity development and national level economic benefits. The Project may also contribute to infrastructure and service improvements in the affected districts, which will in themselves impact positively on the local and district socio-economic status. These positive impacts, in combination with those of other developments, could boost the overall development in the surrounding municipal districts.

A highly significant cumulative impact relates to the fact that existing and new developments in the West Rand may accelerate population influx to the area with the associated increased pressure on land, resources and services, as well as the potential for informal settlement, encroachment and urban sprawl. It recommended that the Project, together with the relevant government departments, as well as other developers in the area, investigate the potential for partnerships to manage cumulative impacts and contribute towards the development of the region through sustainable resource management, spatial planning and land use, as well as efficient land administration by local government.

It is emphasised that isolated attempts by the Project to ameliorate the above impacts may only have limited success. It is essential that SGL collaborates with the appropriate local government structures and development forums, local economic development programmes, as well as through partnerships with both government and other large development projects.

The development of the Project could exacerbate conditions such as the spread of HIV/AIDS and other communicable diseases following population influx, settlement densification and related factors (e.g. decreases in the quality and quantity of water). Health impacts must be addressed in the Project's Community Health and Safety Management Plan. Moreover, the Project should collaborate with national, provincial and local government, as well as leading health-based NGOs to promote an integrated approach to combating HIV/AIDS.

13 Unplanned Events and Associated Risks

This section identifies potential "social" events that cannot necessary be planned in advance but could represent risks to SGL. Aspects that could give rise to these events will require appropriate management and mitigation throughout the life of the Project (and starting at the feasibility stage of the Project.)

Social risk is typically linked to the actions of the Project's stakeholders and can either be a risk to the Project as a result of the impact *on stakeholders*, or stakeholders' impact *on the Project.* In most cases a risk can be financial, delay or reputational, as follows:

- **Financial:** A financial risk can result in a project being financially unfeasible due to costs associated with project delays;
- **Delay** due to community protest and/or appeals against the Project could result in major timeframe implications for the Project; and
- Community protest, human rights violations and severe social impacts could cause damage to a company's ***reputation***, which may result in delays, financial implications and detract from their social licence to operate.

The potential events and the associated social risks, to which the Project could be exposed, are summarised in Table 13-1.

Table 13-1: Risks associated with Unplanned Events

Unplanned event	Potential impact	Mitigation/Management/ Monitoring
Community expectations and actions	Community expectations regarding the proposed Project are most frequently related to employment, but also to sharing in project benefits through socio-economic development. When such hopes are not met or addressed with appropriate communication, it may lead to potential stakeholder opposition and public mobilisation against the project. Property owners in the vicinity of the Project may also initiate legal actions that could involve serious risks to the Project	Expectations of communities must be managed by informing them what to expect from the Project in terms of SLP projects. Continuously involve community and municipal structures in the development or update of LED programmes of the SLP

Unplanned event	Potential impact	Mitigation/Management/ Monitoring
		Appoint Community Liaison Officers (CLOs) to provide communities with an accessible communication mechanism Establish Grievance mechanism which is accessible to aggrieved members of the surrounding communities. Use public media to inform and enlighten stakeholders with regard to project limitations, progress and outcomes
Current uncertainties about physical and economic displacement	The site-specific study area is currently used for purposes other than mining. The project will result in physical and economic displacement. Relocation, whether physical or economic, may result in delays or additional financial costs to the Project. If not carefully managed in an open, transparent and appropriate manner relocation can result in a stop to the Project if affected people are not satisfied with the process. It may also result in a reputational risk if it is perceived that the Project is not following best practice or displacement mitigation is not fair.	Follow a transparent consultation and negotiation process. Adequately compensate displacement affected people in line with international best practice

Unplanned event	Potential impact	Mitigation/Management/ Monitoring
Threats to SGL's Social licence to operate	Failure to avoid any of the aforementioned risks might detract from SGL's "*social licence to operate*" (the on-going approval and acceptance from a host community and stakeholders for the Project to operate). A social licence to operate is intangible and dynamic. It is granted by the communities in which a project operates and is rooted in stakeholder perceptions and opinions about the project, which could in turn be influenced by NGOs and other community based organisations within an area. A social licence to operate is earned through on-going, transparent communications and mutual trust. It is therefore earned and needs to be maintained as opinions and perceptions can change Gaining a social licence to operate can therefore be a critical factor a project's success.	Ensure on-going, transparent communications and mutual trust. Regularly assess if/how/ why stakeholder opinions and perceptions change. Invest in host communities through SLP and LED initiatives

14 Social Management Plan

The social management framework proposed in this section aims to ensure (a) that the expected negative social impacts of the Project on host communities are mitigated and managed, and (b) that potential the positive impacts on host communities are optimised and enhanced in a sustainable manner. Effective integration of the impact assessment results and the eventual implementation of management measures are, therefore, critical. It is also important that the social management actions recommended in the SIA are duly integrated and coordinated with other plans (such as the EMP, SLP and CSI programmes), as well as procurement policies, and contractor and supply chain management. Social management measures should form part of the Project's overall Environmental and Social Management system.

The management measures presented in this section place heavy emphasis on aspects such as skills development and LED as these aspects would constitute the foundation for enhancing the Project's 'social' benefits. Moreover, negative impacts, such as increased pressure on infrastructure and services, and economic dependence on the Project can more effectively mitigated when the social benefits of the Project are enhanced.

Sibanye Gold Limited should develop the necessary corporate policies and procedures that will hold senior management accountable for the effective implementation of management actions. These policies should explicitly state the company's commitment to contribute to the health and safety of host communities and the sustainable economic development of the areas in which the Project operates. Implementation of management actions may require specific organisational arrangements to ensure that implementation is effectively managed by dedicated managers. Organisational arrangements may also require the appointment and capacity building of staff who have a proven record of dealing with host communities and project-related social aspects.

It is emphasised that the development of a Project Community Health and Safety Plan falls outside the scope of the SIA. Where applicable, mitigation measures have been identified in the relevant impact sections. However, in accordance with international best practice, it is recommended that SGL develop such a plan in line with the requirements of IFC PS4: Community Health, Safety and Security.

14.1 Project Activities with Potentially Significant Impacts

The multi-faceted and multi-phased nature of the Project posed a number of challenges for the SIA study. These include:

- The large geographical area covered by the Project;
- Limited information on land acquisition for the Project; and
- The Project will involve retreatment of existing tailings at various locations, as well the construction of new project facilities and infrastructure.

Hence, it was difficult to award the same level of attention to all project activities, or to "ring-fence" initial phase impacts from prior and subsequent project phases. However, particular focus was given to the potential impacts of the CPP and RTSF as both involve radical changes in land-use.

Table 14-1 below presents a summary of the pre- and post-mitigation significance of the social impacts associated with the Project. If all mitigation measures are implemented according to recommendations presented in Section 11, it is expected that the consequence and/or probability of most negative impacts will be reduced. This is reflected in the post-mitigation significance ratings assigned to negative impacts. While not all negative impacts can be reduced to acceptable levels, most positive impacts could be significantly enhanced to maximise benefits to surrounding communities.

Table 14-1: Potential social impacts according to significance

Mining Right Area (MRA)	Impact	Significance Pre-mitigation	Significance Post mitigation
All areas	Local employment creation	Minor - positive	Moderate - positive
All areas	Skills development & capacity building	Minor - positive	Moderate - positive
All areas	Local procurement of goods & services	Minor - positive	Moderate - positive
All areas	Local & regional economic development	Minor - positive	**Major - positive**
Driefontein	Improved quality of life	Minor - positive	Moderate - positive
Driefontein	Increased access to land	Moderate - positive	**Major - positive**
All areas	Disruption of movement patterns	Minor - negative	Minor - negative
Cooke, Ezulwini, Driefontein	Community health, safety & security	Moderate - negative	**Moderate - negative**
Kloof	Displacement impacts	**Major - negative**	**Moderate - negative**
Kloof	Water quality impacts	Moderate - negative	Minor - negative
All areas especially Kloof and Driefontein	Project-induced population influx	Moderate - negative	Minor - negative
Kloof	Impacts on surrounding farms	Moderate - negative	**Moderate - negative**
All areas	Dependency of the Project for sustaining local economy	Moderate - negative	Minor - negative

14.2 Summary of mitigation measures and management actions

Table 14-2 to Table 14-4 provide a summary of the project activities, environmental aspects and impacts on the receiving environment. Information on the frequency of mitigation, relevant legal requirements, recommended management plans, timing of implementation, and roles/responsibilities of persons implementing the EMP. Table 14-5 summarises the most prominent laws and standards that are directly or indirectly applicable to the Project and the implementation of SIAs.

Table 14-2: Impacts

Activity	Phase	Size and scale of disturbance	Mitigation/Enhancement Measures	Compliance with standards	Time period for implementation
All Project Activities	Construction & operation	About 2 000 jobs during construction & 500 during operation	- Ensure/increase local employment during construction and operation - Develop and publicise recruitment policies - Ensure that contractors comply with SGL employment policies - Identify suitable candidates for available opportunities from own and other job seeker databases - Identify core skills required for the relevant project phase and assess the prevalence of these skills in local communities - Structure skills development endeavours (as part of the Project's SLP commitments) accordingly - Formalise preferential employment of women in the company's recruitment policy - Ensure that local communities are made aware of the employment opportunities that will be available during operation - Clearly advertise the nature and numbers of jobs available during the various project phases - Ensure that local communities understand the Project's recruitment and employment procedures - Coordinate recruitment through local offices of the DoL and/or recruitment agencies - Locate recruitment office(s) at a central point (but not on-site), to control the access and movement of jobseekers - Develop registry for job-seekers to document relevant qualifications, work experience and contact details - Promote employment opportunities for women and the youth. Reserve a percentage of local employment opportunities for women and the youth - Establish a monitoring system to ensure that contractors honour the relevant project employment policies - Use labour-intensive construction methods for suitable project activities - Offer suitable training to improve the ability of local community members to take advantage of employment opportunities arising through the Project - Update database of the local labour pool to include people who were employed by the Project - Provide local employees with reference letters and certificates of completion for in-house (on-the-job) training provided	Mineral and Petroleum Resources Development Act (Act of 2002) Mining Charter National Environmental Management Act (Act of 1998 Employment Equity Act, 1998 (Act No. 55 of 1998); Basic Conditions of Employment Act, 1997 (Act No. 75 of 1997); Labour Relations Act, 1995 (Act No. 66 of 1995); and Skills Development Act (Act No. 97 of 1998 as amended). MPRDA, Mining Charter Company employment policies	Prior to start of construction and on-going
Project SLP commitments	Construction & operation	Some internal training will take place, as well as on-the-job training for selected employees	- Undertake a skills survey in the local communities and develop local skills database - Prepare a detailed skills inventory for the Project. Skills database should be updated with personal training data - Establish training programmes based on the skills needs and gaps identified for the Project - Develop and implement an Adult Basic Education and Training (ABET) Programme, for both workers and people from local communities - Prioritise inclusion of women and vulnerable people in ABET programmes and other training programmes available to local community; - Provide opportunities for those locals who received training to be employed on the Project or are considered for procurement contracts with the Project - Identify suitable people from local communities to participate in company bursaries and internships programmes	Mineral and Petroleum Resources Development Act (Act of 2002) Mining Charter Skills Development Act (Act No. 97 of 1998 as amended). Company Training policies	At the start of construction and on-going
All Project Activities	Construction & operation	Cannot be quantified at this time	- Include local procurement targets in the Project's procurement policy - Develop procedures for the procurement policy to ensure preferential procurement in accordance with BBBEE and the Mining Charter requirements - Develop a Procurement Progression Plan as required in terms of the SLP; - Develop skills development and training targets for local procurement and include these in contractor management plans; - Monitor the procurement practices of SGL contractors and enforce requirements; - Compile a database of local and district service providers and issue new contracts to these service providers - Update the Project's existing supplier database to include suppliers that may qualify for procurement opportunities after receiving training and support - Identify procurement opportunities and goods/services that could be supplied by local contractors - Develop internal mechanisms for unbundling contracts where possible to realise the above opportunities - Ensure that local businesses are aware of the procurement needs of the Project and have sufficient information to prepare tenders	Mineral and Petroleum Resources Development Act (Act of 2002) Mining Charter	At start of construction and on-going

Activity	Phase	Size and scale of disturbance	Mitigation/Enhancement Measures
All Project Activities	Construction & operation	Cannot be quantified at this time	- Include in SLP/LED the establishment and upgrading of services and infrastructure, where feasible; - Support housing development through promoting house ownership for employees; - Create improved economic opportunities through entrepreneurship development and the development of skills supporting employment and economic development. - Implement selected poverty eradication, infrastructure development and welfare creation projects that meet the criteria of the company, and other legislation - Empower local black businesses, and support development initiatives in the Project's labour sending areas and in affected communities - Develop a register of local small, medium and micro-sized enterprises (SMMEs), and the types of goods and services they provide - Work with local municipalities (LMs) to develop SMMEs through the relevant LM forums and working committees - Investigate the possibility of launching a training/ skills development initiative under the auspices of the skills development programme required for the SLP - Establish linkages with institutions involved in skills and SMME development - Create synergies with other mining companies' LED projects; - Address the priority needs of employee and their households who do not live in mine accommodation (basic services, housing, road infrastructure; etc.) through: - Implement suitable infrastructure development projects - Increase access of employee households to development credit and assets - Comply with legislation through implementing portable skills programmes that will contribute to the empowerment of employee households and community - Continually asses projected IDP and LED initiatives of the municipality to ensure that the SLP commitments remain - Develop a clear strategy for corporate social investment (CSI) and communicate that to local communities - Appoint a SLP/Social Development Manager, to interact with communities regarding community development
Tailings Reclamation	Operation & decommissioning	Will affect some areas in the West Rand	- Fully comply with the relevant legislation pertaining to environmental protection and in particular gold mine closure and residual risks - Implement the recommendations of the radiation/health specialist studies - Successfully complete the removal of all TSF and the rehabilitation of the remaining footprints to prevent the creation of new/more contaminated areas - Implement long-term monitoring programmes for monitoring soils and water sources in affected areas to establish to what extent the natural resources have recovered - Consult other mines/business enterprises in the project area to identify opportunities for collaboration on selective infrastructure projects - Collaborate with other mines in, for example, upgrading public amenities that will also be used by employees of these developments
Tailings Reclamation	Operation & decommissioning	Some individuals/institutions in the local/district municipalities	- Ensure that reclaimed land is made safe for both humans and animals. Ground- and surface water must be fit for approved future land uses - Comply with the requirements of MPRDA which provides that interested and affected parties must be involved in decision-making regarding future land uses - Implement the recommendations of the relevant specialist studies (in particular the Soil Study and Rehabilitation Plan) - Assess land end-land uses for each individual rehabilitated site. Rehabilitation must be consistent with the relevant end land-use objectives of closure plans - Demarcate reclaimed land areas not suitable for human settlement, crop cultivation or livestock production - If particular development opportunities on reclaimed land are approved, these should be discussed with local municipalities for possible integration into IDPs and SDF

Activity	Phase	Size and scale of disturbance	Mitigation/Enhancement Measures
Construction Activities	Construction & operation	Project area and surrounding communities	- Implement suitable consultation procedures to ensure that local communities are informed about construction activities and involved in the formulation of mitigation measures where appropriate - Implement grievance procedures and compensation measures. Any assets lost must be compensated for in an appropriate manner - Ensure that alignment of construction roads, pipelines and power lines avoid loss of access to properties, livelihood resources and livestock infrastructure - Erect suitable traffic and construction signage to control traffic, raise awareness of potential risks/hazards and indicate alternative access routes - Implement appropriate measures to provide continued access to assets and livestock, and minimise traffic disruptions. - Ensure that access to grazing areas are uninterrupted by providing alternative access routes and/or cattle corridors and access points during construction activities - Ensure acceptable repair of road networks after construction activities are completed. Where this is not possible, alternative access roads should be constructed; and - Where the fencing of project facilities and infrastructure will be permanent, alternative access must be provided if access to properties is lost
Retreatment of TFSs and Development and Operation of CPP and RTSF	Construction & operation	Project sites and surrounding communities	- Evaluate the project-induced risks and impacts to the health and safety of the local communities during the design, construction, operation and decommissioning of the Project; - Establish preventive measures to address them in a manner commensurate with the identified risks and impacts. - Disclose to local communities if the Project poses risks to, or adverse impacts on, the health and safety of affected communities - Engage affected communities & agencies on an ongoing basis. This should include awareness raising of the risks associated with the illegal use of contaminated sites - Design, construct, operate & decommission the structural elements/components of the project in accordance with good international industry practice - Implement a safety and educational awareness programme during and after the construction phase to alert people to the potential dangers of road usage - Implement an awareness programme focusing on the dangers of STDs for employees and local residents - Work closely with provincial/district/local health services and HIV/AIDS organisations in monitoring changes in levels of community health and wellbeing - Explore partnerships with these institutions to address such changes - Implement education programmes focussing on the dangers of unprotected sex, with an emphasis on HIV/AIDS, as well as the dangers of substance abuse - Collaborate with government and other mining companies to support government actions aimed at managing population influx at project sites and surrounding areas
Project-related Land Purchases	Pre-construction	Farm owners and occupiers in Project footprint	- Sales agreement of land to be acquired must reflect the full value of the land (including business value & investments/ improvements made). Consider the relocation cost of commercial farms and business operations on a case by case basis - Agree on who will assume responsibility for the resettlement of vulnerable households located on the property. Sales agreements could makes provision for suitable compensation and support for households so affected - Asses if a Resettlement Action Plan (RAP) have to be developed if the Project assumes responsibility for physically displaced vulnerable households. The RAP must be implemented prior to the start of construction - Determine an “exclusion’ zone (based on the final footprint of the Project), within which no human settlement will be allowed - Assess the physical and economic displacement of households and individuals on a case-by-case basis and reach a favourable solution with each economically displaced individual/household

Activity	Phase	Size and scale of disturbance	Mitigation/Enhancement Measures
Development and Operation of CPP and RTSF	Construction, operation & decommissioning	Surrounding farms and communities	- Implement recommendations of water studies - Include water conservation awareness into stakeholder engagement strategies - Adequately compensate for boreholes that are negatively affected by the Project - Where applicable, provide alternative water sources to compensate for water lost - Supply equal or better quality water to affected parties that rely on groundwater - Monitor and control water use by construction and maintenance workers - Monitor and control illegal use of boreholes by cattle post owners and residents
All Project Activities	Pre-construction, construction & operation	Some project sites and at surrounding settlements	- Measures to address population influx: - Execute recruitment of employees and contractors as discussed in Section 11.1 - Ensure that the intention of giving preferential employment to locals is clearly communicated, so as to discourage in influx of job-seekers from other areas; - Involve local community structures to assist in communicating the intention to give preference to local labour, and also to assist in identifying the local labour pool; - Liaise with the municipalities to ensure that expected population influx is taken into account in infrastructure development planning of the municipal areas; - In consultation with local municipalities and development forums, investigate if its SLP and LED initiatives can contribute to the relevant infrastructure and delivery priorities of the municipal areas - Consider promoting development projects, which includes low cost housing options - Measures to address social pathologies - Implement HIV/AIDS and alcohol abuse campaigns in the communities - Make HIV/AIDS and STD awareness and prevention programmes a condition of contract for suppliers and sub-contractors - Provide an adequate supply of free condoms to workers; - Implement a voluntary counselling and testing (VCT) programme - If feasible, require contractors to undertake HIV/AIDS and STD prevalence surveys amongst its workers on a regular basis - Control access to the construction workforce to prevent sex workers and petty traders from visiting and/or loitering at workforce accommodation and project sites - Financially support government agencies, local clinics and NGOs involved in raising community awareness and education with regard to STDs and substance abuse - Measures to address crime: - Establish liaison structures/forums with local police to monitor social changes in crime patterns during the construction phase - Establish liaison with existing crime control organisations, such as community policing forums, private security companies and other crime prevention organisation. - Through the abovementioned forums, identify if recorded criminal activities (e.g. rape, housebreaking and stock theft) involved members of the Project's workforce, and act accordingly; - Enforce clear rules and regulations for access to the project site to control loitering. - Consult with the local police service to establish standard operating procedures for the control and/or removal of loiterers - If possible, construction workers should be housed on the premises of existing mine accommodation - Measures to address potential conflict between locals and non-locals: - Implement fair and transparent recruitment policy - Establish a community liaison office and grievance mechanism at a location that is accessible to aggrieved members of the surrounding communities; - Empower project security staff (in terms of resources and facilities) to effectively manage security issues relating to incidents of

Activity	Phase	Size and scale of disturbance	Mitigation/Enhancement Measures
All Project Activities	Operation & decommissioning	Workers, local municipalities and communities	- Develop a Closure Plan that include measures to address the social impacts of closure - Predict the likely socio-economic impact of closure on employee households, local communities and the region - Identify critical issues which could affect the on-going sustainability of employees and communities during closure, by means of a detailed consultation process - Implement the recommendations of the abovementioned assessments - Identify alternative livelihood and socio-economic development opportunities for employees, as well community-based development projects which may become sustainable over the long term - Provide financial and/or technical support for the establishment of sustainable community projects. - Establish a Future Forum for the purposes of: - Promoting continuing discussions between employers and employees representatives; - Identifying solutions to problems and challenges which may arise and impact on the operation of the Project; - Discussing issues regarding retrenchment and downscaling, and identifying turnaround strategies; - Developing and implementing prevention and redeployment strategies in the management of retrenchments; - Coordinating the notification process during retrenchments or closure; and - Mobilising the DoL's Social Plan Services for technical assistance on job advice, and retrenchment during retrenchment and closure. - Implement a consultation process in accordance with Section 52 (1) of the MPRDA, of a consultation process in terms of Sections 189 and 189(A) of the Labour Relations Act - Approach the DoL for the utilisation of its resources and support services, such as counselling services and placement services offered by its Labour Centres - Inform affected areas, such as the local municipality and labour sending areas, of imminent retrenchments. The full impact of such retrenchments must be disclosed to the municipalities and possible solutions discussed. - Liaise with institutions such as the National Productivity Institute to identify other economic sectors and ventures that can absorb employees - Partner with LED programmes of other mines and the local municipalities as this will strengthen project initiatives - Ensure that local (and other) employees are trained in alternative skills. Link training to the initiatives described above - Provide financial life skills to employees

Table 14-3: Objectives and Outcomes of the EMP

Activity	Potential impacts	Aspects affected	Project Phase	Mitigation/Enhancement Measures
All Project Activities	Local employment creation	Appointment of workforce	Construction & Operation	- Ensure/increase local employment during construction and operation - Develop and publicise recruitment policies - Ensure that contractors comply with SGL employment policies - Identify suitable candidates for available opportunities from own and other job seeker databases - Identify core skills required for the relevant project phase and assess the prevalence of these skills in - Structure skills development endeavours (as part of the Project's SLP commitments) accordingly - Formalise preferential employment of women in the company's recruitment policy - Ensure that local communities are made aware of the employment opportunities that will be available - Clearly advertise the nature and numbers of jobs available during the various project phases - Ensure that local communities understand the Project's recruitment and employment procedures - Coordinate recruitment through local offices of the DoL and/or recruitment agencies - Locate recruitment office(s) at a central point (but not on-site), to control the access and movement of - Develop registry for job-seekers to document relevant qualifications, work experience and contact deta - Promote employment opportunities for women and the youth. Reserve a percentage of local employm women and the youth - Establish a monitoring system to ensure that contractors honour the relevant project employment polic - Use labour-intensive construction methods for suitable project activities - Offer suitable training to improve the ability of local community members to take advantage of employ arising through the Project - Update database of the local labour pool to include people who were employed by the Project - Provide local employees with reference letters and certificates of completion for in-house (on-the-job)
Project SLP commitments	Skills development and capacity building	Skills development of employees and host communities	Construction & Operation	- Undertake a skills survey in the local communities and develop local skills database - Prepare a detailed skills inventory for the Project. Skills database should be updated with personal trai - Establish training programmes based on the skills needs and gaps identified for the Project - Develop and implement an Adult Basic Education and Training (ABET) Programme, for both workers a communities - Prioritise inclusion of women and vulnerable people in ABET programmes and other training programm community; - Provide opportunities for those locals who received training to be employed on the Project or are cons procurement contracts with the Project - Identify suitable people from local communities to participate in company bursaries and internships pr
All Project Activities	Local procurement of goods and	Procurement of goods and services	Construction & Operation	- Include local procurement targets in the Project's procurement policy - Develop procedures for the procurement policy to ensure preferential procurement in accordance with Mining Charter requirements - Develop a Procurement Progression Plan as required in terms of the SLP; - Develop skills development and training targets for local procurement and include these in contractor - Monitor the procurement practices of SGL contractors and enforce requirements; - Compile a database of local and district service providers and issue new contracts to these service pr - Update the Project's existing supplier database to include suppliers that may qualify for procurement

Activity	Potential impacts	Aspects affected	Project Phase	Mitigation/Enhancement Measures
All Project Activities	Local & regional economic development	Investment in the local economy	Operation	- Include in SLP/LED the establishment and upgrading of services and infrastructure, where feasible; - Support housing development through promoting house ownership for employees; - Create improved economic opportunities through entrepreneurship development and the development employment and economic development. - Implement selected poverty eradication, infrastructure development and welfare creation projects that the company, and other legislation - Empower local black businesses, and support development initiatives in the Project's labour sending a communities - Develop a register of local small, medium and micro-sized enterprises (SMMEs), and the types of goo provide - Work with local municipalities (LMs) to develop SMMEs through the relevant LM forums and working c - Investigate the possibility of launching a training/ skills development initiative under the auspices of the programme required for the SLP - Establish linkages with institutions involved in skills and SMME development - Create synergies with other mining companies' LED projects; - Address the priority needs of employee and their households who do not live in mine accommodation housing, road infrastructure; etc.) through: - Implement suitable infrastructure development projects - Increase access of employee households to development credit and assets - Comply with legislation through implementing portable skills programmes that will contribute to the em employee households and community - Continually asses projected IDP and LED initiatives of the municipality to ensure that the SLP commitr - Develop a clear strategy for corporate social investment (CSI) and communicate that to local commun - Appoint a SLP/Social Development Manager, to interact with communities regarding community devel
Tailings Reclamation	Improved quality of life	Rehabilitation of existing TSFs	Operation	- Fully comply with the relevant legislation pertaining to environmental protection and in particular gold r residual risks - Implement the recommendations of the radiation/health specialist studies - Successfully complete the removal of all TSF and the rehabilitation of the remaining footprints to preve new/more contaminated areas - Implement long-term monitoring programmes for monitoring soils and water sources in affected areas extent the natural resources have recovered - Consult other mines/business enterprises in the project area to identify opportunities for collaboration infrastructure projects - Collaborate with other mines in, for example, upgrading public amenities that will also be used by emp developments
Tailings Reclamation	Increased access to land	Rehabilitation of existing TSFs	Operation & decommissioning	- Ensure that reclaimed land is made safe for both humans and animals. Ground- and surface water mu future land uses - Comply with the requirements of MPRDA which provides that interested and affected parties must be making regarding future land uses - Implement the recommendations of the relevant specialist studies (in particular the Soil Study and Reh - Assess land end-land uses for each individual rehabilitated site. Rehabilitation must be consistent with land-use objectives of closure plans - Demarcate reclaimed land areas not suitable for human settlement, crop cultivation or livestock produ - If particular development opportunities on reclaimed land are approved, these should be discussed wi

Activity	Potential impacts	Aspects affected	Project Phase	Mitigation/Enhancement Measures
Construction Activities	Disruption of movement patterns	Traffic and temporary obstruction of some movement routes	Construction	- Implement suitable consultation procedures to ensure that local communities are informed about cons involved in the formulation of mitigation measures where appropriate - Implement grievance procedures and compensation measures. Any assets lost must be compensated manner - Ensure that alignment of construction roads, pipelines and power lines avoid loss of access to properti resources and livestock infrastructure - Erect suitable traffic and construction signage to control traffic, raise awareness of potential risks/haza alternative access routes - Implement appropriate measures to provide continued access to assets and livestock, and minimise tr - Ensure that access to grazing areas are uninterrupted by providing alternative access routes and/or ca access points during construction activities - Ensure acceptable repair of road networks after construction activities are completed. Where this is no access roads should be constructed; and - Where the fencing of project facilities and infrastructure will be permanent, alternative access must be properties is lost
Retreatment of TFSs and Development and Operation of CPP and RTSF	Community Health, Safety & Security	Workers and communities in close proximity to potentially hazardous activities	Construction, Operation & Closure	- Evaluate the project-induced risks and impacts to the health and safety of the local communities during construction, operation and decommissioning of the Project; - Establish preventive measures to address them in a manner commensurate with the identified risks ar - Disclose to local communities if the Project poses risks to, or adverse impacts on, the health and safet communities - Engage affected communities & agencies on an ongoing basis. This should include awareness raising associated with the illegal use of contaminated sites - Design, construct, operate & decommission the structural elements/components of the project in acco international industry practice - Implement a safety and educational awareness programme during and after the construction phase to potential dangers of road usage - Implement an awareness programme focusing on the dangers of STDs for employees and local reside - Work closely with provincial/district/local health services and HIV/AIDS organisations in monitoring cha community health and wellbeing - Explore partnerships with these institutions to address such changes - Implement education programmes focussing on the dangers of unprotected sex, with an emphasis on the dangers of substance abuse - Collaborate with government and other mining companies to support government actions aimed at ma influx at project sites and surrounding areas - Do not provide accommodation for contract workers on site.
Project-related Land Purchases	Displacement impacts	Relocation of existing inhabitants	Minor negative	- Sales agreement of land to be acquired must reflect the full value of the land (including business value improvements made). Consider the relocation cost of commercial farms and business operations on a c - Agree on who will assume responsibility for the resettlement of vulnerable households located on the p agreements could makes provision for suitable compensation and support for households so affected - Asses if a Resettlement Action Plan (RAP) have to be developed if the Project assumes responsibility displaced vulnerable households. The RAP must be implemented prior to the start of construction - Determine an “exclusion’ zone (based on the final footprint of the Project), within which no human sett

Activity	Potential impacts	Aspects affected	Project Phase	Mitigation/Enhancement Measures
Development and Operation of CPP and RTSF	Water quality and quantity	Abstraction from local groundwater sources	Construction & Operation	- Implement recommendations of water studies - Include water conservation awareness into stakeholder engagement strategies - Adequately compensate for boreholes that are negatively affected by the Project - Where applicable, provide alternative water sources to compensate for water lost - Supply equal or better quality water to affected parties that rely on groundwater - Monitor and control water use by construction and maintenance workers - Monitor and control illegal use of boreholes by cattle post owners and residents
All Project Activities	Project-induced population influx	Appointment of workforce	Construction & Operation	- Measures to address population influx: - Execute recruitment of employees and contractors as discussed in Section 11.1 - Ensure that the intention of giving preferential employment to locals is clearly communicated, so as to job-seekers from other areas; - Involve local community structures to assist in communicating the intention to give preference to local assist in identifying the local labour pool; - Liaise with the municipalities to ensure that expected population influx is taken into account in infrastru planning of the municipal areas; - In consultation with local municipalities and development forums, investigate if its SLP and LED initiati the relevant infrastructure and delivery priorities of the municipal areas - Consider promoting development projects, which includes low cost housing options - Measures to address social pathologies - Implement HIV/AIDS and alcohol abuse campaigns in the communities - Make HIV/AIDS and STD awareness and prevention programmes a condition of contract for suppliers - Provide an adequate supply of free condoms to workers; - Implement a voluntary counselling and testing (VCT) programme - If feasible, require contractors to undertake HIV/AIDS and STD prevalence surveys amongst its worke - Control access to workforce accommodation to prevent sex workers and petty traders from visiting an construction accommodation and other project sites - Financially support government agencies, local clinics and NGOs involved in raising community aware with regard to STDs and substance abuse - Measures to address crime: - Establish liaison structures/forums with local police to monitor social changes in crime patterns during phase - Establish liaison with existing crime control organisations, such as community policing forums, private and other crime prevention organisation. - Through the abovementioned forums, identify if recorded criminal activities (e.g. rape, housebreaking involved members of the Project's workforce, and act accordingly; - Enforce clear rules and regulations for access to the project site to control loitering. - Consult with the local police service to establish standard operating procedures for the control and/or - If possible, construction workers should be housed on the premises of existing mine accommodation - Do not provide accommodation on site - Measures to address potential conflict between locals and non-locals: - Implement fair and transparent recruitment policy - Establish a community liaison office and grievance mechanism at a location that is accessible to aggri

Activity	Potential impacts	Aspects affected	Project Phase	Mitigation/Enhancement Measures
All Project Activities	Dependency on the Project for sustaining the local economy	Appointment of workforce and investment in the local economy	Decommissioning	- Develop a Closure Plan that include measures to address the social impacts of closure - Predict the likely socio-economic impact of closure on employee households, local communities and th - Identify critical issues which could affect the on-going sustainability of employees and communities du means of a detailed consultation process - Implement the recommendations of the abovementioned assessments - Identify alternative livelihood and socio-economic development opportunities for employees, as well co development projects which may become sustainable over the long term - Provide financial and/or technical support for the establishment of sustainable community projects. - Establish a Future Forum for the purposes of: - Promoting continuing discussions between employers and employees representatives; - Identifying solutions to problems and challenges which may arise and impact on the operation of the P - Discussing issues regarding retrenchment and downscaling, and identifying turnaround strategies; - Developing and implementing prevention and redeployment strategies in the management of retrench - Coordinating the notification process during retrenchments or closure; and - Mobilising the DoL's Social Plan Services for technical assistance on job advice, and retrenchment du closure. - Implement a consultation process in accordance with Section 52 (1) of the MPRDA, of a consultation p Sections 189 and 189(A) of the Labour Relations Act - Approach the DoL for the utilisation of its resources and support services, such as counselling service services offered by its Labour Centres - Inform affected areas, such as the local municipality and labour sending areas, of imminent retrenchm of such retrenchments must be disclosed to the municipalities and possible solutions discussed. - Liaise with institutions such as the National Productivity Institute to identify other economic sectors an absorb employees - Partner with LED programmes of other mines and the local municipalities as this will strengthen projec - Ensure that local (and other) employees are trained in alternative skills. Link training to the initiatives c - Provide financial life skills to employees

Table 14-4: Mitigation

Activities	Potential impacts	Aspects affected	Mitigation type	Time pe impleme
			- Ensure/increase local employment during construction and operation - Develop and publicise recruitment policies - Ensure that contractors comply with SGL employment policies - Identify suitable candidates for available opportunities from own and other job seeker databases - Identify core skills required for the relevant project phase and assess the prevalence of these skills in local communities - Structure skills development endeavours (as part of the Project's SLP commitments) accordingly - Formalise preferential employment of women in the company's recruitment policy - Ensure that local communities are made aware of the employment opportunities that will be available during operation	

Activities	Potential impacts	Aspects affected	Mitigation type	Time pe impleme
Project SLP commitments	Skills development and capacity building	Skills development of employees and host communities	- Undertake a skills survey in the local communities and develop local skills database - Prepare a detailed skills inventory for the Project. Skills database should be updated with personal training data - Establish training programmes based on the skills needs and gaps identified for the Project - Develop and implement an Adult Basic Education and Training (ABET) Programme, for both workers and people from local communities - Prioritise inclusion of women and vulnerable people in ABET programmes and other training programmes available to local community; - Provide opportunities for those locals who received training to be employed on the Project or are considered for procurement contracts with the Project - Identify suitable people from local communities to participate in company bursaries and internships programmes	At the sta construc going
All Project Activities	Local procurement of goods and services	Procurement of goods and services	- Include local procurement targets in the Project's procurement policy - Develop procedures for the procurement policy to ensure preferential procurement in accordance with BBBEE and the Mining Charter requirements - Develop a Procurement Progression Plan as required in terms of the SLP; - Develop skills development and training targets for local procurement and include these in contractor management plans; - Monitor the procurement practices of SGL contractors and enforce requirements; - Compile a database of local and district service providers and issue new contracts to these service providers - Update the Project's existing supplier database to include suppliers that may qualify for procurement opportunities after receiving training and support - Identify procurement opportunities and goods/services that could be supplied by local contractors - Develop internal mechanisms for unbundling contracts where possible to realise the above opportunities - Ensure that local businesses are aware of the procurement needs of the Project and have sufficient information to prepare tenders	At start c and on-g
All Project Activities	Local & regional economic development	Investment in the local economy	- Include in SLP/LED the establishment and upgrading of services and infrastructure, where feasible; - Support housing development through promoting house ownership for employees; - Create improved economic opportunities through entrepreneurship development and the development of skills supporting employment and economic development. - Implement selected poverty eradication, infrastructure development and welfare creation projects that meet the criteria of the company, and other legislation - Empower local black businesses, and support development initiatives in the Project's labour sending areas and in affected communities - Develop a register of local small, medium and micro-sized enterprises (SMMEs), and the types of goods and services they provide - Work with local municipalities (LMs) to develop SMMEs through the relevant LM forums and working committees - Investigate the possibility of launching a training/ skills development initiative under the auspices of the skills development programme required for the SLP - Establish linkages with institutions involved in skills and SMME development - Create synergies with other mining companies' LED projects; - Address the priority needs of employee and their households who do not live in mine accommodation (basic services, housing, road infrastructure; etc.) through: - Implement suitable infrastructure development projects - Increase access of employee households to development credit and assets - Comply with legislation through implementing portable skills programmes that will contribute to the empowerment of employee households and community	At start c on-going

Activities	Potential impacts	Aspects affected	Mitigation type	Time pe impleme
Tailings Reclamation	Increased access to land	Rehabilitation of existing TSFs	- Ensure that reclaimed land is made safe for both humans and animals. Ground- and surface water must be fit for approved future land uses - Comply with the requirements of MPRDA which provides that interested and affected parties must be involved in decision-making regarding future land uses - Implement the recommendations of the relevant specialist studies (in particular the Soil Study and Rehabilitation Plan) - Assess land end-land uses for each individual rehabilitated site. Rehabilitation must be consistent with the relevant end land-use objectives of closure plans - Demarcate reclaimed land areas not suitable for human settlement, crop cultivation or livestock production - If particular development opportunities on reclaimed land are approved, these should be discussed with local municipalities for possible integration into IDPs and SDF - Investigate if, and how SGL could contribute to the development of reclaimed land for the benefit of local communities (e.g. including such development projects in the SLP/LED programme of the Project.	Operatio release o land)
Construction Activities	Disruption of movement patterns	Traffic and temporary obstruction of some movement routes	- Implement suitable consultation procedures to ensure that local communities are informed about construction activities and involved in the formulation of mitigation measures where appropriate - Implement grievance procedures and compensation measures. Any assets lost must be compensated for in an appropriate manner - Ensure that alignment of construction roads, pipelines and power lines avoid loss of access to properties, livelihood resources and livestock infrastructure - Erect suitable traffic and construction signage to control traffic, raise awareness of potential risks/hazards and indicate alternative access routes - Implement appropriate measures to provide continued access to assets and livestock, and minimise traffic disruptions. - Ensure that access to grazing areas are uninterrupted by providing alternative access routes and/or cattle corridors and access points during construction activities - Ensure acceptable repair of road networks after construction activities are completed. Where this is not possible, alternative access roads should be constructed; and - Where the fencing of project facilities and infrastructure will be permanent, alternative access must be provided if access to properties is lost	Construc going
Retreatment of TFSs and Development and Operation of CPP and RTSF	Community Health, Safety & Security	Workers and communities in close proximity to potentially hazardous activities	- Evaluate the project-induced risks and impacts to the health and safety of the local communities during the design, construction, operation and decommissioning of the Project; - Establish preventive measures to address them in a manner commensurate with the identified risks and impacts. - Disclose to local communities if the Project poses risks to, or adverse impacts on, the health and safety of affected communities - Engage affected communities & agencies on an ongoing basis. This should include awareness raising of the risks associated with the illegal use of contaminated sites - Design, construct, operate & decommission the structural elements/components of the project in accordance with good international industry practice - Implement a safety and educational awareness programme during and after the construction phase to alert people to the potential dangers of road usage - Implement an awareness programme focusing on the dangers of STDs for employees and local residents - Work closely with provincial/district/local health services and HIV/AIDS organisations in monitoring changes in levels of community health and wellbeing	All proje

Activities	Potential impacts	Aspects affected	Mitigation type	Time pe impleme
Project-related Land Purchases	Displacement impacts	Relocation of existing inhabitants	- Sales agreement of land to be acquired must reflect the full value of the land (including business value & investments/ improvements made). Consider the relocation cost of commercial farms and business operations on a case by case basis - Agree on who will assume responsibility for the resettlement of vulnerable households located on the property. Sales agreements could makes provision for suitable compensation and support for households so affected - Asses if a Resettlement Action Plan (RAP) have to be developed if the Project assumes responsibility for physically displaced vulnerable households. The RAP must be implemented prior to the start of construction - Determine an “exclusion’ zone (based on the final footprint of the Project), within which no human settlement will be allowed - Assess the physical and economic displacement of households and individuals on a case-by-case basis and reach a favourable solution with each economically displaced individual/household - Implement mitigation measures of Heritage studies	Pre-cons
Development and Operation of CPP and RTSF	Impacts on surrounding farms	Neighbouring farmers being in close proximity to Project activities	- Avoid or minimise negative impacts on adjacent farms when planning and designing project facilities/infrastructure - Consult adjacent property owners/users on additional measures that can be implemented to lessen or compensate for negative impacts - Provide appropriate communication channels and grievance mechanisms to address the concerns and grievances of adjacent farmers; - Successfully implement the mitigation measures are implemented to ameliorate the hydrological, acoustic, visual, traffic and health impacts as proposed in other specialist reports - Consider the requests from some affected property owners to purchase immediately adjacent farms that will be severely affected by the Project	Pre-cons consulta all projec
Development and Operation of CPP and RTSF	Water quality and quantity	Abstraction from local groundwater sources	- Implement recommendations of water studies - Include water conservation awareness into stakeholder engagement strategies - Adequately compensate for boreholes that are negatively affected by the Project - Where applicable, provide alternative water sources to compensate for water lost - Supply equal or better quality water to affected parties that rely on groundwater - Monitor and control water use by construction and maintenance workers - Monitor and control illegal use of boreholes by cattle post owners and residents	At start o and on-g

Activities	Potential impacts	Aspects affected	Mitigation type	Time pe impleme
All Project Activities	Project-induced population influx	Appointment of workforce	- Measures to address population influx: - Execute recruitment of employees and contractors as discussed in Section 11.1 - Ensure that the intention of giving preferential employment to locals is clearly communicated, so as to discourage in influx of job-seekers from other areas; - Involve local community structures to assist in communicating the intention to give preference to local labour, and also to assist in identifying the local labour pool; - Liaise with the municipalities to ensure that expected population influx is taken into account in infrastructure development planning of the municipal areas; - In consultation with local municipalities and development forums, investigate if its SLP and LED initiatives can contribute to the relevant infrastructure and delivery priorities of the municipal areas - Consider promoting development projects, which includes low cost housing options - Measures to address social pathologies - Implement HIV/AIDS and alcohol abuse campaigns in the communities - Make HIV/AIDS and STD awareness and prevention programmes a condition of contract for suppliers and sub-contractors - Provide an adequate supply of free condoms to workers; - Implement a voluntary counselling and testing (VCT) programme - If feasible, require contractors to undertake HIV/AIDS and STD prevalence surveys amongst its workers on a regular basis - Control access to workforce accommodation to prevent sex workers and petty traders from visiting and/or loitering at construction accommodation and other project sites - Financially support government agencies, local clinics and NGOs involved in raising community awareness and education with regard to STDs and substance abuse - Measures to address crime: - Establish liaison structures/forums with local police to monitor social changes in crime patterns during the construction phase - Establish liaison with existing crime control organisations, such as community policing forums, private security companies and other crime prevention organisation. - Through the abovementioned forums, identify if recorded criminal activities (e.g. rape, housebreaking and stock theft) involved members of the Project's workforce, and act accordingly; - Enforce clear rules and regulations for access to the project site to control loitering. - Consult with the local police service to establish standard operating procedures for the control and/or removal of loiterers - If possible, construction workers should be housed on the premises of existing mine accommodation - Do not provide accommodation on site - Measures to address potential conflict between locals and non-locals: - Implement fair and transparent recruitment policy - Establish a community liaison office and grievance mechanism at a location that is accessible to aggrieved members of the surrounding communities; - Empower project security staff (in terms of resources and facilities) to effectively manage security issues relating to incidents of community unrest at the Project site - Develop standby procedures with the local police service to assist with crowd control - Comply with the international 'Voluntary Principles on Security and Human Rights', for extractive industry, which emphasises the need for, and value of, effective risks assessment to address human rights issues, and establish appropriate relations with public and private security structures	Construc operation

Activities	Potential impacts	Aspects affected	Mitigation type	Time pe impleme
All Project Activities	Dependency on the Project for sustaining the local economy	Appointment of workforce and investment in the local economy	- Develop a Closure Plan that include measures to address the social impacts of closure - Predict the likely socio-economic impact of closure on employee households, local communities and the region - Identify critical issues which could affect the on-going sustainability of employees and communities during closure, by means of a detailed consultation process - Implement the recommendations of the abovementioned assessments - Identify alternative livelihood and socio-economic development opportunities for employees, as well community-based development projects which may become sustainable over the long term - Provide financial and/or technical support for the establishment of sustainable community projects. - Establish a Future Forum for the purposes of: - Promoting continuing discussions between employers and employees representatives; - Identifying solutions to problems and challenges which may arise and impact on the operation of the Project; - Discussing issues regarding retrenchment and downscaling, and identifying turnaround strategies; - Developing and implementing prevention and redeployment strategies in the management of retrenchments; - Coordinating the notification process during retrenchments or closure; and - Mobilising the DoL's Social Plan Services for technical assistance on job advice, and retrenchment during retrenchment and closure. - Implement a consultation process in accordance with Section 52 (1) of the MPRDA, of a consultation process in terms of Sections 189 and 189(A) of the Labour Relations Act - Approach the DoL for the utilisation of its resources and support services, such as counselling services and placement services offered by its Labour Centres - Inform affected areas, such as the local municipality and labour sending areas, of imminent retrenchments. The full impact of such retrenchments must be disclosed to the municipalities and possible solutions discussed. - Liaise with institutions such as the National Productivity Institute to identify other economic sectors and ventures that can absorb employees - Partner with LED programmes of other mines and the local municipalities as this will strengthen project initiatives - Ensure that local (and other) employees are trained in alternative skills. Link training to the initiatives described above - Provide financial life skills to employees	Operatio decomm

Table 14-5: Applicable social management standards, practice, guideline, policy or law

Social Impact Assessment	Applicable standard, practice, guideline, policy or law
The South African Constitution, 1996	The proposed Project has to comply with South African constitutional and common law by conducting with due diligence and care for the rights of others. Section 24 (a) of the South African Constitution st that is not harmful to his or her health and well-being. This supersedes all other legislation.
National Environmental Management Act, 1998 (NEMA)	This Act provides that sustainable development requires the integration of social, economic and env and evaluation of decisions so as to ensure that development serves present and future generatio participation.
Mineral and Petroleum Resources Development Act, 2002 (MPRDA)	Upon the acceptance of an application for a mining right, the applicant is required to prepare an I accordance with requirements of the Environmental Impact Assessment Regulations, 2014 (EIA 201 mitigate both bio-physical and social impacts of the proposed development. The MPRDA (and NEMA) requires that mining companies assess the social impacts of their activi must develop and implement a comprehensive Social and Labour Plan (SLP) to promote socio-econ prevent or lessen negative social impacts. It is a requirement of the MPRDA that the Project's SLP progression of its employees, and in particular, Historically Disadvantaged South Africans (HDSAs), a
South African Mining Charter	The Mining Charter focuses on sustainable transformation of the mining industry. The Mining Charter ■ Promote equitable access to the country's mineral resources to all the people of South Africa ■ Substantially and meaningfully expand new opportunities for HDSAs to enter the minin exploitation of the nation's mineral resources; ■ Utilise and expand the existing skills base for the empowerment of HDSAs and to serve the c ■ Promote employment and advance the socio- economic welfare of communities and major la ■ Encourage beneficiation of South Africa's mineral commodities; and ■ Promote sustainable development and growth of the mining industry.
Mine Health and Safety Act, 1996 (Act 29 No. of 1996)	This Act is mainly administered by the Mine Health and Safety Inspectorate of the DMR. The section

	well as on an on-going basis. Its objectives are to: ▪ Identify and assess social and environmental impacts, both positive and negative, in the proje ▪ Avoid, minimise, mitigate or compensate for adverse impacts on communities and the enviro ▪ Ensure that affected communities are appropriately engaged on issues that could potentially ▪ Promote improved social and environmental performance of companies through the effective
IFC ***Performance Standard 4***: "Community Health, Safety, and Security"	This PS provides that a project should avoid or minimize the potential for community exposure to wa diseases that could result from project activities. In particular, a project must avoid and/or minimize may be associated with the use of non-local project labour. In addition, many infectious diseases ca attracts a large influx of potential job seekers or source its workforce from out of the country. The PS to improve environmental conditions that could help to minimize the incidence of diseases endemic in
IFC ***Performance Standard 5:*** "Land Acquisition and Involuntary Resettlement*."*	IFC PS 5 is the primary international standard applicable to involuntary resettlement. The objectives c ▪ Avoid, and when avoidance is not possible, minimise displacement by exploring alternative p ▪ Avoid forced eviction; ▪ Anticipate and avoid, or where avoidance is not possible, minimise adverse social and restrictions on land use by (i) providing compensation for loss of assets at replacement cost implemented with appropriate disclosure of information, consultation, and the informed partic ▪ Improve, or restore, the livelihoods and standards of living of displaced persons; and ▪ Improve living conditions among physically displaced persons through the provision of adequ sites.
IFC ***Performance Standard 6:*** "Biodiversity Conservation and Sustainable Management of Living Natural Resources"	This PS includes references to the potential impact of project-induced population influx on bi ecosystems.
IFC ***Performance Standard 8*** *("Cultural Heritage")*	This PS highlights the potential impact of population influx on the cultural and/or natural resources of

14.3 Monitoring Plan

It is proposed that a monitoring programme be developed and implemented to monitor the implementation of social management actions. Furthermore, it is recommended that this is conducted by a competent monitoring and evaluation (M&E) officer as the implementation of monitoring tools (surveys, databases, etc.) will require specialised skills.

The M&E approach recommended in this section is based on the “inputs-outputs-outcomes-impacts” model, which assesses performance of each level of the "results chain." As such, the following four categories of M&E indicators have been defined:

- **Input indicators:** These indicators measure the quantity, quality, and timeliness of resources – human, financial and material, technological and information – provided for an activity/ project/ programme;
- **Output indicators:** These indicators measure the quantity, quality, and timeliness of the products – goods or services – that are short-term results of an activity/project/ programme;
- **Outcome indicators:** These indicators measure the intermediate results generated by programme outputs. They often correspond to any change in people’s behaviour as a result of programme; and
- **Impact indicators:** These indicators measure the quality and quantity of long-term results generated by programme outputs (e.g. measurable change in quality of life, reduced incidence of diseases, increased income, reduced mortality, etc.).

Table 14-6 provides a framework for monitoring the implementation and performance of social management actions. Each indicator is classified in terms of the four categories as defined above. Objective means of verification, optimal frequency of reporting and responsibility for verification are also defined.

Table 14-6: Monitoring and Evaluation Framework

Indicator	Type of indicator				Means of verification	Reporting frequency	Responsible party
	Input	Output	Outcome	Impact			
Employment creation							
Local Employment Policy is developed that includes SLP and BBBEE requirements and "Women in Mining" requirements	X				Local Employment Policy on file	Once-off	HR Department
Applicable requirements of the existing Recruitment and Selection Policy are applied when employing locally		X			Recruitment records, checked against policy	Every 6 months	HR Department
Local employment requirements are included in contractor management plans		X			Contractor management plans on file	Monthly	Procurement and Supply Chain Management Department
Labour pool database is developed and kept up-to-date	X				Date of latest revision of database	Every 6 months	Procurement and Supply Chain Management Department
Targets in terms of local recruitment are met by Project and contractors			X		Records of employee places of origin	Monthly	HR Department
Percentage of locally-recruited employees increases over a 5-year period				X	Records of employee places of origin	Every 5 years	HR Department
Turnover among locally-recruited employees is below 5%				X	Employee records	Annually	HR Department
Skills development and capacity building							
Detailed skills inventory is prepared for the Project	X				Skills inventory on file	Once-off, reviewed every 5 years	HR Department, with input from technical departments
Appoint qualified Technical Consultant for Skills Survey	X				Consultant appointment contract	Once-off at start of operation	Procurement and Supply Chain Management Department; Social Manager
Skills survey is undertaken in the local communities & local skills database is developed		X			Report & database on skills survey results	Once-off at start of operation, updated every 5 years	Consultant; SLP Manager
Qualified Training Consultant is appointed to develop training programmes	X				Consultant appointment contract	Once-off at start of operation	Procurement and Supply Chain Management Department; SLP Manager
Training programme is developed based on the skills gaps identified for the Project		X			Training programme approved by Social Manager & HR Department	Once-off at start of operation, updated every 5 years	Consultant; SLP Manager
Training programme is implemented			X		Annual SLP Report and Workplace Skills Plan Report	Annually	SLP Manager, HR Department
Staff skills levels and job performance improve				X	Staff performance appraisals	Annually	HR Department, with input from line managers
Skills levels in local communities improve				X	Follow-up skills surveys	Every 2 years	HR Department, with input from line managers
ABET programmes are implemented for both workers and people from local communities			X		Training records on file	Annually	Training Service Provider; SLP Manager
Locals who received training (and qualified) are employed on the Project or receive procurement contracts with the Project				X	Employee and procurement records	Annually	HR Department; Supply chain management
SLP's Skills Development Plan (*Skills Development Programmes and Learnership Scheme)* expanded to include more people from the local area			X		Targets set out in training & learnership plans	Once-off at start of operation, updated every 5 years	HR Department; SLP Manager
Targets are met in terms of enrolment of local community members in training programmes and learnerships				X	Training and learnership records on file	Annually	Training Service Provider; SLP Manager
Targets are met in terms of participation of suitable people from local communities participate in company bursaries and internships programmes				X	Records of bursaries and internships provided	Annually	HR Department

Indicator	Type of indicator				Means of verification
	Input	Output	Outcome	Impact	
Local and regional economic development					
Procurement and Supply Chain Management Department is and Committee are established	X				Record of Department and Committee establishment
Management and operational procedures are developed to ensure preferential procurement in accordance with BBBEE and the Mining Charter	X				Procedures are on file
Procurement Progression Plan is developed as stipulated in the SLP	X				Procurement Progression Plan on file; included in SLP
Skills development and training targets are defined for local procurement, and included in contractor management plans		X			Targets included in Procurement Progression Plan and contractor management plans
Skills development and training targets for local procurement are met			X		Training records on file
LED consultant is appointed for local business capacity assessment	X				Consultant appointment contract
Inventory is compiled of local businesses		X			Inventory on file
Capacity assessment is undertaken of local businesses		X			Report on capacity assessment
Existing supplier database is updated regularly to include suppliers that have received training and support, and could qualify for procurement opportunities			X		Date of latest revision of database
Procurement opportunities are identified that may be available to local contractors		X			Record of identified opportunities
Goods and services are identified that could be supplied by local contractors (e.g. through unbundling of contracts)		X			Record of identified opportunities
Plan is developed for SMME support and partnerships		X			Completed plan on file
Local businesses are aware of the procurement needs of the Project and have sufficient information to prepare tenders			X		Record of enquiries/ responses received to advertised tenders

Indicator	Type of indicator				Means of verification
	Input	Output	Outcome	Impact	
LED impact indicators (as defined in SLP) are achieved				X	SLP implementation reports
CSI Policy and Programme are developed and signed off by senior management	X				Local Employment Policy on file
Service providers are appointed to assist with/manage CSI & community development projects		X			Service providers' appointment contracts
CSI & community development projects are implemented			X		Annual CSI implementation reports
Impact indicators (as defined in CSI Programme) are achieved				X	Annual CSI implementation reports
Increased access to land					
Rehabilitation of reclaimed sites					
Disruption of movement patterns					
Implement mitigation measures of specialist reports	X				
Measures implemented			X		Reporting as per specialist reports
Grievance Procedures implemented					Grievance log and outcome reports
Community Health & Safety					
Technical Consultant is appointed to develop Community Health Safety and Security Plan (CHSSP)	X				Consultant appointment contract
CHSSP is adopted		X	X		Adoption Plan is signed-off by senior managemen
CHSSP is implemented			X		Quarterly and annual reports submitted and approved
Relevant mitigation measures in the EMP are implemented			X		Environmental & social monitoring reports
Technical Consultant to develop Community, Health, Safety and Security Plan	X				Consultant appointment contract

Indicator	Type of indicator				Means of verification
	Input	Output	Outcome	Impact	
HIV awareness in communities is improved, and VCT services are accessed				X	Sample survey on community knowledge, awareness and practice related to health & safety
Impact on surrounding farms					
Technical Consultant is appointed to develop and implement communication channels and mechanisms (Stakeholder Engagement Plan (SEP))	X				Consultant appointment contract
SEP is developed that includes: - Communication channels for dissemination information regarding local recruitment and employment - Dissemination of information regarding local ABET and skills development opportunities - Mechanisms for identification and prioritisation of CSI/community projects - Regularly reporting on progress with SLP/LED implementation - Channels to address grievances from local communities and farm owners - Grievance Procedure and mechanisms		X			Completed plan on file
SEP and Grievance Procedure are implemented			X		Performance monitoring against output indicator as defined in SEP
All grievances are addressed within timeframes specified in the Grievance Procedure, and records are kept of resolution				X	Grievance register
Community & stakeholder perceptions of the project show improvement over 5 year period				X	Sample survey on community attitudes towards t Project (may be combined with sample survey on community knowledge, awareness and practice related to health & safety – see above)
Water quality and quantity					
Technical Consultant is appointed to develop water monitoring programme	X				Consultant appointment contract
Water monitoring programme is implemented		X			Environmental & social monitoring reports
Compensation is provided for loss of water supply/quality if the monitoring programme confirms Project's liability			X		Compensation records
Compensation successfully offsets water impacts				X	Records of meetings with affected stakeholders
Displacement impacts					

Indicator	Type of indicator				Means of verification
	Input	Output	Outcome	Impact	
Affected parties sign agreements			X		Documentation on files
Affected parties have the right to appeal				X	Appeals are registered and claimants
Project-induced population influx					
Investigate partnerships with local authorities	X				Strategic projects have been identified with municipalities
Develop partnership agreements		X			
Sign agreements with local authorities on assistance with IDPs and SDFs			X		Sign-off completed and documents on file
Include agreements in Project SLP/LED and CSI				X	SLP and CSI programmes adapted accordingly
Dependency on the Project for sustaining local development (Social Closure)					
Social Closure Plan is developed	X				Plan on file
SLP and LED Plan are regularly updated		X			SLP updated
Regular reporting is undertaken on SLP and LED Plan implementation			X		SLP implementation reports
Objectives as defined in Social Closure Plan are achieved				X	Closure Plan implementation report

The monitoring programme must also include specific key performance indicators to monitor and evaluate the Project's contribution to local economic development. Some of the key outcomes that should be monitored in this regard are listed below.

- Percentage of total workforce that is local (as defined in the SLP).
- Number of people trained in project required skills.
- Number of people trained in skills not directly required by the Project.
- Number of people given basic adult education.
- Percentage of total project contracts made available to local suppliers.
- Percentage of project expenditure on local procurement.
- Number of businesses and entrepreneurs trained.
- Number of successful SMMEs assisted (project supply chain).
- Number of successful micro-enterprises assisted (excluding project supply chain).
- Amount spent on social investment as a percentage of turn-over.
- Number of people impacted by social investment.

15 Consultation Undertaken

Several interviews were conducted during May and June 2015 as part of the assessment phase of the SIA. Eighteen interviews were conducted with directly and/or indirectly affected land owners and users in the project area (Table 15-1). The objectives of the interviews were to obtain a good understanding of the study areas, to verify land use and land occupancy, and to obtain information from local stakeholders on their views and concerns about the Project.

Figure 8 shows the areas that were visited during the SIA study. Not all potentially affected parties were interviewed. Opportunities to engage farmworkers were very limited. However, observations, together with the information from respondents, are considered sufficient to develop a good understanding of the social baseline conditions in the primary study area, and assess the project-induced social impacts accordingly.

Table 15-1: List of Stakeholders Interviewed

Name of Resident	Farm Portion	Tenure Status	Date Interviewed
Johan Burger	Driefontein 113 and Leeuwpoort 356	Tenant	18 May 2015
Ignatius Badenhorst	Wildebeestkuil 360 and Rietfontein 519	Owner	19 May 2015
Andre Swanepoel	Wildebeestkuil 360	Owner	19 May 2015
Paul da Cruz	Doornkloof 350	Owner	20 May 2015
Coetzee Badenhorst	Cardoville 364 & 358 and Droogheuwel 521	Owner	20 May 2015
Ben & Bernard Rabe	Tweefontein 396, Geluksdal 396, Raatskraal 524, Barnardsrus 628 and Cardoville 364	Tenant	21 May 2015
Andre Badenhorst	Wildebeestkuil 360 and Weltevreden 357	Owner Tenant	21 May 2015
James Keyser	Rietfontein 519	Owner	22 May 2015
Alfred Rudman	Kalbasfontein 365	Owner	22 May 2015
Johan Mahne	Blyvooruitzicht 116	Tenant	22 May 2015
Tom Visser	Blyvooruitzicht 116	Owner	22 May 2015
Piet Davidtsz	Weltevreden 357	Owner	25 May 2015
Mr & Mrs van Heerden	Rietfontein 519	Owner	25 May 2015
Peet Bornman	Doornkloof 350 and Libanon 283	Tenant	25 May 2015

Name of Resident	Farm Portion	Tenure Status	Date Interviewed
Jaco Taute	Doornkloof 350,Doornpoort 347 and Elandsfontein 346	Tenant Owner	25 May 2015
P. J. Henning	Leeuwpoort 356, Doornkloof 350 Driefontein 113 and Uitval 280	Tenant	26 May 2015
Barry van Wyk	Kalbasfontein 365, Wildebeestkuil 360, Rietfontein 519 and Cardoville 364	Owner Tenant Tenant Tenant	26 May 2015
Armand de Villiers	Weltevreden 357 and Cardoville 364	Owner Tenant	2 June 2015
Other Stakeholders Interviewed			
Mariette Liefferink	Federation for Sustainable Environment (in person)		5 June 2015
Sefoshe Philemon	Far West Rand Dolomitic Water Association (telephone)		5 June 2015

Table 15-2 lists the main issues and concerns of respondents, while Table 15-3 lists some of the general comments and suggestions from respondents. While these comments relate to the potential negative impacts associated with the Project, some respondents acknowledged the potential benefits that the Project may have in terms of economic growth and “cleaning up the environment.” Nevertheless, the perceived negative impacts of the Project dominated discussions.

It is noted that most of the concerns referred to issues that already exist, but respondents were of the opinion that the Project would exacerbate current conditions. While respondents referred to health risks associated with uranium production, this concern did not dominate discussions. However, dust resulting from mining activities (and associated potential health issues) was one of the overriding concerns. Other main concerns include:

- Crime and security;
- Water pollution;
- Loss of land; and
- Property devaluation.

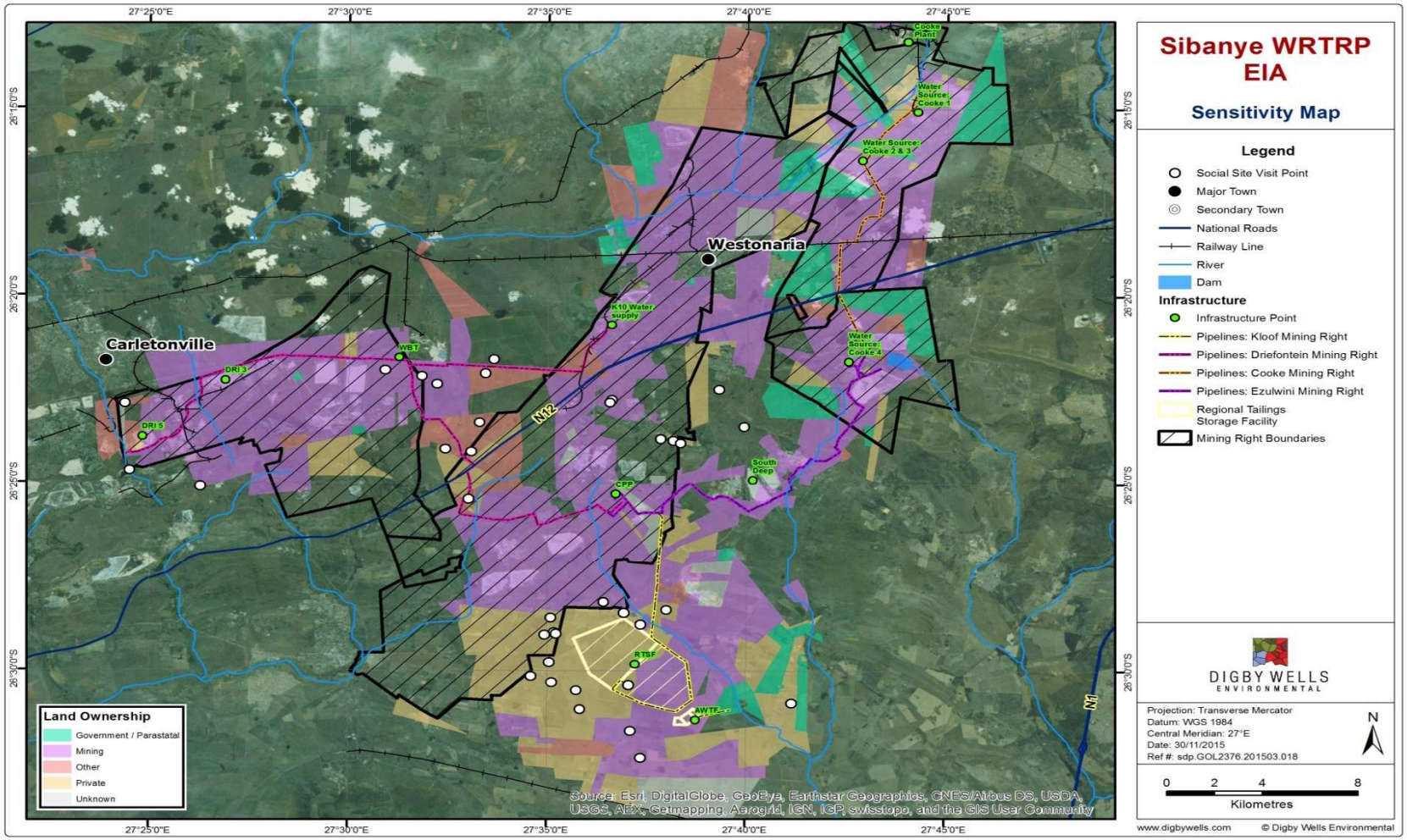


Figure 8: Areas visited during the SIA study

Table 15-2: Issues and Concerns

Issues and concerns		Negative impacts	Frequency of issue raised
1.	Dust fallout	▪ Serious health risks: lung and sinus problems; ▪ Financial loss: crop loss and loss of feed for cattle	94%
2.	Crime and security	▪ Financial loss: cattle/livestock and fencing theft; ▪ Safety: burglary, stock theft	94%
3.	Water pollution	▪ Farmers' dependency on borehole and natural streams is very high. Pollution of water sources would be devastating	88%
4.	Loss of land	▪ For many respondents farming is their only income. Loss of land would leave them without a livelihood	83%
5.	Property devaluation	▪ Financial loss: Not only will farmers lose their income when their farms are acquired, but they may not get the full market value for their property	78%
6.	Population influx	▪ There are already many informal settlements in the area, with associated crime and other social ills. The Project will cause more influx of people and informal settlements	56%
7.	Impacts on adjacent farmers	▪ Adjacent farmers will bear the brunt of negative impacts without receiving compensation	44%
8.	Burst pipes and TSF leakage	▪ Leakages at South Deep Mine are already a problem. This increases the risks for the surrounding communities	22%
9.	Traffic and lack of road maintenance:	▪ Increased traffic is currently an issue as a result of other projects in the area. Roads are not being maintained. The new project will aggravate the situation	22%
10.	Artisanal miners accessing property	▪ Artisanal miners are currently an issue near Blyvooruitzicht, There is a concern that these illegal miners will increase and access private property	11%

Table 15-3: General Comments, Questions and Suggestions

1.	SGL continues to assure farmers that they will control dust fallout; yet farmers are currently battling with serious dust fallout from Kloof Mine.
2.	Water from the Leeuspruit and Loopspruit is causing cows to have miscarriages. The occurrence of these events will become more frequent with another project in the area
3.	SGL needs to improve its relationship with the farming community and assist with issues such as veld fires.
4.	SGL allows some of its workers to graze their cattle on mine property. This makes it easier for cattle thieves to hide cattle they have stolen amongst other herds. These cattle graze in close proximity of the Uranium TFS. The meat from these cattle is toxic, yet is sold for human consumption and also transported to the Transkei. Thus, SGL is indirectly contributing to this negative impact on people living on the local farms, as well as further afield
5.	A member of the family who used to reside on the “Berry farm” adjacent to the Uranium TFS is on dialysis as a result of years of exposure to uranium. After farm was bought by the mine, SGL is now allowing mine employees to reside on that farm. This is extremely dangerous as they are putting more lives at risk without these people being informed.
6.	Why can SGL not use the land they have already acquired? They are taking fertile farming land, and at this rate it will have an impact on the national food security.
7.	SGL must buy farms within a wider radius from project infrastructure to ensure minimal impact. Adjacent farmers will be seriously impacted by dust, noise, traffic, etc.
8.	The local farming community is a close knit group. This sense of community has a role in the farmers’ success in this area. How will they build this again in another area in the event they have to move?
9.	In the event that farmers are bought out (i.e. their land will be acquired by the Project), it is not sufficient only to compensate them for their property. They have spent a substantial amount of money on developing their farms.
10.	Farmers need to be informed well in advance about planning for the Project years. They need to make life decisions and it cannot be expected of them to make such serious decisions on a whim.
11.	As affected parties they feel they have the right to be informed of results, e.g. water test results should not be kept from them. This makes them think that SGL has something to hide.
12.	Population influx will cause serious damage to the environment. “City people” have lost touch with the environment, and do not respect the environment; thus littering, veld fires and pollution will become common place.

16 Comments and Responses

The Comments and Response Report of the EIA's public consultation process highlights a number of concerns that may directly or indirectly also relate to socio-economic conditions. These include (but are not limited to) aspects pertaining to:

- Water quality and quantity;
- Acid mine drainage (AMD);
- Loss of agricultural potential;
- Community health, safety and security;
- Potential end-land uses post closure;
- Potential positive impacts of the Project in terms of creating a cleaner environment and minimising health impacts associated with gold and uranium production;
- Impacts on farmers living adjacent to project facilities/infrastructure on land that may not be acquired by the Project; and
- The nature of relationships between mining companies and host communities, and the importance of on-going consultation with affected communities and land owners.

Where applicable, the socio-economics aspects of the abovementioned concerns have been addressed in this SIA. This section will, however, have to be updated continuously to reflect the outcome of further public consultations.

17 Conclusion and Recommendations

Table 11-2 shows that 13 social impacts were identified for the proposed Project; six of these are positive and seven negative. If all mitigation measures are implemented according the recommendations given in Section 11, it is anticipated that the consequence and/or probability of most negative impacts will be reduced.

It, is recommended that the mitigation measures described in Section 11, and summarised in Table 11-2 be incorporated into the EMP for the proposed Project and, where relevant, into contract conditions to be issued to the subcontractors. Measures must also be developed to monitor and assess the implementation of these mitigation measures and to take corrective action where necessary.

It is also recommended that SGL establish linkages with other institutions (e.g. government, NGOs and other mines) involved in local and regional economic development and social upliftment to maximise project benefits to the welfare of local communities.

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Appendix A: Curriculum Vitae N Boersema

Appendix B: Curriculum Vitae J Erwee