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Social Impact Assessment for De Wittekrans Coal Mine

Report

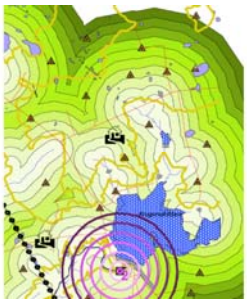
version – 1

June 2009

Client Name: Mashala Resources (Pty) Ltd
Project Number: 00078/000/000/08-111

MASHALA RESOURCES

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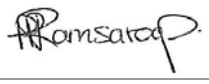
Author	Priya Ramsaroop		June 2009
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EXECUTIVE SUMMARY

Mashala Resources has applied for a mining right in respect of coal reserves on the remaining extent of Portion 1 and 2 of the farm De Wittekrans 218 IS, Portion 5, Portion 7 and Portion 11 of the farm De Wittekrans 218 IS, the farm Tweefontein 203 IS, the remaining extent of Groblershoek 191 IS, the remaining extent of Israel 207 IS and the farm Groblershoop 192 IS. This area lies between the towns of Ermelo and Hendrina in the Mpumalanga Province, on the western side of the N11. It is the intention of Mashala Resources to develop both an opencast and underground coal mine on the above mentioned properties with a life of mine of approximately 30 years.

In terms of Section 39 (1) of the Mineral and Petroleum Resource Development Act (Act 28 of 2002) (MPRDA), Mashala Resources is required to conduct an Environmental Assessment and submit an Environmental Impact Assessment (EIA) Report and an Environmental Management Programme (EMP) to the Department of Minerals and Energy (DME), in respect of the development and operations of the proposed opencast and underground mine.

As part of the EIA report, a Social Impact Assessment (SIA) was also undertaken. . The aim of the SIA was to identify and assess the potential social impacts associated with the proposed mining activities on the affected landowners and surrounding communities. In so doing the SIA provides:

- A description of social trends and current conditions;
- An analysis of significant social and cultural values existing in the assessment area and the relationship of these values to the proposed change;
- A description of the local and regional economy and potential economic links between the proposed development and the assessment area;
- Definitions or interpretations of key variables and their sources;
- Documentation of data sources and a discussion of the assumptions underlying their analysis and projection; and
- A discussion of the reliability of data, inconsistencies, or gaps in the data that may affect the analysis.

The SIA found the following key issues (positive and negative) raised by the farmers and key interested and affected parties in the surrounding area. These issues are related to the Construction and Operational phases of the mine.

The following key issues are related to the Construction phase:

- The influx of migrant workers and the associated concerns which arise from that;
- Degradation of the gravel roads;
- Loss of sense of place;
- Creation of economic development, employment and business opportunities for the area and the broader region as a whole. In this regard many members of the local community indicated that this would result in loss of their local work force as they would not be able to compete with the mine wages and benefits; and
- Opportunities for education, skills development and training linked to the mine.

The following key issues are related to the Operational phase:

- Inability to rehabilitate disturbed areas and return them to productive farmland (agriculture and grazing);
- Pollution of the environment, specifically water bodies (groundwater and surface water);
- Visual effect of mine is a disturbance to the farm like atmosphere in the area;
- Dust from trucks travelling along the road as well as potential dust from the proposed opencast mining operations; and
- Noise and vibrations generated by the proposed mining operation.
- Creation of employment and business opportunities.

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1. INTRODUCTION

Mashala Resources has applied for a mining right in respect of coal reserves on the remaining extent of Portion 1 and 2 of the farm De Wittekrans 218 IS, Portion 5, Portion 7 and Portion 11 of the farm De Wittekrans 218 IS, the farm Tweefontein 203 IS, the remaining extent of Groblershoek 191 IS, the remaining extent of Israel 207 IS and the farm Groblershoop 192 IS. This area lies between the towns of Ermelo and Hendrina in the Mpumalanga Province, on the western side of the N11. It is the intention of Mashala Resources to develop both an opencast and underground coal mine on the above mentioned properties with a life of mine of approximately 30 years. This project area falls in the Msukaligwa Local Municipality which covers 830 957 ha within the Gert Sibande District Municipality. The total population in the Msukaligwa Local Municipality is 124 319 people.

In terms of Section 39 (1) of the Mineral and Petroleum Resource Development Act (Act 28 of 2002) (MPRDA), Mashala Resources is required to conduct an Environmental Assessment and submit an Environmental Impact Assessment (EIA) Report and an Environmental Management Programme (EMP) to the Department of Minerals and Energy (DME), in respect of the development and operations of the proposed opencast and underground mine.

GCS has been appointed by Mashala Resources to undertake the EIA and EMP. As part of the EIA report, a Social Impact Assessment (SIA) was also undertaken. The aim of the SIA was to identify and assess the potential social impacts associated with the proposed mining activities on the affected landowners and surrounding communities.

2. APPRAOCH THE STUDY

The International Association of Impact Assessment (IAIA) Guidelines for Social Impact Assessment (1994) stipulate some guidelines which have been used as the basis for the study, although adjustments have been made to correspond with specific project requirements. The phases that formed part of the study, with their various steps that were undertaken are summarised as follows:

- Scoping, which involves a preliminary investigation to identify the main anticipated social impacts and serves to focus the study;
- Review of consultation with key stakeholders;
- Review of demographic data from the 2001 Census Survey;

- Review of relevant planning and policy frameworks for the area, including the Msukaligwa Local Municipality.
- Identification and defining of key impacts based on site specific information collected during site visits to the area and meetings with interested and affected parties;
- Identification and assessment of potential social impacts;
- Development of potential mitigation measures if and where necessary; and
- Compilation of the Social Impact Assessment Report.

2.1 Definitions of Social Impacts

The term Social Impact Assessment (SIA) can be defined as the process of identifying the future consequences of a current or proposed action which are related to individuals, organisations, and social macro-systems. This definition is similar to the description of SIA by the Inter-organisational Committee on Guidelines and Principles (1994). The committee defined social impacts as the consequences for human populations of any public or private action that alters the way in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. According to the committee the term also includes cultural impacts involving changes in the norms, values and beliefs that guide and rationalise their cognition of themselves and their society (Becker, 1997).

An SIA, therefore, attempts to predict the probable impact of a development (before the development actually takes place) on individuals and communities by:

- Appraising the social impacts associated with the project;
- Relating the assessed social impacts of the project to future changes in the socio-economic environment that is not associated with the project. This would serve to place the impacts of the project into context;
- Using the measurements (rating) to determine whether the impacts would be negative, neutral or positive;
- Determining the significance of impacts; and
- Proposing mitigation measures.

2.2 Data Gathering

Data gathering is a process by which information is collected from respondents and obtained from existing data. This includes baseline socio-econ data, plus project info from the client.

Primary data gathering represents the collection of qualitative information that was specifically generated as part of the proposed project, mainly through the public participation process. This data assists in establishing the social setting and characteristics of the study area.

A site visit was undertaken to ascertain the relevant information regarding social characteristics of the area. Interviews were conducted via telephonic conversations with the local municipal councillor and adjacent landowners. Follow up interviews were also held with the adjacent residents and land owners during November 2008.

Secondary data was sourced through the Integrated Development Plan (IDP) for the Msukaligwa Local Municipality and the De Wittekrans Scoping Report.

3. THE DECLARATION OF INDEPENDENCE

The declaration of independence is to confirm that GCS, the specialist consultants responsible for undertaking the study and preparing the SIA Report, are independent and do not have vested or financial interests in the proposed coal mine being either approved or rejected.

The Social Impact Assessors Priya Ramsaroop and reviewer Tony Barbour were appointed by GCS to undertake this project.

Priya Ramsaroop who compiled the report has a BSc degree in Environmental Science and Psychology as well as a BSc Honours in Applied Psychology from the University of the Witwatersrand. She has worked in the consultancy industry and has undertaken SIAs and Environmental reports since 2007.

Tony Barbour who reviewed this report has an MSc in Environmental Science from the University of Cape Town and is an independent specialist with 18 years experience in the field of environmental management and impact assessments. In terms of SIA experience, Tony Barbour has undertaken in the region of 30 SIA's and is the author of the Guidelines for Social Impact Assessments for EIAs adopted by the Department of Environmental Affairs and Development Planning (DEA&DP) in the Western Cape in 2007. This guideline document is based on accepted international best practice and has been endorsed by the National Department of Environmental Affairs and Tourism.

4. ASSUMPTIONS AND LIMITATIONS

4.1 Assumptions

4.1.1 Economic and technical viability

It is assumed that the information provided by Mashala Resources with regard to the economic and technical viability of the proposed mine is accurate and sound.

4.1.2 Fit with planning and policy agreements

Legislation and policies reflect societal norms and values. The legislative and policy context therefore plays an important role in identifying and assessing the potential social impacts associated with a proposed development. In this regard, a key component of the SIA process is to assess the proposed development in terms of its fit with key planning and policy documents. As such, if the findings of the study indicate that the proposed development in its current format does not conform to the spatial principles and guidelines contained in the relevant legislation and planning documents, and there are no significant or unique opportunities created by the development, the development cannot be supported (SIA Guidelines for the Western Cape, 2007).

However, the study recognises the strategic importance of the proposed coal mine in terms of economic development and investment in an area with high unemployment and low income levels.

4.2 Limitations

4.2.1 Demographic Data

The demographic data used in this report was largely based on the 2001 Census data. While this data does provide useful information on the demographic profile of the affected area it is in some cases dated. Where possible this data has been updated from other sources like the Social and Labour Plan (SLP) and the Msugaligwa Municipality Integrated Development Plan (IDP).

5. PROJECT DESRIPTION

Mashala Hendrina Coal (Pty) Ltd (Mashala) has applied for a mining right in respect of coal reserves on Portions 5, 7, 10, 11 and the remaining extents of Portions 1 and 2 of the farm De Wittekrans 218 IS, the remaining extent of Portion 1 of the farm Tweefontein 203 IS, the remaining extent of the farm Groblershoek 191 IS and all portions on the farm Groblershoop 192 IS and Israel 207 IS. The project area is situated between the towns of Ermelo and Hendrina in the Mpumalanga Province, on the western side of the N11. It is the intention of Mashala to develop a coal mine (both opencast and underground activities will be undertaken) on the above-mentioned property.

5.1 Scale of Project

The proposed mining area is approximately 3 193ha in size and the mining method to be used is conventional opencast mining, making use of the roll-over method, while the standard bord and pillar mining method will be used for the underground section. Rehabilitation will take place on an ongoing basis. (A detailed description of the project is included in Section 5 of the EIA Report.)

Opencast mining is expected to commence within six (6) months of the granting of the Mining Right. The areas will commence to the north of the National Road (N11) and the area to the south of the Klein Olifants River. These two (2) areas (Tweefontein 203 IS and De Wittekrans 218 IS) will commence at the same time and will be developed to allow access to the underground mining areas to the north east (Northern Underground Section) and the south west (Southern Underground Section) of the property. (Groblershoek 191 IS, Groblershoop 192 IS and Israel 207 IS).

Opencast mining will be conducted in benches using appropriate equipment based on current use in South Africa. Approximately eight (8) opencast sections will be mined during the life of mine. Boxcut excavations will be constructed, and to facilitate the exposure of the highwall at an appropriate time to allow access to the underground reserves.

Two (2) Underground sections will be developed The northern Underground Section will be to the north of the N11 and the Southern Underground Section will be situated on the farms Groblershoek 191 IS, Groblershoop 192 IS and Israel 207 IS.

The underground mining will be carried out on the B Seam and C seam using mechanised bord and pillar mining methods. The mining layout has been design to cater for panel

lengths of 1000m on average. Access to Underground Areas will be from the highwall at Open cast areas.

There are sufficient coal reserves to sustain an operation for at least 30 years.

The mine will create approximately 430 employment positions. The recruitment of employees will commence as soon as the new mining right has been granted by the Department of Minerals and Energy (DME) and will be based on the requirements and planning contained in the Mining Work Programme. The labour sending areas for the De Wittekrans Mine employees are the towns of Ermelo, Hendrina and the surrounding areas. All new employees for De Wittekrans will be recruited from labour sending areas within Ermelo and Davel towns. Once a mining right has been granted and a once a full labour force has been recruited, an exact breakdown of the numbers and labour sending areas will be provided to the DME.

Where a shortage of mining-related skills exists as far as practically and operationally possible, local people will be trained to fill these positions. A proper and transparent recruitment procedure will be followed during the sourcing of employees to ensure that all legal requirements are met and that local residents surrounding the operation are given first preference where possible, given the need for specialised skills at the mine.

The Skills Development Plan for De Wittekrans has been compiled containing estimated actions plans, activities, timeframes, budgets and resources. The Skills Development Plan will need to be verified, reviewed and amended within the Reporting Cycle as the operation spools-up and more employees are engaged**.** The focus of skills development will be on providing employees with opportunities to be functionally literate and numerate; learnerships; skills programmes and portable skills. Later in the life of the operation, the focus will shift to providing employees with opportunities for gaining portable skills in other sectors of the economy (De Witterkrans Social and Labour Plan, 2009).

6. SOCIAL BASELINE STATISTICS

This section provides an overview of the baseline socio-economic conditions in the study area and surrounding areas. The information is based on existing information contained in:

- The Demarcation Board Statistics (2001);
- Msukaligwa Local Municipality IDP (2008-2009); and
- De Wittekrans Social and Labour Plan (2009).

This project area falls in the Msukaligwa Local Municipality which covers 830 957ha within the Gert Sibande District Municipality. The total population in the Msukaligwa Local Municipality is 124 319 people.

6.1 Population Statistics

6.1.1 Age

As indicated in Table 1 and 2, youth and female residents comprise 39% and 52% of the total population of Msukaligwa Municipality respectively. Taking into consideration the unemployment rate of 38% in Msukaligwa as per 2001 statistics, as well as the 2% estimated population growth in line with the District Water and Sanitation blue print, this is creating a large challenge for the Municipality to develop job creation strategies, provision of land for housing, infrastructure and sanitary services. The other challenge is the in the municipality is the mushrooming of squatter settlements as a result of population growth, which should be eradicated by 2014 in terms of the millennium goals.

Table 1: Age Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
0-4	13 904
5-9	14 749
10-14	14 911
15-19	14 116
20-24	11 057
25-29	10 403
30-34	9 013
35-39	8 367
40-44	7 047
45-49	5 698
50-54	4 675
55-59	3 049
60-64	2 703
65-69	1 809
70-74	1 375
75-79	875
80 and over	1 053

6.1.2 Gender

According to Table 2 there are more females than males in the municipal population. The proposed mine will bring in more males to the area which will have an impact on the gender statistics in the project area but may not affect the general gender statistics for the municipality.

Table 2: Gender Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
Female	64 680
Male	60 132

6.1.3 Population Race Distribution

According to Table 3, the Black African population group constitutes 89% of the municipal population, with White people constituting 9% of the population with the Indian and Coloured population making up the remaining 2%. The total area of the local municipality is 6016 km^2, giving a population density of 20.7 people per square kilometer.

Table 3: Race Distribution Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
Black African	111 414
Coloured	378
Indian or Asian	823
White	12 195

6.1.4 Language

According to Table 4, the predominant language in the Msukaligwa Local Municipality is Isizulu, which is spoken by 68% of the population. Siswati is the second predominant language, spoken by 18% of the population in the municipality followed by Afrikaans, which is spoken by 9% of the population in this municipality.

Table 4: Language Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
Afrikaans	11 721
English	1 728
IsiNdebele	1 388
IsiXhosa	879
IsiZulu	83 919

Sepedi	439
Sesotho	872
Setswana	420
SiSwati	22 672
Tshivenda	78
Xitsonga	299
Other	393

6.2 Employment

6.2.1 Employment Status

Table 5 and 6 reflect the labour force within Msukaligwa Municipality and the big challenge in dealing with the unemployment problem. The Municipality, District, business/private sector and government sectors should collectively come up with strategies to deal with this problem.

Table 5: Work Status Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
Paid employee	25 921
Paid family worker	252
Self-employed	1 784
Employer	607
Unpaid worker	65
Not applicable	96 180

The unemployment statistics from Table 6 below reveals that approximately 23% of the municipal population is unemployed, 37% are employed and 41% are not economically active. This means that 41% of the population falls below the age of 16 and above the age of 65 years old. These percentages do not include people who generate a livelihood from subsistence agriculture, grants, handouts, pensions etc.

Table 6: Employment Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
Employed	28 083
Unemployed	17 361
Not Economically Active	31 208

6.2.2 Occupation and Industry

The Msukaligwa economy is based on manufacturing, mining, trade, catering, transport, finance, communications, real estate, and social, mostly government, and personal services. Recently there has been a sharp growth in the number of retail and service establishments, specifically in the town of Ermelo. According to the 2001 Census data, 60% of the population is within the economically active age group. Agriculture, forestry, and fishing comprise 26% of employment sources in the municipality, with wholesale and retail making up a further 13%. Community, social and personal work also makes up 14% of the employment, with manufacturing and mining contributing another 15%.

Table 7: Occupation Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
Senior Officials	1 060
Professionals	1 078
Tech/Assoc Prof	1 940
Clerks	2 276
Service workers	2 334
Skilled agric work	3 097
Other	3 107
Elementary occupation	8 928
Occupations NEC	1 533
Plant Operators	3 274

Maize, sunflower, wheat, soya beans, beans, and potatoes are produced in the surrounding areas. The Nooitgedacht Agricultural research station offers an extensive agricultural support service, such as research on wool, grass and seedlings. Ermelo is also South Africa's largest wool producing area per hoof and this thus makes up a large portion of the manufacturing sector. The annual Merino Wool Festival and Agricultural Show in March attract thousands of tourists each year, thus contributing to the economy of the area.

Since 2001, there has been a large increase in mining activities in Msugalikwa. This has been brought about by investor confidence in mining and positive commodity prices. Coal mining is also an enormous economic contributor to the area, and thus promotes economic growth and employment creation in the town of Ermelo.

Table 8: Industry

Description	Msukaligwa Local Municipality
Agricultural relate work	7 461
Mining, Quarrying	1 852

Manufacturing	2 241
Elec,gas,water	218
Construction	923
Wholesale, Retail	3 746
Transport, Communication	1 431
Business Services	1 460
Community Services	6 398
Private Household	0
Undetermined	96 180
ExtraTerrit Orgs	0
Rep Foreign Gov	0

6.3 Education

Table 9 below reflects the number of educational facilities within the Msukaligwa Municipality and as indicated only one technical college is located within the municipality. Taking into consideration the way in which the municipality is growing and the shortage of skills within communities, there is need for at least another tertiary institution in this area. With development of Ermelo Extensions 32, 33 and 34 with a total of ± 2134 housing units and neighbouring New Ermelo settlement with ± 650 housing units there is also the need for a high school in addition to the six high schools mentioned in the table.

Table 9: Educational Facilities

Description	Msukaligwa Local Municipality
No. of Primary Schools	71
No. of High Schools	6
No. of Combined Schools	12
No. of Secondary Schools	10
No. of Tertiary Education Facilities	1
No. of Training Centres/ Adult Education Facilities	9
No. of Private Schools	3
Total	**112**

Table 10 below shows the education levels of the population. A majority of 15% of the population has some form of secondary education whereas only 9% has completed matric. 14% of the municipal population has no form of schooling and only 3% has a tertiary education.

There is a need for specialised skills at the De Wittekrans Coal Mine. Where a shortage of mining-related skills exists as far as practically and operationally possible, local people will be trained to fill these positions (De Wittekrans Social and Labour Plan, 2009).

Table 10: Education Statistics (Demarcation Board Statistics, 2001)

Description	Msukaligwa Local Municipality
No schooling	17 755
Some primary	11 380
Complete primary	4 021
Some secondary	19 078
Std 10/Grade 12	11 160
Higher	3 733

It is unlikely that the skills shortage would significantly impact on the De Wittekrans Project as a large number of jobs do not require tertiary level education.

6.4 Housing

The Msukaligwa Municipality population is predominately urban with 21 200 urban households and 9 100 rural households giving a total of 30 300 households. The average household size is 4.2 persons, giving a population density of approximately 20.7 people per square kilometer.

The main challenge faced by the municipality is availability of land for housing purposes since the municipality has no additional land available and the only way to overcome this challenge is by securing enough land for housing and other social amenities through purchasing of farms surrounding the town of Ermelo.

Table 11: Household Income Statistics

Description	Msukaligwa Local Municipality
No income	5 851
R1 - R4 800	3 423
R4 801 - R 9 600	6 272
R9 601 - R 19 200	5 727
R19 201 - R 38 400	4 170
R38 401 - R 76 800	2 382
R76 801 - R153 600	1 592
R153601-R307200	624

R307201-R614400	110
R614401-R1228800	41
R1228801-R2457600	37
R2 457 601 , more	27
Not Applicable	41

Table 12: Household size

Description	Msukaligwa Local Municipality
One	5 480
Two	5 556
Three	4 615
Four	4 539
Five	3 363
Six	2 252
Seven	1 497
Eight	1 057
Nine	688
Ten and over	1 249

6.5 Municipal Analysis (Msukaligwa IDP, 2008- 2009)

The municipality has over the past 12 years of the democratic government strived to provide and improve basic services and infrastructure to its communities in order to achieve statutory obligation of ensuring a better life for all. In its endeavour to improve service delivery, the municipality has extended its services to rural communities/farms by providing water boreholes where farm owners consented to these services. It should however be noted that service provision at some rural/farm areas becomes difficult due to resistance by farm/land owners, which poses a challenge to the Municipality. All urban areas within the municipality have access to running water, which includes informal settlement areas where water is provided through communal taps. The municipality has further endeavoured to meet the millennium target of eradicating the bucket system by providing water borne sewerage system at Kwazanele Extension 4 and VIP toilets at Silindile informal settlement.

Urban migration is also posing a challenge, especially in Ermelo with the increase of illegal squatting making it difficult for the municipality to render proper sanitary services and waste removal. Provision of land for housing purposes is therefore the biggest challenge for the Municipality and based on the financial status of the municipality, it becomes difficult to fund the procurement of land from our limited budget. The municipality relies on

funding from the Department of Land Affairs (DLA), Department of Agriculture and Land Affairs (DALA), DPLG and other funding institutions to assist in purchase of land. The municipality with the assistance of the district and the Department of Local Government and Housing need to speed up the process of development of the By-laws to control the illegal squatting so that land can be allocated accordingly.

Msukaligwa Municipality has also provided free basic water to its communities and subsidised indigent residents. The provision of free basic electricity still remains a challenge to the municipality. Eradication of informal settlements is a big challenge for the municipality as this impacts on community health due to poor sanitary services and refuse removal and inaccessibility to some sections of the settlement as result of poor/none existence of roads.

The municipality faces a large challenge to ensure access roads by its residents to critical areas and social amenities, these include access to economic opportunities, thus more work need to be done to improve access to all these critical areas. The poor condition of many roads in the area also impacts on the local economic development and tourism industry. Heavy trucks transporting coal are causing damage to the municipal, national and provincial roads. The national roads damaged by the heavy trucks will be maintained by the South African National Roads Agency and the maintenance of N11 commenced on June/July 2007.

7. IMPACT ASSESSMENT

This section outlines the key social issues and impacts identified during the Study. The identification of social issues and concerns was based on:

- A review of relevant baseline information for the area;
- Issues and concerns identified by interested and affected parties; and
- Issues and concerns identified by the project team during discussion and meetings.

To ensure uniformity, the assessment of potential impacts will be addressed in a standard manner so that a wide range of impacts are comparable. For this reason a clearly defined rating scale was provided to assess the impacts associated with the investigation. Each impact identified will be assessed in terms of probability (likelihood of occurring), extent (spatial scale), intensity (severity) and duration (temporal scale). To enable a scientific approach to the determination of the impact significance (importance), a numerical value will be linked to each rating scale. The sum of the numerical values will define the

significance. The following criteria will be applied to this social impact assessment for the De Witterkrans Coal Mine Project.

Table 13: Probability

Category	Rating	
Definite	4	The impact will definitely occur.
Probable	3	The impact is highly likely to occur.
Possible	2	The impact has some possibility, but low likelihood of occurring.
Improbable	1	The impact is not likely to occur except in extreme and/or rare conditions.

Table 14: Extent

Category	Rating	Description
Site	1	Immediate project site
Local	2	Up to 5 km from the project site
Regional	3	20 km radius from the project site
Provincial	4	Provincial
National	5	South African
International	6	Neighbouring countries/overseas

Table 15: Significance Rating

Score	Significance Rating
3-6	Low
7-10	Low to Moderate
11-15	Moderate
16-19	Moderate to High
20-24	High

Table 16: Duration

Category	Rating	Description
Very short-term	1	Less than 24 hours
Short-term	2	Less than 1 year

Medium-term	3	1 to 5 years
Long-term	4	5 to 15 years
Very long-term	5	Greater than 15 years
Permanent	6	Permanent

Table 17: Intensity

Category	Rating	Description
Very low	0	Where the impact affects the environment in such a way that natural, cultural and social functions are not affected
Low	2	Where the impact affects the environment in such a way that natural, cultural and social functions are only marginally affected
Medium	4	Where the affected environment is altered but natural, cultural and social function and processes continue albeit in a modified way
High	6	Where natural, cultural or social functions or processes are altered to the extent that they will temporarily cease
Very high	8	Where natural, cultural or social functions or processes are altered to the extent that they will permanently cease

7.1 Summary of Key Issues

7.1.1 Introduction

A typical mining project can be divided into three components, namely:

- Construction phase;
- Operational phase; and
- Decommissioning/Closure phase.

Each phase has potential social and economic opportunities and negative impacts associated with it. The focus of this SIA is on the social opportunities and negative impacts associated with the Construction, Operational and Decommissioning/Closure Phases and the ability of each phase to address the key issues identified by the representatives of the surrounding area.

The key social issues associated with the proposed mine are linked to the construction and operational phase.

7.1.2 Summary of Issues related to the Construction Phase

The following key issues and concerns that are related to the Construction phase:

- The potential impacts associated with the influx of construction workers includes:
  - Cultural clashes with the local people;
  - Increase in theft and crime in the area;
  - Increase in sexually transmitted diseases;
  - Increase in pregnancy amongst the younger girls in the area.
- Loss of sense of place;
- Degradation of the gravel roads;
- Poaching of skilled labourers by the mine;
- Creation of economic development, employment and business opportunities for the area and the broader region as a whole. In this regard many members of the local community indicated that this would result in loss of their local work force as they would not be able to compete with the mine wages and benefits; and
- Opportunities for education, skills development and training linked to the mine as well as local economic development linked to the mine's Social and Labour Plan.

7.1.3 Summary of Issues related to the Operational Phase

The following key issues and concerns are related to the Operational phase:

- Inability to rehabilitate disturbed areas and return them to productive farmland (agriculture and grazing);
- Pollution of the environment, specifically water bodies (groundwater and surface water);
- Visual effect of mine is a disturbance to the farm like atmosphere in the area;
- Dust from trucks travelling along the road as well as potential dust from the proposed opencast mining operations; and
- Noise and vibrations generated by the proposed mining operation.
- Creation of employment and business opportunities.

7.2 Construction Phase

7.2.1 Influx of migrant workers (negative impact)

There will be an influx of construction workers from outside the area associated with the construction phase of the mine. The majority of construction workers on mining projects are single males. The influx of predominantly single males to an area can create a number of negative social impacts in the host community.

The surrounding farms are concerned about the possibility of the incidence of theft on their property. The farmers are also concerned with the security of their properties and for the people living on them. The social consequences of the influx of migrant workers on the women on the farms are a concern. Increased pregnancy and sexually transmitted diseases are significant concerns. There is also a possibility of conflict arising from the integration on the local people with the laborers.

The mine will create approximately 430 employment positions. The recruitment of employees will commence as soon as the new mining right has been granted by the Department of Minerals and Energy (DME) and will be based on the requirements and planning contained in the Mining Work Programme. The labour sending areas for the De Wittekrans Mine employees are the towns of Ermelo, Hendrina and the surrounding areas. All new employees for De Wittekrans will be recruited from labour sending areas within Ermelo and Davel towns.

Mining projects also frequently result in the influx of job seekers. The influx of job seekers to the area will place pressure on local services and facilities, such as housing, clinics and schools. The influx of job seekers can also lead to tension and conflict over available jobs and resources within the local community. The local farmers are concerned that the mine will poach their skilled labourers for the construction phase of the mine. They have experienced this already form other mining projects in the area. In this regard the farmers train their workers only for the workers to be employed by the mine for the short periods of construction and then these employees aren't needed for the operational phase of the mine. These employees return back to their previous jobs on the surrounding farms. The local farmers find this disruptive to their own businesses.

The influx of workers will on the other hand results in additional spending in the local economy. The influx of workers will, therefore, also have a positive socio-economic benefit through the creation of employment and product supply. The mine will also contribute to the long term growth and sustainability of economic activities in the Mpumalanga Highveld region of South Africa. This impact will be significant for the life of the mine.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Regional (3)	Medium-term (3)	Medium (4)	Moderate (14) (-)
With Mitigation	Probable (3)	Regional (3)	Short-term (1)	Low (2)	Low to Moderate (9) (-)
Mitigation Measures	• The potential impact on existing services and amenities should be discussed between the mine and the local authorities in the Msukaligwa Municipality and with the Ward Councillor. • The mine should draft a code of conduct for the construction workers, which should outline what types of behaviour and activities by construction workers are not permitted. • The mine should establish a liaison committee consisting of contractors and the local authorities and local communities to address conflicts that may arise. • Where are workers going to be accommodated and how many are we talking about and for how long?				
Responsible Person	• Mine Manager				

7.2.2 Loss of sense of place

The local farmers have all located to the area because of mining in their previous place of residence. They chose the area because of the agricultural and grazing potential, not to have a mine on their border. The concern is that the peaceful ambiance of the area will be disrupted by the noise and visual presence of the mine during the construction phase and its life of mine.

The local farmers also feel that the area will not be rehabilitated to its pre-mining capability once the mine closes. The concern is that the land will not be of sufficient quality upon mine closure. It is felt that even though the mine says that rehabilitation will occur, it is not sufficient and will only occur over a longer period of time.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Regional (3)	Permanent (6)	Medium (4)	Moderate to High (17) (-)
With Mitigation	Probable (3)	Site (1)	Long term (4)	Medium (4)	Moderate (12) (-)
Mitigation Measures	• Monitoring water quality in the area subsequent to mine closure. • The mine should monitor and maintain rehabilitated areas until a self-sustaining plant community that protects soil against erosion has been established. This will include the control of the spread of invader species on disturbed land until the vegetation cover is capable of providing sufficient natural weed control. • The mine will restore the affected surface area to a state similar to the surrounding area and make it natural to grassland capability. • Full market related compensation for lost productive farm land by mining company				

Responsible Person	Mine Environmental Manager and Mine Manager

7.2.3 Deterioration of the access road in the area

The Mashala De Wittekrans Mine proposes to utilise the access road off the N11 Hendrina to Davel. This road currently has a local farm school and farm roads leading off it. The children attending the school in the area are picked up and dropped off by bus. The bus is parked at the school and utilises the road to pick up the children in the mornings and drop them off in the afternoons. On occasion the bus isn't used and the children have to walk to school on this access road. The concern from the local farmers is that with the mine utilising the road with their trucks makes the road unsafe for children walking to and from school.

The local farmers are also concerned with the general condition and maintenance of the road. Should the mine utilise the road for transporting coal in trucks the road will deteriorate further.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Local (2)	Very long-term (5)	High (6)	Moderate to High (17) (-)
With Mitigation	Possible (2)	Local (2)	Short term (2)	Low (2)	Low to Moderate (8) (-)
Mitigation Measures	• A suitable stormwater management plan must be implemented as it limits erosion. • Include upgrading of the roads in the mine's Environmental Management Plan (EMP). • The movement of trucks on the road can be controlled to stop operations from a period of 7h00-9h00am and 13h00-15h00pm. • Establish pedestrian walk ways adjacent to the road?				
Responsible Person	Mine Manager				

7.2.4 Creation of local employment opportunities (Positive Impact)

Given the nature of mining construction projects, a number of the employment opportunities are likely to be created for unskilled and semi-skilled workers. A number of these jobs will be available to members of the local community. The majority of these jobs are likely to be filled by men. Depending on the level of local employment, a percentage of the wage bill associated with the construction phase will be earned by local residents.

Given the relatively low-income levels in the area this represents a significant opportunity for both the community and the local economy.

It should be noted that the jobs associated with the construction phase of the mine may be different than the jobs available for the operational phase of the mine. Also the jobs available during the construction phase are temporary, and these people in most cases are not employed during the operational phase.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Probable (3)	Local (2)	Medium term (3)	Low (2)	Low to Moderate (10) (+)
With Mitigation	Definite (4)	Regional (3)	Long term (4)	Medium (4)	Moderate (15) (+)
Mitigation Measures	• In addition surveys of the available labour force and skills levels should be undertaken in the area prior to the commencement of the Project, in order to identify suitably qualified individuals for training programmes and employment. • The mine should in consultation with the Msukaligwa Local Municipality to develop targets for local employment that need to be met by the contractors appointed for the construction phase. These targets will need to be flexible and realistic given the low education and skills levels in the area. • Establish a local employment office in closest town. • No hiring to take place at the gate; • The employment selection process should seek to promote gender equality and the employment of women wherever possible.				
Responsible Person	Mine Human Resources Manager				

7.2.5 Opportunities for education, skills development and training

The opportunities for education, skills development and training linked to the mine are discussed in the De Wittekrans Social and Labour plan.

The Skills Development Plan for De Wittekrans has been compiled containing estimated actions plans, activities, timeframes, budgets and resources. The Skills Development Plan will need to be verified, reviewed and amended within the Reporting Cycle as the operation spools-up and more employees are engaged. The focus of skills development will be on providing employees with opportunities to be functionally literate and numerate; learnerships; skills programmes and portable skills. Later in the life of the operation, the focus will shift to providing employees with opportunities for gaining portable skills in other sectors of the economy.

The mine employees ABET needs are going to be met by making a facility available so that employees may attend ABET classes. De Wittekrans will engage the services of service provider that is accredited with the Mining Qualifications Authority (MQA) and Department of Education and Training.

The De Wittekrans Skills Development Plan will comply with the requirements of skills development legislation and includes developing and submitting a Workplace Skills Plan (WSP), as well as Annual Training Reports (ATR). The plan will provide for the payment and claiming of levies and grants from the relevant Sector Education and Training Authority (SETA) with which the operation will be required be registered i.e. the MQA.

In compiling the Skills Development Plan, the IDP's of both the Msukaligwa Local Municipality and the Gert Sibande District will be studied to align our skills development initiatives with the IDP requirements. Furthermore, an employee socio-economic survey will be undertaken on the socio-economic characteristics (skills, literacy and household details) of De Wittekrans employees, as part of the SEBI. Utilising the data from these exercises, the Skills Development Plan will be formulated to provide employees with opportunities for acquiring skills. This will be linked to an Alternative Livelihoods Plan.

The Skills Development Plan will be aligned with the Career Progression Plan, Mentorship & Coaching Plan, Internship Plan and the Employment Equity Plan (De Witterkrans Social and Labour Plan, 2009).

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Probable (3)	Local (2)	Medium term (3)	Low (2)	Low to Moderate (10) (+)
With Mitigation	Definite (4)	Regional (3)	Long term (4)	Medium (4)	Moderate (15) (+)
Mitigation Measures	• In addition surveys of the available labour force and skills levels should be undertaken in the area prior to the commencement of the Project, in order to identify suitably qualified individuals for training programmes and employment. • The mine should in consultation with the Msukaligwa Local Municipality to develop targets for local employment that need to be met by the contractors appointed for the construction phase. These targets will need to be flexible and realistic given the low education and skills levels in the area. • The employment selection process should seek to promote gender equality and the employment of women wherever possible.				
Responsible Person	Mine Human Resources Manager				

7.3 Operational Phase

The social impacts associated with the operational phase are linked to:

- Inability to rehabilitate disturbed areas and return them to productive farmland (agriculture and grazing);
- Pollution of the environment, specifically water bodies (groundwater and surface water);
- Pollution associated with dust from the mine;
- Impact of Noise and vibration during blasting;
- Visual effect of mine is a disturbance to the farm like atmosphere in the area;
- Creation of employment and business opportunities

Some of the above mentioned impacts are similar to those associated with the construction phase. In many cases the mitigation measures are similar. Where this is the case reference is made to the mitigation measures contained in the appropriate construction section.

7.3.1 Rehabilitation Methods

It is a concern that the rehabilitation methods will not leave the land in an adequate state for future farming and agricultural use. It was also a concern that there will be an invasion of wattles to the natural vegetation of the area if rehabilitation is not done as soon as mining is completed in an area.

Rehabilitation goals will be ascertained in consultation with the authorities. This will be done in the operational phase of the mine so that ongoing rehabilitation can be directed towards the agreed end land use. Where practical, rehabilitation will take place during the life of mine. On closure, most of the disturbed areas will have been rehabilitated.

Vegetation establishment in disturbed areas will be undertaken as soon as practicable with the growing season and water availability being the primary constraints. The choice of vegetation will be determined in consultation with the land owner and the authorities. Re-vegetation will also address the issue of erosion in the surrounding areas due to the establishment of the boxcut.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Local (2)	Permanent (6)	Very High (8)	High (20) (-)

With Mitigation	Probable (2)	Site (1)	Medium - term (3)	Low (1)	Low to Moderate (7) (-)
Mitigation Measures	• The mine should monitor and maintain rehabilitated areas until a self-sustaining plant community that protects soil against erosion has been established. This will include the control of the spread of invader species on disturbed land until the vegetation cover is capable of providing sufficient natural weed control. • The mine will restore the affected surface area to a state similar to the surrounding area and make it natural to grassland capability. • Full market related compensation for loss of productive farm land.				
Responsible Person	Mine Environmental Manager				

7.3.2 Groundwater Quality

All the local farmers are concerned with the potential impacts of the mine on the groundwater in the area. A special concern is the availability of water in the surrounding boreholes. The local farmers feel that the mine will utilise the groundwater and their personal boreholes will dry up.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Probable (3)	Local (2)	Very Long-term (5)	High (3)	Moderate (13) (-)
With Mitigation	Possible (2)	Site (1)	Short term (2)	Low (2)	Low to Moderate (7) (-)
Mitigation Measures	• The coal stockpile footprints can be minimised and the underlying material compacted to reduce the seepage rates into the underlying material. • There is nothing that can be done to mitigate contamination from the underground areas. • Issue of use of groundwater has not been assessed or mitigated				
Responsible Person	Mine Environmental Manager				

7.3.3 Surface Water Quality

According to the Hydrological Report for the project, the study area falls within the B12A DWAF quaternary catchment. The effective catchment area was divided into 4 sub basins according to the drainage lines.

- Sub-basin A is approximately 5524ha big. Portion 5 of the farm De Wittekrans 218 and portion 3 of the farm Israel 207 overlaps into this sub basin. The Klein Olifants

River originates in this sub-basin and flows in the northerly direction towards Hendrina. The longest watercourse (Klein Olifants River) in this sub basin is approximately 10km long.

- Sub-basin B is approximately 2173 ha big. An unnamed perennial stream flows in the northerly direction towards the farm Israel 207 and confluence with the Klein Olifants River. The length of the longest watercourse in this sub basin is 8.432km.
- Sub-basin C is approximately 2426ha big. An unnamed perennial stream flows in the northerly direction and confluence with the Klein Olifantspruit. This stream flows through the farm Groblershoek 191.
- Sub-basin D is approximately 3404ha big. 2 unnamed non-perennial stream flows on the Southern side of the Klein Olifants River and 1 unnamed perennial stream on the northern side. The length of the longest stream is approximately 5.791km.

Farmers are concerned with the contamination of surface water from the proposed opencast mining operations. Below are the potential impacts on water quality due to coal mining activities:

- Increased turbidity;
- Increased suspended solids;
- Increased nitrogen and;
- Altered pH.

The recommendations from the De Wittekrans Hydrological Report are as follows:

- The location and sizes of pollution control dams was not determined during the study because the proposed mine layout plan was not available. As soon as the mine layout plan is available, recommendation on the location and sizes of pollution control dams will be made to ensure that these structures serve optimally as contaminated water impoundments.
- During the floodline delineation phase, the location of the infrastructure was not determined yet. The values determined are not fixed and may change over time due to the change in the hydrological and hydraulic characteristics of the catchments. Should the proposed infrastructure be close to the delineated floodlines, it will be required that a detailed survey is conducted and a digital terrain model of the affected water resources be provided for more detailed floodlines.
- Due to the close proximity of the 1:50 and a 1:00 year floodlines, the 1:50 year floodlines were not indicated on the drawing. (Please refer to table 8 and 9).

- Water quality monitoring program must be adhered to as required by the Department of Water Affairs and Forestry. Should pollution occur on this site, further investigations must be conducted and a mass balance report produced;
- Should import material be used during rehabilitation, a complete soil analysis must be conducted. A seeding company must be consulted for the recommended type of vegetation and fertiliser, based on the soil analysis;
- Leak detection technologies should be implemented for the water pipelines. The importance of metering is emphasised; and
- A detailed stormwater management study which may include a surface water management model must be conducted to ensure compliance with the National Water Act, 1998 (act 36 of 1998).

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Probable (3)	Regional (3)	Long-term (4)	Medium (4)	Moderate (14) (-)
With Mitigation	Improbable (1)	Site (1)	Short term (2)	Low (2)	Low (6) (-)
Mitigation Measures	• Having and maintaining a proper storm water management plan. • Monitoring points should be established and ongoing monitoring should occur during the operational phases. • Rehabilitation and monitoring must be done upon mine closure.				
Responsible Person	Mine Environmental Manager				

7.3.4 Impact of Dust on the Surrounding Area

The impact of dust can be separated into the dust created by trucks traveling on the gravel access roads to the mine, the dust created by the opencast mining operation and the coal dust from the stockpiles during the operational phase.

The Ermelo area experiences heavy winds during certain parts of the year. The farmers in this surrounding area raised the issue of dust from the proposed mining operation affecting their properties, their agricultural produce and their livestock.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Local (2)	Very Long term (3)	Medium (4)	Moderate (13) (-)
With Mitigation	Possible (2)	Site (1)	Short term (2)	Low (2)	Low to Moderate (7) (-)

Mitigation Measures	• A Dust management plan must be implemented. • Dust suppression techniques like wetting the access roads have to be implemented. • With respect to haul road dust levels, it is recommended to limit vehicle speeds, especially during high risk periods of high winds, high temperature and low humidity. • Haulage trucks must also be equipped with tarpaulins.
Responsible Person	Mine Environmental Manager

7.3.5 Impact of Noise and vibration on the area.

The potential noise impacts associated with heavy construction and other mining vehicles have been identified as a concern. The farmers have raised concerns about the construction vehicles and trucks operating on the access roads generating continuous noise.

Blasting for the opencast pit creates airborne noise and ground vibration. Farmers have stated that they are concerned with the effect this blasting will have on the integrity of the structure of their houses and other buildings.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Local (2)	Very long term (5)	High (6)	Moderate to High (17) (-)
With Mitigation	Possible (2)	Local (2)	Short term (2)	Low (2)	Low to Moderate (8) (-)
Mitigation Measures	• The mine should enforce operating hours for heavy vehicles. Operations should also take into consideration important days when there is likely to be more traffic on the roads, such as pension payout days and market days. • The mine should look into installing vibration isolation for mechanical equipment and silencers for fans. • Movement of heavy vehicles and coal trucks should be restricted to the following hours 06h30 and 17h30. • The mine could also re-locate noise sources to areas which are less noise sensitive to take advantage of distances and natural shielding.				
Responsible Person	Mine Manager				

7.3.6 Impact of the mine on the visual aesthetics of the area

The local farmers are emphatically opposed to the proposed mining activity as it will be on the borders of their properties. Due to the nature of the opencast mining, it will create a

significant visual impact. They feel the presence of the mine will destroy the peace and calmness of the area.

Impact	Probability	Extent	Duration	Intensity	Significance
Without Mitigation	Definite (4)	Regional (3)	Permanent (6)	High (6)	Moderate to High (19) (-)
With Mitigation	Probable (3)	Local (2)	Very Long term (5)	Low (2)	Moderate (12) (-)
Mitigation Measures	• The mine should look into installing natural berms of vegetated topsoil or trees so as to mitigate the visual effect during the operational phase. • The mine could also re-locate noise sources to areas which are less noise sensitive to take advantage of distances and natural shielding. • Also all mine related infrastructures must be removed from site once operations cease, roads rehabilitated and dumps revegetated etc				
Responsible Person	Mine Manager				

7.4 Decommissioning and Closure Phase

On decommissioning of the mine, the following concerns have been raised:

- Water quality (continuous groundwater and surface water monitoring);
- Rehabilitation of the land to its previous land use so that farming can continue;
- Revegetation of mined area to reduce effects of dust and erosion on the surrounding community; and
- Restoration of “sense of place” for the local community.

These have been discussed under the operational phase and will continue into the decommissioning and closure phase.

8. CONCLUSION

In summation the potential impacts of the SIA can be broken down into construction and operational phases. They may seem generic but they address the issues for the surrounding area.

In terms of social impacts associated with the proposed construction phase of the mine, the most significant are:

- The potential impacts associated with the influx of construction workers includes:

  - Cultural clashes with the local people;
  - Increase in theft and crime in the area;
  - Increase in sexually transmitted diseases;
  - Increase in pregnancy amongst the younger girls in the area.
- Loss of sense of place;
- Degradation of the gravel roads;
- Poaching of skilled labourers by the mine;
- Creation of economic development, employment and business opportunities for the area and the broader region as a whole. In this regard many members of the local community indicated that this would result in loss of their local work force as they would not be able to compete with the mine wages and benefits; and
- Opportunities for education, skills development and training linked to the mine as well as local economic development linked to the mine's Social and Labour Plan.

In terms of potential social impacts associated with the proposed operational phase of the mine, the most significant are:

- Inability to rehabilitate disturbed areas and return them to productive farmland (agriculture and grazing);
- Pollution of the environment, specifically water bodies (groundwater and surface water);
- Visual effect of mine is a disturbance to the farm like atmosphere in the area;
- Dust from trucks travelling along the road as well as potential dust from the proposed opencast mining operations; and
- Noise and vibrations generated by the proposed mining operation.
- Creation of employment and business opportunities.

Table 18: Summary of Issues in Construction Phase

Issue	Significance without mitigation measures	Significance with mitigation measures
Influx of Construction workers and the associated concerns	Moderate (14) (-)	Low to Moderate (9) (-)
Loss of sense of place	Moderate to High (17) (-)	Moderate (12) (-)
Degradation of the access road	Moderate to High (17) (-)	Low to Moderate (8) (-)
Creation of economic development, employment and business opportunities for the area	Moderate (15) (+)	Low to Moderate (10) (+)

Opportunities for education, skills development and training linked to the mine	Moderate (15) (+)	Low to Moderate (10) (+)

Table 19: Summary of Issues in Operational Phase

Issue	Significance without mitigation measures	Significance with mitigation measures
Rehabilitation methods	High (20) (-)	Low to Moderate (7) (-)
Groundwater quality	Moderate (13) (-)	Low to Moderate (7) (-)
Surface water contamination	Moderate (14) (-)	(6)
Dust pollution	Moderate (13) (-)	Low to Moderate (7) (-)
Impact of noise and vibration	Moderate to High (17) (-)	Low to Moderate (8) (-)
Visual impact of the mine	Moderate to High (19) (-)	Moderate (12) (-)
Creation of employment and business opportunities	Moderate (15) (+)	Low to Moderate (10) (+)

9. REFERENCES

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