A Competent Person's Report on the Material Assets of Tendele Coal Mining (Pty) Ltd

Report Prepared for

Tendele Coal Mining (Pty) Ltd

Report Prepared by

SRK Consulting (South Africa) (Pty) Ltd

Tendele CPRv13/Project Number 470421

04 March 2014

(Effective Date of CPR: 01 December 2013)

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Executive Summary

ES1: Purpose

[SR1.1 (A/B/C) (ii), SV2.2]

SRK Consulting (South Africa) (Pty) Limited ("SRK") has been commissioned by Tendele Coal Mining (Pty) Ltd ("Tendele") to compile a Competent Person's Report ("CPR") on the material coal assets and liabilities of Tendele located in KwaZulu-Natal, South Africa (collectively the "Material Assets").

ES2: Effective Date

[12.9 (a), SR1.1 (A/B/C) (ii), SV2.9]

The effective date ("Effective Date") of this CPR is deemed to be 01 December 2013, and is co-incident with the start date of techno-economic projections as reported in this CPR.

ES3: Overview of the Material Assets and Legal Status

[SR1.7 (A/B/C) (I – iii), SV2.3]

The Material Assets of Tendele comprise Somkhele Anthracite Mine ("Somkhele"). A summary of the mineral and surface rights held by Tendele is given in Table ES1-1. Tendele have approved mining rights over all areas that are currently operational and have applied for mining rights over all the prospecting rights; this application was accepted by the Department of Mineral Resources in September 2013.

ES4: Project Outline

[SR1.2 (A/B/C) (i), SR1.5 (A/B/C (I – ii), SV2.3]

Somkhele is located some eighty-five kilometres northwest of Richard's Bay, KwaZulu-Natal in the Mtubatuba Local Municipality. Somkhele mines anthracite for export and local markets and produces thermal coal from rewashed discard. The anthracite is extracted from the B Seam from a number of pits (currently four pits are operating) and processed to produce a 18% ash duff product for export, mainly to Brazil and 15% ash duff, small and large nut and pea products for local consumption. Minor amounts of thermal-grade coal are produced from rewashed discard for the export market.

The mine operations consist of a number of operational pits (North Pit 1, North Pit 2, South Pit and Luhlanga); mined out pits used to dispose of slurry (Pit A) and coarse discard (Pits B, C, D and E); waste, discard and overburden stockpiles; haul and access roads; a process Plant area with associated RoM and product stockpiles; a return water dam and a process water storage dam; pollution control and settling dams; and office and workshop buildings. The current operations cover an area of 4.5 km^2 with approximately 3 km^2 with active mining operations.

ES5: Geological Setting

[12.9 (h) (v), SR2.5 (A/B/C), SR4.1A (i), SV2.5]

Somkhele Mine is situated in the Somkhele Coalfield of northern KwaZulu-Natal. The coal-bearing strata are found in the lower Emakwezini Formation of the Beaufort Group. Four coal seams have been developed, but only the B Seam consistently attains mineable thickness over significant areas. The strata have been preserved along the eastern limb of the Natal Monocline with steep dips (12 - 25°) to the east-southeast. The mining areas are separated one from another by large-scale faulting with downthrows of up to 600 metres in places; these faults have caused repetition of the strata, resulting in a number of sub-parallel mining blocks. Dolerite intrusions have further subdivided some of the mining blocks, and also impacted on the rank of the coal. In general, the coal is semi-anthracitic in the south and anthracitic in the north.

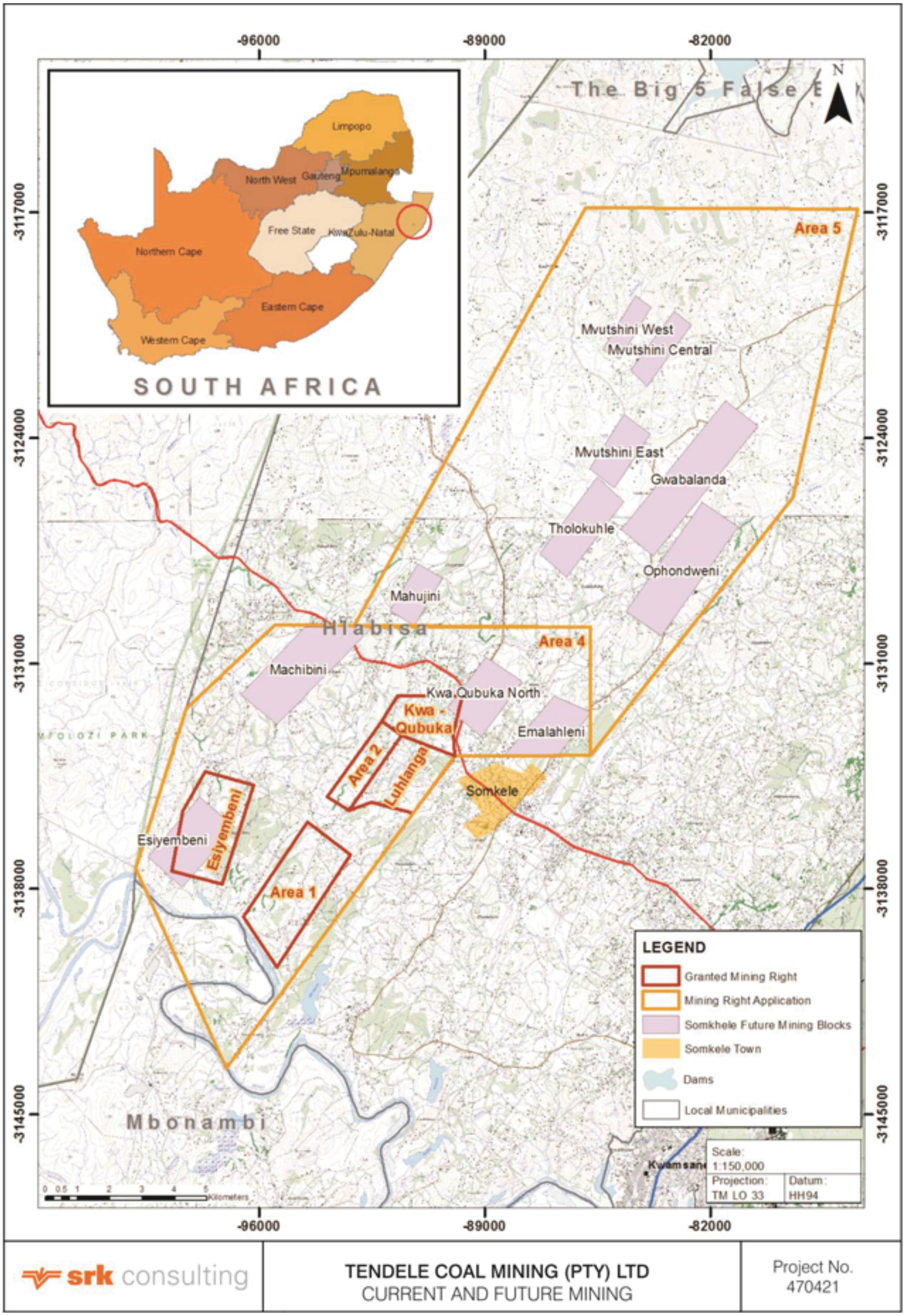

Figure ES1-1: General Location of the Operations

Table ES1-1: Summary Table of Mineral and Surface Rights

Title Covered	Right	Rights Held By	Area (ha)	Expiry Date	Minerals Covered	Comments
Mining Rights:						
Area 1 on Reserve No.3 (Somkhele) No. 15822	KZN30/5/1/2/2/135MR	Tendele Coal Mining (Pty) Ltd	660.5321	21 June 2034	Coal	New Order Mining Right
Area 2 and 3 on Reserve No 3 (Somkhele) No 1582	KZN30/5/1/2/2/2/216MR	Tendele Coal Mining (Pty) Ltd	779.8719	29 February 2031	Coal	Converted Old Order Mining Right
Total for New Order Mining Right			**1 440.404**			
Prospecting Rights (covered by 2013 Mining Right Application):						
Area 5 On Reserve No 3 No 15822	KZN30/5/1/1/2/93PR	Tendele Coal Mining (Pty) Ltd	13 951.0054	29 June 2013	Coal	Initial PRs valid to 04/12/2009; renewed to 29/06/2013; mining right application (covers both areas) accepted 09/09/2013
Area 4 On Reserve No 3 (Somkhele) No 15822	KZN86PR	Tendele Coal Mining (Pty) Ltd	7 988.0637	29 June 2013	Coal	
Total for Mining Right Application			**21 939.0691**			
Surface Rights:						
Area 1 on Reserve No. 3 No. 15822		Mpukunyoni Tribal Authority				Memorandum of Understanding signed on 15/11/2012
Area 2 on Reserve No. 3 No. 15822		Ingonyama Trust Board				Mining Surface Lease signed on 11/12/2002
Area 3 on Reserve No. 3 No. 15822		Ingonyama Trust Board				Mining Surface Lease signed on 11/12/2002
Areas 4 and 5						In relation to the area covered by the pending mining right application there is no surface use compensation agreement with the land owner. However, this can only be extended in the main agreement once the right has been executed.

ES6: Future Exploration Programme

[12.9(h) (vi), 12.9(e) (iii), SR9 (A/B/C)]

Future exploration will be focused on three areas; namely:

- Tholokuhle-Mvutshini;
- Mahujini-Tholokuhle; and
- The current known blocks.

Somkhele's future exploration programme is set out in Table ES1-2.

Table ES1-2: Future Planned Exploration Budget

Area	Percussion Boreholes	Total Length (m)	Core Boreholes	Total Length (m)	Samples Planned	Cost (ZARm)
Tholokuhle - Mvutshini	110	12 750	54	4 650	375	15
Mahujini - Tholokuhle	80	9 500	25	2 150	175	10
Known blocks	60	6 600	60	5 500	420	30
Total	**250**	**28 850**	**139**	**12 300**	**970**	**55**

ES7: Coal Resources Summary

[12.9 (h) (ix), SR1.1 (A) (iii), SR2.5 (A/B/C), SR7 (B), SR9 (A/B/C), SV2.6]

The Coal Resources are reported inclusive of the Coal Reserves.

All Coal Resources and Coal Reserves as stated in this CPR are reported as at 01 December 2013 in accordance with the terms and definitions of the SAMREC Code.

SRK has used publicly available resource and reserve estimates for Areas 1 and 3. The estimate for the Mineable Tonnes in Situ ("MTIS") for Area 1 has been depleted according to validated depletion figures received from Tendele; thereafter the publicly available modifying factors have been applied for Area 1.

A summary of the raw Coal Resources for the Material Assets estimated and classified in accordance with the SAMREC Code as at 01 December 2013 is set out in Table ES1-3. These resources are for the full seam including all partings and have been estimated by Applied Geology and Mining (Pty) Ltd and reviewed by SRK.

As Area 2 has been mined out, estimates for Areas 1 and 3 only are shown in Table ES1-4.

Table ES1-5 shows the expected product coal qualities for each area according to SRK. Note that the wash density for the product coal is different for the different areas:

- Luhlanga Product density = 1.60 t/m^3;
- KwaQubuka North Product density = 1.65 t/m^3;
- Mahujini and Gwabalanda Product density = 1.80 t/m^3; and
- Ophondweni Product density = 1.85 t/m^3.

Estimated product coal qualities for Areas 1 and 3 are shown in Table ES1-6. Note that these estimates are not for the full seam or mining height, but for the coal sub-seams only; the partings have been excluded. Thus it is not possible to reconcile these estimates with the actual tonnes or qualities mined.

Table ES1-3: SRK Average B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	Average ARD	GTIS	Geological Loss	MTIS	Average Raw Qualities (air dried)					
								Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur
					(Mt)	(%)	(Mt)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
Emalahleni	Measured	OP & UG	B	1.72	15.23	5	14.47	19.38	40.09	5.67	52.13	1.78	0.70
Gwabalanda	Measured	OP	B	1.92	5.93	5	5.63	24.32	28.28	4.27	62.64	4.82	0.28
KwaQubuka	Measured	OP	B	*No measured resources*									
KwaQubuka North	Measured	OP	B	1.80	3.65	5	3.47	16.10	45.05	5.82	46.45	2.68	0.63
Luhlanga	Measured	OP	B	1.64	11.88	5	11.29	21.04	36.20	6.91	55.28	1.61	0.86
Mahujini	Measured	OP	B	1.79	5.90	5	5.60	23.32	31.03	6.03	59.81	3.13	0.59
Ophondweni	Measured	OP	B	1.96	5.05	5	4.80	17.64	41.70	3.62	50.37	4.40	0.35
Subtotal	**Measured**	**OP & UG**	**B**	**1.77**	**47.64**	**5**	**45.26**	**20.46**	**37.08**	**5.64**	**54.55**	**2.63**	**0.63**
Emalahleni	Indicated	OP & UG	B	1.73	2.12	10	1.91	19.09	40.76	5.72	52.00	1.51	0.67
Gwabalanda	Indicated	OP	B	1.99	1.22	10	1.10	22.09	32.65	3.63	59.26	4.46	0.27
KwaQubuka	Indicated	OP	B	1.73	4.61	10	4.15	18.86	41.83	5.19	51.16	1.86	0.64
KwaQubuka North	Indicated	OP	B	1.74	0.72	10	0.65	18.44	40.27	5.93	51.08	2.73	0.69
Luhlanga	Indicated	OP	B	1.70	1.90	10	1.71	18.42	42.34	6.61	49.28	1.77	0.92
Mahujini	Indicated	OP	B	1.84	1.28	10	1.15	22.62	31.41	6.08	59.63	2.88	0.66
Ophondweni	Indicated	OP	B	1.98	0.66	10	0.59	16.13	44.98	3.61	47.14	4.31	0.28
Subtotal	**Indicated**	**OP & UG**	**B**	**1.78**	**12.52**	**10**	**11.26**	**19.36**	**39.84**	**5.39**	**52.45**	**2.32**	**0.64**
Emalahleni	Inferred	OP & UG	B	*No inferred resources*									
Gwabalanda	Inferred	OP	B	1.94	1.77	10	1.59	23.33	30.78	3.91	60.92	4.39	0.34
KwaQubuka	Inferred	OP	B	*No inferred resources*									
KwaQubuka North	Inferred	OP	B	1.89	2.28	15	1.94	15.00	50.34	5.66	41.57	2.44	0.62
Luhlanga	Inferred	OP	B	1.61	7.77	15	6.60	22.26	33.18	6.89	58.38	1.55	0.67
Mahujini	Inferred	OP	B	1.95	0.71	15	0.60	18.97	45.12	5.99	46.19	2.71	0.54
Ophondweni	Inferred	OP	B	1.98	0.12	10	0.11	15.08	46.39	3.56	45.96	4.10	0.27
Subtotal	**Inferred**	**OP**	**B**	**1.73**	**12.64**	**14**	**10.84**	**20.85**	**36.73**	**6.17**	**54.91**	**2.19**	**0.60**
TOTAL		**OP & UG**	**B**	**1.76**	**72.80**	**7**	**67.36**	**20.34**	**37.49**	**5.69**	**54.25**	**2.50**	**0.63**

OP = Open Pit UG = Underground ARD = Apparent Relative Density GTIS = Gross Tonnes *In Situ* MTIS = Mineable Tonnes *In Situ*
Average ARDs and qualities have been weighted by the GTIS Emalahleni qualities cannot be divided into separate OP and UG categories adb = air dry basis
Slight differences may arise due to rounding Effective date 01 December 2013

Table ES1-4: Areas 1 and 3 Raw Coal Resource Estimates (Coal Only) (adb)

Area	Seam	SAMREC Category	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)
	B	Measured	10.911	10	9.820
1	B	Indicated	16.568	20	13.254
	B	Inferred	8.596	50	4.298
1	**B**	**Subtotal**	**36.075**	**24**	**27.372**
	B	Measured	Nil	-	-
3	B	Indicated	Nil	-	-
	B	Inferred	42.847	50	21.424
3	**B**	**Subtotal**	**42.847**	**50**	**21.424**
Total	**B**		**78.922**		**48.796**

GTIS = Gross Tonnes *In Situ*
MTIS = Mineable Tonnes *In Situ*
adb = air dry basis
These are publicly available figures
Effective date 15 August 2006

Table ES1-5: SRK Average B Seam Coal Resource Estimates and Product Coal Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	GTIS	Geological Loss	MTIS	Average Raw ARD	Average Product Qualities (air dried)							Theoretical Yield
								Product Density	Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur	
				(Mt)	(%)	(Mt)		(t/m^3)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)	(%)
Emalahleni	Measured	OP & UG	B	15.23	5	14.47	1.72	1.6	28.5	16.3	6.2	75.01	2.4	0.7	43.4
Gwabalanda	Measured	OP	B	5.93	5	5.63	1.92	1.8	28.45	18.36	4.79	71.49	5.36	0.21	35.53
KwaQubuka	Measured	OP	B					*No measured resources*							
KwaQubuka North	Measured	OP	B	3.65	5	3.47	1.80	1.65	24.32	25.76	6.1	65.7	2.45	0.73	39.9
Luhlanga	Measured	OP	B	11.88	5	11.29	1.64	1.6	28.99	16.88	7.01	74.58	1.53	0.68	59.19
Mahujni	Measured	OP	B	5.90	5	5.60	1.79	1.8	26.22	17.24	5.73	73.44	3.59	0.53	53.42
Ophondweni	Measured	OP	B	5.05	5	4.80	1.97	1.85	25.63	17.94	3.65	72.59	5.82	0.23	38.95
Subtotal	**Measured**	**OP & UG**	**B**	**47.64**	**5**	**45.26**	**1.79**	**1.68**	**27.71**	**17.72**	**5.89**	**73.30**	**3.06**	**0.57**	**46.86**
Emalahleni	Indicated	OP & UG	B	2.12	10	1.91	1.73	1.6	28.5	16.3	6.2	75.01	2.4	0.7	43.4
Gwabalanda	Indicated	OP	B	1.22	10	1.10	1.97	1.8	28.01	18.74	4.22	71.07	5.15	0.19	26.53
KwaQubuka	Indicated	OP	B	4.61	10	4.15	1.73	1.6	29.14	16.1	5.6	76.5	1.8	0.7	48
KwaQubuka North	Indicated	OP	B	0.72	10	0.65	1.74	1.65	25.57	22.45	5.97	69.02	2.56	0.74	42.18
Luhlanga	Indicated	OP	B	1.90	10	1.71	1.66	1.6	28.99	16.84	7.02	74.6	1.56	0.7	59.82
Mahujni	Indicated	OP	B	1.28	10	1.15	1.84	1.8	26.42	17.74	5.92	73.09	3.25	0.63	50.89
Ophondweni	Indicated	OP	B	0.66	10	0.59	1.96	1.85	25.43	17.95	3.24	72.86	5.95	0.21	31.01
Subtotal	**Indicated**	**OP & UG**	**B**	**12.51**	**10**	**11.26**	**1.78**	**1.66**	**28.22**	**17.14**	**5.71**	**74.46**	**2.60**	**0.62**	**45.99**
Emalahleni	Inferred	OP & UG	B					*No inferred resources*							
Gwabalanda	Inferred	OP	B	1.77	10	1.59	1.94	1.8	28.3	18.75	4.41	71.86	4.98	0.19	33.43
KwaQubuka	Inferred	OP	B					*No inferred resources*							
KwaQubuka North	Inferred	OP	B	2.28	15	1.94	1.89	1.65	25.2	23.95	6.01	67.75	2.29	0.76	35
Luhlanga	Inferred	OP	B	7.77	15	6.60	1.61	1.6	28.89	17.16	6.75	74.48	1.49	0.62	63.41
Mahujni	Inferred	OP	B	0.71	15	0.60	1.95	1.8	24.72	22.45	6.07	68.4	3.08	0.64	38.8
Ophondweni	Inferred	OP	B	0.12	10	0.11	1.98	1.85	25.19	18.33	3.34	72.49	5.87	0.23	29.91
Subtotal	**Inferred**	**OP & UG**	**B**	**12.64**	**14**	**10.84**	**1.73**	**1.65**	**27.87**	**18.91**	**6.20**	**72.53**	**2.28**	**0.58**	**52.23**
Total		**OP & UG**	**B**	**72.79**	**7**	**67.36**	**1.77**	**1.67**	**27.82**	**17.81**	**5.91**	**73.37**	**2.86**	**0.58**	**47.58**

OP = Open Pit UG = Underground
Average ARDs and qualities have been weighted by the GTIS
Slight differences may arise due to rounding

ARD = Apparent Relative Density GTIS = Gross Tonnes *In Situ*
Emalahleni qualities cannot be divided into separate OP and UG categories
Effective date 01 December 2013

MTIS = Mineable Tonnes *In Situ*
adb = air dry basis

Table ES1-6: Areas 1 and 3 Resource Estimates and Product Qualities (Coal Only) (adb)

SAMREC Category	MTIS	Product Density	Calorific Value	Ash Content	Volatile Matter	Moisture Content	Total Sulphur	Theoretical Yield (%)
	(Mt)	(t/m^3)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
Measured (Area 1)	9.82	1.6	29.2	15.86	8.74	1.8	0.67	75.56
Average Measured	**9.82**	**1.6**	**29.2**	**15.86**	**8.74**	**1.8**	**0.67**	**75.56**
Indicated (Area 1)	13.254	1.6	29.2	16.8	9.1	1.8	0.66	72.2
Average Indicated	**13.254**	**1.6**	**29.2**	**16.8**	**9.1**	**1.8**	**0.66**	**72.2**
Inferred (Area 1)	4.298	1.6	29.1	16.9	9.2	1.9	0.64	71.0
Inferred (Area 3)	21.424	1.6	29.1	16.1	7.0	1.45	-	68.6
Average Inferred	**25.722**	**1.6**	**29.1**	**16.2**	**7.4**	**1.5**	**-**	**69.0**
OVERALL AVERAGE	**48.796**	**1.6**	**19.1**	**16.3**	**8.1**	**1.6**	**-**	**71.2**

1. MTIS = Mineable Tonnes *In Situ*
2. adb = air dry basis
3. These are publicly available figures

ES8: Rock Engineering

[12.9 (h) (vii), SR 5.7C (ii), SR 5.4C (ii), SR 5.2B (ii), SV2.7]

Much of the geotechnical investigation is based on a limited amount of information and is conceptual in nature. Of concern are if future slopes exceed 100 m in height, particularly where jointing may result in increased rock fall risks, potential loss of reserves may occur. In-depth slope stability analysis will also require more detailed understanding of the groundwater regime.

ES9: Mining

[12.9 (h) (ix), 12. 9(h) (vii), SR2.5 (A/B/C), SR5.4B, SR5.7 (B/C), SR7 (C), SR8 (C), SR9 (A/B/C)]

ES10: Key Modifying Factors

[SV12.9 (h) (vii), SV2.7]

From a production planning perspective, the geometry, depth to surface and geotechnical factors are considered important for the underground design (Table ES1-7). The open pit mine design parameters used for the LoM plan are shown in Table ES1-8.

Table ES1-7: Emalahleni Underground Mine Design Parameters

Parameter	Unit	Value
Depth to Surface	m	< 350
Primary Bord Width	m	5
PMOR Bord Width	m	7
PMOR Pillar Centres	m x m	29.5
Primary Mining Height	m	4
PMOR Mining Height	m	8
Crown Pillar Width	m	40
Primary Safety Factor	factor	3.5
PMOR Safety Factor	factor	1.6
Extraction Factor	%	35
Contamination	%	32

1. PMOR = Pillar Mining on Retreat

Table ES1-8: Somkhele Open Pit Design Parameters

Parameter	Unit	No
Depth	m	<120
Coal Seam True Thickness	m	12
Bench Height	m	20
Dip	Degrees	20 - 30
Extraction Ratio	%	95
Contamination	cm	24

ES11: Coal Reserves Summary

[12.9 (h) (ix), SR5.5 (C) (iv), SV2.6]

A summary of the Coal Reserves for the Material Assets, estimated and classified in accordance with the SAMREC Code as at 01 December 2013 is set out in Table ES1-9 and Table ES1-10. Coal qualities are shown in Table ES1-11 and Table ES1-12.

Table ES1-9: SRK Proved and Probable Coal Reserve Estimates (adb)

Area	SAMREC Category	Mining Method	Seam	MTIS	Contam-ination	Extraction Factor	Recovery Factor	Moisture Correction	Previous RoM	Depletion	Current RoM	Practical Plant Yield	Theoret-ical Yield	Saleable
				(Mt)	(%)	(%)	(%)	(%)	(Mt)	(Mt)	(Mt)	(%)	(%)	(Mt)
Luhlanga	Proved	OP	B	8.61	2.00	95.00	96.00	2.00	8.17	0.45	7.72	96	43.96	3.26
Subtotal OP	*Proved*	*OP*	*B*	*8.61*	*2.00*	*95.00*	*96.00*	*2.00*	*8.17*	*0.45*	*7.72*	*96*	*43.96*	*3.26*
Emalahleni	Probable	OP	B	9.29	2.00	95.00	96.00	2.00	8.81	-	8.81	96	46.49	3.93
Gwabalanda	Probable	OP	B	2.09	2.00	95.00	96.00	2.00	1.98	-	1.98	96	49.97	0.67
KwaQubuka	Probable	OP	B	3.94	2.00	95.00	96.00	2.00	3.74	-	3.74	96	45.50	1.63
KwaQubuka North	Probable	OP	B	1.51	2.00	95.00	96.00	2.00	1.43	-	1.43	96	47.73	0.64
Luhlanga	Probable	OP	B	1.03	2.00	95.00	96.00	2.00	0.98	-	0.98	96	43.96	0.41
Mahujini	Probable	OP	B	4.57	2.00	95.00	96.00	2.00	4.34	-	4.34	96	50.49	1.95
Ophondweni	Probable	OP	B	1.85	2.00	95.00	96.00	2.00	1.76	-	1.76	96	49.14	0.79
Subtotal OP	*Probable*	*OP*	*B*	*24.28*	*2.00*	*95.00*	*96.00*	*2.00*	*23.04*	*-*	*23.04*	*96*	*47.55*	*10.03*
Total OP	**Proved & Probable**	**OP**	**B**	**32.89**	**2.00**	**95.00**	**96.00**	**2.00**	**31.21**	**0.45**	**30.76**	**96**	**46.61**	**13.28**
Emalahleni	Probable	UG	B	1.35	32.00	35.00	96.00	2.00	0.61	-	0.61	96	45.00	0.26
Subtotal UG	*Probable*	*UG*	*B*	*1.35*	*32.00*	*35.00*	*96.00*	*2.00*	*0.61*	*-*	*0.61*	*96*	*45.00*	*0.26*
Grand Total	**Proved & Probable**	**OP & UG**	**B**	**34.24**			**96.00**	**2.00**	**31.82**	**0.45**	**31.37**	**96**	**46.55**	**13.54**

1. OP = Open Pit; UG = Underground
2. adb = air dry basis
3. MTIS = Mineable Tonnes *In Situ*; RoM = Run of Mine
4. 24 cm contamination has been allowed for in the open pit estimates
5. Option 2 is quoted for Mahujini
6. Reserve estimates for Area 1 are publicly available estimates
7. Slight differences may arise due to rounding
8. Effective date 01 December 2013

Table ES1-10: Area 1 Proved and Probable Coal Reserve Estimates (adb)

Area	SAMREC Category	Mining Method	Seam	MTIS	Contam-ination	Extraction Factor	Recovery Factor	Moisture Correction	Previous RoM	Depletion	Current RoM	Practical Plant Yield	Theoret-ical Yield	Saleable
				(Mt)	(%)	(%)	(%)	(%)	(Mt)	(Mt)	(Mt)	(%)	(%)	(Mt)
Area 1	Proved	OP	B	9.82	Not stated	95.00	Not stated	Not stated	9.33	4.65	4.68	69	Not stated	3.21
Area 1	Probable	OP	B	13.25	Not stated	95.00	Not stated	Not stated	12.59	-	12.59	69	Not stated	8.64
Total	**Proved & Probable**	**OP**	**B**	**23.07**	Not stated	**95.00**	Not stated	Not stated	**21.92**	**4.65**	**17.27**	**69**	Not stated	**11.85**

1. OP = Open Pi
2. adb = air dry basis
3. MTIS = Mineable Tonnes *In Situ*; RoM = Run of Mine
4. Reserve estimates for Area 1 are publicly available estimates
5. Slight differences may arise due to rounding
6. SRK has depleted the RoM by current mining and otherwise applied the various factors as publicly available
7. Effective date 01 December 2013

Table ES1-11: SRK Proved and Probable Coal Reserve Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	Saleable	Average Theoretical Product Qualities (adb)			
					Ash Content	Volatile Matter	Fixed Carbon	Moisture Content
				(Mt)	(%)	(%)	(%)	(%)
Luhlanga	Proved	OP	B	3.26	16.25	6.89	75.29	1.57
Subtotal OP	*Proved*	*OP*	*B*	3.26	16.25	6.89	75.29	1.57
Emalahleni	Probable	OP	B	3.93	16.72	6.25	74.86	2.17
Gwabalanda	Probable	OP	B	0.67	24.79	3.64	66.54	5.03
KwaQubuka	Probable	OP	B	1.63	15.66	5.52	76.90	1.92
KwaQubuka North	Probable	OP	B	0.64	30.57	6.43	60.79	2.21
Luhlanga	Probable	OP	B	0.41	16.25	6.89	75.29	1.57
Mahujini	Probable	OP	B	1.95	17.97	5.77	72.71	3.55
Ophondweni	Probable	OP	B	0.79	17.89	3.50	72.80	5.81
Subtotal OP	*Probable*	*OP*	*B*	10.03	18.41	5.65	73.06	2.89
Subtotal	**Proved & Probable**	**OP**	**B**	**13.28**	**17.84**	**5.97**	**73.64**	**2.54**
Emalahleni	Probable	UG	B	0.26	16.72	6.25	74.86	2.17
Subtotal UG	*Probable*	*UG*	*B*	0.26	16.72	6.25	74.86	2.17
Grand Total	**Proved & Probable**	**OP & UG**	**B**	**13.54**	**17.80**	**5.98**	**73.69**	**2.53**

1. adb = air dry basis
2. Qualities have been weighted on the MTIS
3. The Volatile Matter Content for Gwabalanda and Ophondweni is lower than expected and the Moisture Content higher than expected due to the increasing coal rank compared with the other areas
4. Slight differences may arise due to rounding
5. Effective date 01 December 2013

Table ES1-12: Area 1 Proved and Probable Coal Reserve Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	Saleable	Average Theoretical Product Qualities (adb)			
					Ash Content	Volatile Matter	Fixed Carbon	Moisture Content
				(Mt)	(%)	(%)	(%)	(%)
Area 1	Proved	OP	B	3.21	15.86	8.74	73.60	1.8
Area 1	Probable	OP	B	8.64	16.80	9.10	72.30	1.8
Total	**Proved & Probable**	**OP**	**B**	**11.85**	**16.40**	**8.95**	**72.85**	**1.8**

1. adb = air dry basis
2. Qualities have been weighted on the MTIS
3. Slight differences may arise due to rounding
4. Effective date 01 December 2013

ES12: Coal Processing

[12.9 (h) (vii), SR5.5, SR5.7 (B/C), SV2.7]

Somkhele consists of three plants, fed from various mining areas. Plants 1, 2 and 3 each consist of a single stage wash only coarse circuit, a double stage wash smalls circuit (except for Plant 3, which is single stage) and a fines circuit The design capacities of the three plants are: Plant 1 – 220 tph; Plant 2 - 330 tph; and Plant 3 – 250 tph. Somkhele produces a wide range of products and exhibits operational flexibility to alter product sizes and qualities.

The plant feed assumptions are, in the opinion of SRK, somewhat optimistic. A loss in plant efficiency may be experienced if variations in the particle size distribution at 10 mm cut size lead to over or under loading of circuits.

ES13: Tailings and Discard

[12.9 (h) (vii), SR 5.2, SR 5.6 (C), SV2.7]

Disposal of coal discard and slurry into the mined out pits may be unsuitable for the groundwater regime and ground water contamination may be more significant than anticipated.

ES14: Engineering and Infrastructure

[SR5.6 (C)]

A potential fire risk in unmanned substations exists, which may lead to loss of production.

ES16: Environmental and Social Compliance and Water Management

[12.9 (h) (viii), SR5.2 (B/C)]

Approved EMPs cover the current operations and washing plants. The mine has an approved Water Use Licence for abstraction from the Umfolozi River, but this excludes waste disposal and other relevant activities; however, applications are pending to cover these activities.

Estimated closure costs may be higher than expected, due to higher than expected water treatment costs and extra costs that a backfilling backlog develops. Groundwater management and acid mine drainage is not foreseen to be problematical. Although pit dewatering will be required, ground water quality is not expected to deteriorate significantly and impact on the Umfolozi River is likely to be low. However, decant in Area 1 may cause contaminated water to affect surrounding surface water bodies and aquifers.

ES20: Valuation Methods

[12.8 (a) (i), 12.9 (f), SV2.8]

The valuation of Somkhele and the contained coal deposits has been prepared in accordance with the SAMVAL Code. The three generally accepted approaches to mineral asset valuation are:

- The “Cash Flow Approach” which relies on the ‘value-in-use’ principle and requires determination of the present value of future cash flows over the useful life on the mineral asset. The most widely used valuation method for pre-development, development and operating mines is the discounted cash flow;
- The “Market Approach “which relies on the principle of ‘willing buyer-willing seller’ and requires that the amount obtainable from the sale of the mineral asset is determined as if in an arm’s-length transaction. The Market Approach utilizes information relating to transactions in either public or private firms similar to the subject. The approach is based on the principle of substitution and the assumption that comparable opportunities yield appropriate values. The

Market Approach generally provides fair value, since it is based on transactions that are normally consummated between willing buyers and willing sellers in an open market; and

- The "Cost Approach" which relies on historical and/or future amounts spent on the mineral asset. Where previous and future committed exploration expenditures are known, or can be reasonably estimated, the Multiple of Exploration Expenditures ("MEE") method can be applied to derive a cost-based technical value. The MEE method is best suited to Exploration and Advanced Exploration Areas.

Cash Flow Approach

[SR 5.7C (v) (iv), SV2.8]

Tendele compiled a financial model for Somkhele, which SRK has updated ("SOMKHELE UPDATED BANK MODEL excl UG Final 07022014 .xlsm") that incorporates LoM production schedules for the various coal deposits within the licence areas. The results of the Cash Flow Approach are summarised in Table ES1-13 to Table ES1-15. The tables present the Net Present Values ("NPV") of the nominal post-tax pre-finance cash flows as determined from the financial model and include the variation in nominal NPV with discount factors); the variation in nominal NPV at the Weighted Average Cost of Capital ("WACC") based on twin (revenue and operating expenditure) sensitivities and the variation in nominal NPV at the WACC based on twin (capital and operating cost) sensitivities.

Table ES1-13: Somkhele – Variation in Nominal NPV with Discount Factors

Discount Rate (Nominal)	NPV (ZAR million)
0.0%	3013.0
10.0%	1962.2
12.0%	1819.7
14.05%	1690.5
16.0%	1581.4
18.0%	1481.6
20.0%	1392.7

Table ES1-14: Somkhele – Variation in Nominal NPV at 14.05% WACC based on Twin (revenue and operating costs) Sensitivities

All amounts in ZAR million		Revenue Sensitivity						
		-30%	-20%	-10%	0%	10%	20%	30%
Operating Cost Sensitivity	-30%	1,120	1,881	2,642	3,403	4,163	4,924	5,685
	-20%	548	1,310	2,071	2,832	3,593	4,353	5,114
	-10%	(83)	739	1,500	2,261	3,022	3,783	4,544
	0%	(842)	154	929	**1,691**	2,451	3,212	3,973
	10%	(1,623)	(575)	353	1,120	1,881	2,641	3,402
	20%	(2,404)	(1,356)	(309)	546	1,310	2,071	2,832
	30%	(3,185)	(2,137)	(1,090)	(57)	737	1,500	2,261

The cell in bold indicates the "base case" valuation.

Table ES1-15: Somkhele – Variation in Nominal NPV at 14.05% WACC based on Twin (capital and operating costs) Sensitivities

All amounts in ZAR million		Capital expenditure sensitivity						
		-30%	-20%	-10%	0%	10%	20%	30%
Operating Cost Sensitivity	-30%	3,516	3,478	3,440	3,403	3,365	3,327	3,289
	-20%	2,945	2,907	2,870	2,832	2,794	2,756	2,719
	-10%	2,374	2,337	2,299	2,261	2,223	2,186	2,148
	0%	1,804	1,766	1,728	**1,691**	1,653	1,615	1,577
	10%	1,233	1,195	1,158	1,120	1,082	1,044	1,007
	20%	660	622	584	546	508	470	432
	30%	68	27	(14)	(57)	(132)	(176)	(220)

The cell in bold indicates the "base case" valuation

Market Approach

SRK subscribes to the SNL Metals Economics Group ("MEG") and IntierraRMG ("Intierra") databases, which have been used for more than five years to obtain comparable transaction information. In SRK's experience, the information provided on these databases is reliable and trustworthy. During December 2013, SRK extracted data on all anthracite projects that were located in South Africa for which transactions were reported. To ensure that a sufficiently large data set was obtained, a search criterion of January 2000 to November 2013 was used. Information related to six transactions was obtained from this search. Analysis of the data resulted in a range of values for Measured and Indicated Resources from 0.049 to 1.425 USD/t, with an average of 0.417 USD/t; similarly, Inferred Resources were values at between 0.032 and 0.668 USD/t, with an average of 0.229 USD/t. These values were summed and converted to SA Rands at ZAR10.18 = USD1.00 (the rate ruling at the Valuation Date). The valuation derived from this information is shown in Table ES1-16.

Table ES1-16: Market Valuation of Resources in the LoM

Item	Units	Minimum	Average	Maximum
Total Value	(USDm)	1.6	13.5	46.2
	(ZARm)	16.1	137.4	470.1

This does not agree with the value derived from the cash flow approach. SRK therefore places more reliance on the cash flow value for the LoM production.

The coal resources not used in the LoM production schedules are set out by property in Table 16-16. The values obtained from the transactional analysis, as described above, have been applied to the Measured and Indicated Resources and the Inferred Resources of those resources not used in the LoM at Somkhele. The resultant USDm values have been converted to SA Rands (Table ES1-17).

Table ES1-17: Market Valuation of Resources not used in LoM

Property	Resources not used in LoM (Mt)		Value Resources not used in LoM (USDm)					
			Measured and Indicated			Inf		
	M&I Res	Inf Res	Min.	Av.	Max.	Min.	Av.	Max.
Emalahleni	9.95	-	0.5	4.1	14.2	0.0	0.0	0.0
Gwabalanda	5.06	1.77	0.2	2.1	7.2	0.1	0.4	1.2
KwaQubuka North	2.81	2.28	0.1	1.2	4.0	0.1	0.5	1.5
Luhlanga	9.07	7.77	0.4	3.8	12.9	0.2	1.8	5.2
Mahujini	2.47	0.71	0.1	1.0	3.5	0.0	0.2	0.5
Ophondweni	3.87	0.12	0.2	1.6	5.5	0.0	0.0	0.1
Area 1	20.35	8.60	1.0	8.5	29.0	0.3	2.0	5.7
Area 2	2.67	-	0.1	1.1	3.8	0.0	0.0	0.0
Area 3	-	42.85				1.4	9.8	28.6
KwaQubuka	1.75	-	0.1	0.7	2.5			
Sub-total	58.00	64.10	2.8	24.2	82.7	2.0	14.7	42.8
Total value (USDm)			**4.9**	**38.9**	**125.5**			
Total value (ZARm)			**49.4**	**395.7**	**1277.5**			

1. M&I Res = Measured and Indicated Resources
2. Inf Res = Inferred Resources

Cost Approach

Historic exploration expenditure on Somkhele, correct at the Valuation Date in this CPR, is ZAR48.0 million. The forecast exploration expenditure for the next eight years totals ZAR61 million. The NPV at Somkhele's WACC of the weighted expenditure is R38.2 million. The sum of this and the historical expenditure is then R86.2 million. Applying a PEM of 4.5 to the combined exploration expenditure yields a value for Somkhele according to the Cost Approach of R388.1 million.

ES21: Material Change

[SV2.9]

From the Effective Date of this CPR until the date this CPR was issued, SRK is not aware of any material changes that have occurred in relation to the Somkhele.

As far as SRK has been able to ascertain, the information provided by Tendele was complete and not incorrect, misleading or irrelevant in any material aspect. SRK has no reason to believe that any material facts have been withheld.

SRK is aware that arbitration proceedings are underway with Osho SA Coal Trading (Pty) Ltd ("Osho"). According to Tendele, this is regarding the sale of discard material to Osho. SRK has been served with a subpoena from Osho, requesting SRK to provide:

- Any and all correspondence, reports, memoranda, notes and any other document prepared by SRK (or any of its associates, affiliates or related companies) for Tendele/Somkhele/Petmin relating to all and any coal, coal product or discard mined from or produced bat Somkhele;
- Any and all geological reports which have been produced by SRK for Somkhele/Petmin on or relating to any coal, coal product or discard mined from or produced at Somkhele;
- Any and all mining reports which have been produced by SRK for Somkhele/Petmin on or relating to any coal, coal product or discard mined from or produced at Somkhele; and
- Any and all reports which have been prepared by SRK for Somkhele/Petmin on or relating to any and all mining, washing, rewashing, coal and/or discard plant at Somkhele.

SRK complied with the subpoena on 29 January 2014.

ES22: Summary Valuation

[12.9 (h) (xii), SV2.8, SV2.10, SV2.15]

The summary Market Valuation for Tendele at 01 December 2013 has been done on a sum-of-the-parts basis, as set out in Table ES1-18. The effects of debt/loans and debt servicing have been excluded in the derivation of the fair value for Somkhele. Adjustments have been made in Table ES1-18 for balance sheet items at the Tendele level, which include cash on hand, consolidated debt and net current assets. Tendele confirmed to SRK that there are no hedge or derivative contracts in force.

Table ES1-18: Tendele Summary Market Valuation

Item	Values (ZARm)
Somkhele (NPV@14.05% nominal)	1690.5
Resources not in LoM plans	395.7
Sub-total	2086.2
Adjustments	
Cash on hand	-5.5
Consolidated debt	-379.6
Net Current Assets (accounts receivable – current liabilities)	-62.6
Hedge contracts – mark to market	nil
Environmental liabilities	incl in cash flows
Net Tendele Value	1638.6

SRK repeated the construction of Table ES1-18, using the minimum and maximum values for Somkhele (LoM schedule) and the resources not used in the LoM.

In SRK's opinion, the fair value for Tendele is ZAR1 639 million, in the range of ZAR1 344 million to ZAR1 838 million.

ES23: Risks

[SR6 (i – iii)]

The key risks in SRK's opinion, associated with the Material Assets are:

- Geological:
  - Logging, Sampling and Analysis Protocols: Although well understood by personnel, the core logging, sampling and analysis protocols are not documented, which may give rise to inconsistencies developing in the logging, sampling and analysis;
  - Geophysical Logging: The geophysical sondes are not calibrated for depth, which may lead to depth errors exists; and
  - Coal Analysis: Although an accredited laboratory was used, no duplicate analysis of samples was done to confirm reliability of the analytical results.

  It should be noted that the impact of the geological risks is low.
- Geotechnical:
  - Quality of Information: No laboratory testing has been carried out, which will be required for detailed design work when slope heights exceed 100 m in future;
  - Analysis of Stability: The Haines Terbrugge Method is not considered to be an appropriate method for design beyond pre-feasibility stage. The method is not applicable to the higher slopes at Somkhele which lie beyond the limit of the data set used;

  - Groundwater: The current understanding of groundwater is insufficient for slope stability analysis, potentially leading to unforeseen dewatering and depressurization requirements with deeper pits; and
  - Slope Design: Adversely orientated joints have combined to cause bench scale collapse in places, resulting in a rock fall risk. Remediation measures will result in a consequent loss of coal and an increase in stripping ratio.
- Mining:
  - Faulting at Mahujini: The faulting may restrict the practical pit design and is likely to present some challenges to the mining. Additional exploration and cover drilling will improve the ore body knowledge.
  - Emalahleni Underground Mining Method: The proposed mining method is unusual in the South African coal mining industry and has not been tested at dips as severe as those that occur at Somkhele. It is possible that mining will be compromised, resulting in a reduction of available reserves. Further detailed geotechnical work to support the proposed mine design is required.
- Coal Processing:
  - Plant Feed Assumptions: The Somkhele Updated Bank Model_5 December 2013 may be optimistic in terms of plant feed tonnages applied to Plants 1 and 2; annual Plant 1 and 2 capacities of 1.1 and 1.4 million tonnes, respectively are believed to be more likely; and
  - Particle Size Distribution: The particle size distribution variations at 10 mm cut size may lead to over- and under-loading of circuits with a resultant loss in efficiency.
- Tailings and Discard:
  - Discard and Slurry Disposal: The acceptability of the proposed use of the open pits for the disposal of coal discard and slurry may be questionable in terms of ongoing monitoring and updating of the ground water model, which may require the revision of the current disposal method; and
  - Groundwater Contamination: There is a risk that ground water contamination may be more significant than anticipated and unforeseen remediation of ground water may be required.
- Infrastructure:
  - Fire Risk in Substations: Substations in Plants 2 and 3 pose a risk of catastrophic fires, resulting in a loss in production and revenue.
- Environmental:
  - Additional Capital Expenditure: Estimated closure costs may be higher than expected. SRK believes that the cost estimate for water treatment is significantly underestimated. Additional costs may be incurred at closure if a backfilling backlog develops. This will occur if planned backfilling open pits is not implemented and backfill has to be returned to the pit from overburden piles on surface during the closure phase, which will involve double handling. Indicative additional closure costs are estimated at R15 million for water treatment and R20 million for a backfilling backlog;
  - Acid Mine Drainage: The risk of AMD during the closure phase and the potential of the waste disposal to generate AMD is considered to be low, provided that the separation of the overburden from waste material is done effectively to prevent this material falling into the waste rock stockpile;
  - Groundwater: Ground water management does not represent a significant liability. However, groundwater migrating away from the pit areas will transport contaminants, specifically sulphate compounds. There are no groundwater users that will be impacted and it is not expected that there will be any significant influence on the water quality of the Umfolozi River;

- Pit Dewatering: Pit dewatering will be required but ground water quality is not likely to deteriorate significantly except in terms of sulphate concentration. Water make in the pits is not excessive and can be absorbed in the process water system. Mine dewatering is unlikely to impact directly on the flow volumes in the Umfolozi River;
- Decant: Decant in Area 1 may cause contaminated water in the pit area to daylight onto surface, impacting surrounding surface water bodies and aquifers. The flow of decant water will be towards the Umfolozi River, with possible limited deterioration in the sulphate concentrations; and
- Local Economic Development Projects: Two commitments have been rolled over to the 2013 – 2017 SLP. Failure to address all commitments before the end of the five year period incurs the risk of the imposition of fines. Failure to comply with SLP commitments could impact on relations between the mine and the community, possibly leading to labour unrest.

- Social: Social:
  - Failure to comply with the Social and Labour Plan may result in community dissatisfaction and hence unrest, or prosecution.
- Water Supply:
  - The Water Use License provides for the authorized volume of water abstracted from the Umfolozi River to be halved during water stressed times. This could have negative consequences.
- Valuation of Material Assets:
  - Tenure: The NOMR for Areas 4 and 5 has not yet been awarded to Tendele. This presents a risk, albeit low, to Tendele in terms of continued coal production once the coal in the current permitted areas is depleted (within five to six years). If the Mining Right Application is rejected, Tendele will no longer hold the coal rights over these properties; and
  - Mine Designs: The mine designs on which the production schedules for future mining areas are based are largely at a conceptual level. The assumed slope geometry needs to be confirmed and the plans redone using a complete set of modifying factors.

The risks are summarized in Table ES1-19.

Table ES1-19: Summary of Identified Risks

Type	Description of Risk	Initial Risk Rating	Mitigation Possible?	Risk Rating after Mitigation
Geological	Logging, Sampling and Analysis Protocols	Low	Yes	Very Low
	Geophysical Logging	Low	Yes	Very Low
	Coal Analysis	Low	Yes	Very Low
Geotechnical	Quality of Information	High	Yes	Low
	Analysis of Stability	High	Yes	Low
	Groundwater	Medium	Yes	Low
	Slope Design	High	Yes	Low
Mining	Faulting at Mahujini	High	Yes	Low
	Unproven UG Mining Method	High	Yes	Medium
Coal Processing	Plant Feed Assumptions	High	Yes	Medium
	Particle Size Distribution	Medium	Yes	Low
Tailings and Discard	Discard and Slurry Disposal	Low	Yes	None
	Groundwater Contamination	Medium	Yes	Low
Infrastructure	Fire Risk in Substations	High	Yes	Low
Environmental	Additional Capital Expenditure	Low	Yes	Very Low
	Acid Mine Drainage	Low	Yes	Very Low
	Groundwater	Medium	Yes	Low
	Pit Dewatering	Low	Yes	Very Low
	Decant	Medium	Yes	Low
Social	Community Dissatisfaction	Medium	Yes	Low
Water Supply	Reduction in Water Allocation	Medium	Yes	Low
Valuation of Material Assets	Tenure	Low	No	Low
	Mine Designs	Medium	Yes	Low

ES24: Opportunities

The opportunities identified within the Somkhele mining operation are:

- Mining
    - Blasting: Cost saving during overburden blasting may be possible if a lower powder factor is used.
- Valuation of Material Assets
    - Production Schedule: The opportunity exists to optimize the production schedule, to reduce the large swings in production from one year to the next, thereby reducing the working capital requirements of holding large RoM stockpiles.

ES25: Concluding Remarks

SRK has conducted a comprehensive review and assessment of all material issues likely to influence the future operations of Somkhele based on information available up to 01 December 2013, which is the Effective Date and Valuation Date for this CPR. The CPR and Market Valuation of Somkhele have been done according to the requirements of the SAMREC and SAMVAL Codes.

As far as SRK has been able to ascertain, the information provided by Tendele was complete and not incorrect, misleading or irrelevant in any material aspect. SRK has no reason to believe that any material facts have been withheld.

SRK has reviewed the information provided by Tendele and is satisfied that the extents of the properties described in the various rights are consistent with the maps and diagrams received from Tendele. Nevertheless, this does not constitute a legal due diligence and SRK does not make any claim or state any opinion as to the validity of Tendele's title to the mineral rights held or purported to be held over Material Assets.

This report contains statements of a forward looking nature which are subject to a number of known and unknown risks, uncertainties and other factors that may cause the results to differ materially from those anticipated in this report. The achievability of LoM plans, budgets and forecasts is neither assured nor guaranteed by SRK. The forecasts as presented and discussed herein have been proposed by Tendele management and staff and have been reviewed and adjusted where appropriate by SRK. The projections cannot be assured as they are based on economic assumptions, many of which are beyond the control of Tendele. Future cash flows and profits derived from such forecasts are inherently uncertain and actual results may be significantly more or less favourable.

Nevertheless, SRK believes that the projections set out in this report should be achievable, provided that the required management resources and adequate capital necessary to achieve the projections are sustained.

COMPLIANCE CHECKLIST

[12.8(a) (ii), 12.9(d)]

Chapter 12 of JSE Listing Rules		SAMREC ("SR") Code		SAMVAL ("SV") Code	
Section	**Where complied with**	**Section**	**Where complied with**	**Section**	**Where complied with**
12.8(a)	This report, Executive Summary, 1.2.2, 16	SR1.1A/B/C (i)-(iii)	Cover Page, Executive Summary, 1.1, 1.2.1, 1.3,	SV2.1	Executive Summary
12.8(b)	1.6.3,	SR1.2A/B/C	Executive Summary, 2.3	SV2.2	Executive Summary, 1.1, 1.6.3,
12.8(c)	2.4.2, Table 2.1	SR1.3A/B/C	2.4, Table 2.1, 4.5.5, 6.9.2	SV2.3	Executive Summary, 1.1, 2.2, 2.3, 2.6, Table 2.3
12.8(d)	1.4.3,	SR1.4A/B/C	2.3, Figure 3.1	SV2.4	2.4, Table 2.1
12.8(e)	1.4.3, 2.6, 18.2	SR1.5A(i)-(ii)	Executive Summary, 1.1, 2.1, 2.3, Figure 3.1	SV2.5	Executive Summary, 3
12.9(a)	Cover Page, Executive Summary, 1.3	SR1.6A/B/C	2.3,	SV2.6	Executive Summary, 4, 4.3, 6.9, Table 7.4
12.9(b)	Not applicable	SR1.7A(i)-(iv)	Executive Summary, 1.4.3, 2.5, 2.6, Table 2.3, Figure 3.1	SV2.7	Executive Summary, 5, 6.2, 8, 9,
12.9(c)	1.6.3,	SR2.1A/B/C	3.8	SV2.8	Executive Summary, 1.5, 16, 16.3, 16.4, 16.5
12.9(d)	This table, below section headings	SR2.2A	3.8	SV2.9	Cover Page, Executive Summary, 1.3
12.9(e)	1.4.3,	SR2.3A/B/C	3.6	SV2.10	Executive Summary, 1.6.1, 17, 18
12.9(e)(i)-(iii)	Executive Summary, 3.8	SR2.4A/B/C	3.9	SV2.11	1.2.3,
12.9(f)	Executive Summary, 1.5, 16, 18	SR2.5A/B/C	Executive Summary, 3, 4, 6	SV2.12	16.2
12.9(g)	In full in Circular	SR3.1A	3.9	SV2.13	1.2.2, 1.7, Table 1.2
12.9 (h)	Set out below	SR3.2A(i)-(vi)	3.9	SV2.14(i)-(ix)	1.4, 1.6.3, 1.7,
12.9 (h)(i)	1.1, 1.2.1	SR3.2B	3.9	SV2.15	Executive Summary, Table 16.11, 17.4, 17.5, 18
12.9 (h)(ii)	2.3,	SR3.3A(i)-(v)	3.9	SV2.16	18.
12.9 (h)(iii)	2.3, Figure 3.1	SR3.4A(i)-(iv)	3.9	SV2.17	2.4, Table 2.1
12.9 (h)(iv)	1.4.3, 2.5, 2.6, Table 2.3, 14	SR4.1A(i)-(iv)	Executive Summary, 3, 4.4	SV2.18	15
12.9 (h)(v)	Executive Summary, 3	SR4.1B(i)-(iv)	4.4	SV2.19	Not applicable
12.9 (h)(vi)	Executive Summary, 3.8	SR4.2A	4.4, 4.5		
12.9 (h)(vii)	Executive Summary, 5, 11, 14, 15,	SR4.2B(i)-(vi)	4.4		
12.9 (h)(viii)	Executive Summary, 9, 12, 13,	SR5.1A	2.6		
12.9 (h)(ix)	Executive Summary, 4, 4.3,7.6, Table 7.4	SR5.2A/B/C	Executive Summary, 2.6.2, 9, 12, 12.10, 12.11, 12.12, 12.14		
12.9 (h)(x)	5.5, 8, 9.7, 10.2, Table 10.1, 12.14, 16.3, 16.3, 16.3, 17	SR5.3C	12.11, 12.13		
12.9 (h)(xi)	Not applicable	SR5.4A/B	Executive Summary, 6		
12.9 (h)(xii)	Executive Summary, 18	SR5.4C(i)-(iii)	Executive Summary, 5		
12.10(a)	1.6.3, 1.6.4,	SR5.5B/C	Executive Summary, 8		
12.10(b)	Not applicable	SR5.5C(i)-(iv)	Executive Summary, 8		
		SR5.6C	Executive Summary, 8, 9, 10, 11,		
		SR5.7B(i)-(v)	Executive Summary, 4.4.3		
		SR5.7C(i)-(vi)	Executive Summary, 6, 8, 16.3		
		SR5.8A/B/C	14, 15,		
		SR6A/B/C	Executive Summary, 17.4		
		SR7A	Not applicable		
		SR7B(i)-(iv)	Executive Summary, 4		
		SR7C(i)-(v)	Executive Summary, 6		
		SR8A(i)-(iii)	3.3		
		SR8B(i)-(iv)	Exec Summary, 4.5.4, 4.5.5		
		SR8C(i)-(vi)	Executive Summary, 6		
		SR9A/B/C	Executive Summary, 1.7, 3.7, 3.7, 4.2, 6.1		
		SR10A/B/C	5.5		
		SR11A(i)-(iii)	1.6.3, 1.7,		

Table of Contents

List of Tables

List of Figures

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4 March 2014

Tendele Coal Mining (Pty) Ltd
Postnet Suite 208
Private Bag X013
Mtubatuba
3935
KwaZulu-Natal

Dear Sirs

A Competent Person's Report on the Material Assets of Tendele Coal Mining (Pty) Ltd

1 Introduction

1.1 Background

[12.9 (h) (i), SR1.1 (A) (ii), SR1.5 (A) (i), SV2.2, SV2.3]

SRK Consulting (South Africa) (Pty) Limited ("SRK") has been commissioned by Tendele Coal Mining (Pty) Limited ("Tendele") to compile a Competent Person's Report ("CPR") on the material coal assets and liabilities of Tendele located in South Africa (collectively the "Material Assets"). Tendele is a wholly owned subsidiary of Petmin Limited, listed on the JSE Limited ("JSE"), and is the operating company of the Somkhele anthracite mine eighty five kilometres northwest of Richard's Bay, KwaZulu-Natal.

The Material Assets of Tendele consist of the Somkhele Anthracite Mine.

1.2 CPR – Compliance and Sources of Data

1.2.1 Requirement

[12. (h) (i)]

A proposed transaction, which may be BBEEE-related represents a material transaction in terms of Tendele's share structure and market capitalisation, Tendele requires an independent CPR to be compiled that will satisfy the disclosure requirements of Chapter 12 of the JSE Listing Rules.

1.2.2 Compliance

[12.8 (a), SR1.1 (A) (iii), SV2.13]

This CPR has been prepared in accordance with the following:

- Chapter 12 of the JSE Listing Rules; and
- The 2007 South African Code for Reporting of Mineral Resources and Mineral Reserves known as the SAMREC Code ("SAMREC") Code.

In accordance with the contents of the SAMREC and SAMVAL Codes, this CPR has been prepared under the direction of the Competent Persons (the "CPs") and Competent Valuator ("CV") who assume overall professional responsibility for the document. The CPR however, is published by SRK, the commissioned entity, and accordingly SRK assumes responsibility for the views expressed herein. Consequently with respect to all references to the CP and SRK: all references to SRK mean the CP and vice-versa.

1.2.3 Sources of Data

[SV2.11]

Details of data/information used to prepare this CPR are set out in Section 18.

1.3 Effective Date

[12.9 (a), SR1.1 (A) (ii), SV2.9]

The effective date ("Effective Date") of this CPR is deemed to be 01 December 2013, and is co-incident with the start date of the techno-economic projections as reported in this CPR.

To the best of the knowledge of SRK, there have been no material changes to Tendele since the Effective Date of this CPR.

1.4 Verification, Validation and Reliance

[SV2.14]

This report is dependent upon technical, financial and legal input. The technical information as provided to and taken in good faith by SRK has not been independently verified by means of re-calculation.

SRK's approach in undertaking the review of the Coal Resource and Coal Reserve estimations and classifications is detailed in Section 4 and Section 6 respectively in this report.

SRK has performed all necessary validation and verification of information provided by Tendele in order to place an appropriate level of reliance on such information. To the best of SRK's knowledge, all facts presented in this CPR are valid.

1.4.1 Technical Reliance

SRK places reliance on Tendele and management at the Material Assets that all technical information provided to SRK at the Effective Date is both valid and accurate for the purpose of compiling this CPR.

1.4.2 Financial Reliance

In consideration of all financial aspects relating to the Material Assets and the valuation of their Coal Reserves, SRK has placed reliance on the Chief Executive Officer of Tendele, Mr. Johan Gloy that the information for Tendele is valid as at 01 December 2013.

1.4.3 Legal Reliance

[12.8(d) (e), 12.9(e) (h) (iv), SR1.7A (iv)]

SRK has reviewed the information provided by Tendele and is satisfied that the extents of the properties described in the various rights are consistent with the maps and diagrams received from Tendele.

SRK have been assured by Tendele that no significant legal issue exists which would affect the likely viability of a project and/or on the estimation and classification of the Coal Reserves and Coal Resources as reported herein.

1.5 Valuation Basis

[12.9 (f), SV2.8]

The summary equity valuation of Tendele is based on a sum of the parts approach using a SRK-preferred value for each of the Material Assets. Valuation of the Material Assets has been prepared in accordance with the 2008 SAMVAL Code.

The three generally accepted approaches to mineral asset valuation are:

- "**Cash Flow Approach**" which relies on the 'value-in-use' principle and requires determination of the present value of future cash flows over the useful life on the mineral asset.
- "**Market Approach**" which relies on the principle of 'willing buyer-willing seller' and requires that the amount obtainable from the sale of the mineral asset is determined as if in an arm's-length transaction.
- "**Cost Approach**" which relies on historical and/or future amounts spent on the mineral asset.

The applicability of the three valuation approaches to the different property types as set out in the SAMVAL Code is shown in Table 1-1.

The SAMVAL Code requires that at least two valuation approaches must be applied and the results from the valuation approaches and methods must be weighed and reconciled into a concluding opinion on value. A range of values must be provided, together with the estimated value.

The currency of valuation used in this report is South African Rand ("ZAR").

Table 1-1: Applicability of Valuation Approaches to Property Types

Valuation Approach	Exploration Properties	Development Properties	Production Properties	Dormant Properties		Defunct Properties
				Economically Viable	Not Viable	
Cash Flow	Not generally used	Widely Used	Widely Used	Widely Used	Not generally used	Not generally used
Market	Widely Used	Less widely used	Quite widely used	Quite widely used	Widely Used	Widely Used
Cost	Quite widely used	Not generally used	Not generally used	Not generally used	Less widely used	Quite widely used

1.6 Limitations, Declarations and Consent

1.6.1 Limitations

[SV2.10]

This report contains statements of a forward looking nature which are subject to a number of known and unknown risks, uncertainties and other factors that may cause the results to differ materially from those anticipated in this report. The achievability of LoM plans, budgets and forecasts is neither assured nor guaranteed by SRK. The forecasts as presented and discussed herein have been proposed by Tendele management and staff and have been adjusted where appropriate by SRK.

The forecasts cannot be assured as they are based on economic assumptions, many of which are beyond the control of Tendele and SRK. Future cash flows and profits derived from such forecasts are inherently uncertain and actual results may be significantly more or less favourable. Nevertheless, SRK believes that the projections set out in this report should be achievable, provided that the required management resources and adequate capital necessary to achieve the projections are sustained.

This report includes technical information, which requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where such errors occur, SRK does not consider them to be material.

As far as SRK has been able to ascertain, the information provided by Tendele was complete and not incorrect, misleading or irrelevant in any material aspect. SRK has no reason to believe that any material facts have been withheld.

1.6.2 Reliance on Information

SRK believes that its opinion must be considered as a whole and that selecting portions of the analysis or factors considered by it, without considering all factors and analyses together, could create a misleading view of the process underlying the opinions presented in this document. The derivation of a technical review is a complex process and should not be subjected to partial analysis or summary.

The technical review in this report is effective at 01 December 2013 and is based on information provided by Tendele throughout the course of SRK's investigations, which in turn reflect various technical-economic conditions prevailing at the date of this report.

These can change significantly over relatively short periods of time. Should these change materially, the NPV could be materially different in these changed circumstances. Further, SRK has no obligation or undertaking to advise any person of any change in circumstances which comes to its attention after the date of this CPR or to review, revise or update the CPR or opinion.

1.6.3 Declarations

[12.8 (b), 12.9 (c), SR1 1(A) (ii), SV2.2, SV2.14]

SRK will receive a fee for the preparation of this report in accordance with normal professional consulting practice. SRK will receive no other benefit for the preparation of this report.

Neither SRK nor the CV or any of the CPs nor any of its employees and associates employed in the preparation of this CPR has any pecuniary or beneficial interest in Tendele, the Material Assets or the outcome of this CPR, that could reasonably be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Coal Resources, the Coal Reserves and the Material Assets.

SRK considers itself to be entirely independent.

Drafts of this CPR were provided to Tendele, but only for the purpose of confirming the accuracy of factual material and the reasonableness of assumptions relied upon in the report.

1.6.4 Consent

SRK consents to the issue of this CPR in the form and context in which it is to be included on Tendele's website and to be distributed by Tendele to its directors and shareholders and third-party investors.

Neither the whole nor any part of this report nor any reference thereto may be included in any other document without the prior written consent of SRK as to the form and context in which it appears.

1.6.5 Copyright

Copyright in all text and other matter in this document, including the manner of presentation, is the exclusive property of SRK. It is a criminal offence to publish this document or any part of the document under a different cover, or to reproduce and/or use, without written consent, any technical procedure and/or technique contained in this document. The intellectual property reflected in the contents resides with SRK and shall not be used for any activity that does not involve SRK, without the written consent of SRK.

1.7 Qualifications of Consultants

[SR11A (i), SV2.13, SV2.14]

SRK is part of an international group (the SRK Group) which has more than 1 300 staff worldwide and offers expertise in a wide range of resource engineering disciplines. The SRK Group's independence is ensured by the fact that it holds no equity in any project. This permits the SRK Group to provide its clients with conflict-free and objective recommendations on crucial judgment issues. The SRK Group has a demonstrated track record in undertaking independent assessments of resources and reserves, project evaluations and audits, Independent Engineer's Reports, Competent Persons' Reports, Mineral Experts' Reports, and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and on their projects, providing mining industry consultancy services. SRK also has specific experience in commissions of this nature.

The consultants who have provided input to this CPR and are listed alphabetically by name in Table 1-2, have extensive experience in the mining industry and are members in good standing of appropriate professional institutions.

Table 1-2: Consultant Contributors

Name	Professional Registration	Qualifications	Professional Membership	Discipline
Andrew McDonald	C Eng	MSc, MBL	FSAIMM, MIMMM	Tenure, Mineral Economics
Andrew Smithen,	Pr Eng	BSc (Civ. Eng.), MSc (Agric. Eng.), MBL	MSAICE, MSAIAE, MSAIMM	Environmental, Social, Tailings Disposal
James Morris	Pr Eng	BSc (Civ. Eng.)	MSAICE, MWISA	Hydrogeology
Gerhardus Badenhorst		Nat. High. Dip (Extractive Metallurgy)	MSACPS	Coal Processing
Kenneth Mahuma	Pr Tech Eng	NTC6 (Elec. Eng. - Heavy Current)		Electrical Engineering & Infrastructure
Lesley Jeffrey	Pr.Sci.Nat.	BSc (Geo.), MSc (Min. Eng.)	MGSSA, MFFF	Geology & Coal Resources
Roger Dixon	Pr Eng	BSc (Hons) (Min. Eng.), MDP, EDP	HLFSAIMM, CM SAMRECSAMVAL; RSA Rep. CRIRSCO	Chairman and Final Review
William Joughin	Pr Eng	BSc (Min. Eng.), MSc (Min. Eng.), GDE (Rock Eng.)	FSAIMM, MSANIRE, AMMSA	Geotechnical Engineering
Alan Naismith	Pr.Sci.Nat.	MBA, MSc (Rock Mech. & Exc. Eng.), BSc (Hons) (Eng. Geol.)	Fellow SAIMM, SANIRE	Geotechnical Engineering
Xolani Gumede	Pr Eng	BSc (Min. Eng.)	MSAIMM, SACMA & IQSA	Mining & Coal Reserves

All of SRK House, 265 Oxford Road, Illovo, 2196, Johannesburg, except for Gerhardus Badenhorst.

The CP with overall responsibility for the CPR is Mr. Roger Dixon Pr Eng (Engineering Council of SA, 20000060), Fellow of the Southern African Institute of Mining and Metallurgy, who is Chairman and Corporate Consultant with SRK. Mr. Dixon is a mining engineer with 43 years' experience in the mining industry and has supervised many due-diligence reviews and engineering studies in Southern Africa and internationally. Mr. Dixon also takes responsibility for the reporting of the Coal Reserves.

The CP with responsibility for the reporting of the Coal Resources is Mrs. Lesley Jeffrey, Pr.Sci.Nat. (SACNASP, 400115/01). She is a member of the Geological Society of South Africa, who is a Principal Geologist with SRK. Mrs Jeffrey is a coal geologist with more than 25 years' experience in the mining industry and has been responsible for the reporting of Coal Resources on various properties in southern Africa during the past 29 years.

The CP with responsibility for the valuation of the project is Mr. Andrew McDonald, C Eng (UK, 334897), a Fellow of the South African Institute of Mining and Metallurgy and Member of the Institute of Materials, Minerals and Mining. Mr. McDonald is a fulltime associate of SRK and a Competent Valuator (SAMVAL). He has been involved in the financial valuation of mining-related projects for over 18 years.

2 Tendele Coal Mining (Pty) Limited

2.1 Introduction

[SR1.5A (i)]

This section gives a brief overview of the Material Assets including the location, historical development, property descriptions and legal status. The Material Assets are situated in the KwaZulu-Natal Province of South Africa (Figure 3-1).

2.2 Company and Operating Structure

[SV2.3]

Petmin Limited is an established South African Company listed on the JSE since 1986. Petmin Limited currently holds one operating asset in South Africa, namely the Somkhele Anthracite Mine. The Material Assets of Somkhele are held through Tendele Coal Mining (Pty) Ltd, a wholly owned subsidiary of Petmin Limited. The operating structure and effective shareholdings in Tendele and the Material Assets at the Effective Date of this report are depicted in Figure 2-1.

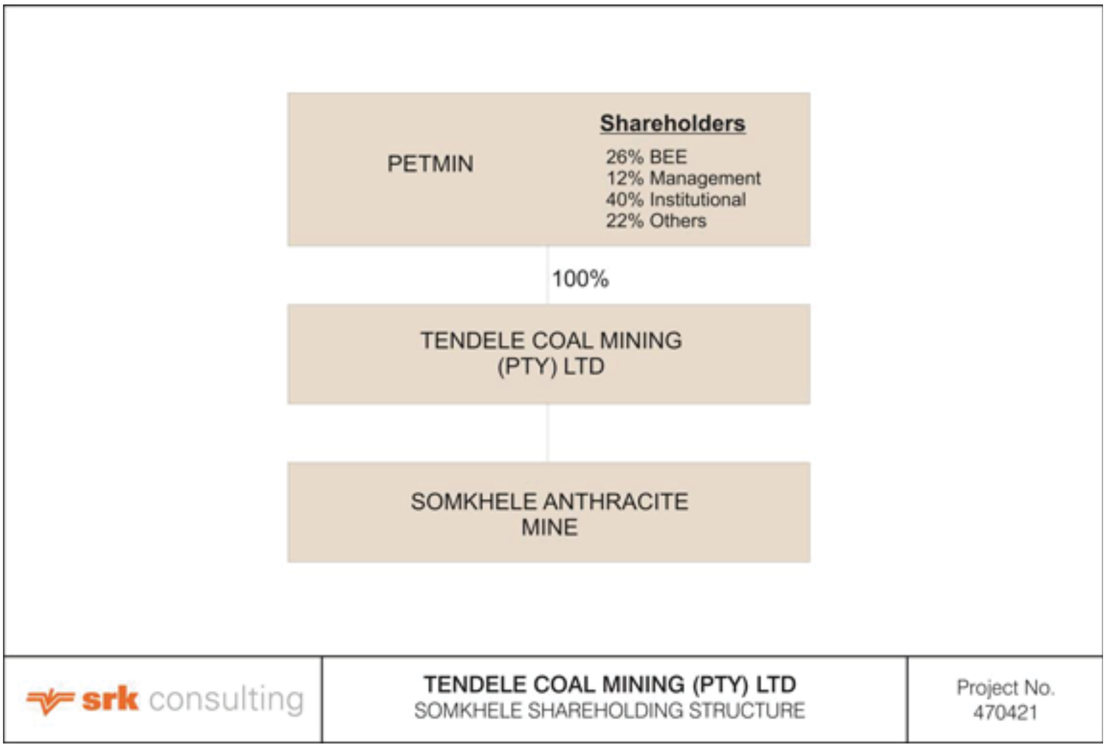

Figure 2-1: Somkhele Shareholding Structure

2.3 Property Description

[12.9 (h) (ii) (iii), SR1.5 (A) (i), SR1.4 (A), SR1.6 (A), SV2.3]

2.3.1 Location

The Prospecting Lease area extends from Hluhluwe in the north to the Umfolozi River in the south and from the Umfolozi-Hluhluwe Game Park in the west to past the Somkhele village in the east. This area surrounds Somkhele Mine which is 20 km west of Mtubatuba, KwaZulu-Natal, approximately 85 km northwest of Richards Bay. The total project area encompasses 21 939.07 hectares (”ha”). The area falls within the jurisdiction of the Mtubatuba Local Municipality.

2.3.2 Land Tenure and Use

Communities within the area are managed under a traditional system (Traditional Council) where tenure of the land is granted to local inhabitants with the rest of the community led by the local Indunas (and councillors), who report into a Traditional Council. The Induna areas include Esiyembeni, Machibini, Mahujini, Gunjanini, Ekuthuleni, Nsolweni, KwaMyeki, Tholokuhle, Mvutshini and Emalahleni under the control of Inkosi Mkhwanazi and are in the Mpukunyoni District. The area is furthermore divided into wards that are accountable to councillors reporting to the Mtubatuba Municipal authorities.

2.3.3 Topography, Weathering and Vegetation

The area is relatively flat with low rolling hills at elevations of between 50 m and 250 m above mean sea level, with the highest hills reaching just over 300 m above mean sea level. Drainage is predominately from west to east and the Umfolozi River and its tributaries traverse Area 4 in the south. Numerous smaller rivers, the Nyalazi River being the most significant, cross the area and sometimes expose the geology.

The weathering profile is deep. Soils formed by the weathering of the sandstones create deposits of medium-grained sand. The water table is variable due to east dipping, porous sandstones and porous gouge filled faults, and bodies of cross-cutting intrusive dolerite, and may be intersected at shallow to moderate depths. Shallow groundwater occurs as perched water tables and occasionally strong water, which could provide good supplies to local communities, was encountered in boreholes.

The area is dominantly grassland with acacia thorn scrub bush in the valleys.

2.3.4 Climate

The climate is typically sub-tropical with an average annual rainfall of approximately 1000 - 1200 millimetres (“mm”), the majority of which falls during the hot, humid summer months of January to March. Periods of heavy rain may result in localized flooding. Shallow river valleys filled with alluvium often form impassable muddy areas after heavy summer rain. Temperatures frequently reach into the high 30°C and occasionally exceed 40°, although the average daily maximum is 29°C (SAWS, 2003; Bate and Taylor 2008).

Winters are cool and dry, with an average daily minimum of 12°C (SAWS, 2003) experienced in the coldest months of June and July. Dry spells often lead to extended periods of drought typically occurring about once every ten years (Taylor, 2006a, Bate and Taylor, 2008).

2.3.5 Current Mining and Project Areas

Somkhele is currently mining in Area 1, consisting of three active pits: North Pit 1, North Pit 2 and South Pit and in Luhlanga (Figure 3-1). Mining in Area 2 has been completed and backfilling of the area has commenced. Current project areas are:

- KwaQubuka and KwaQubuka North:
- Emalahleni;
- Mahujini;
- Ophondweni;
- Gwabalanda;
- Tholokuhle; and
- Mvutshini West, Central and East.

The Tholokuhle and Mvutshini project areas are still at an early stage of exploration and therefore have not been included in this CPR. SRK has not had sight of any documentation or information pertaining to these areas.

2.3.6 Operational Summary

Tendele started operating at Somkhele Mine in 2007 in Area 2 (Figure 3-1) where the B seam was exploited until 2011; the area is currently being backfilled, using discard material from the Coal Handling and Preparation Plant ("CHPP"). Three pits, all exploiting the B Seam, are currently operational in Area 1:

- North Pit 1 was started in July 2011 and is to be completed in June 2016;
- North Pit 2 started in April 2012, to be completed in August 2017; and
- South Pit, which began in July 2011 and will be completed in November 2017.

Mining of the B Seam commenced at a fourth pit, the Luhlanga Pit, in June 2013 and is scheduled for completion in April 2019. All mining operations extract the full B Seam, including all plies and partings, in a bulk mining operation. The Run of Mine ("RoM") tonnes are processed in three processing plants:

- Plants 1 and 2 produce sized and duff anthracite products for both the export and domestic markets; and
- Plant 3 treats the discard from Plants 1 and 2 and also reprocesses material from the existing discard dump to produce an export thermal product.

2.4 Mining History

[SR1.3A, SR1.3C, SV2.17, SV2.4]

2.4.1 Historical Development of Somkhele

Coal was originally discovered in the Emalahleni area and was mined between 1900 and 1906 when a rail line to Durban was constructed to transport the anthracite. Mining operations then ceased and no activity was recorded until the1980s, when Johannesburg Consolidated Investment Ltd sank a shaft in Area 2 and did some experimental underground mining with little success due to unexpected dyke activity (Cogran and Proctor, 1987 and Bekker and Hannweg, 1983). Other companies that conducted investigations in the area were Mining Corporation, ASA, Purity Holdings (Pty) Ltd and AfriOre Lt. (South Africa). Petmin Limited acquired Somkhele at prefeasibility stage in 2005 from Afriore Ltd (South Africa). The mine and Plant 1 were commissioned in 2007.

2.4.2 Historical Operating Statistics

[12.8 (c), SR1.3A, SV2.4]

Brief historical operating statistics for Somkhele are shown in Table 2.1.

Table 2-1: Somkhele – Historical Operating Statistics

Parameter	Unit	2010	2011	2012	2013
Production					
RoM Coal Production	kt	1 068.9	1 215.5	1 430.0	2 218.6
Plant Feed	kt	1 103.0	1 219.5	1 458.0	2 078.4
Saleable Product Produced	kt	467.8	524.0	637.2	822.4
Yield	%	42	43	44	40
Revenue from Coal Sales	ZARm	334.9	471.4	516.3	828.9
Sundry Income	ZARm	0.02	3.7	0.2	0.5
Sales	kt	411.7	579.7	546.1	802.3
Coal Price received	ZAR/t sold	813.46	813.17	945.43	1033.15
Costs					
Mining Costs	ZARm	83.9	156.1	183.4	381.3
Processing Costs	ZARm	47.9	50.9	74.9	151.1
Overheads	ZARm	38.1	52.6	57.2	61.7
Total Operating Costs	**ZARm**	**169.9**	**259.6**	**315.5**	**594.1**
Off-mine Costs	ZARm	45.9	54.5	51.8	71.2
Cash Cost	ZAR/t sold	461.3	599.4		808.97

2.5 South African Regulatory Environment

[12.9 (h) (iv), SR1.7 (A)]

2.5.1 The Minerals and Petroleum Resources Development

The MPRDA was promulgated by the South African Parliament during July 2002 and came into effect on 1 May 2004. The MPRDA is the key legislation in governing prospecting and mining activities within South Africa. It details the requirements and processes which need to be followed and adhered to by mining companies. The Department of Mineral Resources (“DMR”) is the delegated authority to deal with all mining related applications and the designated authority to administer this act.

Under the MPRDA, prospecting rights will initially be granted for a maximum period of five years, and can be renewed once upon application for a further period of up to three years. Mining rights will be valid for a maximum period of 30 years and can be renewed on application for further periods, each of which may not exceed 30 years. Provision is made for the granting of retention permits in circumstances where prospecting has been completed but mining is not commercially viable, which will have a maximum term of three years and which are not renewable. A wide range of factors and principles, including proposals relating to black economic empowerment, social responsibility and evidence of an applicant’s ability to conduct mining optimally, will be pre-requisites for the approval of such applications.

Key requirements under the MPRDA are:

- A social and labour plan (“SLP”);
- A mine works plan (“MWP”);
- Proof of technical and financial competence; and
- An approved Environmental Management Plan (“EMP”).

All mines are required to make financial provision for closure. Environmental liability provisioning in the South African mining industry is a requirement of the MPRDA and must be agreed with the relevant regulatory authorities (mainly DMR and DWAF). In general, monies are accrued annually in a trust fund based on the estimated environmental rehabilitation cost should the mine have to close immediately divided by the operating life of a mine. The South African Revenue Service approves such contributions as there is a tax benefit. For new mines and some older mines, guarantees may be required for the shortfall between the amount available in trust funds and the total estimated closure liability.

2.5.2 The Mining Charter

In accordance with the provisions of the MPRDA, the Mining Charter was signed on 12 October 2002 by the South African Minister of Minerals and Energy, representatives of the South African mining industry and the South African National Union of Mineworkers. The Mining Charter embraces a range of criteria against which prospecting and mining right applications and conversion applications will be considered. These criteria include issues such as human resources development, employment equity, procurement, community and rural development and ownership of mining assets by HDSA's. On the issue of ownership, the Mining Charter requires that mining companies achieve 15% HDSA ownership of mining assets by 1 May 2009 and 26% HDSA ownership of mining assets by 1 May 2014. The Mining Charter envisages that transactions directed at achieving the required HDSA status will take place in a transparent manner and for fair market value.

2.5.3 Mineral and Petroleum Resources Royalty Act

On 3 June 2008, the fourth and final Mineral and Petroleum Resources Royalty Bill ("2008 Royalty Bill") was released, for technical comment only. It was enacted as the Mineral and Petroleum Resources Royalty Act on 1 May 2009 ("Royalty Act"). The Royalty Act embodies a formula-derived royalty rate regime, since it provides necessary relief for mines during times of difficulties (low commodity prices or marginal mines) and allows the fiscus to share in the benefits during time of higher commodity prices. As the final product can be either refined or unrefined, two separate formulae are given. Both formulae calculate the royalty rate on the basis of a company's earnings before interest and taxes (referred to as EBIT) and its aggregate gross sales for the assessment period. While the gross sales figure used in the formulae excludes transportation and handling costs, these are taken into account in the determination of the EBIT figure. The mineral royalty percentage rates (Y%) is based on the following formulae:

- **Refined Minerals:** $Y(\%) = 0.5 + \frac{EBIT}{\text{Gross Sales} \times 12.5} \times \frac{100\%}{1}$
- **Unrefined Minerals:** $Y(\%) = 0.5 + \frac{EBIT}{\text{Gross Sales} \times 9.0} \times \frac{100\%}{1}$

The maximum percentage rates for refined and unrefined minerals are 5.0% and 7.0% respectively. According to Schedule 2 of the Royalty Act, all grades of coal are deemed to be unrefined minerals.

The implementation of the Royalty Act commenced on 1 May 2010.

2.5.4 Environmental and Social Compliance

This section includes discussion and comment on the legislative, environment, social, health and safety and human resource aspects associated with the material assets. Specifically, information is included on the following: current legislation; industrial relations; human resource policies and safety statistics.

It must be noted that the legislative review has been undertaken from a technical and practical basis and not solely in terms of legal compliance. Where relevant, reference is also made to currently foreseeable legislation. It must be further noted that this section focuses on areas where the operations are not fully compliant with the South African legislation.

2.5.5 South African Environmental Legislation

This section covers a brief, broad-brushed summary of selected aspects of legislation applicable to the mining industry in South Africa and relevant to the operations of Tendele. The lead agent in implementing environmental legislation is the DMR who must consult with other relevant government departments in approving mining operations. In addition to this, the old Department of Water Affairs and Forestry ("DWAF") has traditionally been very active in implementing water related legislation. This department is now incorporated into the Ministry of Environmental and Water Affairs ("DWEA") which, through the Department of Environmental Affairs ("DEA"), is becoming more directly involved in all aspects of environmental management in the mining industry.

Key environmental legislation which is applicable to the South African mining industry is as follows:

- ***National Environmental Management Act (Act 107 of 1998*) ("NEMA"),** as regulated by the DEA. Responsibility for the implementation of NEMA is generally delegated to the relevant provincial environmental departments. This over-arches South African environmental legislation and lays down basic environmental principles including: duty of care, polluter pays and sustainability. Historically, environmental management by mines has been regulated by mining legislation rather than NEMA or its predecessors, but this situation is changing and transitional measures are in place. Currently, for new mines, environmental authorization is regulated by both authorities. Separate Environmental Impact Assessments are therefore compiled but in general these are compiled using a single process;
- *National Water Act (Act 36 of 1998)* ("NWA"), as regulated by the Department of Water Affairs ("DWA"). Chapter 4 of the National Water Act stipulates that water uses (abstraction, storage, waste disposal, discharge, removal of underground water and alteration to watercourses) must be licensed. As with the MPRDA, there are transitional arrangements to enable permits under the former 1956 Water Act to be converted into water-use licences ("WULs"). The Act also has requirements relating to pollution control, protection of water resources (this is addressed, specifically for mines, in Regulation 704), dam safety (for dams with a capacity greater than 50 000 m^3 and a dam wall higher than 5 m) and water-use tariffs;
- *National Heritage Resources Act (Act 25 of 1999)* ("NHRA"), regulated by South African Heritage Resource Agency or relevant Provincial departments where established. This Act controls sites of archaeological or cultural significance. Such sites must be investigated and, where necessary, protected for the nation. Procedures for the relocation of graves are also given;
- *Hazardous Substances Act (Act 15 of 1973*), regulated by the Department of Health. This Act controls the declaration of hazardous substances and control of declared substances. It allows for regulations relating to the manufacturing, modification, importation, storage, transportation and disposal of any grouped hazardous substance;
- *National Environmental Management - Air Quality Act (Act 39 of 2004)* ("NEM: AQA"). This Act allows for the setting of ambient air quality standards and more-onerous emissions standards for identified scheduled processes;
- *National Environmental Management - Waste Act (59 of 2008)* ("NEM: WA");
- *Environmental Conservation Act (Act 73 of 1989)* ("ECA"), as regulated by DEA and DWA;
- ***Mine Health and Safety Act (Act 29 of 1996) and amendments* ("MHSA"),** regulated by the DMR. This Act deals with the protection of the health and safety of persons in the mining industry but has some implications for environmental issues due to the need for environmental-health monitoring within mine operations.

DWEA, and its provincial authorities, the DWA and the DEA are key stakeholders in the approvals process. It is SRK's experience that the DEA is already taking greater interest in the mining authorizations and expecting its Environmental Impact Assessment ("EIA") requirements to be incorporated into processes and documentation. It is also important to note that listed activities, such as waste sites and sewage treatment works, already require authorization by DWEA even if they are within a mine site and have been authorized as part of the environmental management programme report ("EMPR") by the DMR.

On 18 June 2010, GN R543 was published and the regulations came into force on 2 August 2010. The regulations set out the environmental impact assessment methodology to be used, replacing R387 of 2006. The new regulations provide greater detail on the process that must be followed compared to the previous regulations, particularly in relation to public participation, which is now required to be more inclusive of people who are illiterate, have a disability or are in any other way disadvantaged. GN R544 and GN R545 (of the same date as GN R543) set out the listed activities requiring a basic assessment (repealing GN386 of 21 April 2006) and for a full environmental impact assessment (repealing GN387 of 21 April 2006). The new regulations update the old regulations with references to any new legislation that has come into force since 2006, such as NEM: AQA. Of particular importance in the new regulations set out in GN R546 is that there is a separate list of activities that require authorization in specific geographical areas, with particular focus on protecting areas that have been included in the National Environmental Management: Protected Areas Act (Act No. 57 of 2003).

Although waste management on mines was not included in the ECA, the waste sections of this Act (Section 20) were repealed and replaced by the NEM: WA, which came into effect on 1 July 2009. The Waste Act seeks to encourage the prevention and minimization of waste generation, whilst promoting reuse and recycling of the waste and only consider disposal of waste as a last resort. It provides for the licensing of waste management activities. Mine residues have again been excluded from the Act, but the disposal of other wastes on a mine, for example general wastes, would need to be licensed if no Section 20 permit is in place. If a mine subcontracts waste disposal, the subcontractor must be in possession of the appropriate permit/licence. Any salvage yards or similar areas are now required to be permitted. An important change that could affect Tendele in the future is the sections of the new Act relating to contaminated land. These have not come into force yet and it is not yet clear how or if contaminated land within mining areas will be managed.

As a worst case, the lack of compliance with the above legislation could lead to prosecution and ultimately the closure of the operation. However, it is considered more likely that the authorities will issue a directive possibly coupled with a fine. The directive indicates which legislation is being contravened and describes the time period in which the operation must comply. An operation would then be required to present a plan, including timing, to achieve compliance. Directives related to environmental issues, Water Use Licences ("WUL") in terms of Section 21 of the NWA, are being issued more frequently that was historically the case, and legal action is being taken against individuals, including directors, responsible for non-compliance with legislative requirements.

2.6 Tendele – Current Status

[12.9 (h) (iv), SR1.7 (A), SV2.3, SR5.1 (A)]

2.6.1 Mining Rights

Two mining rights cover Areas 1 – 3 (Figure 3-1):

- **Area 1:** New Order Mining Right granted to Tendele Coal Mining (Pty) Ltd in June 2007 (KZN 30/5/1/2/2/135MR); and
- **Areas 2 and 3:** Existing plant and mine is held over a converted New Order Mining Right, executed in March 2011 (KZN30/5/1/2/2/216MR). The Luhlanga and KwaQubuka areas are included in KZN30/5/1/2/2/216MR through a Section 102 conversion.

Table 2-2: Summary Table of Mineral and Prospecting Rights

Title Covered	Right	Rights Held By	Area (ha)	Expiry Date	Minerals Covered	Comments
Mining Rights						
Area 1 on Reserve No.3 (Somkhele) No. 15822	KZN30/5/1/2/2/135MR	Tendele Coal Mining (Pty) Ltd	660.5321	21 June 2034	Coal	New Order Mining Right
Area 2 and 3 on Reserve No 3 (Somkhele) No 15822, Luhlanga and KwaQubuka	KZN30/5/1/2/2/2/216MR	Tendele Coal Mining (Pty) Ltd	779.8719	29 February 2031	Coal	Converted Old Order Mining Right
Total for New Order Mining Right			**1 440.404**			
Prospecting Rights (covered by 2013 Mining Right Application)						
Area 5 On Reserve No 3 No 15822	KZN30/5/1/1/2/93PR	Tendele Coal Mining (Pty) Ltd	13 951.0054	29 June 2013	Coal	Initial PRs valid to 04/12/2009; renewed to 29/06/2013; mining right application (covers both areas) accepted 09/09/2013
Area 4 On Reserve No 3 (Somkhele) No 15822	KZN86PR	Tendele Coal Mining (Pty) Ltd	7 988.0637	29 June 2013	Coal	
Total for Mining Right Application			**21 939.0691**			

2.6.2 Environmental Management Plan

[SR5.2 (B)]

An approved Environmental Management Plan ("EMP") exists for the current operations in Area 2, as well as an approved amendment for current operations in Area 1. An EMP has been approved for planned expansions adjacent to Area 2 (Luhlanga and KwaQubuka), as well as an amendment to cover the second coal washing plant in Area 2. An EMP has been approved by the Department of Mineral Resources for the third coal washing plant in Area 2.

2.6.3 Prospecting Rights

Prospecting Rights KZN86PR and KZN30/5/1/1/2/93PR covered Areas 4 and 5, respectively (Table 2-2). These expired in June 2013; a Mining Right application was submitted on 13 June 2013 and accepted by the Department of Mineral Resources on 9 September 2013 for these areas.

2.6.4 Surface Rights

The surface rights are owned by the Mpukunyoni community and are managed by the Ingonyama Trust Board. Once the Mining Right has been granted, the affected areas will be incorporated into the Surface Rights Agreements. Table 2-3 summarizes these Surface Rights.

Table 2-3: Summary Table of Surface Rights

Title / Properties covered	Rights held by	Comments
Area 1 on Reserve No. 3 No. 15822	Mpukunyoni Tribal Authority	Memorandum of Understanding signed on 15/11/2012
Area 2 on Reserve No. 3 No. 15822	Ingonyama Trust Board	Mining Surface Lease signed on 11/12/2002
Area 3 on Reserve No. 3 No. 15822	Ingonyama Trust Board	Mining Surface Lease signed on 11/12/2002
Areas 4 and 5		In relation to the area covered by the pending mining right application there is no surface use compensation agreement with the land owner. However, this can only be extended in the main agreement once the right has been executed.

2.6.5 Land Claims

There are no land claims over the area.

3 Geology

[12.9 (h) (v), SR2.5 (A/B/C), SR4.1A (i), SV2.5]

3.1 Regional Geology

Somkhele Mine is situated in the Somkhele Coalfield (Figure 3-1) of the Karoo Supergroup. The Supergroup is a thick sedimentary succession deposited between 320 and 150 million years ago (Ma). Deposition commenced with the Dwyka Formation, a series of tillites associated with the then southern polar icecap, and concluded with basalt extrusions of the Drakensberg and Lebombo Volcanic Groups, associated with late stage rifting of the Gondwanaland supercontinent.

3.2 Local Geology

3.2.1 Somkhele Coalfield

The Somkhele Coalfield occurs in the lower Beaufort Group of the Karoo Supergroup in the northeastern part of the Karoo Basin, and is preserved on the eastern limb of the Natal Monocline on the African continental margin in South Africa. The coalfield is one of a number of coal occurrences extending from Nkomati in the eastern part of South Africa, close to the Mozambique border, through Maloma in Swaziland, Nongoma, Somkhele to the Heatonville Colliery near Empangeni. Although a complete correlation of these coal occurrences remains unproven, it would appear that they all lie within the Beaufort Group. The stratigraphy of the Karoo Supergroup in the Somkhele area is shown in Table 3-1.

Table 3-1: Karoo Supergroup Stratigraphy in the Somkhele Coalfield

Group	Formation	Local Name	Lithology	Average Thickness (m)
Stormberg	Drakensberg Volcanics	Lebombo Volcanics	Amygdaloidal lava	> 2 000
	Clarens	Clarens	Aeolian sandstone	< 45
	Elliot	Nyoka ‘Red beds’	Mudstone	250
	Molteno.	Ntabeni	Immature sandstone	100
Beaufort	Emakwezini	Lower, Middle & Upper Emakwezini	Sandstone, siltstone, mudstone and COAL	500 – 600
Ecca	Volksrust		Shale	140
	Vryheid Fm		Sandstone, gritstone, carbonaceous shale, coal	500
	Pietermaritzburg		Shale and sandstone	200
	Dwyka		Glacial tillite	

3.3 Project Geology

3.3.1 Stratigraphy

All Groups of the Karoo Supergroup occur in and beneath the Somkhele Coalfield although the lower units are not known to crop out in the coalfield itself.

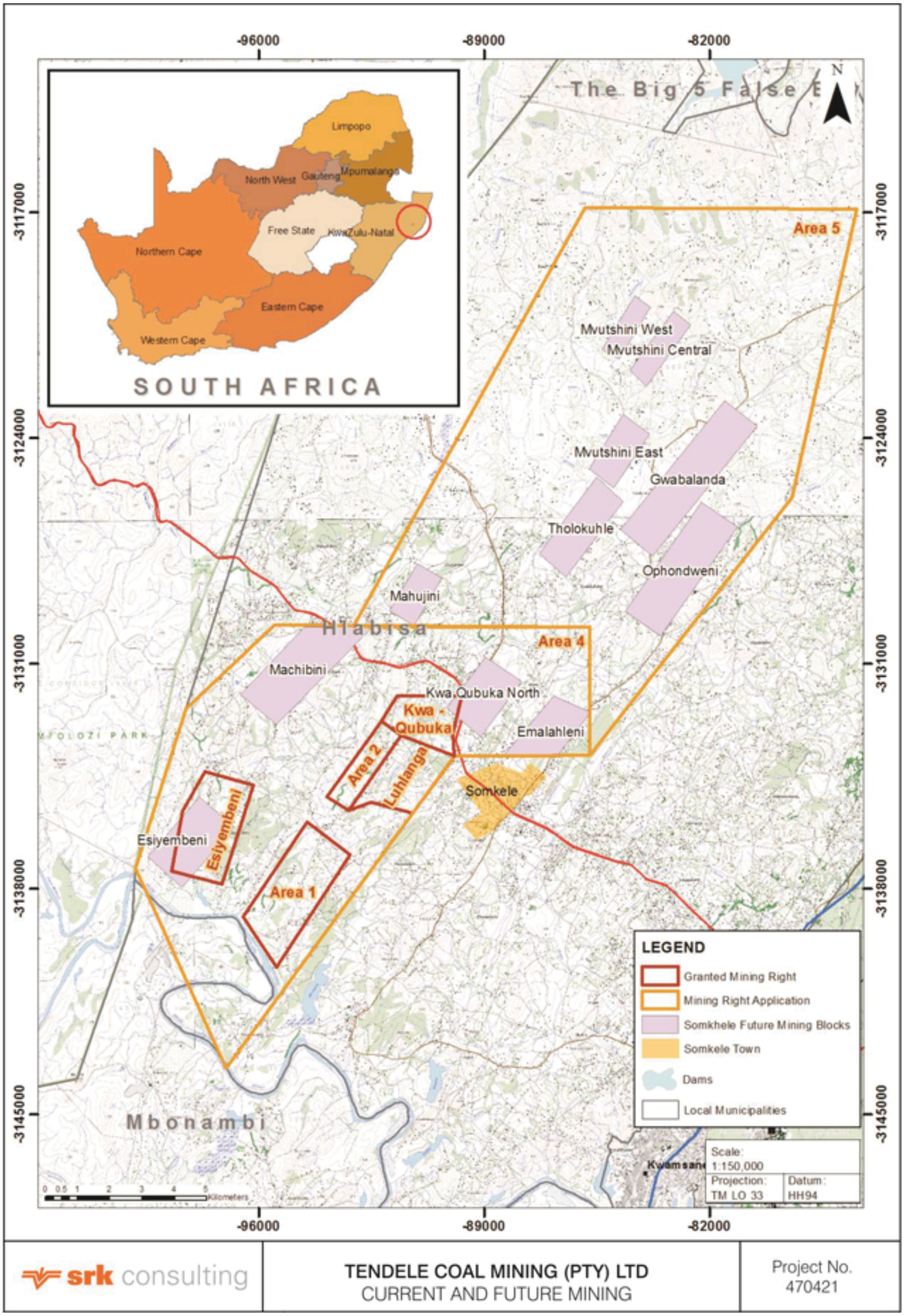

Figure 3-1: Location and of Somkhele Anthracite Mine in South Africa

Ecca Group

The Ecca Group comprises the Vryheid and Volksrust Formation and hosts most of South Africa's coal deposits. It immediately underlies the Emakwezini Formation of the Beaufort Group that hosts the coal in the Somkhele Coalfield. The Vryheid Formation consists of massive gritty sandstones with occasional small to medium pebble conglomerate channel lags. These sediments were deposited in meandering to braided stream environments and host the seams of the Natal Coalfield in the Natal Midlands. Around Somkhele however, these coal seams occur as occasional, thin and continuous bands and beds less than a metre in thickness. The Volksrust Formation overlies the Vryheid Formation and consists of a monotonous, occasionally bluish mudstone and shale.

Beaufort Group

The Emakwezini Formation lies conformably on the Volksrust Formation and belongs to the lower Beaufort Group. It is approximately 550 m thick and its lower half consists of inter-bedded carbonaceous siltstone and shale with two to three continuous thin sandstone beds. Four coal seams referred to as the A, B, C and D seams lie in the Middle Emakwezini Formation. The A Seam marks the boundary between the Lower and Middle Emakwezini Formation and is dominantly coaly, carbonaceous shale. The A Seam is separated from the economically important B Seam by a 90 m thick sequence of carbonaceous siltstones and shale with minor sandstones. The shale immediately below the B Seam is locally referred to as the 'Footwall Shale'. The B Seam is the target seam at Somkhele and is discussed in Section 3.4.

The B Seam is overlain by a 50 - 80 m thick, fluvial, medium- to coarse-grained, gritty, trough cross-bedded graded arkosic sandstone. This is locally referred to as the 'Hanging Wall Sandstone' (HWS). The C Seam occurs near the top of this sandstone and comprises a coaly carbonaceous shale horizon with minor coal bands and laminae and is of little economic significance. Carbonaceous shale separates this from the D Seam which forms the boundary between the Upper and Middle Emakwezini Formation.

The Upper Emakwezini Formation consists of mudstones and shale with very occasional fine-grained sandstones. Upwards, the sediments display rapidly reducing carbon content and increasing propensity of detritus, terminating at the base of the Stormberg Group.

Stormberg Group

The Stormberg Group conformably overlays the Emakwezini Formation and is marked at its base by the Ntabeni Formation which consists of poorly sorted, rapidly deposited grits and arkosic sandstones often having a similar appearance to the Hangingwall Sandstone. The Ntabeni Formation is overlain by Red Beds of the Elliot (Nyoka) Formation. These sediments were deposited as mudstones and fine-grained sandstones in an increasingly dryer and oxygenated environment resulting from the plethora of vegetation that flourished in this time and which is preserved as coal in the sediments beneath. Fine-grained, wind-blown sandstones of the Clarens Formation were deposited in a dry, warm desert environment with the absence of water-born sediment. The Clarens Formation is capped by the Lebombo Volcanic Group.

The Lebombo Volcanics flooded out onto a wide plain at the initiation of continental rifting with the intrusion of dykes and sills throughout the stratigraphy, but particularly focused in the Beaufort Group including the Emakwezini Formation. Later rifting and concomitant listric faulting created the repetitive duplication of the sliced up stratigraphy into blocks of parallel, east dipping strata typical of the Somkhele Coalfield.

3.3.2 Igneous Intrusions and Structure

Rifting associated with the division of Gondwanaland some 160 – 140 Ma started the extensive flood magma extrusions resulting in the extrusion of flood basalts that, in north-eastern KwaZulu-Natal, make up the Lebombo Group of the Karoo Igneous Province. The sills and dykes that intrude the Emakwezini Formation and locally affect the coal quality preserve the intricate magma feeder systems to the Lebombo and Drakensberg Volcanic Groups. Later listric normal faulting (strike 25 degrees) associated with continental rifting introduced the easterly dip to the strata and created a succession of fault bounded blocks in which the coal bearing strata are repeated. These repetitions together with the dolerite intrusions create multiple exploration and open pit mining opportunities.

A number of lesser secondary faults disrupt the continuity both parallel to and normal to the strike. The intrusions vary from minor conformable bedding parallel sills of less than 300 mm thick to sills of hundreds of metres thick. These sills have contributed to raising the coal rank into the anthracite category and in places 'overcooked' the coal where the coal is in contact with intrusive bodies.

Average strata dips are in the order of 22 degrees, although at Luhlanga the dip is shallower at 12 degrees (Figure 3-2 and Figure 3-3).

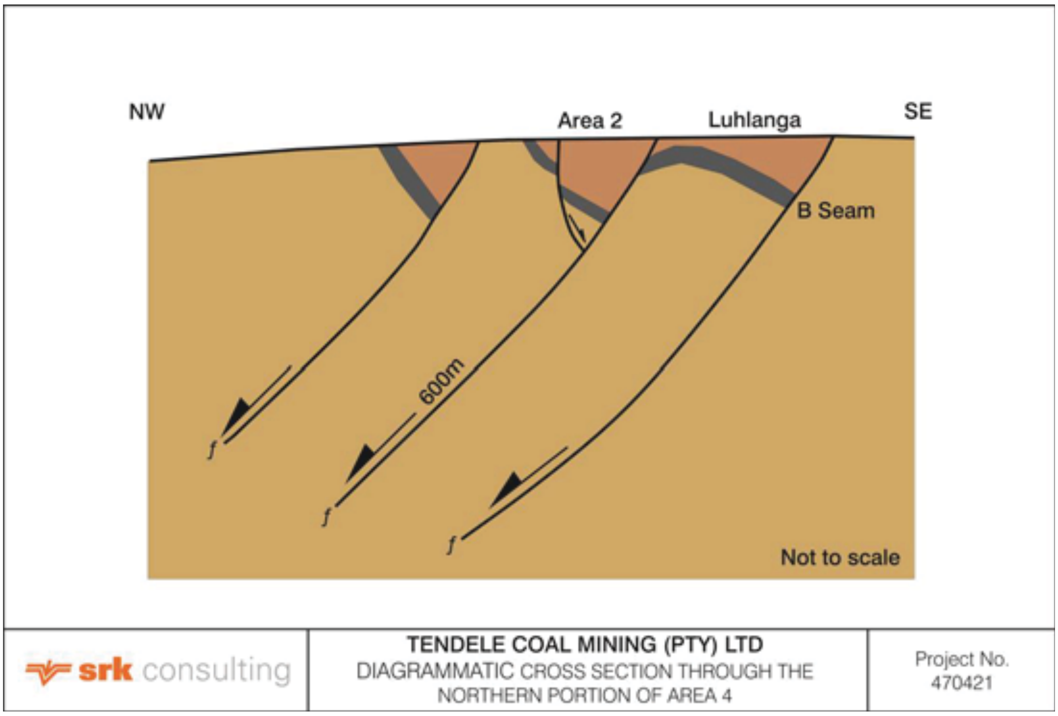

Figure 3-2: Cross-section showing General Structure at Somkhele Mine

The anthracite and semi-anthracite resources in the Somkhele coalfield occur in discontinuous blocks isolated from one another by intense listric normal faulting and dolerite intrusions. The dolerite activity predates the faulting and intrudes the coal measures and the coal seams as dykes and sills frequently reaching sufficient intensity in places to totally destroy the B Seam. The resource blocks lie between these areas of intense dolerite activity. Subsequent listric normal faulting has broken the strata into blocks elongated north-northeast. The main faults strike north-northeast and dip steeply to the west with downthrows in the order of hundreds of metres. Antithetic faults branching off the main faults have throws in the order of tens of metres and have been rotated into near vertical and rarely overturned orientations as a consequence of the listric faulting.

Figure 3-3: Strata Dip at Luhlanga and North Pit 1

The strata dip to the east-southeast at angles of up to 30º and sometimes more reflecting rotation of the strata in the hanging wall of the listric faults. Rarely the crests of open anticlines are encountered with associated flat lying or shallow westerly dips in the strata. The hosting strata have poorly defined marker beds and it is often difficult to establish the stratigraphic position of strata away from known areas. The Somkhele Coalfield is almost certainly one of the most structurally complex in the country and poses ongoing challenges to the location and evaluation of resources.

3.3.3 Geothermal Gradient

The magma source associated with the East African aulacogen and the Lebombo Group volcanics created a higher geothermal gradient in northern KwaZulu-Natal along the monocline. This geothermal gradient is considered to have been sufficient to elevate the rank of the Somkhele coal to semi-anthracite and in places to anthracite. Anthracite has an extremely high carbon content (92 – 98% estimated on a dry mineral matter free basis) compared with thermal coals of lower rank and concomitantly higher volatile matter content as the hydrocarbons in the Somkhele coal have been driven off by the elevated temperatures.

3.4 Target Coal Seams

Only the B seam is exploited at Somkhele. The seam is laterally variable in true thickness between ten and 12 metres, with an average thickness of approximately 11 m, although structural disturbances can cause variations in apparent thickness from zero to 20 m. It consists of three low density, bright coal rich sub-seams (also called plies), the basal B1 (3 – 5 m), middle B2 (2 - 4 m) and top B3 (1 - 2 m) sub-seams, separated by the higher density 'Middle-Bottom' (0 - 3.5 m) and 'Top-Middle' Partings (0 – 3 m), which consist of carbonaceous shale with minor coal bands and laminae (Figure 3-4). Regional primary stratigraphic depositional changes in thickness appear to be limited with changes occurring gradually over large areas. Thickness plots for Luhlanga are shown in Figure 3-5 to illustrate the different sub-seams; plots for the remaining project areas can be found in Appendices 1 to 6.

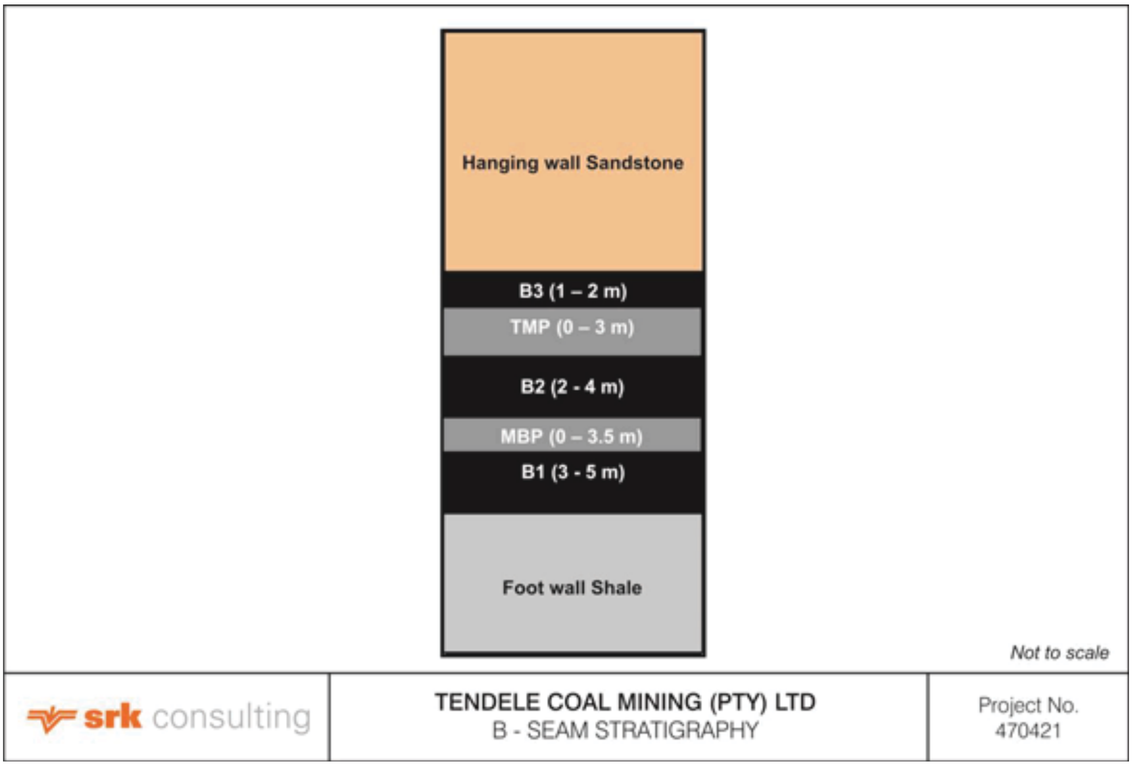

Figure 3-4: B Seam Stratigraphic Column at Somkhele Mine

Recovered B Seam intersections typically include all five sub-seams at all the evaluation targets with local variations resulting from dyke or sill intrusion and replacement, loss of ground due to faulting and rarely, structural duplication.

The coal is derived from an accumulation of wet peat and organic matter including stem and leaf matter deposited with thick organic mud in a stable deltaic flood plain. Evidence of trees, leaves and other vegetation are preserved in shale units within the hanging wall sandstone and seam partings. Increased rates of clay input into this environment produced the shale partings. The coal and partings are mined as one unit and the shale component removed in the CHPP.

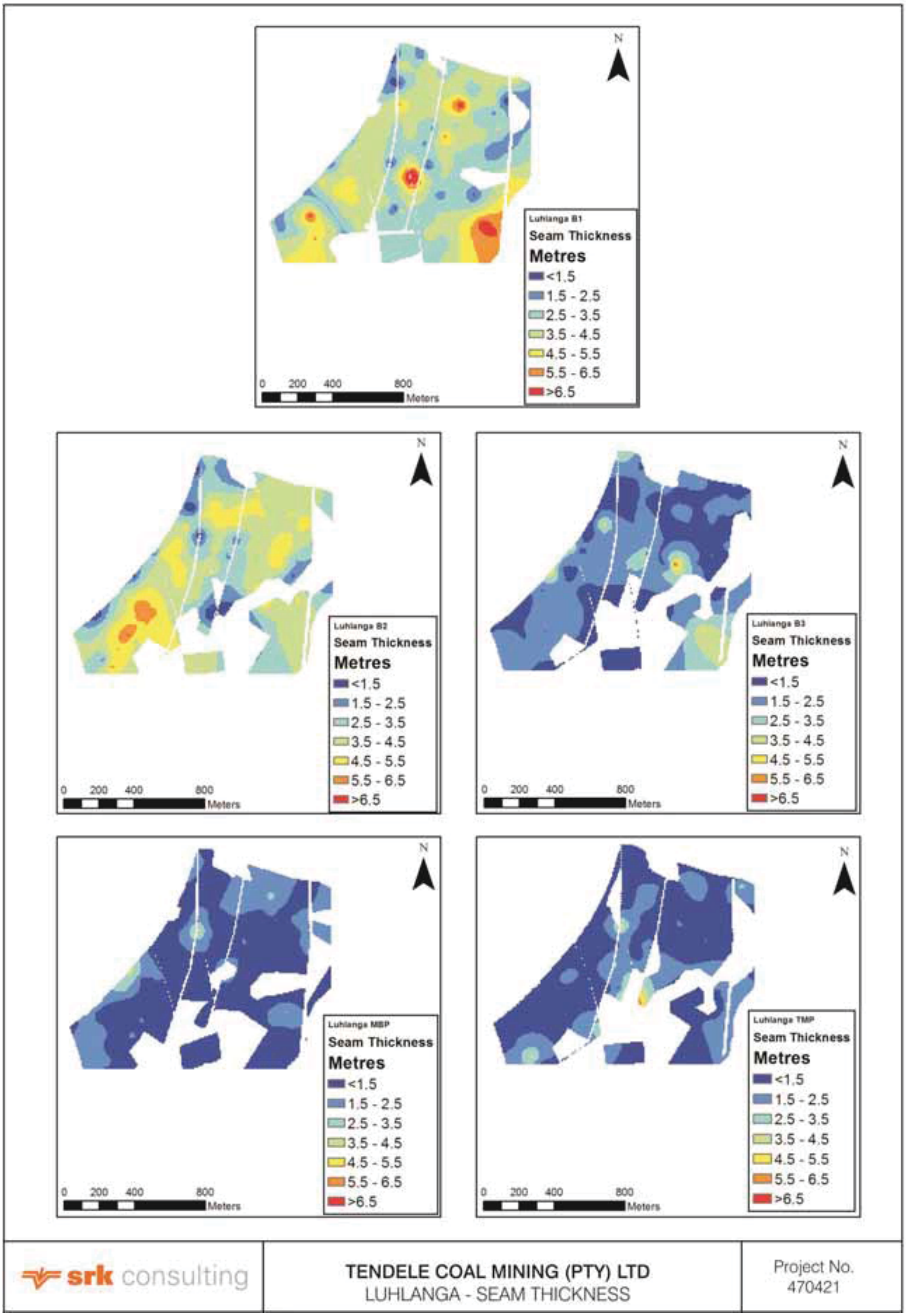

Figure 3-5: Sub-seam Thickness for Luhlanga

3.5 Coal Quality

3.5.1 Coal Rank

The B Seam is generally of semi-anthracite rank in the south increasing to anthracite in the north. Dolerite intrusions may have contributed to the regional geothermal gradient that has raised the coal rank and locally may burn the coal to a degree that product yields become uneconomic.

3.5.2 Raw Coal Quality

The average raw coal qualities on an air dry basis (“adb”) for the full B Seam (including all five plies) are depicted in Table 3-2. These data are from work done by SRK for Tendele during 2013 on each of the six project areas listed. Averages have been estimated by weighting the individual sub-seam qualities by the Gross Tonnes *In Situ* (“GTIS”). These qualities are representative of the potential Run of Mine (“RoM”) qualities. The detailed raw coal qualities per sub-seam are shown in Table 4-4, Table 4-6 to Table 4-11 and Table 4-21. Plans depicting the modelled raw coal qualities for Luhlanga are shown in Figure 3-6 to Figure 3-10 to illustrate the different sub-seams; plots for the remaining project areas can be found in Appendices 1 to 6.

3.5.3 Potential Product Coal Quality

Products are estimated at different wash densities for each project area, depending on the characteristics of the coal in each area. The detailed product coal qualities per sub-seam are shown in Table 4-12 to Table 4-16, Table 4-18, Table 4-20 and Table 4-22. Plans depicting the modelled product coal qualities for Luhlanga are shown in Figure 3-11 to Figure 3-15 to illustrate the different sub-seams; plots for the remaining project areas can be found in Appendices 1 to 6.

Table 3-2: Average B Seam Raw Coal Qualities (adb) per Project Area, 2013

Area	Average ARD	Average Raw Qualities (air dried)						SAMREC Category
		Calorific Value (MJ/kg)	Ash Content (%)	Volatile Matter (%)	Fixed Carbon (%)	Moisture Content (%)	Total Sulphur (%)	
Emalahleni	1.72	19.38	40.09	5.67	52.13	1.78	0.70	Measured
Emalahleni	1.73	19.09	40.76	5.72	52.00	1.51	0.67	Indicated
Total/Average	**1.73**	**19.35**	**40.17**	**5.68**	**52.11**	**1.74**	**0.69**	
Gwabalanda	1.92	24.32	28.28	4.27	62.64	4.82	0.28	Measured
Gwabalanda	1.99	22.09	32.65	3.63	59.26	4.46	0.27	Indicated
Gwabalanda	1.94	23.33	30.78	3.91	60.92	4.39	0.34	Inferred
Total/Average	**1.94**	**23.82**	**29.37**	**4.11**	**61.83**	**4.69**	**0.29**	
KwaQubuka	1.73	*No raw coal qualities are available*						Indicated
KwaQubuka North	1.80	16.10	45.05	5.82	46.45	2.68	0.63	Measured
KwaQubuka North	1.74	18.44	40.27	5.93	51.08	2.73	0.69	Indicated
KwaQubuka North	1.89	15.00	50.34	5.66	41.57	2.44	0.62	Inferred
Total/Average	**1.82**	**15.98**	**46.34**	**5.78**	**45.28**	**2.60**	**0.64**	
Luhlanga	1.64	21.04	36.20	6.91	55.28	1.61	0.86	Measured
Luhlanga	1.70	18.42	42.34	6.61	49.28	1.77	0.92	Indicated
Luhlanga	1.61	22.26	33.18	6.89	58.38	1.55	0.67	Inferred
Total/Average	**1.63**	**21.25**	**35.65**	**6.87**	**55.87**	**1.60**	**0.79**	
Mahujini	1.79	23.32	31.03	6.03	59.81	3.13	0.59	Measured
Mahujini	1.84	22.62	31.41	6.08	59.63	2.88	0.66	Indicated
Mahujini	1.95	18.97	45.12	5.99	46.19	2.71	0.54	Inferred
Total/Average	**1.81**	**22.82**	**32.35**	**6.04**	**58.56**	**3.05**	**0.60**	
Ophondweni	1.94	18.18	40.07	3.57	52.00	4.45	0.36	Measured
Ophondweni	1.96	16.59	43.61	3.59	48.52	4.33	0.28	Indicated
Ophondweni	1.99	14.89	46.85	3.58	45.43	4.14	0.27	Inferred
Total/Average	**1.95**	**17.94**	**40.60**	**3.58**	**51.48**	**4.43**	**0.35**	

1. All qualities are on an air dry basis
2. ARD = Apparent Relative Density

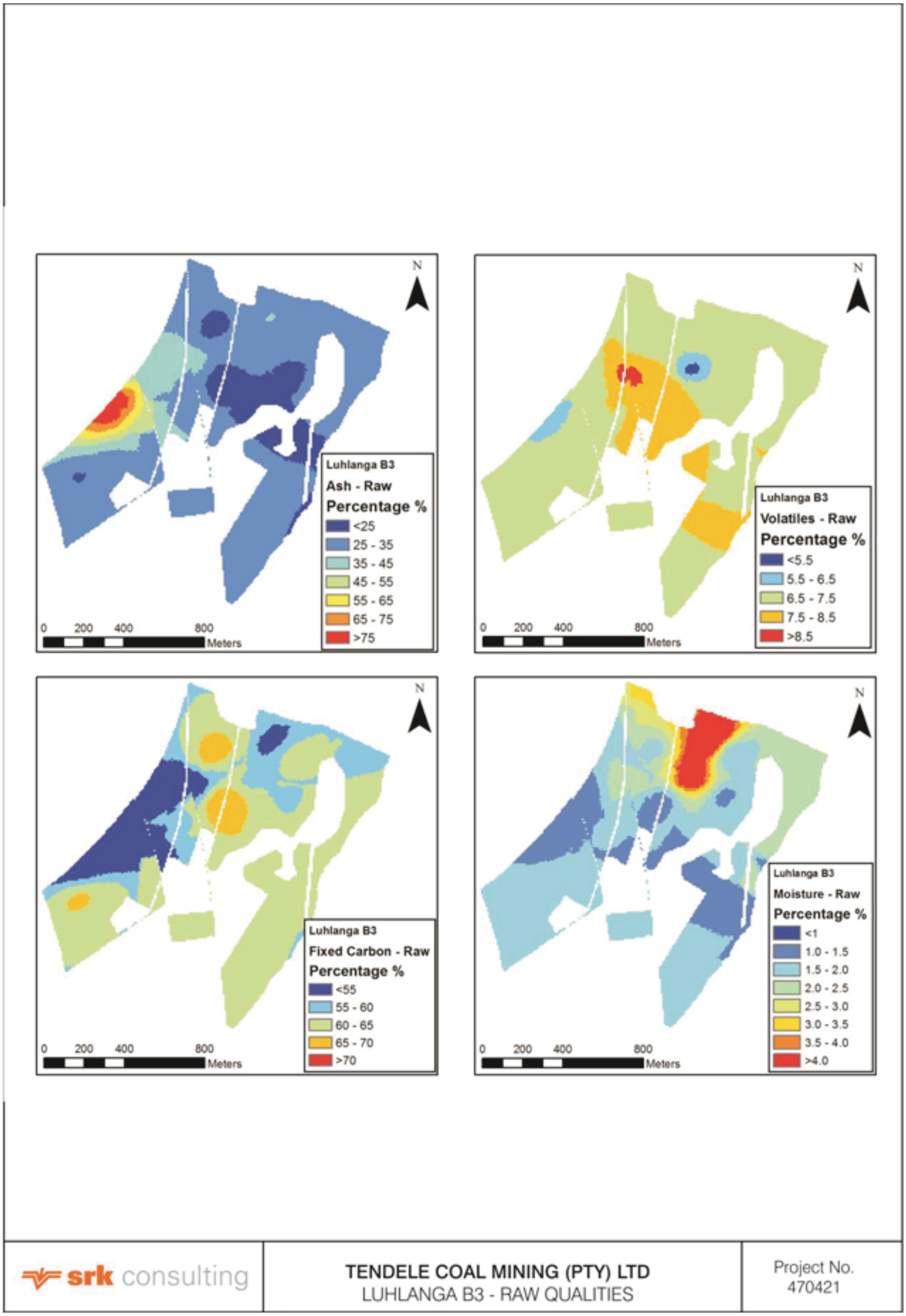

Figure 3-6: Luhlanga B3 Raw Coal Qualities

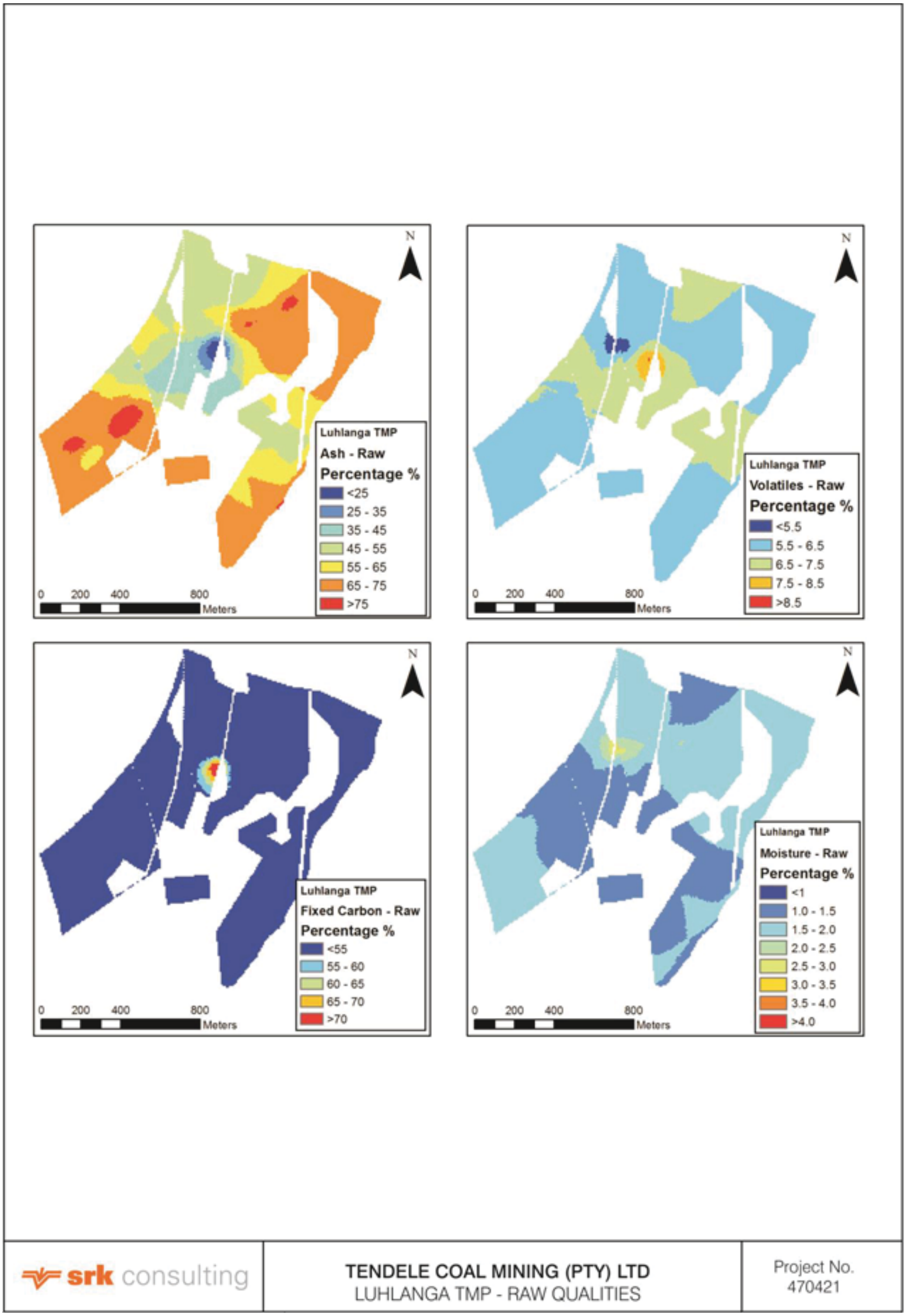

Figure 3-7: Luhlanga TMP Raw Qualities

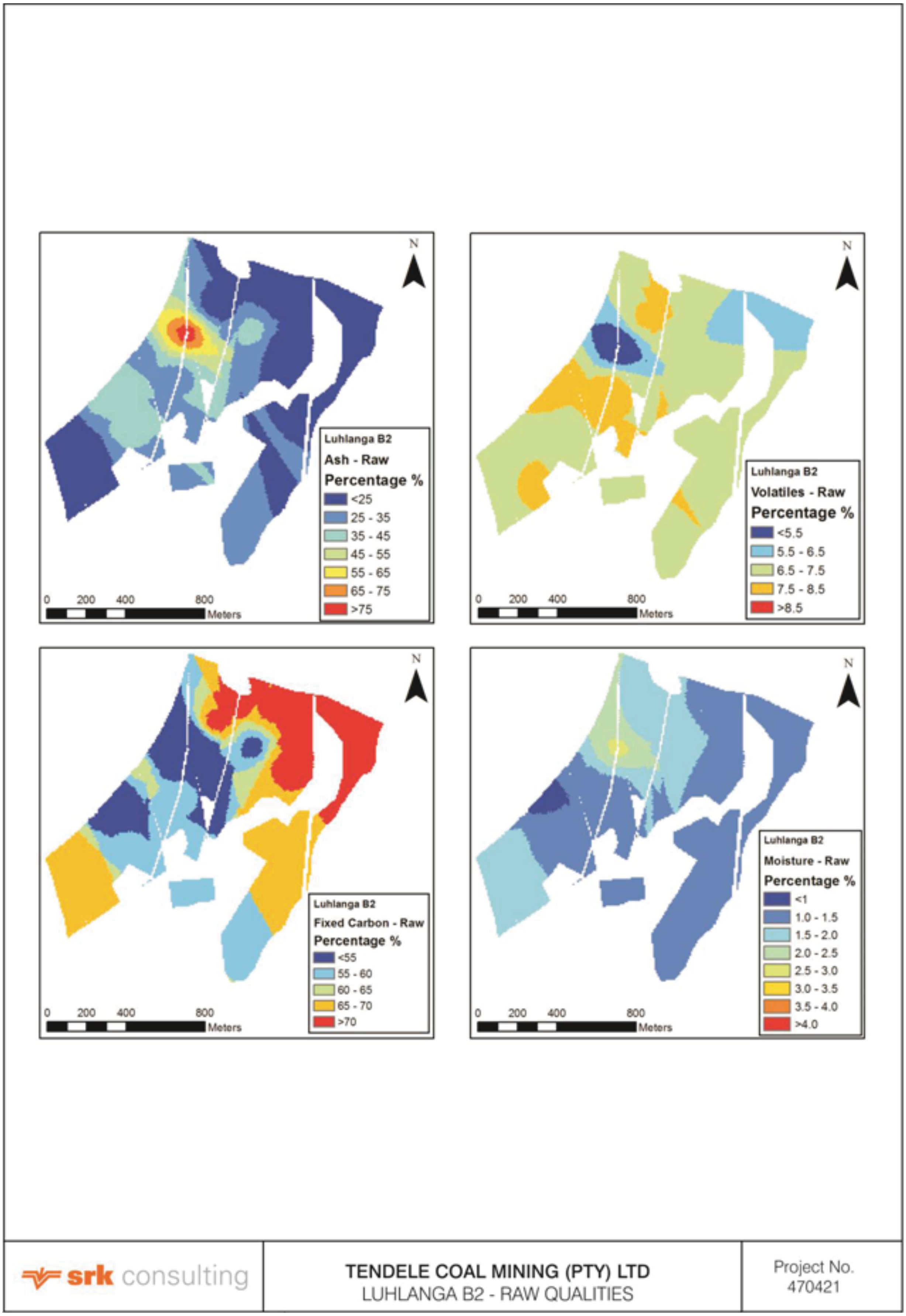

Figure 3-8: Luhlanga B2 Raw Coal Qualities

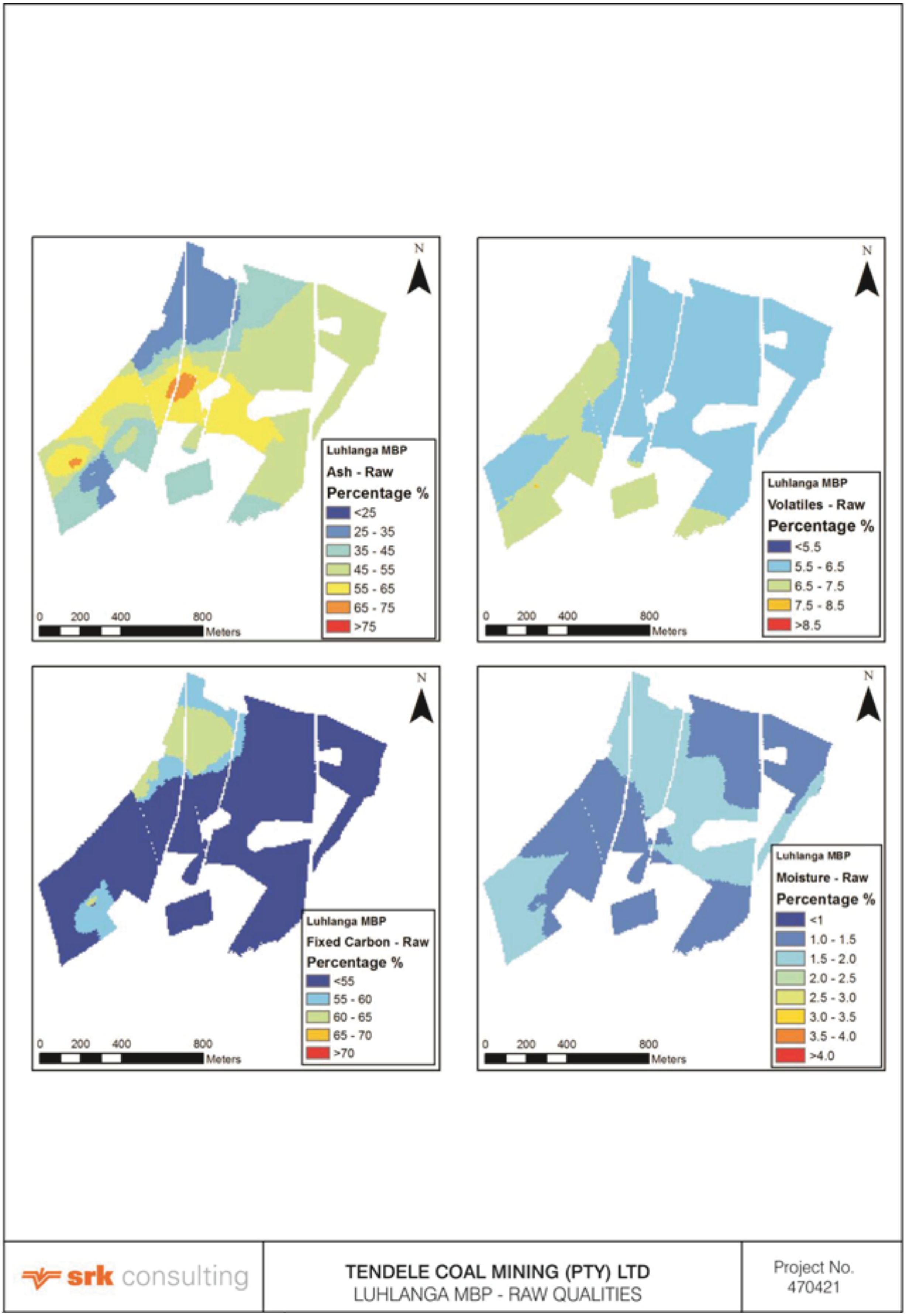

Figure 3-9: Luhlanga MBP Raw Qualities

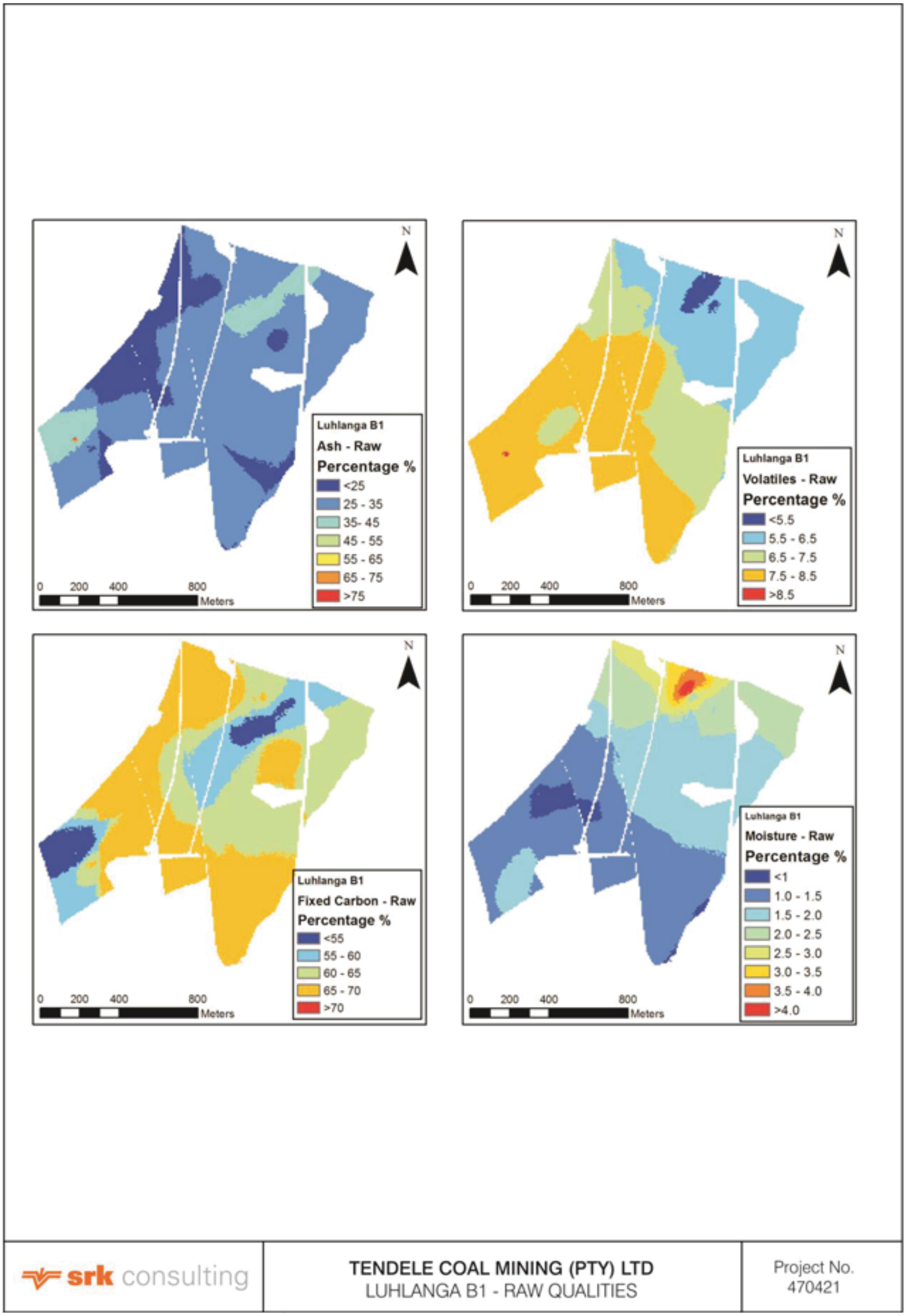

Figure 3-10: Luhlanga B1 Raw Coal Qualities

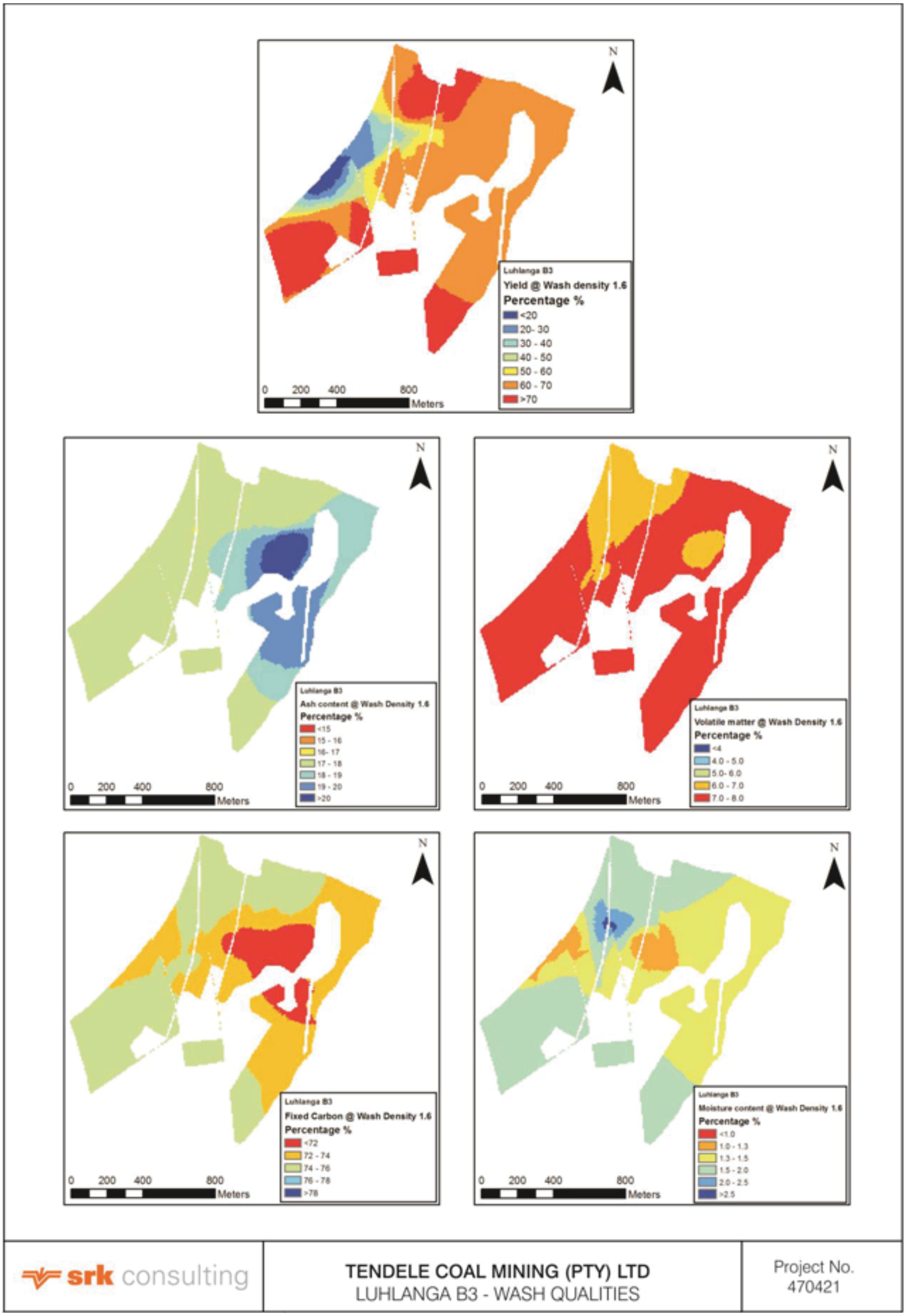

Figure 3-11: Luhlanga B3 Product Coal Qualities

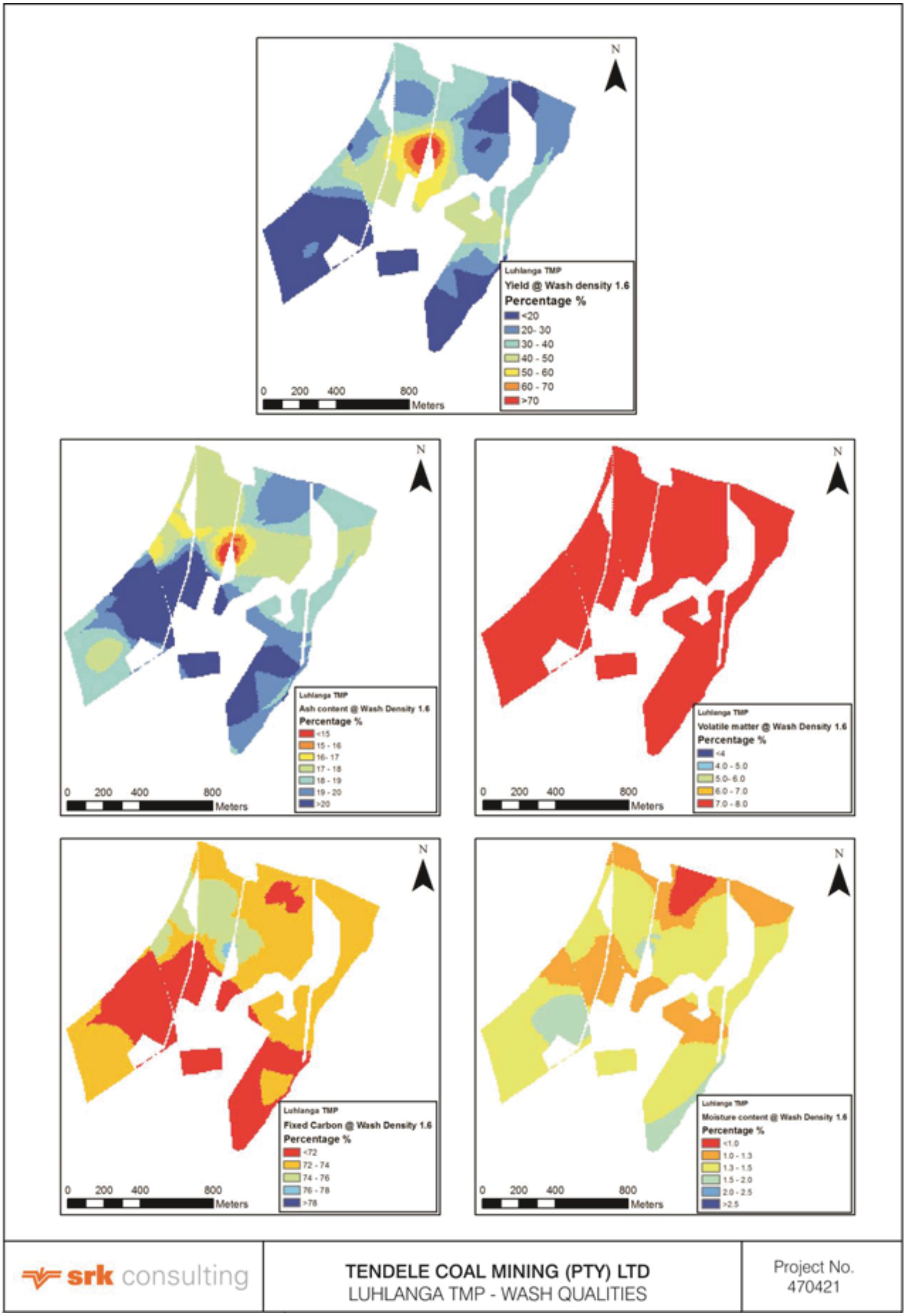

Figure 3-12:Luhlanga TMP Product Qualities

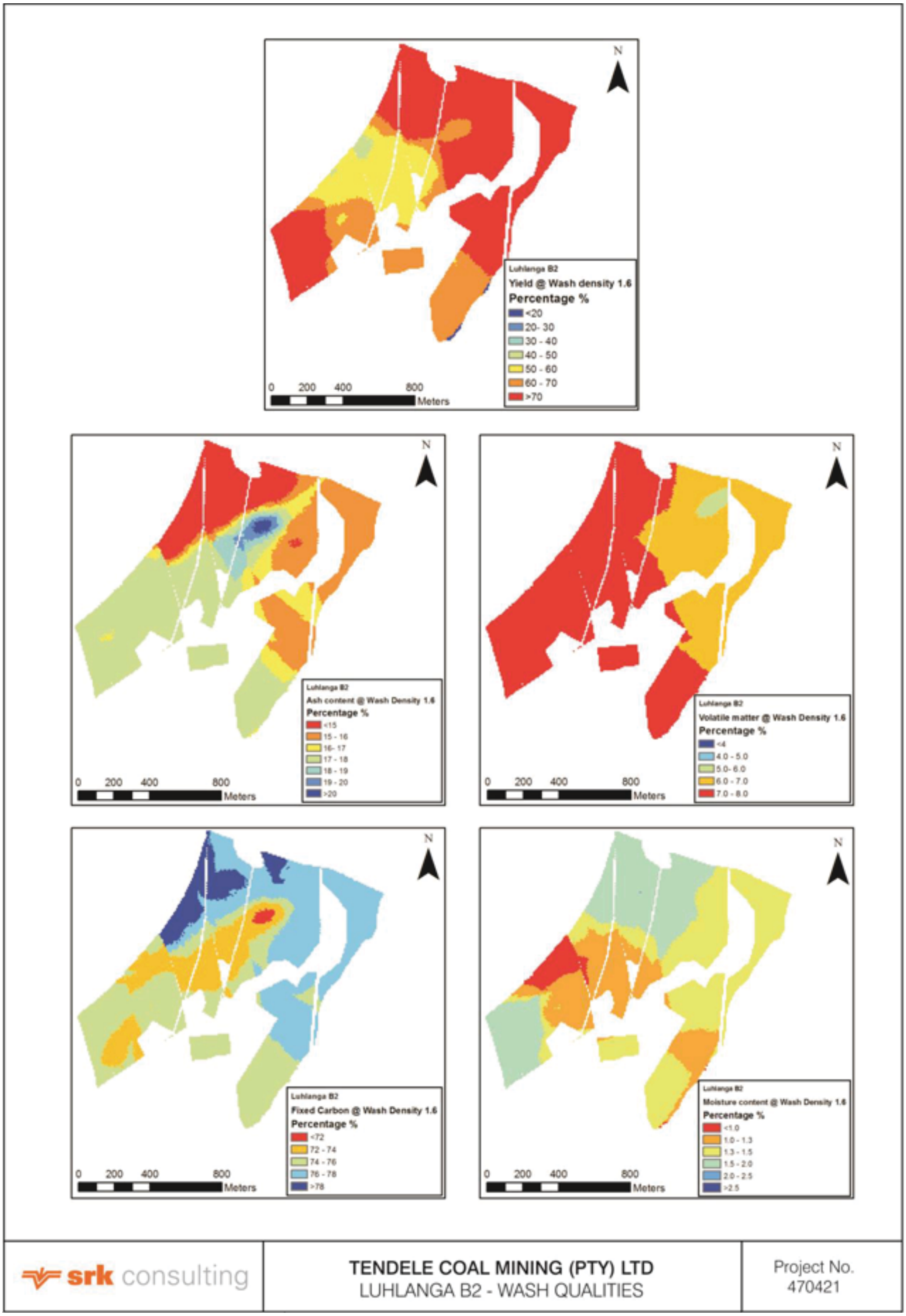

Figure 3-13: Luhlanga B2 Product Coal Qualities

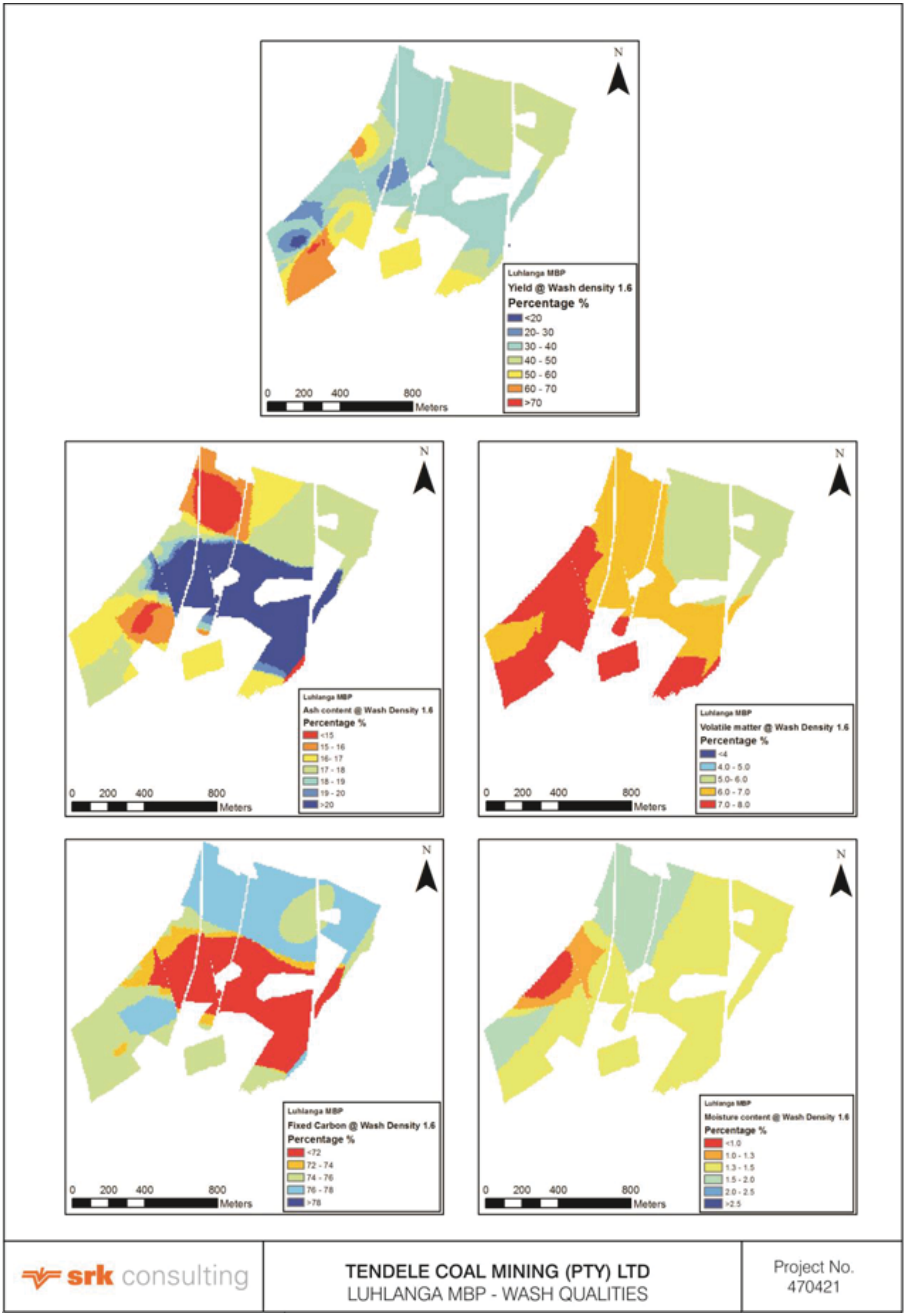

Figure 3-14: Luhlanga MBP Product Qualities

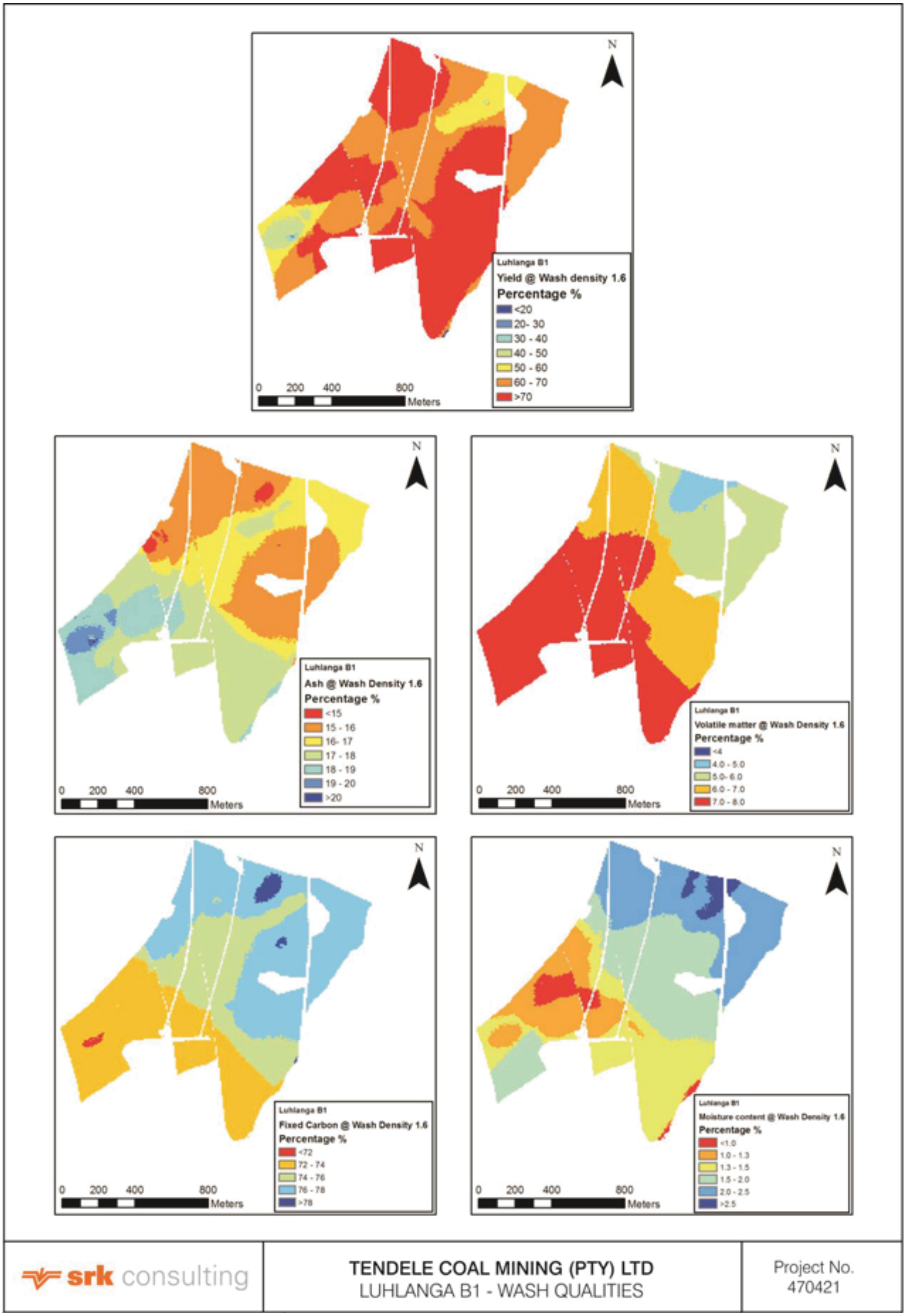

Figure 3-15: Luhlanga B1 Product Coal Qualities

3.6 Exploration

[SR2.3 (A/B/C), SR8 (A)]

All geological exploration, geological modelling and resource estimation has been conducted by Applied Geology & Mining (Pty) Ltd ("AM&G") under contract to Tendele. Original data is stored at Somkhele and working copies of most records are filed at AM&G's offices in Johannesburg. Downhole geophysical logging is carried out by Geoline Logging Services.

3.6.1 Drilling and Core Logging

Phase 1 - Percussion Drilling

The coal bearing Middle Emakwezini Formation is devoid of good marker beds except for the four coal seams and the Hangingwall Sandstone overlying the B Seam. Consequently, the exploration methodology followed was to identify the presence of potential hanging wall sandstone, and test for the presence of underlying coal by Phase 1 percussion drilling. This process was aided by 1:5000 orthophotos of the prospecting lease areas provided by Premier Mapping combined with field traverses and mapping of the region. Outcrop is generally poor although road cuttings, river courses and numerous dongas and excavations for building materials by local people enable local detailed ground mapping.

Once coal was intersected, the seam was identified through various techniques including down-hole wire-line geophysics that also enabled a semi-quantitative assessment of the coal quality. Successful intersections were investigated by following the coal seam along strike with boreholes approximately 500 m - 600 m apart until no further coal was intersected. The reason for the strike termination would be tested when possible. If the identified coal was not B Seam, then seam identification helped to identify the intersected stratigraphy from which further exploration boreholes could be sited.

Once the approximate extent of the B Seam strike had been traced and its potential for evaluation assessed, the block was handed over to the evaluation team for percussion drilling on section lines 150 m apart with planned intersections at depths of approximately 40, 90 and 140 m. The criteria of a discovery worthy of evaluation were based on the linear extent of the coal strike, the quality of the coal as indicated by down-hole geophysical logging, observation, and potential damage from dolerite intrusion.

Once the grid percussion drilling had been completed and a reasonable understanding of the coal block geology and potential had been gained, then further evaluation with diamond core drilling and sampling was undertaken to meet the SAMREC Code requirements for coal resource estimation. This included compilation of an exploration and evaluation database and computer resource block modelling.

Phase 2 - Percussion Drilling

Percussion drilling was used to further determine structure and coal condition in all the potential resource blocks. Phase 2 (evaluation phase) boreholes were drilled along section lines spaced approximately 150 m apart to delineate areas of suitable coal thickness, depth and quality. The section lines were oriented perpendicular to the regional strike and planned to intersect the top of coal depths of 40 m, 90 m, and 140 m, covering a potential open pit area within the resource block. This information was then used to locate the core holes in optimum positions for sampling during Phase 3.

The percussion drilling data were used to delineate the limits of potential resource blocks by interpreting the lithological and structural information, and in combination with the wireline log data (density log), determine the precise depths of geological contacts and determine preliminary coal qualities (i.e. areas of burnt coal, semi-anthracite, high density coals, etc.).

Phase 3 - Core Drilling

Diamond core drilling was used during Phase 3 (evaluation phase) to sample the coal; the boreholes were placed in positions considered optimum for sampling in fulfilment of the SAMREC Code requirements for resource category classification. Boreholes were located within the Phase 2 drilling grid, spaced up to 350 m apart for Measured Resource area and 500 m apart for Indicated Resource areas.

The cores were logged for detailed geology and geotechnical information and the coal intersections sampled for analytical determination of coal qualities. Geological information derived from all sources including downhole geophysical logs, percussion chip and core logging was used to interpret the geological structure. Coal quality data at selected wash densities from core samples of the B Seam were utilized for geological and evaluation modelling exercises and resource category definition for resource estimation.

The coal intersections were considered to be vertical with minimal deviation and the intersection thicknesses oblique to the true thickness of the seam due to the seam dipping at an average angle of about 25 degrees. The cores were not oriented. All borehole cores recovered were photographed before logging and sampling. After sampling the B Seam intersection, the remaining drill cores were stored on core trays at the Somkhele Mine core yard. Table 3-3 summarizes the drilling activities for the 2010/2012 exploration and evaluation programme.

Table 3-3: Summary of Exploration and Evaluation Drilling and Sampling 2010/2012

Resource Blocks	Percussion Core Drilling				Diamond Core Drilling			
	No. of Boreholes	Metres Drilled (m)	No. of Boreholes Sampled	No. of Samples	No. of Boreholes	Metres Drilled (m)	No. of Boreholes Sampled	No. of Samples
Area 1	64	11553			49	7481.49	17	99
Emalahleni	27	5584			28	3158.27	18	104
Gwabalanda	56	6711	24	70	26	2333.39	12	65
KwaQubuka	0	0			9	738.14	6	41
KwaQubuka North	34	4017			9	740.62	6	34
Mahujini	43	4564			12	575.99	5	19
Ophondweni	46	5217	9	25	20	1731.64	12	79
Sub-total	**270**	**37646**	**33**	**95**	**153**	**16759.54**	**76**	**441**

Environmental precautions taken during the exploration program included consideration of affected communities, access and preparation of borehole sites, commissioning and decommissioning of the drilling equipment and site rehabilitation. These matters were adhered to in compliance with the Tendele Mining Exploration EMP. At most borehole sites, except where the affected parties or holding family indicated otherwise, the casing was left in place, capped and secured with a concrete block bearing the borehole number.

3.6.2 Exploration History

Historical exploration by AG&M has resulted in extensive drilling in most of the project areas (Table 3-4; Figure 3-16 to Figure 3-21). Boreholes were logged geophysically for coal seam identification, seam thickness correction and depth checks. All boreholes are assumed vertical, although this has not been checked by downhole survey.

Table 3-4: Summary of Historical Boreholes

Area	Number of Boreholes	Posting Plan Figure
Emalahleni:	More than 70	Figure 3-16
Gwabalanda:	More than 75	Figure 3-17.
KwaQubuka:	More than 55	Figure 3-18.
Luhlanga:	Approximately 130	Figure 3-19.
Mahujini:	Approximately 200	Figure 3-20.
Ophondweni	More than 60	Figure 3-21

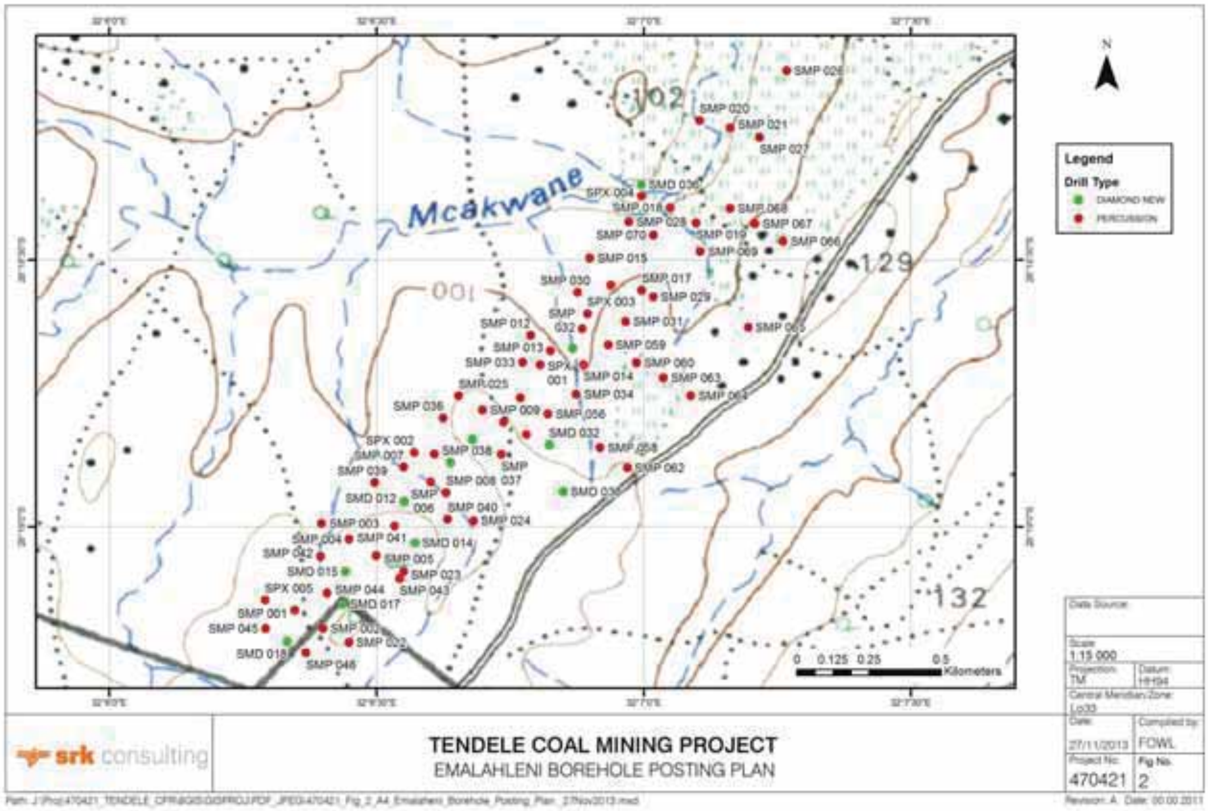

Figure 3-16:Emalahleni Borehole Posting Plan

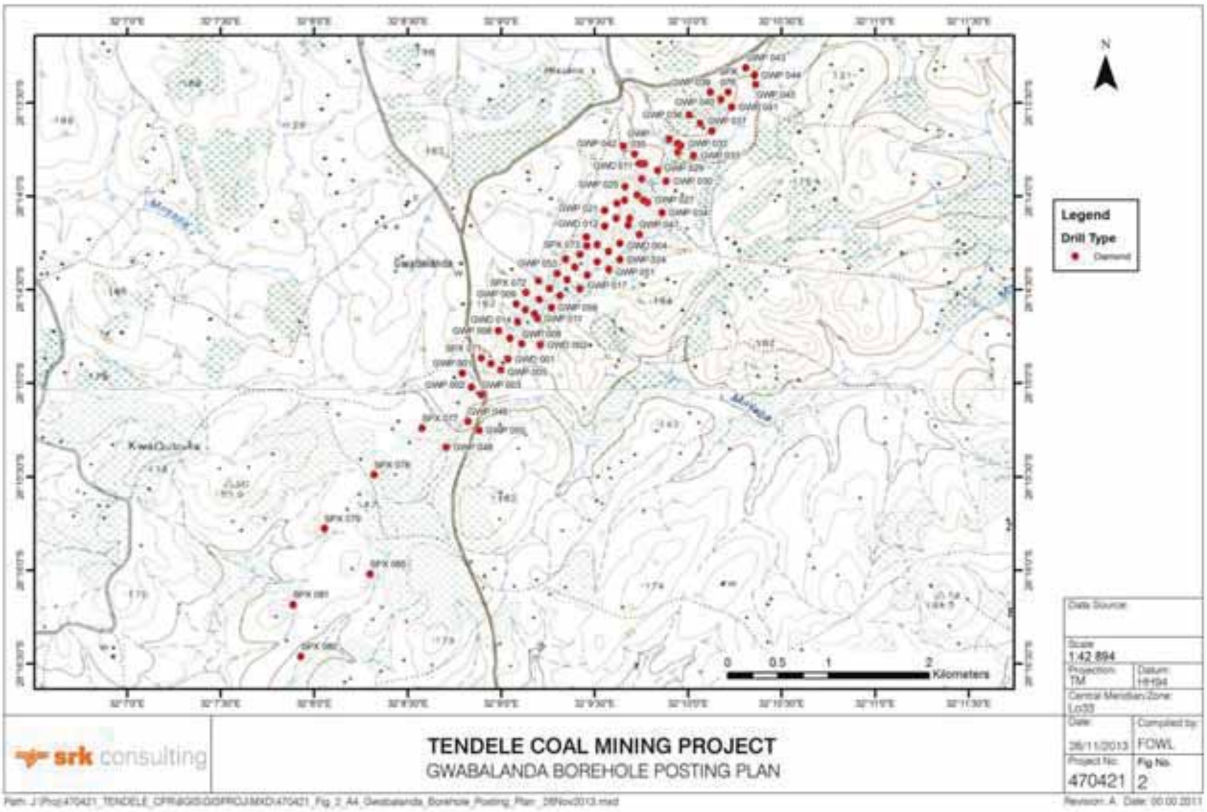

Figure 3-17:Gwabalanda Borehole Posting Plan

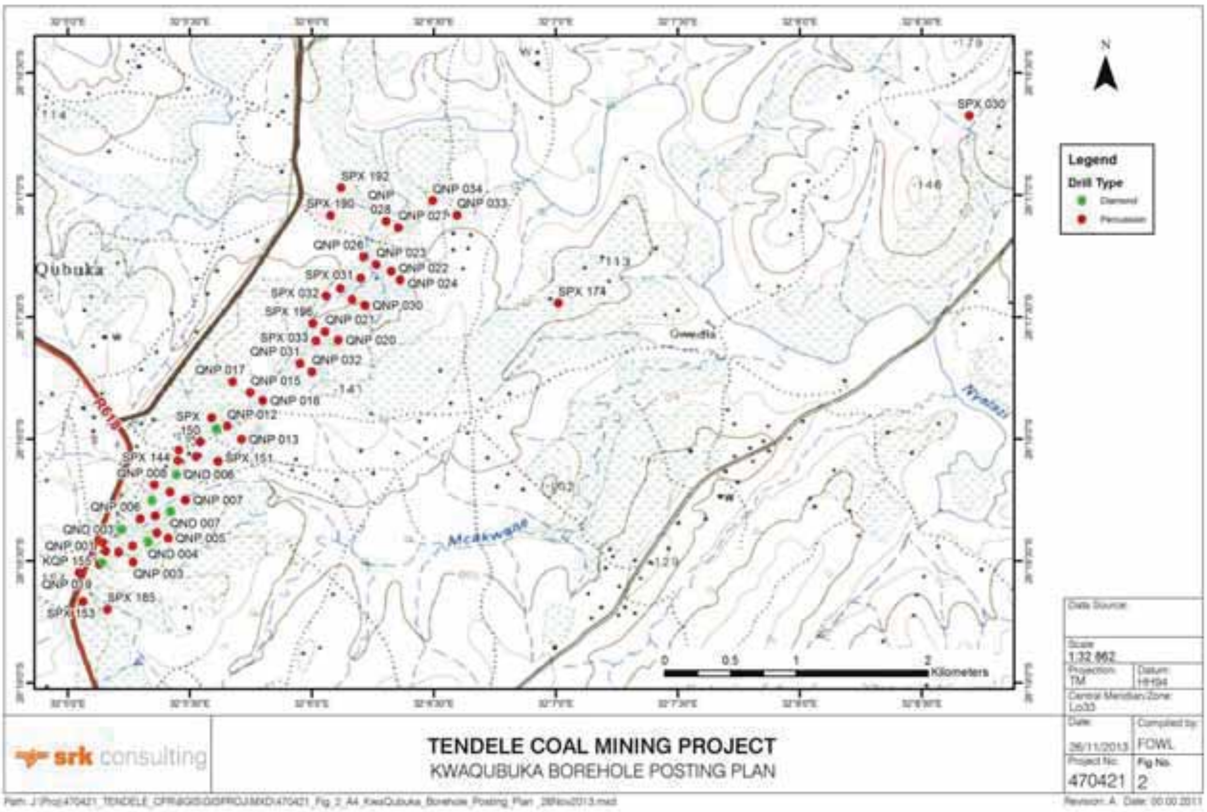

Figure 3-18:KwaQubuka Borehole Posting Plan

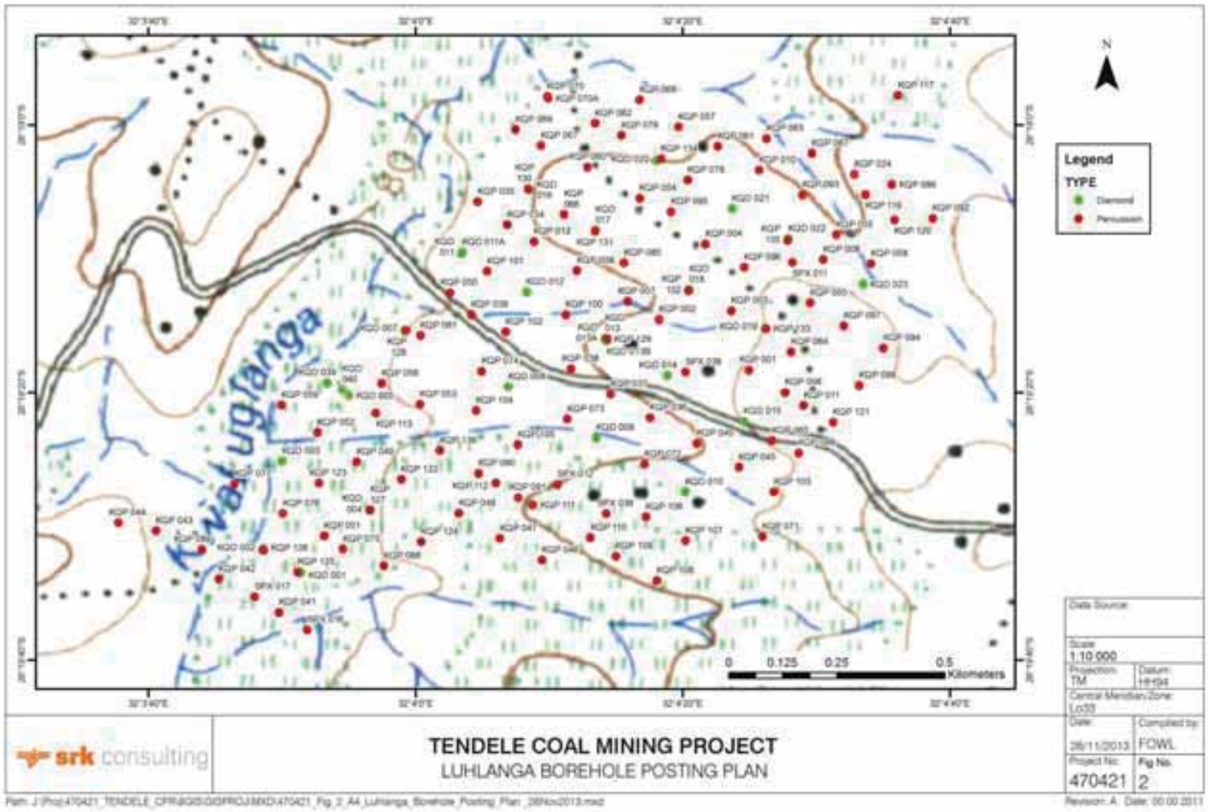

Figure 3-19:Luhlanga Borehole Posting Plan

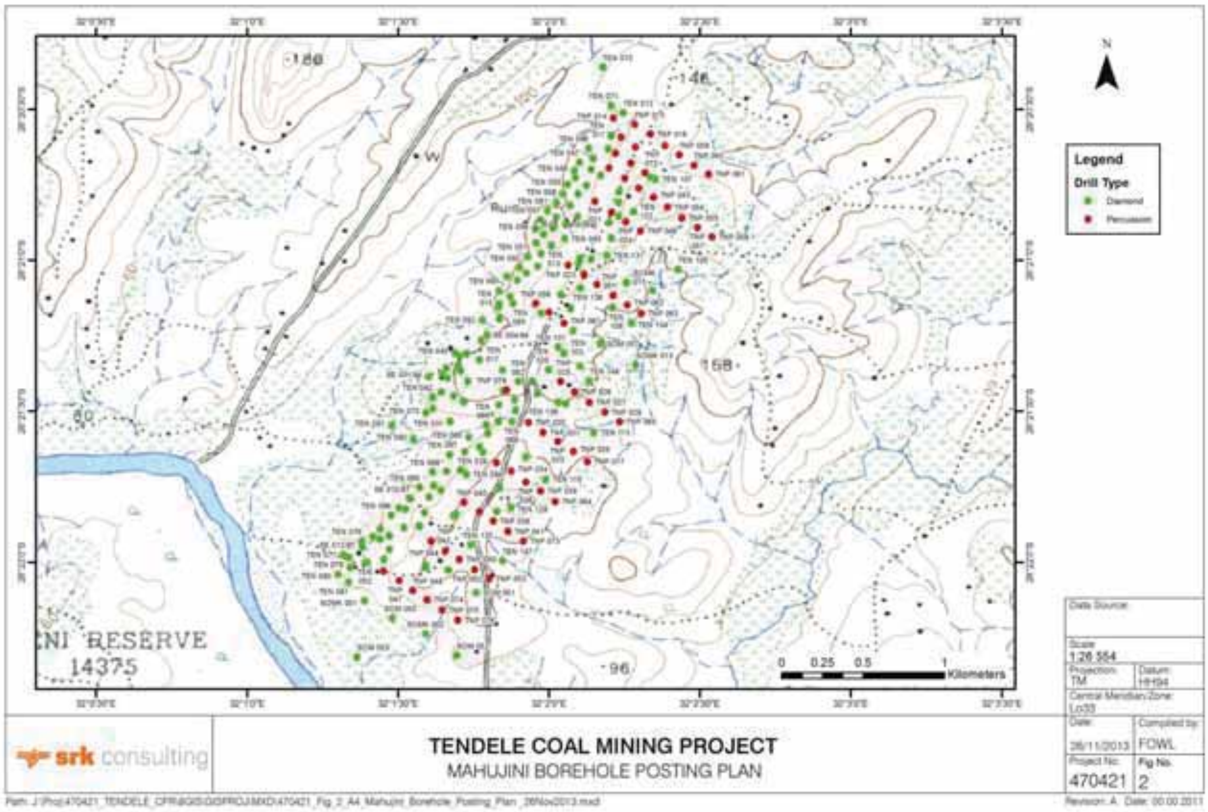

Figure 3-20: Mahujini Borehole Posting Plan

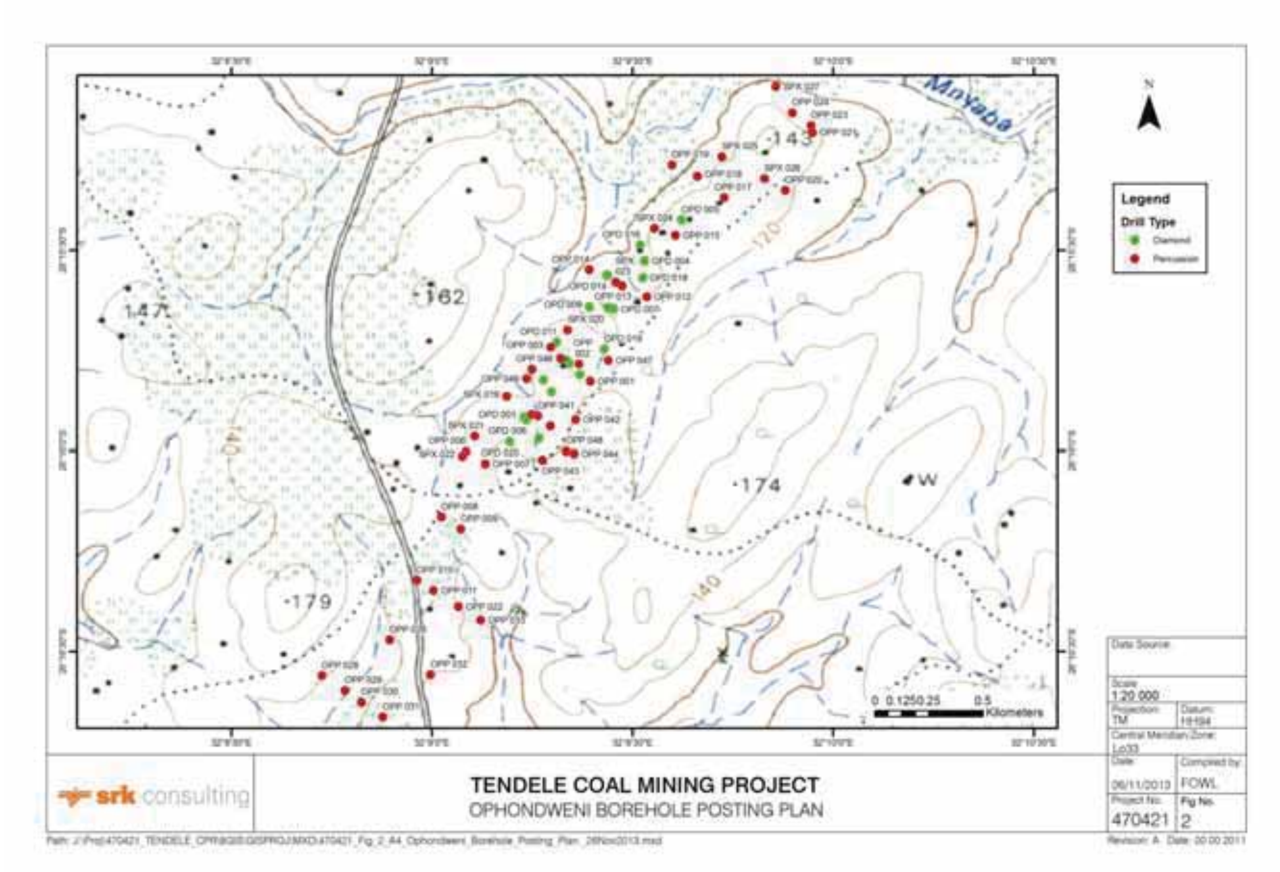

Figure 3-21:Ophondweni Borehole Posting Plan

3.7 Future Planned Exploration

[12.9 (h) (vi), 12.9(e) (iii), SR9 (A/B/C)]

3.7.1 Tholokuhle - Mvutshini Area

This is a large area of gently dipping strata in the northern part of the coalfield. Structural continuity in the underlying B Seam appears to be largely maintained over a distance in excess of 7 km. The strike of the coal seam swings from north-northeast in the Tholukuhle section in the south to north-northwest in the Mvutshini area in the north, suggesting influence from an underlying listric fault. Dips range from around 25°SE in the south to 4°E in the north. The western parts of these prospects lie at shallow depths beneath gently rolling topography but the eastern extents dip beneath topography with higher relief and are dominated by north-northwest trending dykes of the Rooi Rand igneous suite. A dominantly north-northeast trending fault with an arcuate trace and down throw of up to 170 m to the west can be traced from Tholokuhle to Mvutshini and maintains the relatively shallow depth of the coal to the east. A second displacement has also been detected that strikes north-northwest with a near vertical dip and which is possibly a dyke belonging to the Rooi Rand swarm. There is a down-throw of about 15 m to the west across this structure. Both these structures serve to bring the B Seam closer to surface, opposing the deepening effects of the shallow easterly dip. This area has the potential to yield resources in the order of 17.5 Mt and requires further exploration and subsequent evaluation.

3.7.2 Mahujini – Tholokuhle Area

A northwest striking fault with a right-lateral displacement offsets the KwaQubuka strike by about 800 m and terminates the north-northeastern strike of the Mahujini block. The KwaQubuka strike links with the Gwabalanda strike but no continuation of the Mahujini block has been located on the northeastern side of this fault. It appears that a northeast continuation of the Mahujini strike should link with the Tholokuhle-Mvutshini block. This strike should be explored for the presence of the B Seam and any successful discoveries evaluated.

3.7.3 Exploration of Known Blocks

Exploration of known resource blocks is required for better definition of the economic boundaries of planned mining operations and for locating smaller economic blocks in areas broadly passed over as a result of the intense dolerite activity that was encountered. Smaller blocks would serve to contribute to mining operations established on the larger resource blocks in the vicinity. This work should be ongoing over an extended period of time.

Table 3-5 summarizes the proposed future exploration.

Table 3-5: Somkhele Future Exploration Plan and Budget

Area	Percussion Boreholes	Total Length (m)	Core Boreholes	Total Length (m)	Samples Planned	Cost (ZARm)
Tholokuhle - Mvutshini	110	12 750	54	4 650	375	15
Mahujini - Tholokuhle	80	9 500	25	2 150	175	10
Known blocks	60	6 600	60	5 500	420	30
Total	**250**	**28 850**	**139**	**12 300**	**970**	**55**

3.8 Quality Assurance and Quality Control

[SR2.1 (A), SR2.2 (A/B/C), SR9 (A/B/C)]

SRK was requested by Tendele to review and sign off the resource estimates for the various Somkhele projects during 2013. The data, geological models, resource estimates, mine design parameters and reserve estimates were reviewed in each case (Table 3-6):

Table 3-6: Summary of Previous SRK Reviews

Area	Report Date	Reviewer	
		Competent Person Resources	Competent Person Reserves
Emalahleni	16 March 2012	Liz de Klerk	Morongwa Mothengu
Emalahleni Underground	03 April 2013	Liz de Klerk	Morongwa Mothengu
Gwabalanda	25 May 2013	Liz de Klerk	Morongwa Mothengu
KwaQubuka	16 March 2012	Liz de Klerk	Morongwa Mothengu
KwaQubuka North	28 October 2013	Sello Nzama	Xolani Gumede
Luhlanga	16 March 2012	Liz de Klerk	Morongwa Mothengu
Luhlanga (updated Resources)	25 October 2013	Sello Nzama	-
Mahujini	28 October 2013	Sello Nzama	Xolani Gumede
Ophondweni	7 May 2013	Liz de Klerk	Morongwa Mothengu

SRK received three models (Luhlanga, Mahujini and KwaQubuka) for review in Surpac format from AG&M that were then imported into Datamine Studio 3 for verification. All validations and verification processes were completed in Datamine Studio 3, Minex and Microsoft Excel (“Excel”). SRK received an additional three models (Emalahleni, Gwabalanda and Ophondweni) for review in Surpac format from AG&M that were then imported into Micromine for verification. All validations and verification processes were completed in Micromine and Excel. The following procedures were followed in order to validate geological models constructed by AG&M and to enable SRK to sign off on the resource estimates.

3.8.1 Data Verification: Borehole ► Database ► Geological Model

SRK has reviewed a random selection of borehole logs, sampling records and analytical results from both percussion and diamond core boreholes from each project area as held by Somkhele. SRK is satisfied that the data contained therein has been adequately transferred into the relevant databases. Where discrepancies arise, they can possibly be ascribed to dolerite intrusions, faulting, different sub-seam nomenclature or poor core recovery in some boreholes. Some boreholes appear not to have been included in the databases; it is good practice to maintain a list of which data have been excluded, along with the reason for the exclusion. Previous work by SRK during 2013 compared the data in the databases with the geological models. The differences noted were minimal and not of material significance.

3.8.2 Geological Model Verification

All Microsoft Access borehole databases and Excel csv files submitted to SRK had already been validated by AG&M. SRK then conducted a high level “sanity check” on the borehole databases to test for the modelling methodology and procedures applied. The checks conducted included the following:

- **Borehole Collar Verification:** Borehole records without collar values and borehole records that plot outside the mine or project boundary are identified. If records with no collar elevations are found and the data cannot be located from AG&M, such records are omitted from the database;
- **Borehole Collar Elevation Verification:** AG&M surveys the borehole collars using differential GPS. The results are compared with the DTM and investigated wherever discrepancies are noted. If these discrepancies are not able to be resolved, the borehole is omitted from the database. In addition, SRK checked for collar elevations that have a difference in excess of 5 m from the validated digital terrain model. All collars plotted well within this limit; and
- **Seam Validation:** This check is used to verify for incorrectly ordered seam intervals, negative interval thicknesses, interval overlaps and any seam inconsistencies. None were found.

3.8.3 Quality Model Verification

- **Raw Data Validation:** This routine searches for missing relative density and coal quality values. The only model blocks that reported any missing values were found in the Luhlanga model and default qualities as supplied by AG&M were applied. These areas are mainly within the Inferred category and make up less than 10% of the reported resource tonnage; the impact is not considered material; and
- **Washability Database Validation:** The reported cumulative washability results were validated for any inconsistent relationships, e.g. ash increasing with increasing wash density; CV and volatiles decreasing with increasing wash density, cumulative yields sum to 100%, etc. None were found.

3.8.4 Wireframe Validation

Wireframe surfaces were plotted in section against the de-surveyed borehole file to check for consistency in the structural interpretation. A series of sections were plotted in Datamine Studio and plane navigation tools (move plane forward and move plane backwards) were used to determine if this consistency was maintained. Wireframes were validated using Boolean operations for any crossovers and overlaps. Wireframes were further validated against the block model interpretation for consistency in interpreted zones against modeled surfaces. No significant differences were noted.

3.8.5 Resource Estimation and Classification

Modelled blocks were verified according to the cut off parameters specified by AG&M to derive the condition field of “good/ weathered”. This condition field was used to mask out areas of devolatilized coal as well as areas where the moisture content was greater than 5%; such areas are classified as “weathered” and are not included in the resource estimation. The resource classification system was replicated using the Borehole Distance Gridding algorithm in Minex where boreholes that had no washability data were excluded from the resource areas. A tonnage comparison was used to compare the two model classes if any discrepancies existed. None were found.

3.9 Sampling and Coal Analysis

[SR2.4 (A/B/C), SR3.1, SR3.2 (A) (B), SR3.3 (A), SR3.4 (A)]

After the core was logged for recovery, geology and geotechnical properties, and photographed, the B Seam was sampled. Samples consisted of the whole core with sample boundaries coinciding with geological boundaries. Up to seven samples are collected from a full intersection of the B Seam and exclude any dolerite that may have intruded the seam. Details of the samples are recorded on the sample log sheets including the sub-seam from which they taken, sample start and end depths, intersection and recovered core lengths and the sample numbers.

Samples are placed in thick and sturdy plastic sample bags that are clearly numbered on the outside and inside, and sealed. The samples are sent to the Inspectorate M&L (Pty) Ltd (“Inspectorate”) laboratories in Middleburg via their depot in Richards Bay for determination of sample apparent relative density (“ARD”), proximate analysis of coal qualities, gross calorific value (“CV”), total sulphur, and phosphorus in coal on selected wash fractions; the -0.5 mm fraction values were recombined with the washed fractions values to calculate the raw coal values.

Samples were not split and sent to an alternate laboratory for confirmatory testing. No standard samples were available for the same and round robin analyses were not reviewed by AG&M. However, SRK has reviewed the round robin analyses and are satisfied with the results.

Inspectorate applied the following tests on the coal according to internationally accepted standards:

- Apparent relative density (ISO 1014 / AS 1038.26-2005):
- Float and sink analysis (ISO 7936):

A representative portion of the washed fractions was pulverized to 212 micron and tested as follows:

- Ash content (ISO 1171);
- Moisture in the analysis sample: (SANS 5925);
- Volatile matter (ISO 562);
- Fixed carbon (by difference);
- Calorific value (ISO 1928);
- Total sulphur (ASTM:D4239); and
- Phosphorus in coal (ISO 622).

Phosphorus is only analyzed for at wash density fractions 1.6 for semi-anthracite and 1.8 for anthracite.

3.10 Risks

The following risks have been noted with respect to the geology and exploration:

3.10.1 Logging, Sampling and Analysis Protocols

The core logging, sampling and analysis protocols are not documented, although these are well understood by the current personnel. This represents the risk of inconsistencies developing between different loggers/samplers; between different periods of logging/sampling or if there are no experienced personnel available to train new staff. SRK recommends this is remedied as soon as possible. Current documentation should be available at the mine.

3.10.2 Geophysical Logging

The geophysical sondes are not calibrated for depth against a designated “calibration borehole” at each geophysical logging campaign. Thus the possibility for depth errors exists. It is recommended that a typical borehole that will be easily accessible for logging on a long term basis is designated as the “calibration borehole” and is re-logged at the start of each new logging program. Hard copies of such logs should be available at the mine for inspection at all times. The logs from one campaign to the next should be compared and comment made in the exploration report. Naturally, should any discrepancies be noted, the logging should be postponed until these have been reconciled.

3.10.3 Coal Analysis

No samples were split and a portion sent to another laboratory for duplicate analysis, nor are the round robin results from Inspectorate regularly reviewed by AG&M on behalf of Somkhele. Although the laboratory is an accredited laboratory with an excellent track record, the risk of incorrect results has not been mitigated by including this standard practice.

It should be noted that the impact of these risks is low.

4 Coal Resources

[12.9 (h) (ix), SR1.1 (A) (iii), SR2.5 (A/B/C), SR7 (B), SR9 (A/B/C), SV2.6]

4.1 Introduction

Somkhele Mine mines anthracite, which is low in phosphorous, sulphur and calcium with a very high vitrinite content which makes it a viable reductant for the ferro-titanium and ferrochrome industries in South Africa and abroad, and suitable for pelletizing and sintering processes.

According to ASTM D 388 (Classification of Coals by Rank), Somkhele coal is classified as follows:

- **Class:** Anthracitic
- **Group:** Semi-anthracite (86% < Fixed Carbon < 92%, dry, mineral-matter-free[1])

According to ISO 11760 Standard Classification of Coals, Somkhele coal is classified as follows:

- **Rank:** High Rank C (Anthracite C) as measured by vitrinite random reflectance
- **Petrographic Composition**: Moderately High Vitrinite > 60% (washed at < 16% ash);
- **Grade:**
    - o Moderate to High Ash (Run of Mine ("RoM"));
    - o Medium Ash (washed at < 16% ash); or
    - o Low Ash (washed at < 10% ash).

4.2 SRK Audit Procedure

The Coal Resources have been audited and verified by SRK (Mr. Sello Nzama, Pr.Sci.Nat. and Mrs. Elizabeth de Klerk, Pr. Sci. Nat.) based on geological models constructed in Surpac by Mr. David Grant of AG&M on behalf of Tendele. Geological modeling data for the different areas were provided to SRK by AG&M for their verification and validation. SRK considers that, given the scope and the level of geological investigation, the estimates associated with the Mineral Asset reflect an appropriate level of precision and confidence.

4.3 Reporting Criteria

The categories of Coal Resources are based on the level of confidence, as determined by the Competent Person, in the estimate of both tonnage and the coal quality. The borehole spacing for each coal resource classification category, as outlined in the SAMREC Code coal specific guidelines (SANS 10320:2004) represents the minimum requirement for resource classification (summarized for multiple seam coal deposits in Table 4-1). Any deviation from the minimum standard must be fully justified and reported by the Competent Person. The basis of Coal Resource statements in terms of borehole spacing, seam structure, coal seam thickness cut-offs, physical coal seam continuity, relevant coal quality cut-offs, coal quality continuity, coal quality variability, computer-modelling techniques, classification principles and estimation confidence must be stated.

Classification was guided by the following:

- Borehole density;
- Geological and coal quality continuity;

[1] For classification purposes, ASTM D 388 requires the calculation of the Fixed Carbon to a dry, mineral-matter-free basis whereas analyses are carried out on an air-dry basis or as-determined basis. Note that Fixed Carbon results reported in Tables are on an air-dry basis.

- Geological structure and its influence on mining; and
- Complexity of the deposit geology.

Table 4-1: Coal Resource Reporting Categories (SANS 10320:2004)

Classification	Meaning	Criteria
Measured	High confidence	< 350 m spacing between cored boreholes with quality
Indicated	Moderate confidence	350 m - 500 m spacing between cored boreholes with quality
Inferred	Low confidence	< 1 000 m spacing between cored boreholes with quality

The resources reporting definitions according to the SAMREC Code are summarized in Table 4-2.

Table 4-2: Reporting Definitions (SANS 10320:2004)

Terminology	Meaning	Definition
GTIS	Gross Tonnes *In Situ*	The tonnage and coal quality, at specified moisture content, contained in the full seam thickness above the minimum thickness cut-off, the coal quality cut-offs and the depth/strip ratio cut-off as defined by the Competent Person and de-rated for previous mining activities where appropriate. The Gross Tonnes In Situ Coal Resource must be shown to have reasonable and realistic expectation of economic extraction, in terms of seam geometry, structure and coal quality. The seam height must not include any external dilution or contamination material. A qualifying statement should be provided stating the cut-offs, de-rating factors and geological loss factors applied.
TTIS	Total Tonnes *In Situ*	The tonnage and coal quality, at specified moisture content, contained in the full seam thickness above the minimum thickness cut-off, coal quality cut-offs, depth/strip ratio cut-off as defined by the Competent Person and after application of the geological loss factors and de-rating for previous mining activities, for the mineable blocks. The Total Tonnes In Situ Coal Resource must be shown to have reasonable and realistic expectation of economic extraction, in terms of seam geometry, structure and coal quality. The seam height does not include any external dilution or contamination material. A qualifying statement should be provided stating the cut-offs, de-rating factors and geological loss factors applied.
th	True Thickness	The distance measured between the roof and floor contacts of the coal seam at right angles to the average dip of the coal seam. Where the apparent thickness is measured this must be converted to the true thickness. Generally, the weighted average of the true coal seam thickness over a specified area is reported.
MTIS	Mineable Tonnes *In Situ*	The tonnage and coal quality, at a specified moisture content, contained in the coal seams, or sections of the seams, which are proposed to be mined at the theoretical mining height, including adjustment by the application of geological loss factors and de-rating for previous mining activities, but excluding external dilution and contamination material, with respect to a specific mining method and after the relevant minimum and maximum mineable thickness cut-offs and relevant coal quality cut-off parameters have been applied. The Mineable Tonnes In Situ Coal Resource must be shown to have reasonable and realistic expectation of economic extraction, in terms of seam geometry, structure and coal quality. A qualifying statement should be provided stating the cut-offs, de-rating factors and geological loss factors applied.

The classification of Coal Resources into Inferred, Indicated and Measured categories is a function of increasing geological confidence in the estimate based on the density of points of observation, the physical continuity of the coal seams, the distribution and the reliability of the coal sampling data, the coal quality continuity, the reliability of the geological model and the estimation methods. Factors that contribute to the uncertainty in Coal Resource estimation include the key constraints used to construct the geological model, such as the seam thickness variation, structural complexity and the coal quality distribution. Figure 4-1 to Figure 4-6 show the resource categories for each of the various areas.

Figure 4-1: Emalahleni Resource Categorization

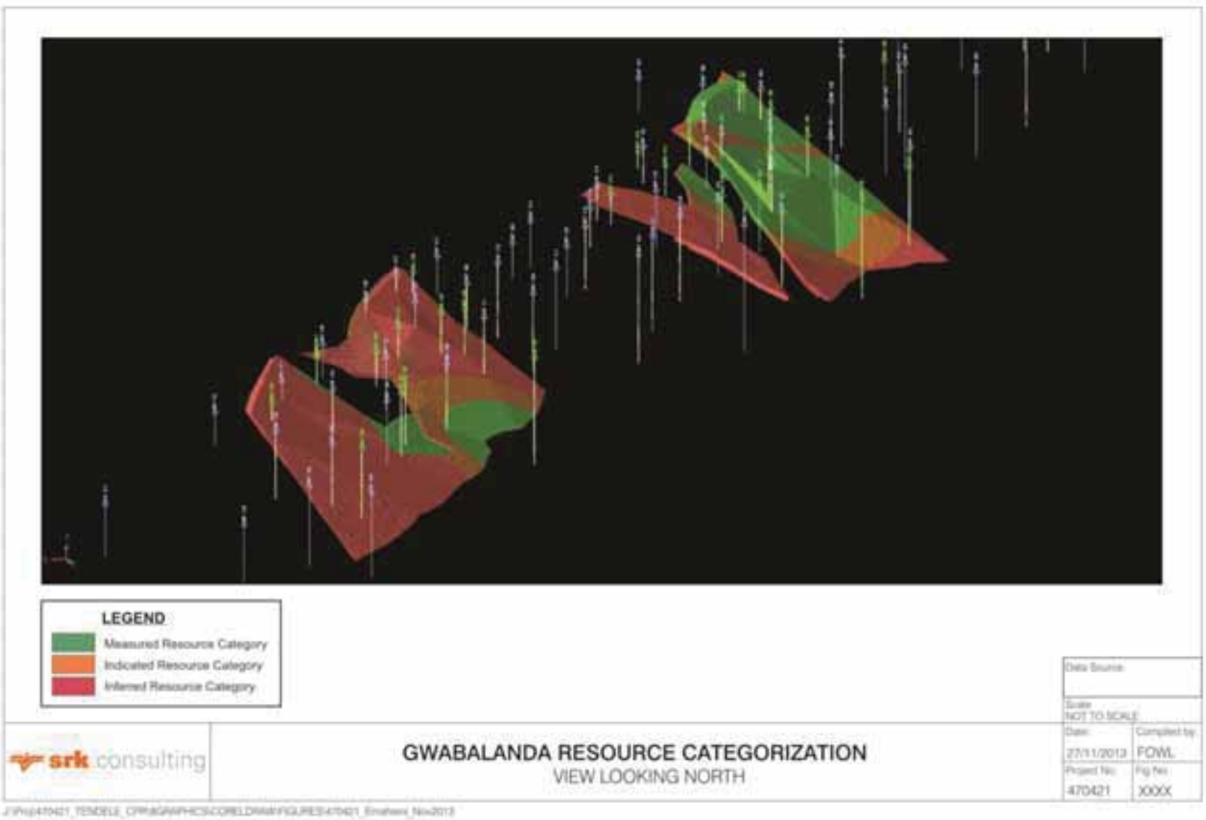

Figure 4-2: Gwabalanda Resource Categorization

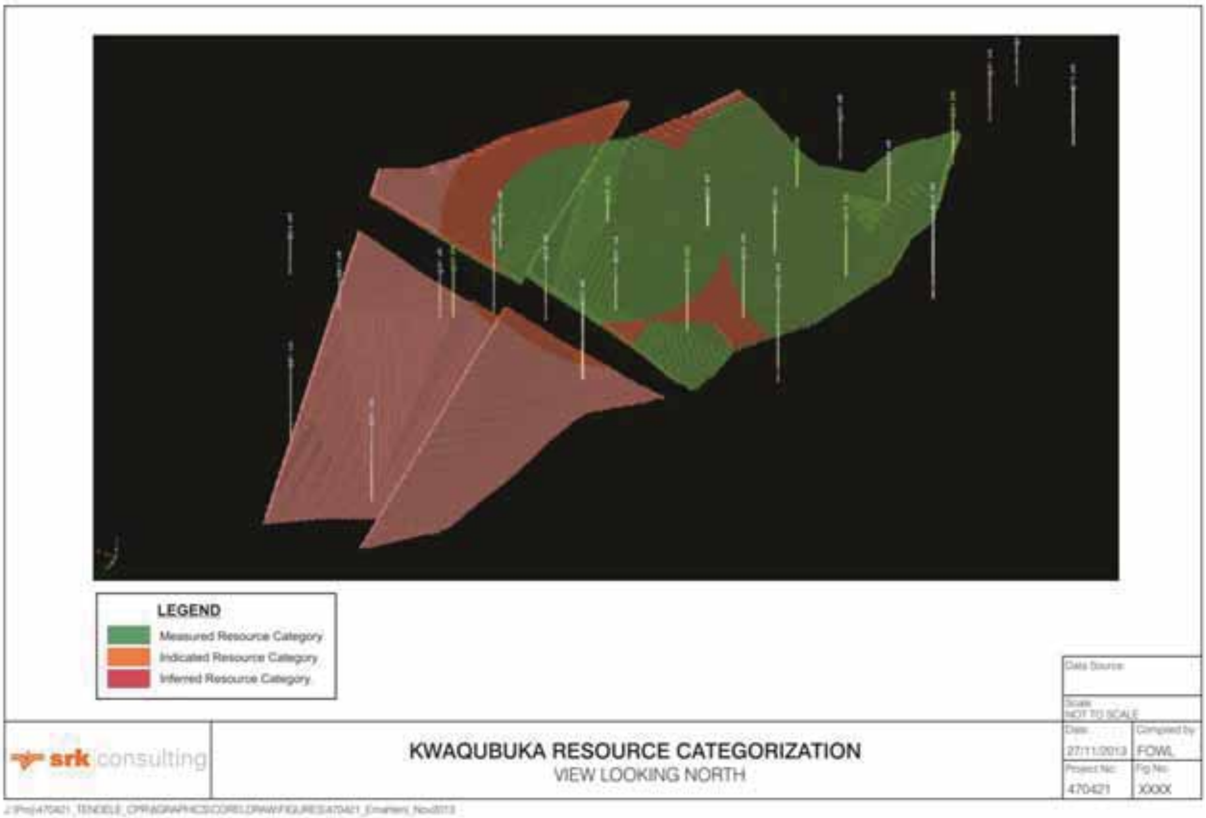

Figure 4-3: KwaQubuka North Resource Categorization

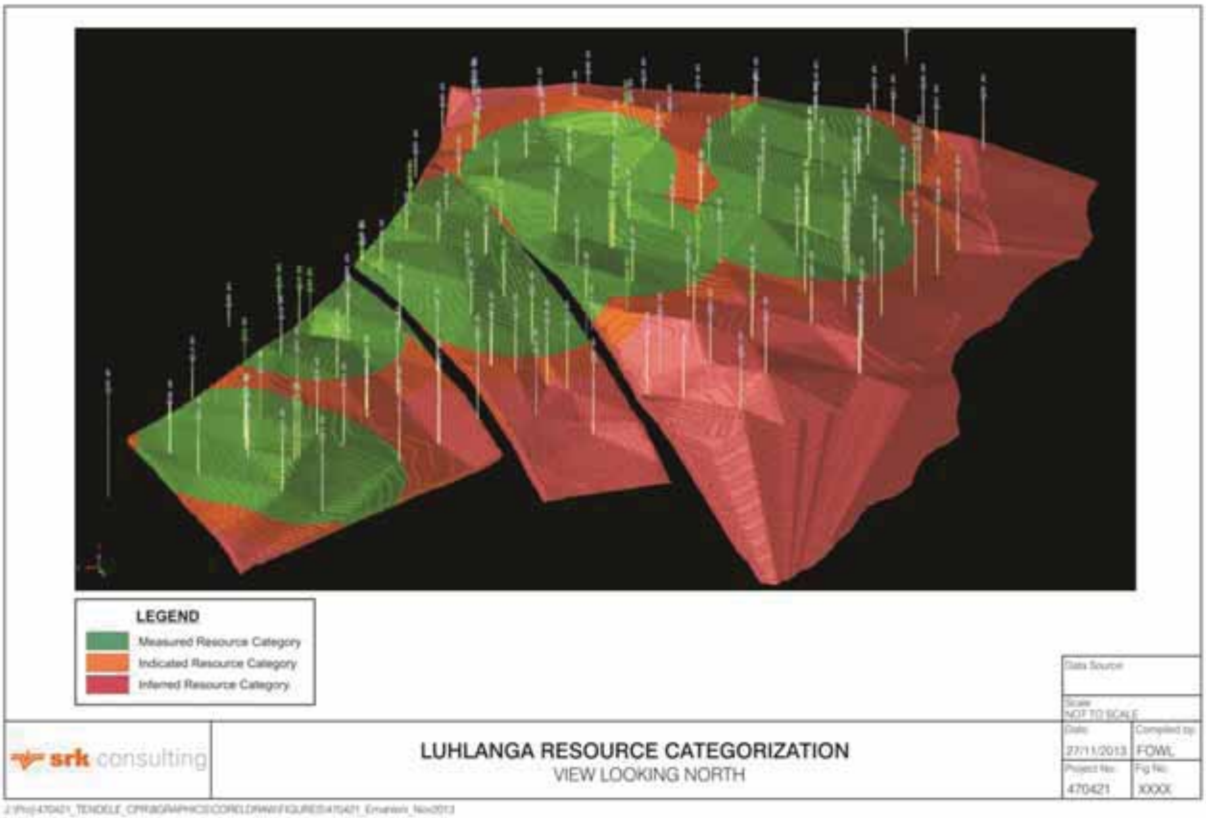

Figure 4-4: Luhlanga Resource Categorization

Figure 4-5: Mahujini Resource Categorization

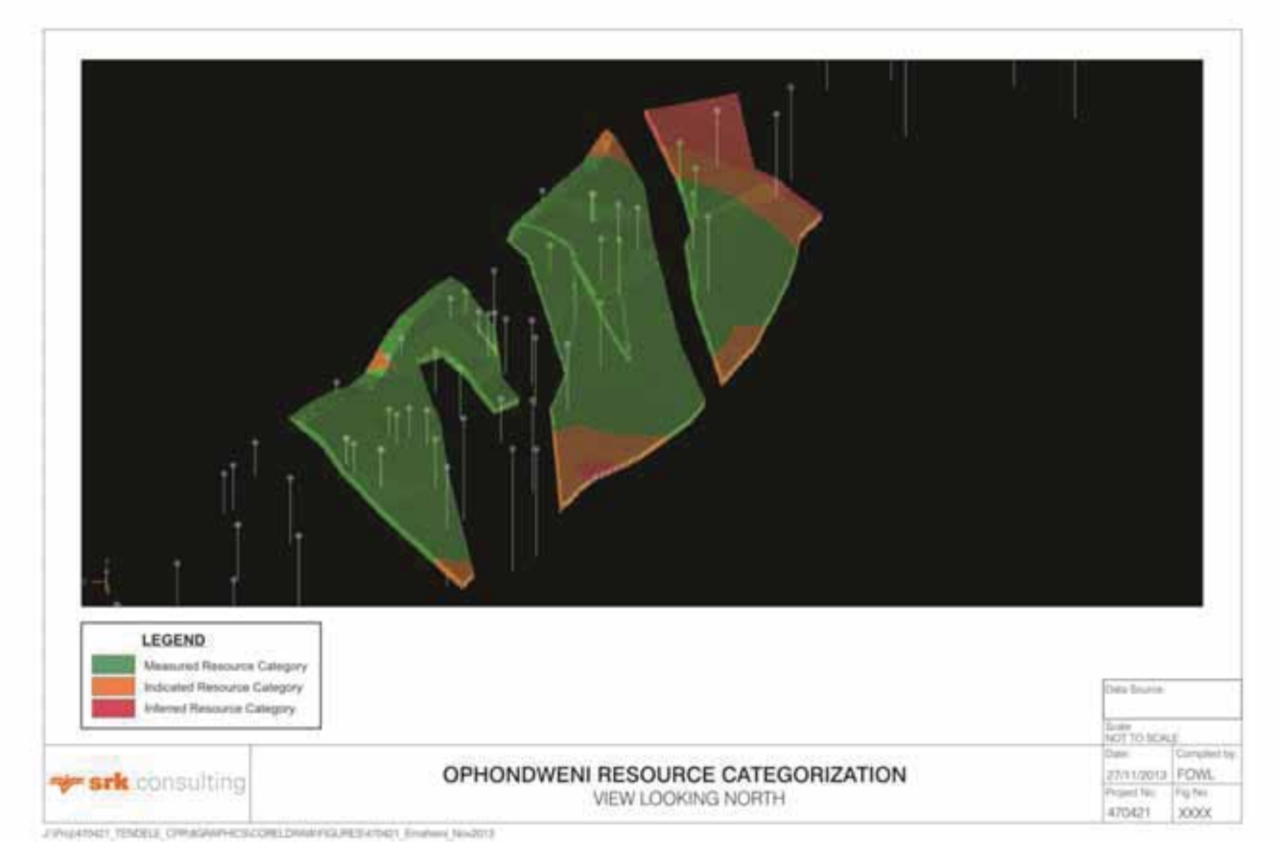

Figure 4-6: Ophondweni Resource Categorization

4.4 Geological Modelling Technique

[SR4.1 (A) (ii) (iv), SR4.1 (B), SR4.2 (A), SR4.2 (B)]

4.4.1 Coal Resources and Qualities

4.4.2 Geological Modelling Methodology

Owing to the complexities of the Somkhele coal resources, the modelling techniques have evolved with time into the methods currently used. The early models are less elaborate.

The resource blocks were evaluated with a combination of percussion and core drilling. Both borehole types were geophysically logged for density, natural gamma and borehole diameter. The percussion hole chip logs were combined with the interpreted density logs and composite logs were compiled with accurate depths to the various geological contacts including the B Seam and its partings for the resource geometry; the condition of the B Seam was assessed and categorized into *good, high density, burnt* and *weathered* coal types. The density logs for the core holes were used for core recovery purposes only and the logged depths used for the geometry of the seam. In rare cases where the recovery was poor and the borehole not re-drilled, the density log was used to replace the core log in the seam for geometric and coal condition purposes only; i.e. the input into the model for such core boreholes would be equivalent to that for percussion boreholes.

Once all the borehole logs were prepared, they were added to a spread sheet to determine the intersected floor elevations of the B Seam plies, the top of coal and the floor elevations of any dolerite that intruded the seam. Coal seam intersections that were incomplete as a result of faulting or dolerite intrusion were assigned elevations for the missing floor elevations based on the thicknesses of the respective plies in the neighbouring boreholes. This was done for geometric purposes only so as not to unrealistically exclude resource tonnage that would otherwise be discounted.

A preliminary digital terrain model (“DTM”) was then created from the intersection points on the floor of the coal seam (base of B1 – “BOC”) as well as for the topographic surface. The coal seam floor was then interpreted for fault displacements and the DTM subdivided into smaller DTMs for the individual fault bounded blocks. Separate DTMs were created for the fault planes. The DTMs for each fault bounded block were expanded to beyond the fault and their intersection with the topographic DTM and then clipped by boundary lines incorporating the lines of intersection of each sub-seam DTM with the fault and topographic DTMs. Each expanded DTM was then checked to ensure that the triangulation corresponds with the next overlying DTM so that anomalies would not be created by cross-orientated triangle sides.

Once the seam in the whole resource block was represented by six sub-seam DTMs for each sub block, a preliminary block model was created with dimensions slightly larger than the full 3D extent of the main block. It was orientated parallel to strike and set horizontal to correspond to the mining blocks in the mine plans. A Somkhele block model comprises blocks measuring 10 m x 10 m (horizontally) x 2 m (vertically) with sub-blocking to 5 m x 5 m x 1 m and 2.5 m x 2.5 m x 0.5 m. The blocks were allocated up to 50 attributes including Ash, Moisture, Volatiles, Fixed Carbon, Calorific Value and Total Sulphur across a spread of wash densities for which reasonable yields were obtained. Phosphorus was determined on the composite fraction for a representative wash density that was usually 1.60 or 1.80. Additional attributes included apparent relative density (“ARD”) and size fraction distribution, determined after the sample has been crushed to -25 mm for wash yield analyses. In addition there were text attributes for seam sub-seam (B1, MBP, B2, TMP, B3), coal condition (*Good, Hi-Density, Burnt, Weathered*), and resource category (*Measured, Indicated, Inferred*).

The block model was then subdivided into sub-block models for each sub-seam by selecting those blocks that lie above the floor and beneath the roof DTMs, and populated with attribute values. The attribute populating procedure starts by compositing the cumulative wash analyses for each wash density following best fit principles across specified lengths. These lengths range from 100 cm in the B1, MBP, and B2 plies and 50 cm in the TMP and B3 sub-seam. These values were then used to assign values to each of the blocks using the inverse distance squared algorithm for specific search ellipses. The search ellipses were assigned equal x and y axes with lengths of 600 m to 800 m and a vertical axis in the order of 100 m. The ellipses were aligned parallel to strike and inclined in the plane of the average dip. The maximum vertical search distance was set at 100 m although for Mahujini it had to be set at 150 m to accommodate the displacements from faulting between the sub-blocks. The minimum number of informing samples was set to the minimum available composites in one borehole and the maximum number set to a value above the sum of samples in three boreholes. Default numeric values were set to -99 so that if they became incorporated into the final resource estimates they would generate absurd values indicating that the block model was incorrect. After each populating run an attribute was selected and the block model coloured according to that attribute as a visual check that the values had been inserted correctly and to highlight any default values that remained in the blocks.

Once all the wash attributes and ARD had been added to each of the sub-block models, sub-seam-specific boundaries were created for the different resource categories:

- Measured - within 175 m of a defining hole;
- Indicated - within 250m of a defining hole; and
- Inferred - all blocks outside the indicated boundary.

Boundary strings were generated by interpreting the distribution of burnt coal in each sub-seam due to both sills and dykes and these used to tag blocks within the boundaries as *Burnt*. Similarly, areas of *High-density* coal were tagged within interpreted boundaries between borehole intersections. Blocks were tagged as *Weathered* above the topographic DTM lowered by 15 m. After all the attributes in each sub-seam sub-block model were populated, the sub-block models were re-combined into one model for the whole resource block. The combined model was then used to estimate the resources in the block. Estimates were made for each sub-seam and for each resource category in each sub-seam along with the estimated ARD, excluding Burnt and Weathered blocks. The estimates were then checked by summing the proximate analyses values for which only values within the range of 99.9 to 100.1 were acceptable. Values outside of this range indicated an error in the data input that would be tracked back to source and corrected, and the resource re-estimated.

4.4.3 Resource Cut-off Parameters

[SR5.7 (B)]

Structural cut-offs

These are faults where the coal seam is displaced beyond the economic boundaries of the pit. Faults are interpreted from borehole information by placing a best fit, fairly straight line between “good” and “bad” boreholes. In the absence of better information the line will be placed half-way between “good” and “bad” intersections. The unmodified B Seam has a consistent true thickness of 11 m and thus a minimum thickness limit not practically useful at Somkhele, although has still been taken into consideration for SAMREC resource definition purposes.

Weathering cut-off

This is taken at 15 m depth below surface and all coal above this depth is excluded from the resource. In practice, when a new pit is started, much of this coal is passed through the plant as it does have some yield.

Quality cut-offs

- **Yield** - The coal quality that limits the resource is yield where it falls below 30% and this occurs with dolerite heat damage. Normally the heat damage is decisive and in proximity to a dolerite body the yield falls well below 30%; the effects are easily seen in the density logs. Heat damaged coal is excluded from the resources as "burnt" coal. The extent of heat damaged coal is determined by structural interpretation of dykes and sills. Dykes show an aligned distribution of burnt coal in the borehole intersections, with or without dolerite actually intersected, and sills show a persistent stratigraphic position between two or more boreholes. The extent of the sills is interpreted as being the midpoint between two adjacent boreholes, one showing the presence of the sill and the other not. The yield cut-off is applied at sub-seam level.
- **Volatile content** - The other quality that is of importance is volatile content, which must not exceed 9% in the product. Volatiles decrease with increasing rank from south to north, so only Area 1 has been of concern. Volatiles also increase with weathering so once the coal in the Area 1 pit was below the limit of weathering (± 15 m), the volatile content was below the cut-off value. No coal has been excluded from the resource on the volatile content.

The cut-off parameters as per Table 4-3 were used when estimating the resources for the various project areas.

Table 4-3: Resource Cut-off Parameters

Parameter	Cut-off Value	Comment
Weathering	15 m	All coal above 15 m is excluded from the resource estimates
Depth to seam roof	160 m	All coal below 160 m is excluded from the estimate for open pit resources
	350 m	All coal below 350 m is excluded from the estimate for underground resources
Seam thickness	0.5 m	The seam thickness averages 11 m thick, so this cut-off is not critical
Product Volatile Matter Content	≥ 9 %	Generally only of concern in the weathered material, which is excluded
Product Yield	≥ 30 %	Yield is negatively impacted by dolerite intrusions; areas are excluded where the coal is "burnt" by the dolerites; yield is applied at sub-seam level

4.5 Resource Estimation

[12.9 (h) (ix), SR4.2 (A)]]

The Coal Resources are inclusive of the Coal Reserves.

4.5.1 Emalahleni, Gwabalanda, KwaQubuka, KwaQubuka North, Luhlanga, Mahujini and Ophondweni

The coal resources for these areas were estimated by Mr. David Grant of AG&M, who is a Competent Person (SACNASP 401497/83) and reviewed and signed off by Mr. Sello Nzama (SACNASP 400034/10) and Mrs. Elizabeth de Klerk of SRK (SACNASP 400090/08), both of whom are Competent Persons.

Resource estimates were taken from the following reports:

- Somkhele Coal Resources and Coal Reserves Audit and Sign Off;
- Gwabalanda Coal Resource Sign Off and Mine Design Review;
- KwaQubuka North Coal Resources Sign Off and Mine Design Review;
- Mahujini Coal Resources Sign Off and Mine Design Review;

- Ophondweni Coal Resource Sign Off and Mine Design Review;
- Emalahleni Resource and Mine Design Review Report; and
- Petmin AIM Listing Document.

Note that resources for Luhlanga have been recently updated (October 2013) but the mine planning and reserve estimates have not yet been revised; this will lead to some difference in the figures. The SRK resource estimates as of 01 December 2013 together with the raw coal qualities on an air dry basis for the B Seam plies (i.e. B1, MBP, B2, TMP and B3) are detailed in Table 4-4 to Table 4-11. No coal qualities for either raw or product coal are available for KwaQubuka. Resources for Emalahleni have also been categorized as open pit or underground (Table 4-5).

The SRK resource estimates as of 01 December 2013 together with the product coal qualities on an air dry basis for the B Seam plies are detailed in Table 4-12 to Table 4-16.

Table 4-4: Emalahleni - SRK B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS	Geological Loss	MTIS	Average Raw Qualities (adb)					
						Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur
			(Mt)	(%)	(Mt)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
B3	Measured	1.60	1.57	5	1.49	23.58	30.10	5.90	62.10	1.80	1.36
TMP	Measured	2.11	2.00	5	1.90	6.38	70.20	5.40	20.00	1.70	0.49
B2	Measured	1.58	4.45	5	4.23	24.54	27.90	6.10	64.30	1.80	0.71
MBP	Measured	1.99	2.46	5	2.34	10.91	61.80	5.00	31.70	1.50	0.51
B1	Measured	1.60	4.75	5	4.52	23.03	30.89	5.65	61.54	1.92	0.65
B	**Subtotal Measured**	**1.72**	**15.23**	**5**	**14.48**	**19.38**	**40.09**	**5.67**	**52.13**	**1.78**	**0.70**
B3	Indicated	1.61	0.31	10	0.28	23.04	31.50	5.90	60.80	1.80	1.44
TMP	Indicated	2.15	0.28	10	0.25	4.32	76.60	5.30	17.10	1.00	0.43
B2	Indicated	1.54	0.50	10	0.45	25.72	25.00	6.20	67.40	1.40	0.61
MBP	Indicated	1.97	0.38	10	0.34	11.87	58.80	5.10	34.70	1.30	0.56
B1	Indicated	1.62	0.65	10	0.59	22.70	31.31	5.80	61.11	1.79	0.51
B	**Subtotal Indicated**	**1.73**	**2.12**	**10**	**1.91**	**19.09**	**40.76**	**5.72**	**52.00**	**1.51**	**0.67**
-	**Inferred**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
B	**Total**	**1.73**	**17.35**	**6**	**16.39**	**19.35**	**40.17**	**5.68**	**52.11**	**1.74**	**0.69**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Qualities and tonnages are average values for combined open pit and underground resources
7. Slight differences may arise due to rounding
8. Effective date 01 December 2013

Table 4-5: Emalahleni – SRK B Seam Open Pit and Underground Coal Resource Estimates (adb)

Mining Method	SAMREC Category	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)
Open Pit	Measured	9.58	5	9.10
	Indicated	0.79	10	0.71
Subtotal Open Pit		**10.37**		**9.81**
Underground	Measured	5.65	5	5.37
	Indicated	1.33	10	1.20
Subtotal Underground		**6.98**		**6.56**
TOTAL		**17.35**		**16.37**

1. GTIS = Gross Tonnes *In Situ*
2. MTIS = Mineable Tonnes *In Situ*
3. adb = air dry basis
4. Slight differences may arise due to rounding
5. Effective date 01 December 2013

Table 4-6: Gwabalanda - SRK B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)	Average Raw Qualities (adb) Calorific Value (MJ/kg)	Ash Content (%)	Volatile Matter (%)	Fixed Carbon (%)	Moisture Content (%)	Total Sulphur (%)
B3	Measured	1.88	0.31	5	0.29	20.54	37.51	4.34	54.10	4.05	0.55
TMP	Measured	2.18	0.47	5	0.45	20.70	37.14	4.40	54.25	4.21	0.49
B2	Measured	1.86	2.86	5	2.72	26.04	24.22	4.76	66.12	4.91	0.27
MBP	Measured	2.12	0.91	5	0.86	17.00	45.50	3.68	47.07	3.75	0.21
B1	Measured	1.85	1.38	5	1.31	27.66	20.24	3.58	70.45	5.73	0.22
B	**Subtotal Measured**	**1.92**	**5.93**	**5**	**5.63**	**24.32**	**28.28**	**4.27**	**62.64**	**4.82**	**0.28**
B3	Indicated	1.88	0.15	10	0.14	22.55	34.54	4.13	57.79	3.54	0.44
TMP	Indicated	2.18	0.20	10	0.18	20.91	35.86	4.23	55.98	3.93	0.36
B2	Indicated	-	0.00	10	0.00	-	-	-	-	-	-
MBP	Indicated	2.12	0.35	10	0.32	18.38	48.46	3.67	44.27	3.61	0.20
B1	Indicated	1.85	0.52	10	0.47	24.91	20.24	3.22	71.03	5.51	0.23
B	**Subtotal Indicated**	**1.99**	**1.22**	**10**	**1.10**	**22.09**	**32.65**	**3.63**	**59.26**	**4.46**	**0.27**
B3	Inferred	1.88	0.28	10	0.25	22.55	32.65	4.41	59.52	3.42	0.35
TMP	Inferred	2.18	0.25	10	0.23	20.91	36.79	3.87	55.81	3.53	0.33
B2	Inferred	1.86	0.46	10	0.41	26.15	23.95	4.62	66.16	5.26	0.18
MBP	Inferred	2.12	0.26	10	0.23	18.38	42.50	3.32	50.03	4.15	0.13
B1	Inferred	1.85	0.52	10	0.47	24.91	27.06	3.32	64.95	4.67	0.58
B	**Subtotal Inferred**	**1.94**	**1.77**	**10**	**1.59**	**23.33**	**30.78**	**3.91**	**60.92**	**4.39**	**0.34**
B	**Total**	**1.94**	**8.92**	**7**	**8.32**	**23.82**	**29.37**	**4.11**	**61.83**	**4.69**	**0.29**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-7: KwaQubuka – SRK B Seam Coal Resource Estimates (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS	Geological Loss	MTIS	Average Raw Qualities (adb)					
						Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur
			(Mt)	(%)	(Mt)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
B3	Measured	-	0.00	-	0.00						
TMP	Measured	-	0.00	-	0.00						
B2	Measured	-	0.00	-	0.00	*No measured resources*					
MBP	Measured	-	0.00	-	0.00						
B1	Measured	-	0.00	-	0.00						
B	**Subtotal Measured**	-	0.00	-	0.00						
B3	Indicated	1.75	0.43	10	0.39	21.68	34.82	4.70	57.09	3.29	1.20
TMP	Indicated	2.10	0.57	10	0.51	7.63	70.17	4.01	23.91	1.90	0.52
B2	Indicated	1.56	1.23	10	1.11	27.31	23.80	5.87	71.51	1.85	0.75
MBP	Indicated	2.04	0.81	10	0.73	8.77	66.05	4.86	27.50	1.68	0.39
B1	Indicated	1.57	1.57	10	1.41	24.38	28.26	5.74	64.52	1.57	0.63
B	**Subtotal Indicated**	**1.73**	**4.61**	**10**	**4.15**	**18.86**	**41.83**	**5.19**	**51.16**	**1.86**	**0.64**
B3	Inferred	-	0.00	-	0.00						
TMP	Inferred	-	0.00	-	0.00						
B2	Inferred	-	0.00	-	0.00	*No inferred resources*					
MBP	Inferred	-	0.00	-	0.00						
B1	Inferred	-	0.00	-	0.00						
B	**Subtotal Inferred**	-	0.00	-	0.00						
B	**Total**	**1.73**	**4.61**	**10**	**4.15**	**18.86**	**41.83**	**5.19**	**51.16**	**1.86**	**0.64**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-8: KwaQubuka North - SRK B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS	Geological Loss	MTIS	Average Raw Qualities (adb)					
						Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur
			(Mt)	(%)	(Mt)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
B3	Measured	1.53	0.33	5	0.32	18.04	39.73	7.66	50.84	1.77	0.99
TMP	Measured	2.20	0.81	5	0.77	5.71	73.09	5.52	18.84	2.55	0.65
B2	Measured	1.65	1.26	5	1.20	19.38	35.32	5.89	56.14	2.66	0.57
MBP	Measured	2.08	0.23	5	0.22	7.04	72.23	4.91	20.87	2.07	0.36
B1	Measured	1.68	1.01	5	0.96	21.80	30.17	5.59	60.99	3.24	0.65
B	**Subtotal Measured**	**1.80**	**3.65**	**5**	**3.47**	**16.10**	**45.05**	**5.82**	**46.45**	**2.68**	**0.63**
B3	Indicated	1.54	0.05	10	0.04	18.54	38.69	7.59	51.98	1.74	1.01
TMP	Indicated	2.21	0.09	10	0.09	5.99	74.35	5.13	18.07	2.44	0.64
B2	Indicated	1.64	0.12	10	0.11	21.93	30.81	5.55	60.82	2.83	0.57
MBP	Indicated	2.08	0.06	10	0.05	7.57	69.92	4.93	23.11	2.12	0.43
B1	Indicated	1.64	0.40	10	0.36	21.98	30.71	6.18	60.12	2.98	0.74
B	**Subtotal Indicated**	**1.74**	**0.72**	**10**	**0.65**	**18.44**	**40.27**	**5.93**	**51.08**	**2.73**	**0.69**
B3	Inferred	1.55	0.29	15	0.25	21.01	34.48	7.44	56.42	1.66	1.04
TMP	Inferred	2.23	0.61	15	0.52	6.01	74.50	5.08	18.01	2.41	0.64
B2	Inferred	1.64	0.67	15	0.57	22.23	30.06	5.53	61.58	2.83	0.57
MBP	Inferred	2.27	0.39	15	0.33	6.27	75.57	4.90	17.62	2.01	0.24
B1	Inferred	1.63	0.32	15	0.27	22.03	30.88	6.36	59.86	2.90	0.77
B	**Subtotal Inferred**	**1.89**	**2.28**	**15**	**1.94**	**15.00**	**50.34**	**5.66**	**41.57**	**2.44**	**0.62**
B	**Total**	**1.82**	**6.65**	**9**	**6.06**	**15.98**	**46.34**	**5.78**	**45.28**	**2.60**	**0.64**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-9: Luhlanga - SRK B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)	Average Raw Qualities (adb) Calorific Value (MJ/kg)	Ash Content (%)	Volatile Matter (%)	Fixed Carbon (%)	Moisture Conte9t (%)	Total Sulphur (%)
B3	Measured	1.62	1.53	5	1.45	21.89	33.35	7.28	57.33	2.04	2.04
TMP	Measured	1.91	1.57	5	1.49	10.40	61.87	6.33	30.22	1.58	0.68
B2	Measured	1.55	3.90	5	3.70	23.68	30.04	7.09	61.35	1.52	0.60
MBP	Measured	1.77	1.25	5	1.19	16.64	46.81	6.23	45.48	1.48	0.51
B1	Measured	1.58	3.64	5	3.45	23.94	29.29	7.03	62.09	1.59	0.83
B	**Subtotal Measured**	**1.64**	**11.89**	**5**	**11.28**	**21.04**	**36.20**	**6.91**	**55.28**	**1.61**	**0.86**
B3	Indicated	1.63	0.41	10	0.36	21.88	32.86	7.20	57.69	2.25	2.27
TMP	Indicated	1.90	0.39	10	0.35	10.93	60.46	6.28	31.67	1.59	0.64
B2	Indicated	1.62	0.78	10	0.70	20.73	37.40	6.68	54.22	1.70	0.51
MBP	Indicated	1.75	0.33	10	0.30	17.58	44.20	6.09	48.16	1.55	0.55
B1	Indicated	1.55	0.83	10	0.75	24.48	27.89	7.08	63.42	1.61	0.69
B	**Subtotal Indicated**	**1.70**	**2.74**	**10**	**2.46**	**18.42**	**42.34**	**6.61**	**49.28**	**1.77**	**0.92**
B3	Inferred	1.55	1.18	15	1.00	24.63	26.84	7.41	64.00	1.75	1.75
TMP	Inferred	1.94	0.87	15	0.74	9.20	64.38	6.34	27.67	1.61	0.47
B2	Inferred	1.53	2.26	15	1.92	25.13	26.59	7.03	64.97	1.41	0.47
MBP	Inferred	1.79	0.70	15	0.60	15.36	49.89	6.20	42.28	1.63	0.52
B1	Inferred	1.54	2.76	15	2.34	24.78	27.18	6.91	64.38	1.53	0.47
B	**Subtotal Inferred**	**1.61**	**7.77**	**15**	**6.60**	**22.26**	**33.18**	**6.89**	**58.38**	**1.55**	**0.67**
B	**Total**	**1.63**	**22.40**	**9**	**20.34**	**21.25**	**35.65**	**6.87**	**55.87**	**1.60**	**0.79**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Note that these estimates and qualities reflect the most recent exploration work, reviewed in October 2013. Reserve estimates have not yet been updated.
8. Effective date 01 December 2013

Table 4-10: Mahujini - SRK B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)	Average Raw Qualities (adb) Calorific Value (MJ/kg)	Ash Content (%)	Volatile Matter (%)	Fixed Carbon (%)	Moisture Content (%)	Total Sulphur (%)
B3	Measured	1.71	0.62	5	0.59	22.06	27.06	6.10	63.38	3.46	0.73
TMP	Measured	2.13	0.63	5	0.60	17.95	54.02	6.14	37.28	2.56	0.64
B2	Measured	1.63	1.47	5	1.39	21.63	21.63	6.11	68.91	3.35	0.60
MBP	Measured	2.03	1.15	5	1.10	21.15	38.16	5.87	53.15	2.82	0.57
B1	Measured	1.69	2.03	5	1.93	27.83	27.83	6.02	62.94	3.21	0.54
B	**Subtotal Measured**	**1.79**	**5.90**	**5**	**5.60**	**23.32**	**31.03**	**6.03**	**59.81**	**3.13**	**0.59**
B3	Indicated	1.67	0.13	10	0.12	23.68	25.58	6.22	65.27	2.93	0.87
TMP	Indicated	2.12	0.26	10	0.24	18.52	49.83	6.17	41.52	2.48	0.71
B2	Indicated	1.63	0.36	10	0.32	25.00	21.11	6.18	69.63	3.08	0.66
MBP	Indicated	2.03	0.32	10	0.28	22.25	34.31	5.91	56.99	2.79	0.60
B1	Indicated	1.68	0.21	10	0.19	23.55	25.36	5.95	65.58	3.11	0.54
B	**Subtotal Indicated**	**1.84**	**1.28**	**10**	**1.15**	**22.62**	**31.41**	**6.08**	**59.63**	**2.88**	**0.66**
B3	Inferred	1.67	0.03	15	0.03	24.06	24.46	6.09	66.42	3.03	0.84
TMP	Inferred	2.15	0.33	15	0.28	15.27	61.90	5.97	30.01	2.12	0.53
B2	Inferred	1.61	0.09	15	0.08	24.67	21.38	6.15	69.20	3.27	0.61
MBP	Inferred	2.04	0.10	15	0.09	20.19	42.28	5.88	49.06	2.78	0.52
B1	Inferred	1.73	0.15	15	0.13	21.64	29.29	5.98	61.20	3.53	0.47
B	**Subtotal Inferred**	**1.95**	**0.71**	**15**	**0.60**	**18.97**	**45.12**	**5.99**	**46.19**	**2.71**	**0.54**
B	**Total**	**1.81**	**7.88**	**7**	**7.35**	**22.82**	**32.35**	**6.04**	**57.56**	**3.05**	**0.60**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-11: Ophondweni - SRK B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Sub-seam	SAMREC Category	Average ARD	GTIS	Geological Loss	MTIS	Average Raw Qualities (adb)					
						Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur
			(Mt)	(%)	(Mt)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
B3	Measured	2.13	0.47	5	0.45	10.75	60.1	3.7	32.7	3.5	0.39
TMP	Measured	2.23	0.52	5	0.50	5.25	75.6	3.6	18	2.9	0.3
B2	Measured	1.86	1.43	5	1.36	23.76	26.8	3.6	64.3	5.4	0.38
MBP	Measured	2.13	0.72	5	0.68	10.59	59.7	4.2	32.9	3.3	0.24
B1	Measured	1.86	1.91	5	1.82	20.79	32.3	3.4	59.7	4.7	0.38
B	**Subtotal Measured**	**1.96**	**5.05**	**5**	**4.80**	**17.64**	**41.70**	**3.62**	**50.37**	**4.40**	**0.35**
B3	Indicated	2.13	0.09	10	0.08	9.61	62.8	3.9	29.9	3.5	0.33
TMP	Indicated	2.23	0.10	10	0.09	5.16	75.5	3.7	17.4	3.4	0.28
B2	Indicated	1.86	0.21	10	0.19	23.37	26.9	3.4	64.1	5.6	0.24
MBP	Indicated	2.13	0.12	10	0.11	10.34	60	4.2	32.6	3.2	0.23
B1	Indicated	1.86	0.29	10	0.26	19.04	35.9	3.4	56.4	4.4	0.31
B	**Subtotal Indicated**	**1.98**	**0.80**	**10**	**0.72**	**16.13**	**44.98**	**3.61**	**47.14**	**4.31**	**0.28**
B3	Inferred	2.13	0.04	10	0.03	8.63	68.5	3	25.9	2.6	0.34
TMP	Inferred	2.23	0.06	10	0.05	7.19	66.5	4.5	24.4	4.5	0.43
B2	Inferred	1.86	0.08	10	0.07	22.96	26.6	3	65.1	5.3	0.18
MBP	Inferred	2.13	0.10	10	0.09	9.81	61	4.2	31.9	3	0.24
B1	Inferred	1.86	0.20	10	0.18	18.02	37.1	3.3	55.3	4.3	0.25
B	**Subtotal Inferred**	**1.98**	**0.48**	**10**	**0.43**	**15.08**	**46.39**	**3.56**	**45.96**	**4.10**	**0.27**
B	**Total**	**1.97**	**6.33**	**6**	**5.95**	**17.26**	**42.47**	**3.61**	**49.63**	**4.37**	**0.34**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-12: Gwabalanda - SRK B Seam Coal Resource Estimates and Product Coal Qualities (adb)

Seam	SAMREC Category	MTIS	Average Product Qualities (adb)							Theoretical Yield
			Product Density	Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur	
		(Mt)	(t/m^3)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)	(%)
B3	Measured	0.29	1.80	27.58	20.33	5.28	69.67	4.73	0.28	11.26
TMP	Measured	0.45	1.80	27.52	20.49	5.36	69.24	4.92	0.29	10.43
B2	Measured	2.71	1.80	28.64	17.89	5.11	71.70	5.30	0.23	47.32
MBP	Measured	0.86	1.80	26.90	22.41	4.62	67.68	5.28	0.17	8.48
B1	Measured	1.31	1.80	29.58	15.48	3.96	74.70	5.86	0.16	42.85
B	**Subtotal Measured**	**5.63**	**1.80**	**28.45**	**18.36**	**4.79**	**71.49**	**5.36**	**0.21**	**35.53**
B3	Indicated	0.14	1.80	28.20	18.88	4.92	72.10	4.09	0.27	19.29
TMP	Indicated	0.18	1.80	27.84	19.79	5.09	70.49	4.62	0.31	18.09
B2	Indicated	-	1.80	-	-	-	-	-	-	-
MBP	Indicated	0.31	1.80	26.42	23.58	4.53	66.58	5.31	0.15	8.98
B1	Indicated	0.47	1.80	29.63	15.41	3.55	75.39	5.66	0.14	44.18
B	**Subtotal Indicated**	**1.11**	**1.80**	**28.01**	**18.74**	**4.22**	**71.07**	**5.15**	**0.19**	**26.53**
B3	Inferred	0.25	1.80	28.37	18.45	5.17	72.45	3.93	0.23	21.13
TMP	Inferred	0.22	1.80	28.00	19.48	4.58	71.71	4.22	0.37	30.81
B2	Inferred	0.41	1.80	28.76	17.67	4.92	71.77	5.64	0.15	39.13
MBP	Inferred	0.23	1.80	26.21	24.07	3.98	66.48	5.47	0.10	8.08
B1	Inferred	0.47	1.80	29.03	16.89	3.70	74.33	5.08	0.17	48.80
B	**Subtotal Inferred**	**1.59**	**1.80**	**28.30**	**18.75**	**4.41**	**71.86**	**4.98**	**0.19**	**33.43**
B	**Total**	**8.33**	**1.80**	**28.36**	**18.49**	**4.64**	**71.51**	**5.26**	**0.20**	**33.87**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-13: KwaQubuka North - SRK B Seam Coal Resource Estimates and Product Coal Qualities (adb)

Seam	SAMREC Category	MTIS	Average Product Qualities (adb)							Theoretical Yield
			Product Density	Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur	
		(Mt)	(t/m^3)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)	(%)
B3	Measured	0.32	1.65	20.94	35.53	7.60	55.20	1.67	0.87	76.49
TMP	Measured	0.77	1.65	23.64	28.66	6.65	62.64	2.05	1.03	10.64
B2	Measured	1.20	1.65	23.39	27.80	6.16	63.49	2.56	0.58	56.98
MBP	Measured	0.22	1.65	25.48	23.70	4.50	69.70	2.10	0.62	3.90
B1	Measured	0.96	1.65	26.88	18.13	5.45	73.46	2.96	0.66	38.29
B	**Subtotal Measured**	**3.47**	**1.65**	**24.32**	**25.76**	**6.10**	**65.70**	**2.45**	**0.73**	**39.90**
B3	Indicated	0.04	1.65	21.39	34.44	7.53	56.39	1.64	0.87	76.36
TMP	Indicated	0.09	1.65	24.77	25.83	6.52	65.64	2.01	1.06	8.17
B2	Indicated	0.11	1.65	25.45	22.41	5.93	68.94	2.71	0.57	52.50
MBP	Indicated	0.05	1.65	25.48	23.70	4.50	69.70	2.10	0.62	3.90
B1	Indicated	0.36	1.65	26.32	20.01	5.89	71.28	2.82	0.72	48.81
B	**Subtotal Indicated**	**0.65**	**1.65**	**25.57**	**22.45**	**5.97**	**69.02**	**2.56**	**0.74**	**42.18**
B3	Inferred	0.25	1.65	22.77	30.95	7.29	60.18	1.58	0.83	78.01
TMP	Inferred	0.52	1.65	25.08	25.05	6.44	66.51	2.01	1.05	6.73
B2	Inferred	0.57	1.65	25.75	21.65	5.93	69.70	2.72	0.57	51.78
MBP	Inferred	0.33	1.65	25.48	23.70	4.50	69.70	2.10	0.62	3.90
B1	Inferred	0.27	1.65	26.16	20.56	6.02	70.64	2.78	0.74	51.82
B	**Subtotal Inferred**	**1.94**	**1.65**	**25.20**	**23.95**	**6.01**	**67.75**	**2.29**	**0.76**	**35.00**
B	**Total**	**6.06**	**1.65**	**24.76**	**24.78**	**6.05**	**66.76**	**2.40**	**0.74**	**38.58**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-14: Luhlanga - SRK B Seam Coal Resource Estimates and Product Coal Qualities (adb)

Seam	SAMREC Category	MTIS	Average Product Qualities (adb)							Theoretical Yield
			Product Density	Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur	
		(Mt)	(t/m^3)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)	(%)
B3	Measured	1.45	1.60	28.75	17.59	7.21	73.62	1.58	0.85	59.20
TMP	Measured	1.49	1.60	28.05	18.76	7.50	72.41	1.34	1.08	27.16
B2	Measured	3.70	1.60	29.40	15.94	7.21	75.40	1.45	0.58	71.13
MBP	Measured	1.19	1.60	28.81	17.55	6.66	74.35	1.44	0.65	41.10
B1	Measured	3.45	1.60	29.12	16.56	6.61	75.13	1.71	0.56	66.41
B	**Subtotal Measured**	**11.29**	**1.60**	**28.99**	**16.88**	**7.01**	**74.58**	**1.53**	**0.68**	**59.19**
B3	Indicated	0.36	1.60	28.89	17.26	7.26	73.90	1.59	0.86	64.31
TMP	Indicated	0.35	1.60	27.79	19.01	7.47	72.18	1.34	1.02	28.87
B2	Indicated	0.70	1.60	29.57	15.66	7.28	75.59	1.48	0.61	71.35
MBP	Indicated	0.30	1.60	28.54	18.07	6.42	74.02	1.49	0.68	41.37
B1	Indicated	0.75	1.60	29.23	16.22	6.68	75.38	1.74	0.56	68.74
B	**Subtotal Indicated**	**2.46**	**1.60**	**28.99**	**16.84**	**7.02**	**74.60**	**1.56**	**0.70**	**59.82**
B3	Inferred	1.00	1.60	28.44	18.23	7.29	73.02	1.47	0.89	66.21
TMP	Inferred	0.74	1.60	27.81	19.16	7.46	72.02	1.37	1.03	26.07
B2	Inferred	1.92	1.60	29.49	15.78	7.01	75.83	1.36	0.48	74.42
MBP	Inferred	0.60	1.60	28.03	19.72	6.59	72.79	1.56	0.67	42.75
B1	Inferred	2.34	1.60	29.14	16.54	6.11	75.22	1.64	0.49	70.27
B	**Subtotal Inferred**	**6.60**	**1.60**	**28.89**	**17.16**	**6.75**	**74.48**	**1.49**	**0.62**	**63.41**
	Total	**20.35**	**1.60**	**28.95**	**16.97**	**6.92**	**74.55**	**1.52**	**0.66**	**60.73**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-15: Mahujini - SRK B Seam Coal Resource Estimates and Product Coal Qualities (adb)

Seam	SAMREC Category	MTIS (Mt)	Average Product Qualities (adb) Product Density (t/m^3)	Calorific Value (MJ/kg)	Ash Content (%)	Volatile Matter (%)	Fixed Carbon (%)	Moisture Content (%)	Total Sulphur (%)	Theoretical Yield (%)
B3	Measured	0.59	1.80	26.04	17.29	5.91	73.17	3.64	0.54	62.71
TMP	Measured	0.60	1.80	24.39	20.71	6.13	69.27	3.89	0.67	26.66
B2	Measured	1.39	1.80	26.60	15.87	5.90	74.80	3.43	0.56	71.17
MBP	Measured	1.10	1.80	26.87	16.99	5.49	73.99	3.53	0.52	25.25
B1	Measured	1.93	1.80	26.20	17.28	5.57	73.51	3.64	0.47	62.11
B	**Subtotal Measured**	**5.60**	**1.80**	**26.22**	**17.24**	**5.73**	**73.44**	**3.59**	**0.53**	**53.42**
B3	Indicated	0.12	1.80	26.64	17.57	5.98	73.37	3.08	0.70	70.97
TMP	Indicated	0.24	1.80	24.49	22.56	6.52	67.77	3.14	0.84	26.65
B2	Indicated	0.32	1.80	26.99	15.83	5.96	75.06	3.15	0.61	74.98
MBP	Indicated	0.28	1.80	27.16	16.58	5.60	74.44	3.38	0.55	25.38
B1	Indicated	0.19	1.80	26.62	16.87	5.56	74.12	3.46	0.48	65.92
B	**Subtotal Indicated**	**1.15**	**1.80**	**26.42**	**17.74**	**5.92**	**73.09**	**3.25**	**0.63**	**50.89**
B3	Inferred	0.03	1.80	26.69	17.32	5.87	73.64	3.17	0.68	71.18
TMP	Inferred	0.28	1.80	22.90	28.43	6.59	62.60	2.38	0.82	20.71
B2	Inferred	0.08	1.80	26.70	15.95	5.95	74.76	3.34	0.57	72.85
MBP	Inferred	0.09	1.80	26.46	17.94	5.47	73.04	3.55	0.48	25.67
B1	Inferred	0.13	1.80	25.86	17.55	5.44	72.88	4.14	0.41	59.73
B	**Subtotal Inferred**	**0.60**	**1.80**	**24.72**	**22.45**	**6.07**	**68.40**	**3.08**	**0.64**	**38.80**
	Total	**7.35**	**1.80**	**26.12**	**17.79**	**5.79**	**72.93**	**3.49**	**0.56**	**51.70**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

Table 4-16: Ophondweni - SRK B Seam Coal Resource Estimates and Product Coal Qualities (adb)

Seam	SAMREC Category	MTIS (Mt)	Average Product Qualities (adb) Product Density (t/m^3)	Calorific Value (MJ/kg)	Ash Content (%)	Volatile Matter (%)	Fixed Carbon (%)	Moisture Content (%)	Total Sulphur (%)	Theoretical Yield (%)
B3	Measured	0.48	1.85	23.70	21.01	3.91	68.62	6.51	0.24	23.33
TMP	Measured	0.54	1.85	23.86	19.90	4.40	69.36	6.34	0.32	16.42
B2	Measured	1.38	1.85	26.83	16.40	4.16	73.88	5.56	0.19	44.91
MBP	Measured	0.68	1.85	25.16	18.07	3.47	72.28	6.22	0.19	20.52
B1	Measured	1.82	1.85	25.94	17.67	3.05	73.74	5.52	0.25	52.21
B	**Subtotal Measured**	**4.91**	**1.85**	**25.63**	**17.94**	**3.65**	**72.59**	**5.82**	**0.23**	**38.95**
B3	Indicated	0.05	1.85	23.52	21.25	3.47	68.99	6.34	0.28	24.42
TMP	Indicated	0.06	1.85	21.73	23.34	4.57	63.86	8.15	0.28	17.40
B2	Indicated	0.14	1.85	27.08	15.47	3.16	75.47	5.93	0.15	29.08
MBP	Indicated	0.09	1.85	26.15	17.46	3.49	73.35	5.78	0.18	18.44
B1	Indicated	0.25	1.85	25.57	17.49	2.81	74.29	5.37	0.23	41.24
B	**Subtotal Indicated**	**0.59**	**1.85**	**25.43**	**17.95**	**3.24**	**72.86**	**5.95**	**0.21**	**31.01**
B3	Inferred	0.01	1.85	23.85	21.21	3.84	69.46	5.49	0.32	24.36
TMP	Inferred	0.01	1.85	22.31	22.60	4.55	65.23	7.62	0.29	17.55
B2	Inferred	0.02	1.85	26.45	16.81	3.53	73.63	6.08	0.18	36.55
MBP	Inferred	0.02	1.85	26.29	17.50	3.33	73.57	5.69	0.19	18.36
B1	Inferred	0.04	1.85	25.23	17.49	2.75	74.39	5.37	0.23	37.38
B	**Subtotal Inferred**	**0.11**	**1.85**	**25.19**	**18.33**	**3.34**	**72.49**	**5.87**	**0.23**	**29.91**
B	**Total**	**5.61**	**1.85**	**25.6**	**17.95**	**3.60**	**72.62**	**5.83**	**0.23**	**37.93**

1. ARD = Apparent Relative Density
2. GTIS = Gross Tonnes *In Situ*
3. MTIS = Mineable Tonnes *In Situ*
4. adb = air dry basis
5. Average ARDs and qualities have been composited for subtotals, weighted by the GTIS
6. Slight differences may arise due to rounding
7. Effective date 01 December 2013

4.5.2 Areas 1, 2 and 3

Area 2 has been mined out and the area is presently being backfilled; Area 1 forms the majority of the current operation whilst Area 3 has yet to be mined. SRK has used publicly available resource estimates for Areas 1 and 3. These are quoted in Table 4-17 to Table 4-20. Note that these estimates are for the coal plies only, and resources for the intervening partings have not been reported.

Table 4-17: Coal Resource Estimates for Area 1 (adb)

SAMREC Category	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)
Measured	10.911	10	9.820
Indicated	16.568	20	13.254
Inferred	8.596	50	4.298
Total	**36.075**	**24**	**27.372**

Table 4-18: Coal Qualities for Area 1 (adb)

Average Product Quality (adb)	Product Density (t/m^3)	SAMREC Category			Average
		Measured	Indicated	Inferred	
Theoretical yield (%)		75.56	72.2	71.0	72.33
Volatiles (adb) (%)		8.74	9.1	9.2	9.1
Ash (adb) (%)		15.86	16.8	16.9	16.54
CV (MJ/kg)	1.6	29.2	29.2	29.1	29.2
Sulphur (%)		0.67	0.66	0.64	0.66
Phosphorus (ppm)		140	25\25	225	199
Inherent Moisture (%)		1.8	1.8	1.9	1.83

Table 4-19: Coal Resource Estimates for Area 3 (adb)

SAMREC Category	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)
Measured	Nil	-	-
Indicated	Nil	-	-
Inferred	42.847	50	21.424
Total	**42.847**	**50**	**21.424**

Table 4-20: Coal Qualities for Area 3 (adb)

Average Product Quality (adb)	Product Density (t/m^3)	SAMREC Category			Average
		Measured	Indicated	Inferred	
Theoretical yield (%)				68.6	68.6
Volatiles (adb) (%)				7.0	7.0
Ash (adb) (%)				16.1	16.1
CV (MJ/kg)	1.6			29.1	29.1
Sulphur (%)				-	-
Phosphorus (ppm)				-	-
Inherent Moisture (%)				1.45	1.45

The following notes apply to the tables:

1. Resources are classified as anthracite according to the International Standard (ISO 11760) for the classification of coal, following review of the borehole sampling database and coal quality plans.
2. The tables include only those resources for the B1, B2 and B3 coal horizons within the B Seam and not the inter-seam partings. A resource cut-off of 1.5 m is applied to the individual horizons as well as a theoretical yield of 50% at a cut point RD of 1.6.
3. Geological loss includes an estimate of expected resource losses within the resource area due to geological disturbances such as dykes and faulting that cannot be accounted for given current exploration methods and level of confidence in the resource.
4. GTIS = Gross Tonnes *In Situ*
5. MTIS = Mineable Tonnes *In Situ*
6. Insufficient data for reliable estimate for sulphur and phosphorus for Area 3.

4.5.3 Summary of SRK Coal Resources

[SR8 (B) (i) (ii)]

The SRK Coal Resource estimates as of 01 December 2013, together with the raw coal qualities on an air dry basis, for the B Seam as a whole are shown in Table 4-21. The SRK Coal Resource estimates as of 01 December 2013, together with the product coal qualities on an air dry basis, for the B Seam as a whole are shown in Table 4-22.

4.5.4 Resources Available for Conversion to Reserves

Only Measured and Indicated Coal Resources are available for conversion to Proved and Probable Coal Reserves, respectively. Table 4-23 shows those resources that are available for conversion to reserves. Note, however, that as the various mining criteria have not yet been applied, these estimates reflect the upper limit of available resources and not the actual resources that will be converted to reserves.

Table 4-21: SRK Average B Seam Coal Resource Estimates and Raw Coal Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	Average ARD	GTIS	Geological Loss	MTIS	Average Raw Qualities (air dried)					
								Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur
					(Mt)	(%)	(Mt)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)
Emalahleni	Measured	OP & UG	B	1.72	15.23	5	14.47	19.38	40.09	5.67	52.13	1.78	0.70
Gwabalanda	Measured	OP	B	1.92	5.93	5	5.63	24.32	28.28	4.27	62.64	4.82	0.28
KwaQubuka	Measured	OP	B	*No measured resources*									
KwaQubuka North	Measured	OP	B	1.80	3.65	5	3.47	16.10	45.05	5.82	46.45	2.68	0.63
Luhlanga	Measured	OP	B	1.64	11.88	5	11.29	21.04	36.20	6.91	55.28	1.61	0.86
Mahujini	Measured	OP	B	1.79	5.90	5	5.60	23.32	31.03	6.03	59.81	3.13	0.59
Ophondweni	Measured	OP	B	1.96	5.05	5	4.80	17.64	41.70	3.62	50.37	4.40	0.35
Subtotal	**Measured**	**OP & UG**	**B**	**1.77**	**47.64**	**5**	**45.26**	**20.46**	**37.08**	**5.64**	**54.55**	**2.63**	**0.63**
Emalahleni	Indicated	OP & UG	B	1.73	2.12	10	1.91	19.09	40.76	5.72	52.00	1.51	0.67
Gwabalanda	Indicated	OP	B	1.99	1.22	10	1.10	22.09	32.65	3.63	59.26	4.46	0.27
KwaQubuka	Indicated	OP	B	1.73	4.61	10	4.15	18.86	41.83	5.19	51.16	1.86	0.64
KwaQubuka North	Indicated	OP	B	1.74	0.72	10	0.65	18.44	40.27	5.93	51.08	2.73	0.69
Luhlanga	Indicated	OP	B	1.70	1.90	10	1.71	18.42	42.34	6.61	49.28	1.77	0.92
Mahujini	Indicated	OP	B	1.84	1.28	10	1.15	22.62	31.41	6.08	59.63	2.88	0.66
Ophondweni	Indicated	OP	B	1.98	0.66	10	0.59	16.13	44.98	3.61	47.14	4.31	0.28
Subtotal	**Indicated**	**OP & UG**	**B**	**1.78**	**12.52**	**10**	**11.26**	**19.36**	**39.84**	**5.39**	**52.45**	**2.32**	**0.64**
Emalahleni	Inferred	OP & UG	B	*No inferred resources*									
Gwabalanda	Inferred	OP	B	1.94	1.77	10	1.59	23.33	30.78	3.91	60.92	4.39	0.34
KwaQubuka	Inferred	OP	B	*No inferred resources*									
KwaQubuka North	Inferred	OP	B	1.89	2.28	15	1.94	15.00	50.34	5.66	41.57	2.44	0.62
Luhlanga	Inferred	OP	B	1.61	7.77	15	6.60	22.26	33.18	6.89	58.38	1.55	0.67
Mahujini	Inferred	OP	B	1.95	0.71	15	0.60	18.97	45.12	5.99	46.19	2.71	0.54
Ophondweni	Inferred	OP	B	1.98	0.12	10	0.11	15.08	46.39	3.56	45.96	4.10	0.27
Subtotal	**Inferred**	**OP**	**B**	**1.73**	**12.64**	**14**	**10.84**	**20.85**	**36.73**	**6.17**	**54.91**	**2.19**	**0.60**
TOTAL		**OP & UG**	**B**	**1.76**	**72.80**	**7**	**67.36**	**20.34**	**37.49**	**5.69**	**54.25**	**2.50**	**0.63**

OP = Open Pit UG = Underground ARD = Apparent Relative Density GTIS = Gross Tonnes *In Situ* MTIS = Mineable Tonnes *In Situ*
Average ARDs and qualities have been weighted by the GTIS Emalahleni qualities cannot be divided into separate OP and UG categories adb = air dry basis
Slight differences may arise due to rounding Effective date 01 December 2013

Table 4-22:SRK Average B Seam Coal Resources and Product Coal Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	GTIS	Geological Loss	MTIS	Average Raw ARD	Average Product Qualities (air dried)							Theoretical Yield
								Product Density	Calorific Value	Ash Content	Volatile Matter	Fixed Carbon	Moisture Content	Total Sulphur	
				(Mt)	(%)	(Mt)		(t/m^3)	(MJ/kg)	(%)	(%)	(%)	(%)	(%)	(%)
Emalahleni	Measured	OP & UG	B	15.23	5	14.47	1.72	1.6	28.5	16.3	6.2	75.01	2.4	0.7	43.4
Gwabalanda	Measured	OP	B	5.93	5	5.63	1.92	1.8	28.45	18.36	4.79	71.49	5.36	0.21	35.53
KwaQubuka	Measured	OP	B	*No measured resources*											
KwaQubuka North	Measured	OP	B	3.65	5	3.47	1.80	1.65	24.32	25.76	6.1	65.7	2.45	0.73	39.9
Luhlanga	Measured	OP	B	11.88	5	11.29	1.64	1.6	28.99	16.88	7.01	74.58	1.53	0.68	59.19
Mahujni	Measured	OP	B	5.90	5	5.60	1.79	1.8	26.22	17.24	5.73	73.44	3.59	0.53	53.42
Ophondweni	Measured	OP	B	5.05	5	4.80	1.97	1.85	25.63	17.94	3.65	72.59	5.82	0.23	38.95
Subtotal	**Measured**	**OP & UG**	**B**	**47.64**	**5**	**45.26**	**1.79**	**1.68**	**27.71**	**17.72**	**5.89**	**73.30**	**3.06**	**0.57**	**46.86**
Emalahleni	Indicated	OP & UG	B	2.12	10	1.91	1.73	1.6	28.5	16.3	6.2	75.01	2.4	0.7	43.4
Gwabalanda	Indicated	OP	B	1.22	10	1.10	1.97	1.8	28.01	18.74	4.22	71.07	5.15	0.19	26.53
KwaQubuka	Indicated	OP	B	4.61	10	4.15	1.73	1.6	29.14	16.1	5.6	76.5	1.8	0.7	48
KwaQubuka North	Indicated	OP	B	0.72	10	0.65	1.74	1.65	25.57	22.45	5.97	69.02	2.56	0.74	42.18
Luhlanga	Indicated	OP	B	1.90	10	1.71	1.66	1.6	28.99	16.84	7.02	74.6	1.56	0.7	59.82
Mahujni	Indicated	OP	B	1.28	10	1.15	1.84	1.8	26.42	17.74	5.92	73.09	3.25	0.63	50.89
Ophondweni	Indicated	OP	B	0.66	10	0.59	1.96	1.85	25.43	17.95	3.24	72.86	5.95	0.21	31.01
Subtotal	**Indicated**	**OP & UG**	**B**	**12.51**	**10**	**11.26**	**1.78**	**1.66**	**28.22**	**17.14**	**5.71**	**74.46**	**2.60**	**0.62**	**45.99**
Emalahleni	Inferred	OP & UG	B	*No inferred resources*											
Gwabalanda	Inferred	OP	B	1.77	10	1.59	1.94	1.8	28.3	18.75	4.41	71.86	4.98	0.19	33.43
KwaQubuka	Inferred	OP	B	*No inferred resources*											
KwaQubuka North	Inferred	OP	B	2.28	15	1.94	1.89	1.65	25.2	23.95	6.01	67.75	2.29	0.76	35
Luhlanga	Inferred	OP	B	7.77	15	6.60	1.61	1.6	28.89	17.16	6.75	74.48	1.49	0.62	63.41
Mahujni	Inferred	OP	B	0.71	15	0.60	1.95	1.8	24.72	22.45	6.07	68.4	3.08	0.64	38.8
Ophondweni	Inferred	OP	B	0.12	10	0.11	1.98	1.85	25.19	18.33	3.34	72.49	5.87	0.23	29.91
Subtotal	**Inferred**	**OP & UG**	**B**	**12.64**	**14**	**10.84**	**1.73**	**1.65**	**27.87**	**18.91**	**6.20**	**72.53**	**2.28**	**0.58**	**52.23**
Total		**OP & UG**	**B**	**72.79**	**7**	**67.36**	**1.77**	**1.67**	**27.82**	**17.81**	**5.91**	**73.37**	**2.86**	**0.58**	**47.58**

OP = Open Pit UG = Underground ARD = Apparent Relative Density GTIS = Gross Tonnes *In Situ* MTIS = Mineable Tonnes *In Situ* adb = air dry basis
Average ARDs and qualities have been weighted by the GTIS Slight differences may arise due to rounding Effective date 01 December 2013

Table 4-23: Coal Resources Available for Conversion to Coal Reserves (adb)

Area	SAMREC Category	Mining Method	Seam	Average ARD	GTIS (Mt)	Geological Loss (%)	MTIS (Mt)
Available for conversion to Proved Coal Reserves							
Emalahleni	Measured	OP & UG	B	1.72	15.23	5	14.47
Gwabalanda	Measured	OP	B	1.92	5.93	5	5.63
KwaQubuka	Measured	OP	B	*No measured resources*			
KwaQubuka North	Measured	OP	B	1.80	3.65	5	3.47
Luhlanga	Measured	OP	B	1.64	11.88	5	11.29
Mahujini	Measured	OP	B	1.79	5.90	5	5.60
Ophondweni	Measured	OP	B	1.96	5.05	5	4.80
Subtotal	**Measured**	**OP & UG**	**B**	**1.77**	**47.64**	**5**	**45.26**
Available for conversion to Probable Coal Reserves							
Emalahleni	Indicated	OP & UG	B	1.73	2.12	10	1.91
Gwabalanda	Indicated	OP	B	1.99	1.22	10	1.10
KwaQubuka	Indicated	OP	B	1.73	4.61	10	4.15
KwaQubuka North	Indicated	OP	B	1.74	0.72	10	0.65
Luhlanga	Indicated	OP	B	1.70	1.90	10	1.71
Mahujini	Indicated	OP	B	1.84	1.28	10	1.15
Ophondweni	Indicated	OP	B	1.98	0.66	10	0.59
Subtotal	**Indicated**	**OP & UG**	**B**	**1.78**	**12.52**	**10**	**11.26**
Total		**OP & UG**	**B**	**1.77**	**60.16**	**6**	**56.52**

1. OP = Open Pit; UG = Underground
2. ARD = Apparent Relative Density
3. GTIS = Gross Tonnes *In Situ*
4. MTIS = Mineable Tonnes *In Situ*
5. adb = air dry basis
6. Average ARDs have been weighted by the GTIS
7. Slight differences may arise due to rounding
8. Effective date 01 December 2013

5 Rock Engineering

[12.9 (h) (vii), SR 5.7C (ii), SR 5.4C (ii), SR 5.2B (ii), SV2.7]

The purpose of this CPR is to provide an assessment of current and planned operations to ensure that they are in accordance with accepted industry practice and to identify any particular issues that could materially affect project costs, project schedule or reserve estimates.

5.1 Documents Reviewed

Documents which have been reviewed and form the basis of this CPR are:

- Mandatory Code of Practice (CoP) to Combat Rockfall and Slope Instability Related Accidents in Surface Mines (May 2013);
- Report entitled "Geotechnical Comparison of Targeted Blocks" (September 2013); and
- Report entitled "Highwall Stability at Somkhele Colliery" (February 2010).

5.1.1 Code of Practice

The Code of Practice ("CoP") has been drafted in accordance with DME Guideline Ref. DME7/4/118/AB4.

Members of the drafting committee include senior mine management, the safety and health representative and members of the contractors (Leomat Mining) organization.

Dave Fenn is indicated as the rock engineering consultant. He is a holder of appropriate COM certificates and states that he has 23 years practical experience.

The information contained within the CoP is presented in Sections 5.2 and 5.3.

5.1.2 Technical Report "Geotechnical comparision of targeted blocks"

This report was prepared by Dave Fenn through Applied Rock Engineering and presented in September 2013. The purpose of the report is to compare conditions in the depleted Area 2 with those in Area 1 and other blocks and determine whether or not slope designs can be transferred.

Geological conditions prevailing are described and general rock mass classification in terms of the Q Index is provided. The Bieniawski rock mass rating, RMR and Mining Rock Mass Rating MRMR are then derived. Slope stability analysis again is by means of the Haines Terbrugge Design Chart. These results are presented in Section 5.3 of this report.

5.1.3 Technical Report "Highwall stability of Somkhele Colliery"

This report was prepared by RocStable SA. The report presents a review of stability in Pit B and Pit E in Area 2 and an assessment of the effectiveness of backfill in ensuring long term stability.

Numerical modelling using Phase 2 indicated safety factor values exceeding 2. Rock fall analyses carried out indicated that the loss in bench capacity due to minor bench scale failure created a rock fall risk zone exceeding 20 m in width at the base of an 80 m high slope.

5.2 The Geotechnical Environment

Coal deposits occur within the late Permian Emakwezini Formation of the Lower Beaufort Group. The B zone, including two coaly mudstone partings and averaging 15 m in thickness, is the target seam. Overburden consists primarily of arkosic sandstone. Shale/siltstone underlies the coal zone. The seam dips eastwards at between 24° and 26° and may increase to 30° in association with faulting. The coalfield is fault bounded and minor faulting, dolerite dykes and dolerite sills are present in the operating pits.

It is noted that geological exploration holes have been logged but only nine holes have been logged geotechnically in five of the nine blocks. Exploration core has not been retained for further logging and analysis.

In SRK's opinion, a combination of geotechnical logging and mining experience provides reasonable confidence in prediction of the likely performance of the rock mass in other pits when mined to similar depths. Where new pits are planned to be substantially deeper than current operations, it is recommended that further site investigation and design work is undertaken.

A deterioration in rock mass conditions associated with faulting and dyke intrusion is unlikely to have a material impact on global stability but will require localized modifications to design on a bench scale.

It is also noted that groundwater generally does not occur in the pits and this is presumed to be due to natural drawdown by mining operations. Exceptions occur:

- In the upper weathered zone, particularly in association with prolonged periods of rainfall;
- Along contacts with dolerite intrusion; and
- In deeper workings if natural drawdown has not occurred sufficiently quickly to dewater face areas.

While the groundwater monitoring is considered adequate for environmental purposes, in SRK's opinion, it is insufficient for detailed slope stability analysis (cf. Sections 12.3 and 13.2.3). It is recommended that standpipe piezometers are installed in geological exploration boreholes to provide quantitative information on the response of ground water to mining.

Five ground control districts have been identified and fundamental geotechnical parameters presented in the CoP:

- GCD-1: The footwall; no information presented;
- GCD-2: "Soft" material – completely weathered overburden and transported and residual soil; MRMR – 35 – 40; UCS from < 1 MPa to 80 MPa; SG up to 2600 kg/m³; RQD 90% for less weathered material;
- GCD-3: Moderately weathered sandstone and shale; MRMR < 54; UCS between 30 MPa (shale) and 80 MPa (sandstone); SG 2600 kg/m³ for sandstone; RQD 95% for less weathered rock;
- GCD–4: Fresh sandstone and shale; MRMR > 54; otherwise properties of GCD – 3 and GCD – 4 are not differentiated; and
- GCD–5: Coal; MRMR between 50 and 60; UCS between 7 MPa and 12 MPa but up to 50 MPa in isolated areas; SG 1600 kg/m³; RQD 95%.

In SRK's opinion, the properties applied to each GCD are very general and are of little use for detailed design. Further inspections of existing operations together with the geotechnical logging available should be carried out to provide more detailed information on the properties of individual stratigraphic units.

A total of four incidents of ground instability have been reported since 2007:

- 2007 – minor circular slip in weathered overburden;
- 2009 – face slough associated with jointing;
- 2010 – sloughing of waste material placed onto the mined out floor; and
- 2010 – Sloughing of floor strata adjacent to old mine workings.

Inspection of photographs of the pits suggest that a number of instabilities have occurred which have not been reported (Section 5.4). These occurred primarily in the weathered overburden but are also evident when adverse jointing occurs in high wall faces. The CoP indicates that a procedure will be introduced to record ground instability incidents. In SRK's opinion, this action is essential in the absence of detailed design in order to identify areas of poor quality ground where bench scale and potentially multiple bench scale instability are possible.

Controlled blasting to minimize face damage is not carried out. The CoP does refer to ongoing improvement of blasting techniques to reduce back break and wall damage. No specific means of quantifying the effectiveness of improvements were provided. In SRK's opinion, substantial improvement in face condition could be gained if steps are taken to minimise blasting damage.

5.3 Geotechnical Design

Slope design parameters listed in the CoP are:

- Bench face height; 12 m to 20 m;
- Bench face angle: 85° to vertical;
- Bench width: 5 m to 10 m;
- Slope height: 100 m; and
- Ramp width 9 m.

An extract from the report on highwall stability (2010) is appended to the CoP and used to motivate an overall slope angle of 55°. This value is based on rock mass classification and its empirical relationship with slope angle.

The slope angles for different target sites have been revised and presented in the 2013 report. The angles recommended are depicted in Table 5-1:

Table 5-1: Slope Design

Parameter	Emalahleni	Gwabalanda	Mahujini	Ophondweni	KwaQubuka North
Slope Angle	**62**	**62**	**62**	**60**[1]	**60**[1]
Slope height[2]	**120**	**135**	**90**	**180**	**70**

[1] Estimated values
[2] Estimated values

No design calculations have been presented and overall slope angles are not related to an acceptable Factor of Safety and Probability of Failure. It is noted that the slope angles have been derived using an average MRMR value and that no cognisance has been taken of variations within the slope due to weathering or the presence of poorer quality strata.

Values generally accepted for operating slopes not associated with infrastructure are:

- FoS = 1.2; and
- PoF = 5%.

It is recommended that these values are applied to new and existing pits.

The Haines-Terbrugge Stability Graph method has been used as a basis for assessing stability. It should be noted that this is an empirical method based on a limited data set and is unable to account for specific weak layers within a slope. It is recommended therefore that either numerical or limit equilibrium stability analyses are carried out to check compliance with these guidelines.

5.4 Observations during Site Visit

The mine was visited on the 12th of November 2013. Area 1, Area 2 and Luhlanga were viewed initially from a helicopter and then Area 1 and Luhlanga were inspected by motor vehicle. During the visit, pit survey data files were collected, which included:

- Area 2 pits.dxf;
- North Pit 1 30 Oct 2013 Grid.dxf;
- North Pit 2 30 Oct 2013 Grid.dxf; and
- Luhlanga 31 Oct 2013 Grid.dxf

The files were used to measure the height and slope angle of the unweathered (steepest) portion of the highwalls in order to assess compliance to the design.

5.4.1 Area 2

Area 2 comprises the Pits A and combined Pits B, C, D and E. These have been completed and are in the process of being backfilled. Figure 5-1 is a photograph of the combined Pits B, C, D and E and shows the condition of the highwall and the backfilling that is taking place. The pit survey data files provided reportedly represent the final pits, prior to backfilling. The overall slope angle in unweathered rock (GCD – 3 and GCD – 4) in the Pit A highwall is 63° over a height of 48 m. This pit was relatively small and greater confinement was provided at the ends. The combined pit B, C, D and E highwall is between 65 m and 70 m high, with a slope angle of between 40°and 42°. This is considerably flatter than the design of 55°. It is reported that the final holes were drilled at angle of 70° and this is mainly to assist with clean breaking of the toe. No controlled blasting techniques are used and considerable blast damage is evident. The crests of the benches have failed and the accumulated broken material has the potential to roll to the base of base pit, and could present a hazard to men and machinery. It is likely that the design slope angle is not being achieved due to the lack of controlled blasting and the associated hazard. This indicates that potential coal reserves are being lost.

Figure 5-1: Area 2, Pits B, C, D and E

5.4.2 Area 1

Area 1 comprises the North Pit 1, North Pit 2 and South pit.

Figure 5-2 shows the conditions of the North Pit 1 highwall. The pit is approaching the limit and the highwall was reportedly created with blast. There are few benches within the fresh rock and the unweathered rock slope angle measured from the pit survey is 52° and slope height is 82 m. A dyke is evident in the face, which does not appear to significantly influence the ground conditions. There is a joint set sub-parallel to the highwall, which has caused several, bench scale planar failures. The slope appears to have suffered a number of bench scale failures, but it is reported that all the collapses occurred with the blast and were loaded out during normal operations.

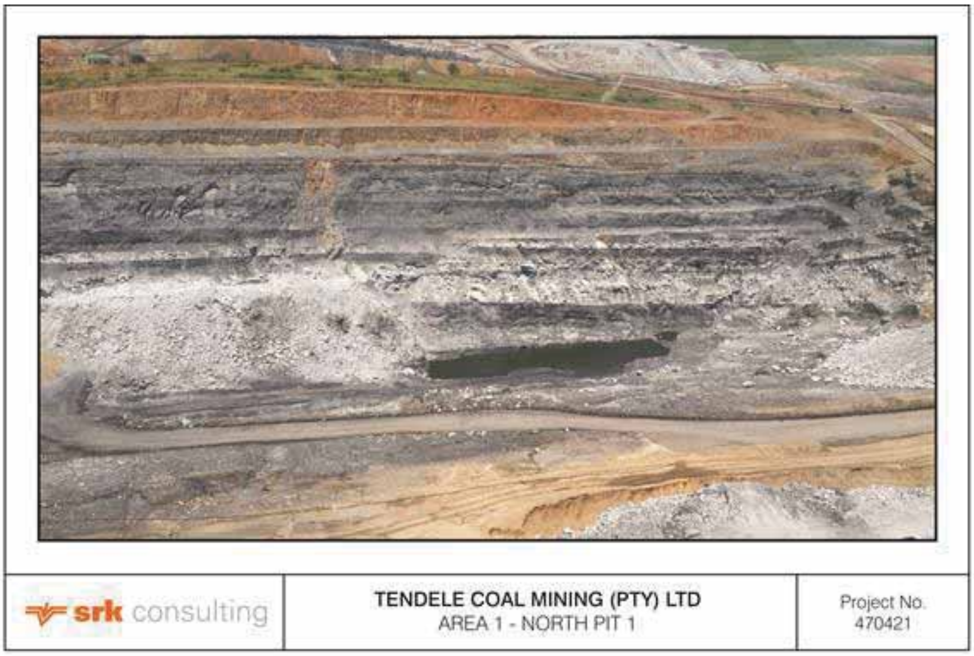

Figure 5-2: Area 1, North Pit 1

In North Pit 2, only a small portion of the highwall has been exposed (Figure 5-3). The slope height and angle are approximately 15 m and 52° respectively.

Figure 5-3: Area 1, North Pit 2, with South Pit in the Background

In South Pit 2 (Figure 5-4), the highwall has been exposed over a height of 40 m, with a slope angle of 56°. No controlled blasting has been carried out and blast damage is evident. Several bench scale plane failures have occurred along a joint set parallel to the highwall.

Figure 5-4: Area 1, South Pit 2

5.4.3 Luhlanga

Two boxcuts have commenced at Luhlanga. The coal seam is undulating, but is almost flatly dipping, which is significantly different from Area 1 and 2, where the coal dips at 20° to 30° into the final highwall. Sub-vertical and inclined joints are evident in the highwall, which create poor ground conditions. Controlled blasting is not carried out and blast damage is significant.

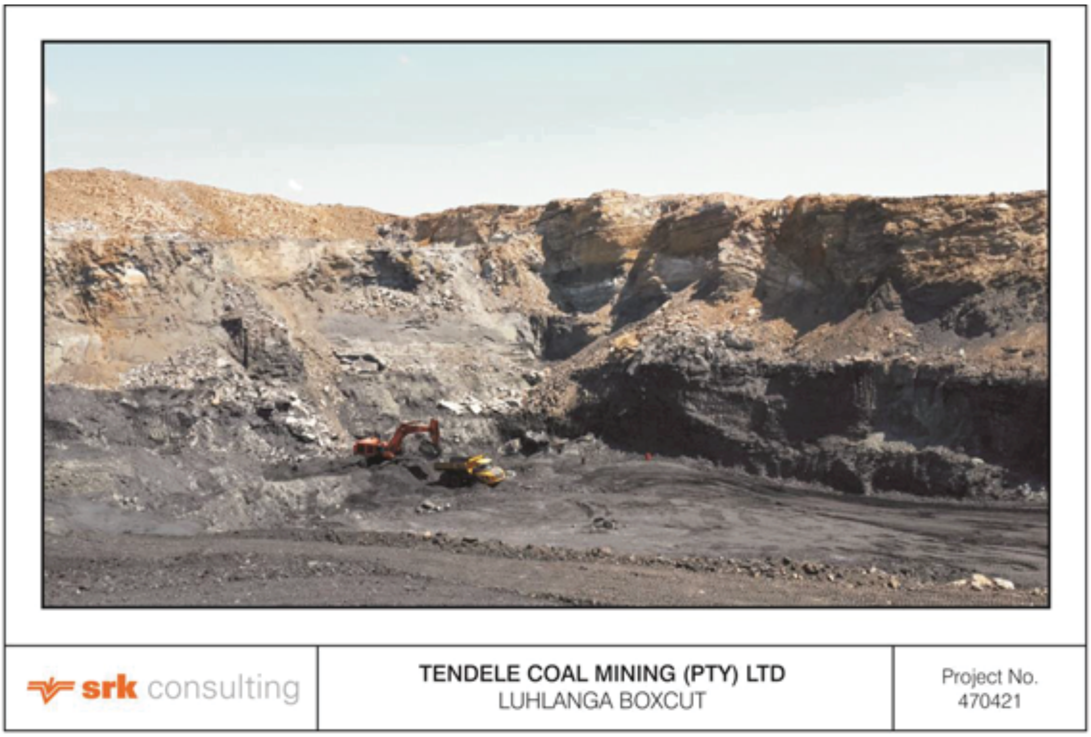

Figure 5-5: Luhlanga Boxcut

5.5 Mining Geotechnical Risks

[12.9 (h) (x)]

5.5.1 Quality of Information

It is noted that no laboratory testing has been carried out. Rock strength values are based on field tests together with values obtained from literature. In SRK's opinion, while this approach is acceptable at pre-feasibility level, detailed design work requires more accurate information, particularly when slope heights exceeding 100 m are contemplated. Without this information, it is not possible to create an optimized slope design, particularly as the slope height increases and current slope performance cannot be used as a guideline.

5.5.2 Analysis of Stability

The Haines Terbrugge Method is not considered to be an appropriate method for design beyond pre-feasibility stage. This is an empirical method based on a limited data set and is unable to account for specific weak layers within a slope. The method is not applicable to the higher slopes at Somkhele which lie beyond the limit of the data set used. It is recommended therefore that either numerical or limit equilibrium stability analyses are carried out to determine the safety factor that exists.

5.5.3 Groundwater

The current understanding of groundwater is insufficient for slope stability analysis and has the possibility of creating an unforeseen dewatering and depressurization requirements with deeper pits which will impact on the operating cost structure and mine scheduling. It is recommended that standpipe piezometers are installed in geological exploration boreholes and groundwater monitoring is undertaken on a regular basis to assist in understanding and managing its interaction with mining.

5.5.4 Slope Design

Comments in the RocStable report and observations made during the site inspection suggest that adversely orientated joints, probably in conjunction with blast damage, have combined to cause bench scale collapse. In places this has resulted in choking of catch benches and the creation of a rock fall risk. Should this situation persist, it is likely that the introduction of one or more geotechnical benches will be required to protect underlying operations. The introduction of these benches will have a consequent loss of coal and an increase in stripping ratio. A trade off study to compare the cost of improving blasting with the additional stripping cost and/or reserve loss is recommended.

6 Mining

[12.9 (h) (ix), 12. 9(h) (vii), SR2.5 (A/B/C), SR5.4B, SR5.7 (B/C), SR7 (C), SR8 (C), SR9 (A/B/C)]

6.1 Introduction

This section gives an overview of the mining operations and mining productivity at Somkhele. SRK reviewed the LoM plans and coal qualities for Area 1, Luhlanga, Emalahleni and KwaQubuka. Mining is currently taking place in Area 1 (North Pit 1, North Pit 2 and South Pit) and at Luhlanga; Area 2 was mined out in 2011 and Area 3 is a future mining area (Figure 6-1). Ten open pit operations and one underground operation are planned for future exploitation.

6.2 Management Organogram

Somkhele have permanent staff employed in managerial and legal positions as required by the Mine Health and Safety Act. Consultants and contractors have been appointed in the other positions, as relevant. The operations management team and legal appointments are shown in Figure 6-2 below.

The required manpower for the Somkhele operations is supplied by the Mpukunyoni Mining (Pty) Ltd, the appointed contractor. SRK are satisfied that the current contractor for the open pit operations is knowledgeable and well experienced in managing the operations and the inherent risks.

6.3 Mining Methods

6.3.1 Open Pit

[12.9 (h) (vii), SV2.7]

Open pit truck and shovel mining methods are currently employed at Somkhele at less than 120 m depth (Figure 6-3). The targeted strip ratio is 4:1; average pit slope angles are 62° and benches are drilled at 70°. The parameters used are acceptable, from a mine design perspective. These methods will also be employed at the future mining areas of KwaQubuka, KwaQubuka North, Gwabalanda, Mahujini, Ophondweni and part of Emalahleni.

6.3.2 Underground Mining

[12.9 (h) (vii), SV2.7]

Somkhele plans to extend the life of Emalahleni by establishing an underground operation when open pit operations reach the maximum operational depth. The underground mining method to be adopted is a combination of primary bord and pillar mining and secondary pillar mining on retreat (“PMOR”) in order to maximize the extraction of the RoM tonnage. The general dip of the coal is 20 – 30 degrees from horizontal, unique for South African coal deposits. Two main declines will be developed on an apparent dip of approximately eight degrees, which is considered to be the threshold operating limit of the proposed mining equipment. The minimum recommended crown pillar separating the surface and underground workings is 40 m in width along the true dip of the coal seams (Applied Rock Engineering cc).

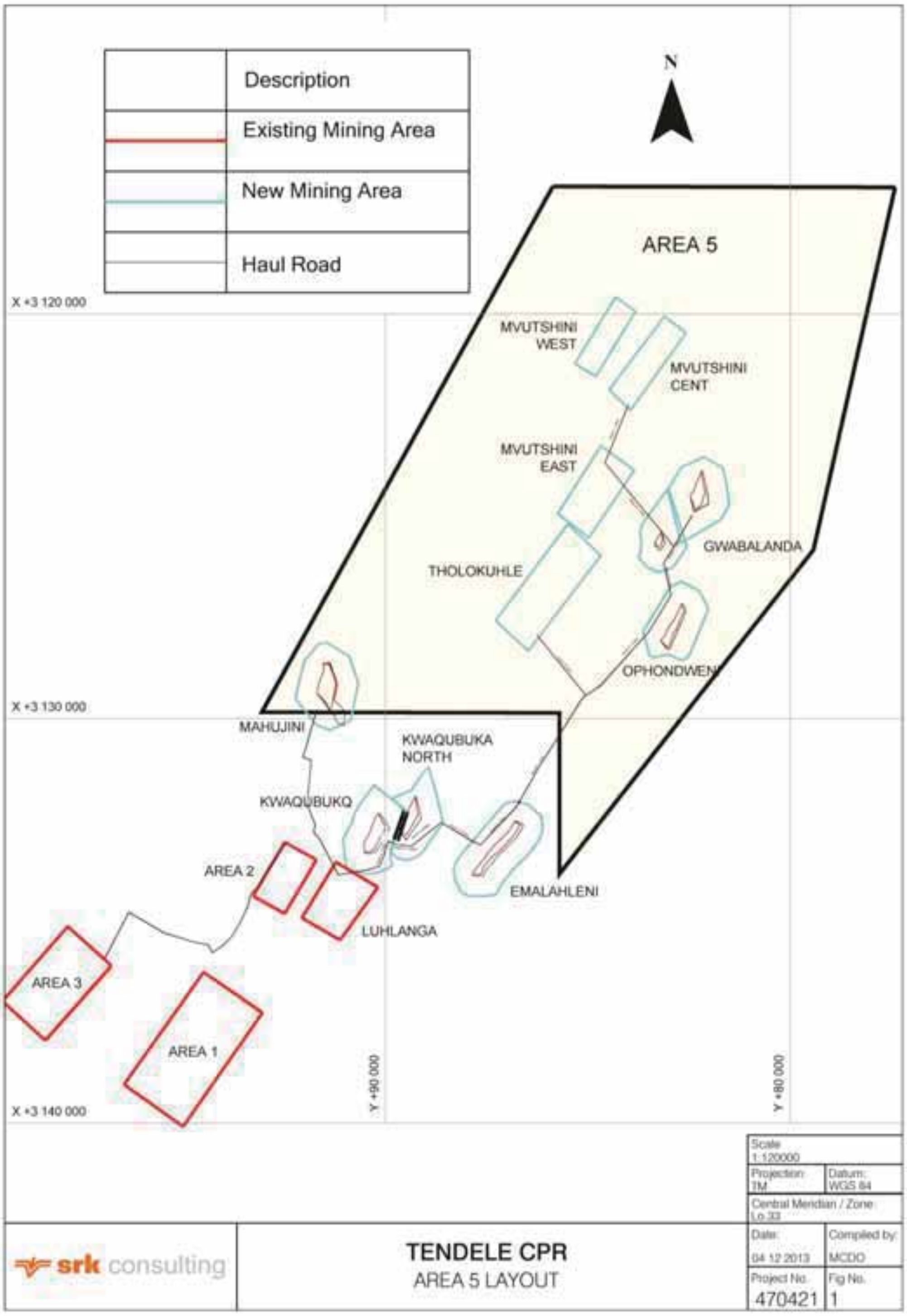

Figure 6-1: Somkhele Current and Future Coal Mining Operations

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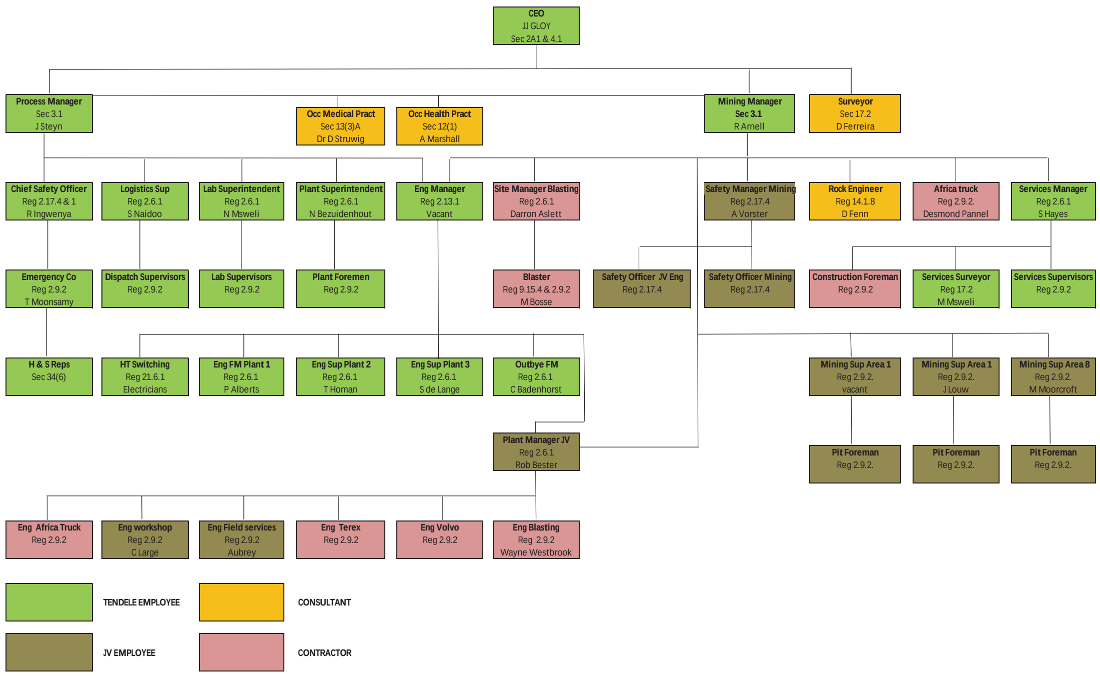

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Figure 6-2: Management Organogram

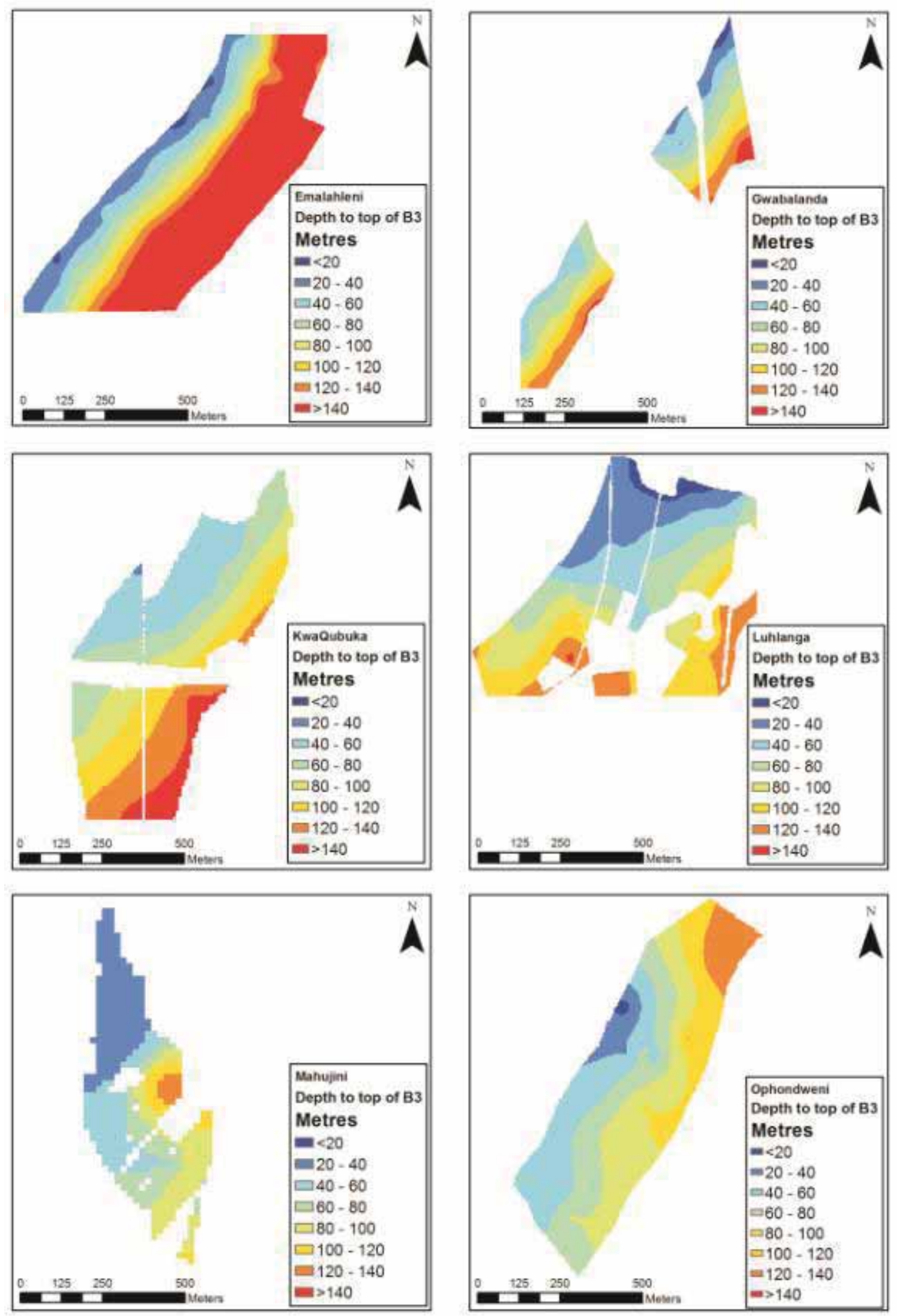

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Figure 6-3: Mining Areas Depth to Top of Coal

6.4 Mine Design

6.4.1 Open Pit Design Parameters

The current and future operations, except for Emalahleni underground, are conventional truck and shovel operations with an average pit slope angle of 62° and a targeted strip ratio of 4:1. A pit slope of up to 52° was measured in Area 1. Benches are drilled at 70°. The parameters used are acceptable from a mine design perspective.

Beyond 120 m depth, underground extraction methods will be used. The open pit parameters as listed in Table 6-1 are considered appropriate for the type of deposit.

Table 6-1: Open Pit Design Parameters

Parameter	Unit	No
Depth	m	<120
Coal Seam True Thickness	m	12
Bench Height	m	20
Dip	Degrees	20 - 30
Extraction Ratio	%	95
Contamination	cm	24

The RoM strip ratio for the different sections is shown in Table 6-2. The strip ratio is considered to be comparable to the industry break even strip ratio of 5:1. The open pit mining method is the most favorable mining method for Somkhele.

Table 6-2: Strip Ratio for Open Pit Section

Section	Strip Ratio
Area 1	2.7 : 1
Emalahleni	2.8 : 1
KwaQubuka	3.6 : 1
KwaQubuka North	3.9 : 1
Luhlanga	2.8 : 1
Ophondweni	3.9 : 1
Gwabalanda	3.7 : 1
Mahunjini	3.4 : 1

6.4.2 Underground Design Parameters

The underground mining method adopted consists of a combination of primary bord and pillar mining and secondary pillar mining on retreat (PMOR) in order to maximize the extraction of ROM tonnage. Several mining methods were considered. ABGM reviewed typical mine designs/layouts that could be considered within the coal seams, and eventually selected a design and layout similar to those used at the Exxaro Tshikondeni coal mine.

SRK visited Exxaro's Tshikondeni mine in Limpopo to during the review of the Emalahleni underground mining method proposed by ABGM. SRK's findings was that, the ore body characteristics and the primary mining layout can be compare to that of Tshikondeni however, the secondary pillar mining on retreat (PMOR) is different in that Tshikondeni applies the typical stooping methods which entails the sequential removal of pillars on retreat allowing goafing of the back bye areas whereas the proposed Somkhele mining method is not a total extraction method and goafing is not desired, the only possible goafing could occur as a result of the 7m wide unsupported span on retreat.

The mining method for the Emalahleni underground mine consist of two main declines which will be developed on an apparent dip of approximately 8 degrees which is considered to be the threshold operating limit of the proposed mining equipment. The bords are planned to be developed from the main declines in a northerly and southerly direction at angles above the true strike of the coal seam. The mining will initially target the B1 sub-seam for primary decline and bord/holing along the B2 sub-seam.

The holings between the bords (required for access and ventilation) will be mined by blasting 5 m cubbies perpendicular to the developed bords and then long-holing between successive mining bord levels. The mine layout provides for holing dip angles of approximately 34 degrees, thereby facilitating mucking/cleaning by Load Haul Dump from the bottom access holing cubby. The holings are planned completely within the B1 to B3 sub-seams.

When the bords have been fully developed, PMOR will commence. The B1 sub-seam sidewalls and roof will be sliped and in some areas the B2 sub-seam will be partially extracted.

The excavation height will be increased as the bord roofs within the B2 sub-seam are reached. Additionally, a small amount of the B3 sub-seam will be extracted in areas where the holings between bords intersect the B3 sub-seam in the roof. The schematic representation is shown in Figure 6-4.

The average true (perpendicular) thickness of the different sub-seams from top to bottom is:

- B3 – 1.9 m;
- TMP – 1.05 m;
- B2 – 4.4 m;
- MBP – 1. m; and
- B1 – 3.8 m;

The primary initial mining bords of 5 m wide by 4 m high whilst PMOR create a 7 m wide by 8 m high excavation. The final excavation ensures pillar widths of 22.5 m at acceptable factors of safety initial = 3.5, PMOR = 1.6. The holings between bords are not designed and planned for any sliping, stooping or splitting.

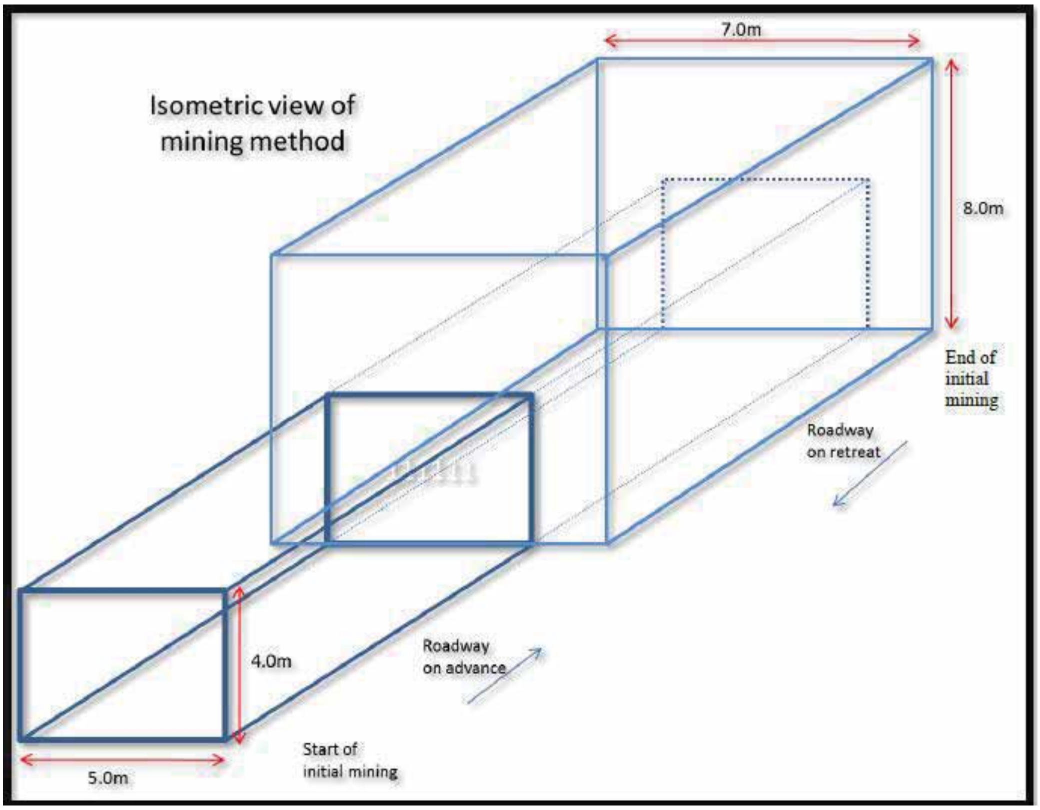

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Figure 6-4: Emalahleni Proposed Mining Method

6.5 Mining Equipment

The forecast production and equipment capacity is shown in Figure 6-5 and Figure 6-6; the equipment has been shown to be sufficient for the current open pit operation. Table 6-3 lists the current equipment used at Somkhele.

Table 6-3: Current Somkhele Open Pit Equipment

Equipment	Number
Excavator	11
TR 100's RHT	25
B40 ADT's	9
Drill rigs	7
Ancillary equipment	12

For the underground operation, drilling of the declines and mining bords, fully mechanised trackless single and double boom jumbo drill rigs, with long-hole drill rigs will be used. Loading and hauling will be done with the CAT R1300G LHDs and CAT AD30 articulated dump trucks.

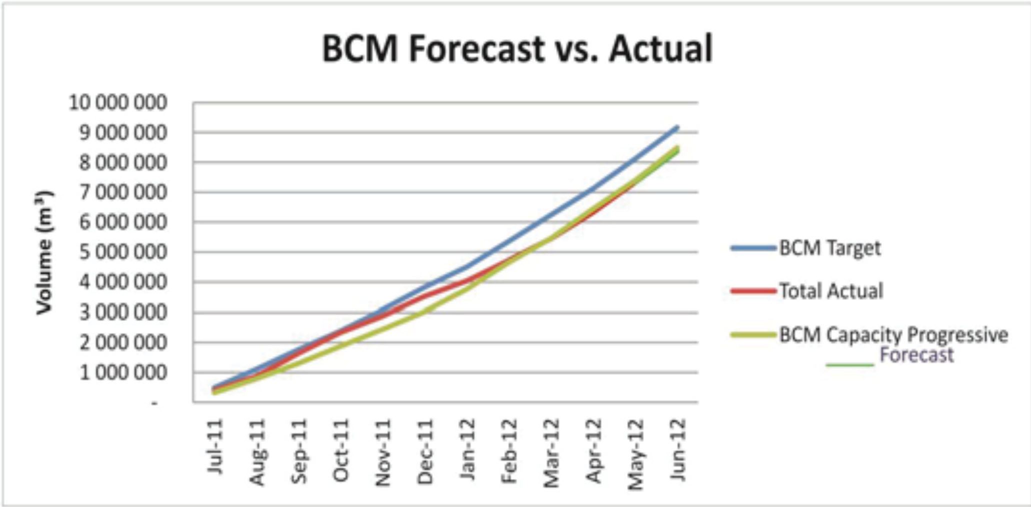

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Figure 6-5: Somkhele Historical Forecast Production

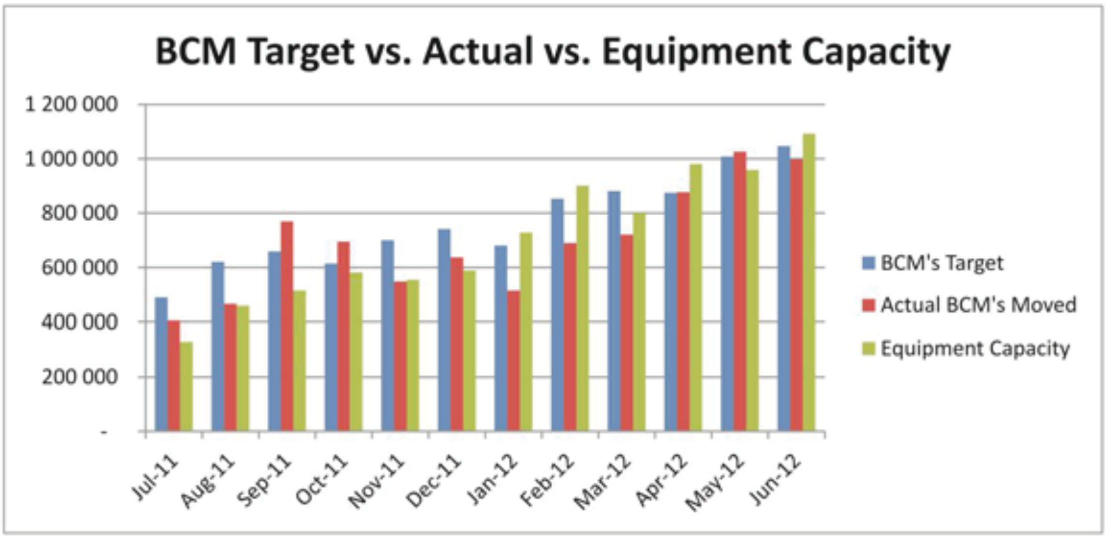

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Figure 6-6: Somkhele Historical Forecast Production and Equipment Capacity

6.6 Mining Costs

Figure 6-7 shows the estimated operating cost for the current and the future operations. The current operations have a more accurate operating cost as these were derived from the actual figures. The rest of the projects' operating costs are estimates based on conceptual studies. The underground mining cost estimation was based on a similar mining operation (Tshikondeni) that was visited by SRK during the mining method review. The Somkhele open pit contract mining cost applied in the LoM is seen to be appropriate.

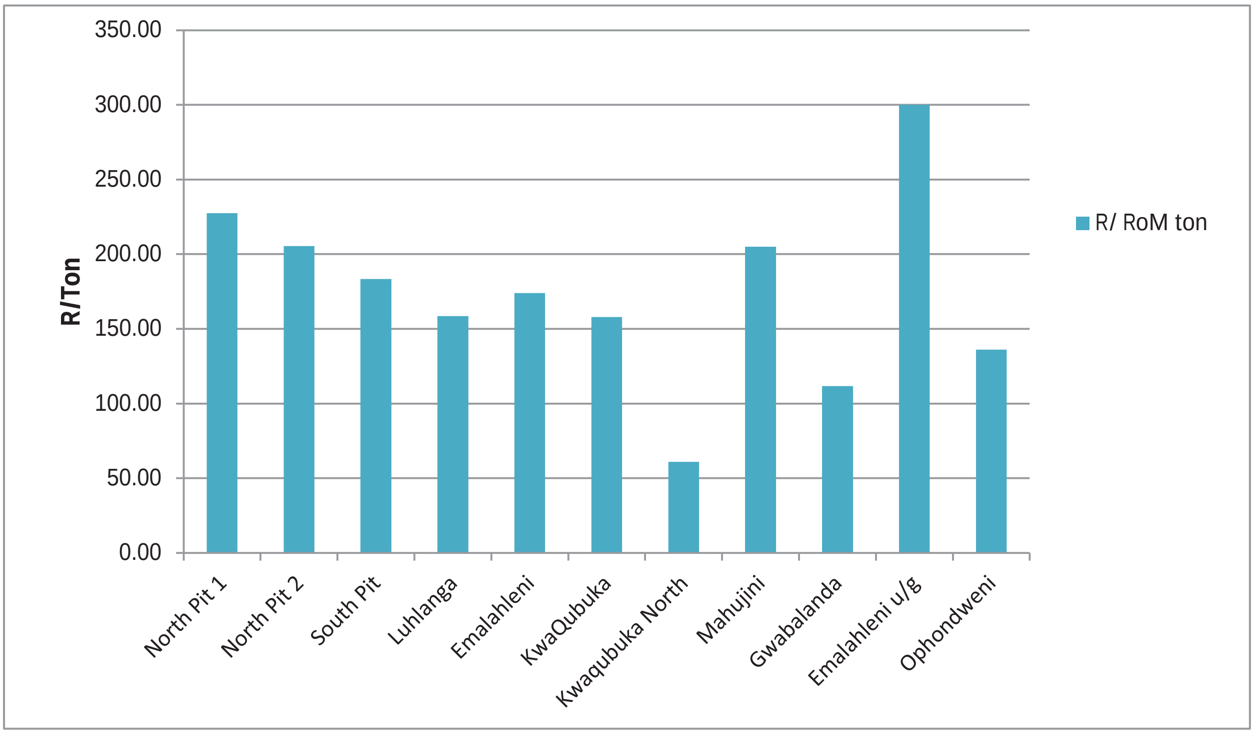

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Figure 6-7: Operating Costs for the Current and Future Operations

6.7 Previous Open Pit Sections

6.7.1 Area 2

Area 2 consisted of a series of five mini pits, mined in sequence from A to E and was depleted in 2011. The planned production rate was 504 000 tpa or 42 000 RoM tonnes per month, with first production in January 2007; the production increased in 2010 to 950 000 tpa. The area is currently being backfilled.

6.8 Current Open Pit Sections

6.8.1 Area 1 - North Pit 1

In this area, the B Seam has an average thickness of 13.5 m and a dip of 22° to 28°. The pit design for Area 1 has been based on a maximum temporary vertical highwall of 30 m, above which the slope cuts back at 45° in benches. The pits are backfilled as soon as practical behind the mining operation so that long term slope stability is not an issue in the pits. The planned production rate is 504 000 tpa or 42 000 RoM tonnes per month; first production was in July 2011. Figure 6-8 shows the historical and planned production for North Pit 1.

Life of Mine

There is an estimated 937 000 t of RoM coal remaining at North Pit 1. The operations are expected to cease in June 2016.

Mining Cost

The historical mining costs and production tonnages are shown in Figure 6-8. The RoM costs are estimated to remain at an average R227.51/t RoM. SRK expects the forecast costs to remain constant through the remaining LoM in real terms.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for North Pit 1 are included in the estimate for Area 1, as shown in Table 7-1 and Table 7-5.

Mining Risk

No major operational risks have been identified at North Pit 1.

6.8.2 Area 1 - North Pit 2

Life of Mine

There is an estimated 1.40 Mt of RoM coal remaining at North Pit 2. The operations are expected to cease in August 2017.

Mining Cost

The historical planned and actual production tonnages are shown in Figure 6-9. The RoM costs are estimated to remain at an average R205.42/t RoM. SRK expects the forecasted costs to remain constant through the remaining LoM in real terms.

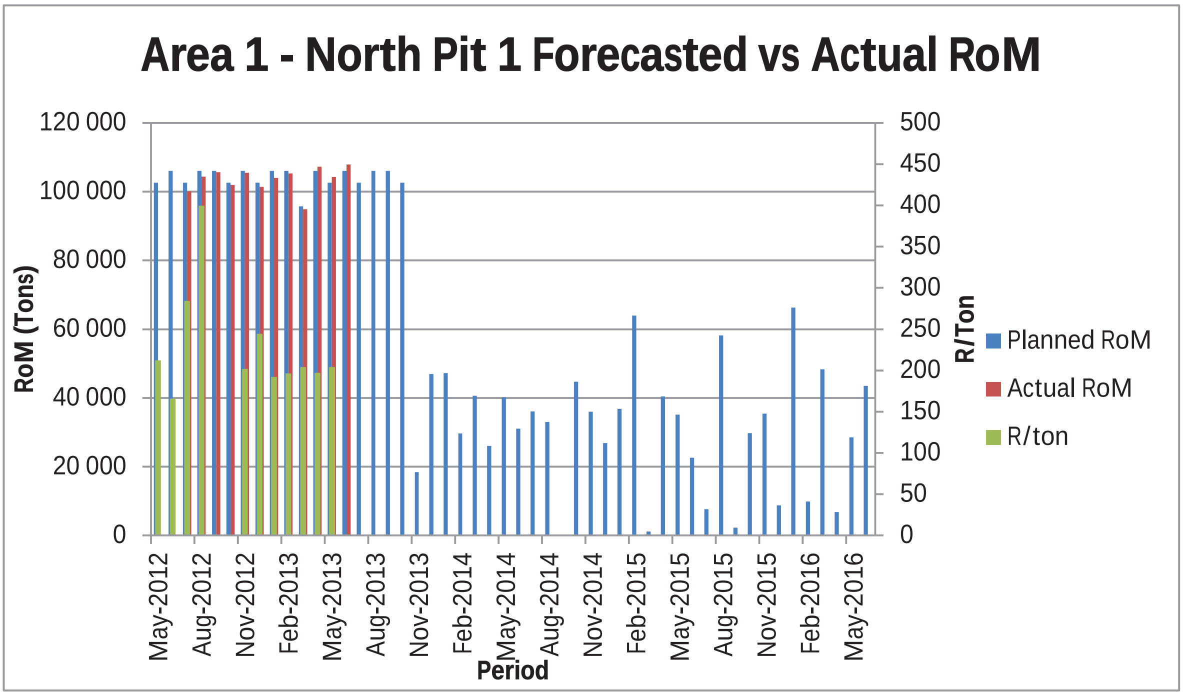
Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for North Pit 2 are included in the estimate for Area 1, as shown in Table 7-1 and Table 7-5.

Mining Risk

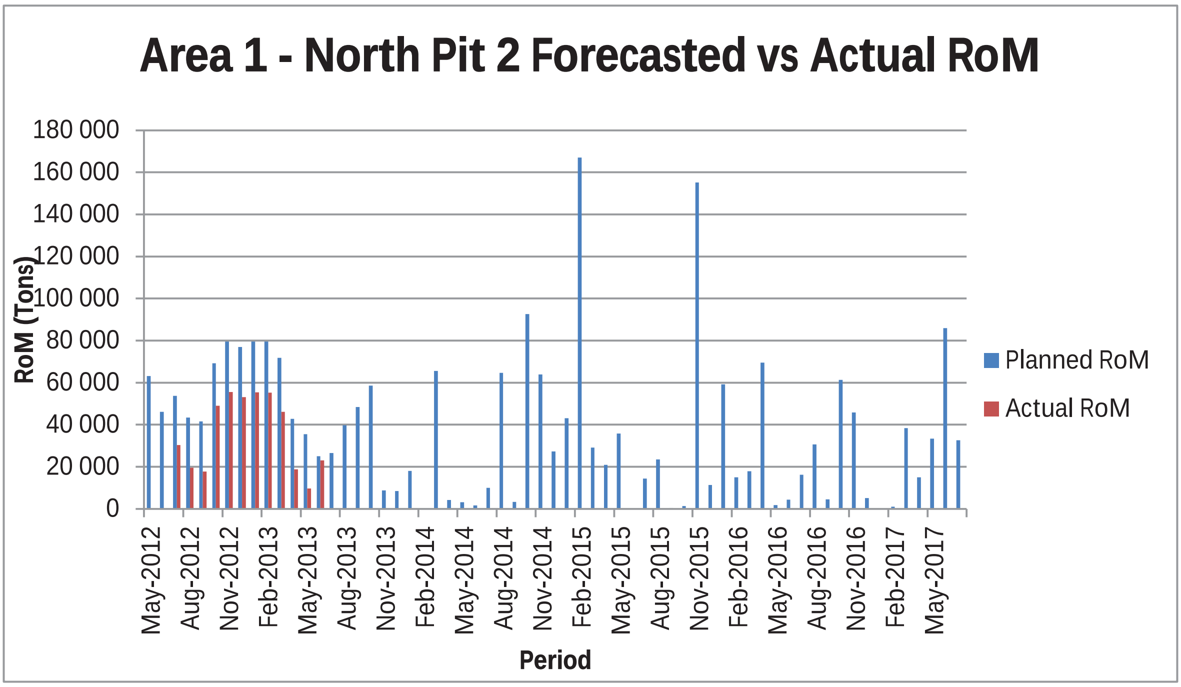
There are no major operational risks identified at North Pit 2.



TENDELE COAL MINING (PTY) LTD
NORTH PIT 1 HISTORICAL AND PLANNED PRODUCTION

Project No. 470421

Figure 6-8: North Pit 1 Historical and Planned Production



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NORTH PIT 2 HISTORICAL AND PLANNED PRODUCTION

Project No. 470421

Figure 6-9: North Pit 2 Historical and Planned Productions

6.8.3 Area 1 - South Pit

Life of Mine

There is an estimated 5.00 Mt of RoM coal remaining at South Pit. The operations are expected to cease in November 2017.

Mining Cost

The historical planned and actual production tonnages are shown in Figure 6-10. The RoM costs are estimated to remain at an average R183.33/t RoM. SRK expects the forecasted costs to remain constant through the remaining LoM in real terms.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for South Pit are included in the estimate for Area 1, as shown in Table 7-1 and Table 7-5.

Mining Risk

No major operational risks have been identified at South Pit.

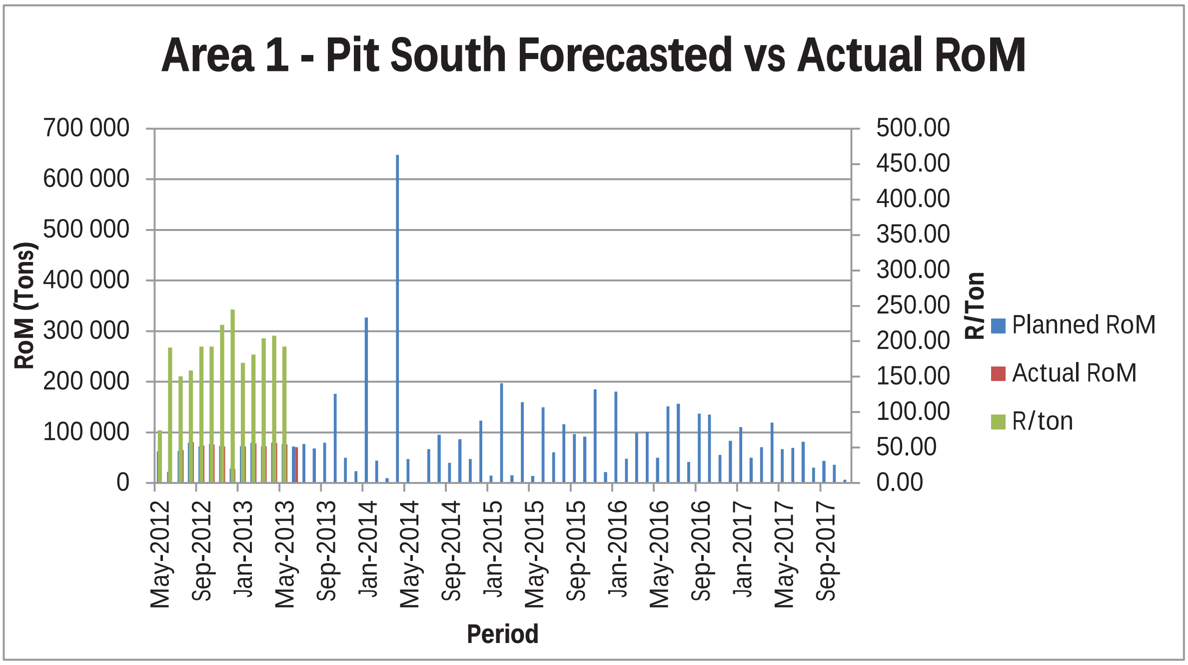

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Figure 6-10: South Pit Historical and Planned Production

6.8.4 Luhlanga

The mine design criteria applied to Luhlanga are similar to those for the current open pit operations. The overall slope angle of 62° is similar to the slope angle in the current pits. SRK considers the mine design parameters to be reasonable and acceptable.

Life of Mine

4.71 Mt of the available 8.72 Mt of RoM coal has been scheduled with a LoM of 61 months (5.1 years). Production will reach an average of 78 ktpm at steady state (Figure 6-11). The estimated mineable tonnages are shown in Table 7.2.

Mining Cost

The mining costs for Luhlanga are R158.59/t Year-to-Date ("YTD"), May 2013.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for Luhlanga are shown in Table 7-1 and Table 7-5.

Mining Risk

No major operational risks have been identified at Luhlanga.

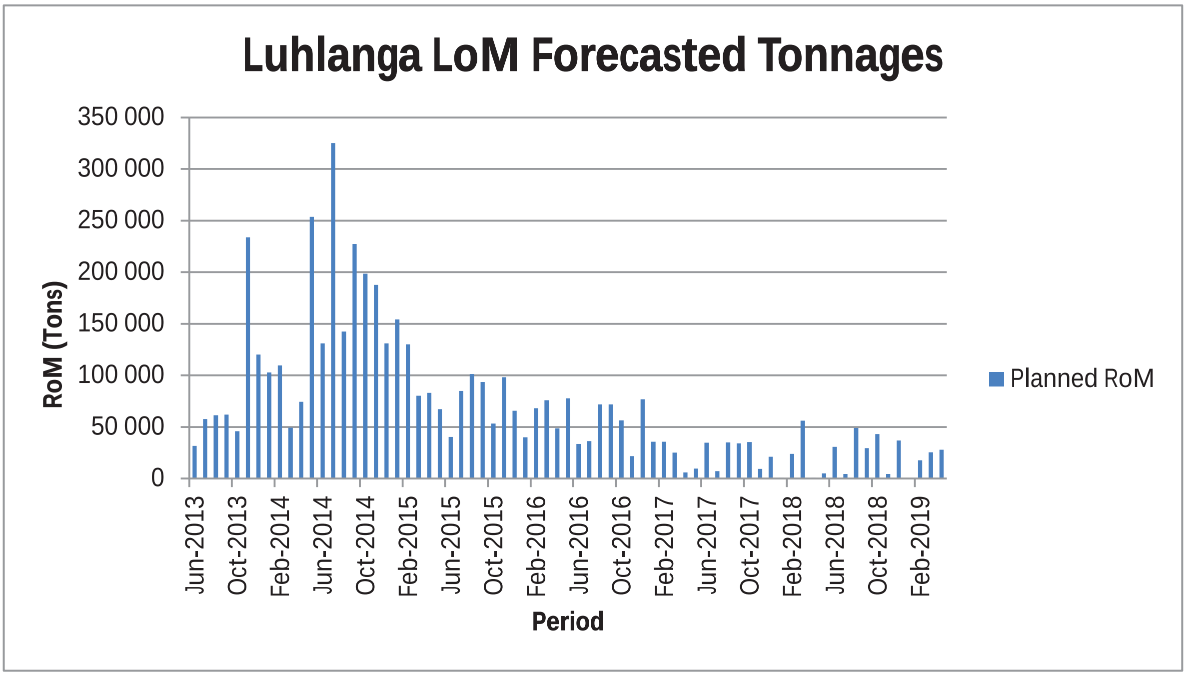

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Figure 6-11: Luhlanga Planned Production

6.9 Future Open Pit Sections

6.9.1 Emalahleni

An average pit slope angle of 62° and a targeted strip ratio of 2.8:1 have been planned for this area. The mine design parameters used are appropriate.

Life of Mine

8.81 Mt of RoM coal was estimated with a LoM of 103 months (8.6 years). Production will reach an average of 86 ktpm at steady state (Figure 6-12). The estimated mineable tonnages are shown in Table 7.2.

Mining Cost

The mining costs are estimated at R174/t RoM, comparable with the current mining costs.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for Emalahleni are shown in Table 7-1 and Table 7-5.

Mining Risk

There are no major operational risks identified at Emalahleni.

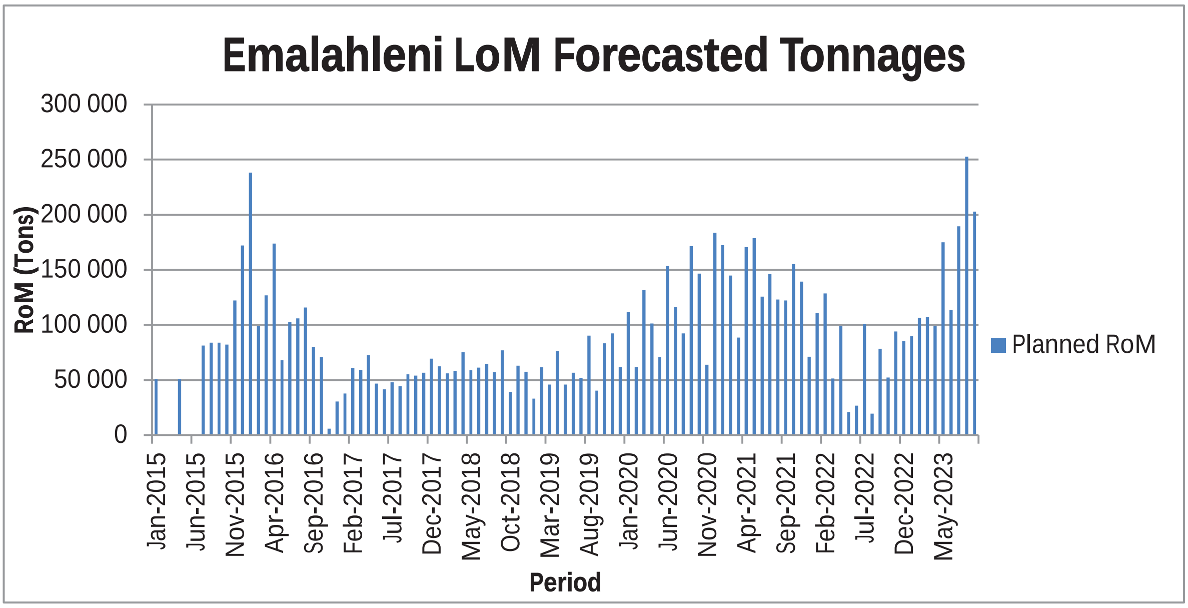

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Figure 6-12: Emalahleni Planned Production

6.9.2 KwaQubuka

An average pit slope angle of 62° and a targeted strip ratio of 3.6:1 have been planned for this area. The mine design parameters are also appropriate for KwaQubuka, where the mining will be similar to the Emalahleni operation.

Life of Mine

An estimated 3.74 Mt of RoM coal was estimated and a LoM of 25 months (2.1 years). Production will reach an average of 78 ktpm at steady state (Figure 6-13). The estimated mineable tonnages are shown in Table 7.2.

Mining Cost

The mining costs are estimated at R158.59/t RoM, comparable with the current mining costs.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for KwaQubuka are shown in Table 7-1 and Table 7-5.

Mining Risk

There are no major operational risks identified at KwaQubuka.

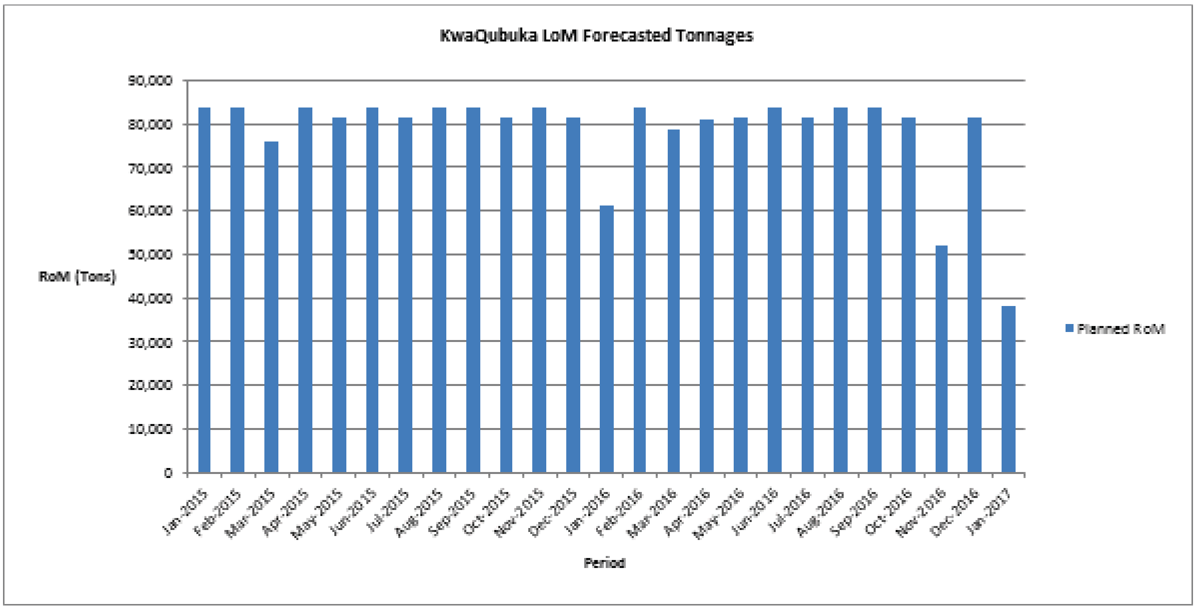

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Figure 6-13: KwaQubuka Planned Production

6.9.3 Ophondweni

The mining parameters adopted for Ophondweni are an average pit slope angle of 62° and a targeted strip ratio of 3.9:1, as per previous properties; these parameters are deemed appropriate for this area as mining at Ophondweni will be similar to the Emalahleni operation.

Life of Mine

An estimated 1.76 Mt of RoM coal was estimated and the LoM of 27 months (2.3 years). Production will reach an average of 67 ktpm at steady state. The estimated mineable tonnages are shown in Table 7-5.

Mining Cost

The mining costs are estimated at R136/t RoM, comparable with the current mining costs.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for Ophondweni are shown in Table 7-1 and Table 7-5.

Mining Risk

There are no major operational risks identified at Ophondweni.

6.9.4 Gwabalanda

The mining method and parameters used at Gwabalanda are the same as for previous areas (average pit slope angle of 62° and strip ratio of 4:1), which is acceptable considering the mining will be similar to that in the other areas.

Life of Mine

The estimated mineable tonnage for Gwabalanda is 2.09 Mt. The estimation is based on a mining area of 0.28 km^2. The strip ratio is calculated at 3.73:1 with an estimated 38 month (3.2 years) LoM. The operation will produce an estimated 55 ktpm at steady state.

The minable tonnages estimated by SRK are shown in Table 7.2. The plant yield for the 1.80 t/m^3 wash density resources is fairly low (35%); yields for the other areas range from 42% to approximately 47%. The potential sales tonnages are estimated at 0.67 Mt.

Mining Cost

The mining costs are estimated at R111.8/t RoM, comparable with current mining costs.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for Gwabalanda are shown in Table 7-1 and Table 7-5.

Mining Risk

No major operational risks have been identified at Gwabalanda.

6.9.5 KwaQubuka North

The mine design criteria applied for KwaQubuka North are similar to those for the current open pit operations and for the Mahujini area. The overall slope angle is similar to the slope angle at the current pits. SRK considers the mine design parameters to be reasonable. The strip ratio is assumed at 3.9:1. The strip ratio is relatively higher than Mahujini but comparable with the other Somkhele coal projects.

Life of Mine

KwaQubuka North LoM is estimated at two years. The mineable tonnage is estimated at 1.513 Mt. Production averages 16 kt for the first year and 50-60 kt for the remaining years.

Mining Cost

The mining costs are estimated at R61/t RoM, comparable with the current mining costs.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for KwaQubuka North are shown in Table 7-1 and 7.2.

Mining Risk

There are no major operational risks identified at KwaQubuka North.

6.9.6 Mahujini

The mine design criteria applied to Mahujini are similar to the current open pit operations. However, the Mahujini area is bounded by faulting, which may pose coal extraction challenges. The same slope angle has been used as for the other areas. However, additional geotechnical studies are required to determine the suitability of the slope angle for this area, considering the presence of substantial faulting.

Life of Mine

The Mahujini LoM is estimated at 4.2 years.

Mining Cost

The mining costs are estimated at R205/t RoM, comparable with the current mining costs.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for Mahujini are shown in Table 7-1 and Table 7-5.

Mining Risk

The major operational risk is the fact that Mahujini is bounded by faulting, which may impose restrictions in the practical pit design and is likely to present some mining challenges. Additional exploration and cover drilling will improve the ore body knowledge.

6.10 Emalahleni Underground Operation

Life of Mine

RoM production will reach 35 ktpm with five sections at steady state. However, maximum production is only maintained for one year; thereafter production will decline to 10 ktpm. The resource area is small and the mining method allows for a low extraction percentage.

Mining Cost

Emalahleni mining cost is estimated at R300/t, comparable with similar operations. ABGM developed mining cost estimations via a combination of first principles, benchmarked costs, ABGM and Hatch databases and networked verbal estimations. Costs derived from first principles include an additional 10% contingency. The estimated mining costs obtained for Tshikondeni were internally reviewed and compared with the ABGM mining cost database and adjusted where deemed necessary. The cost estimations were then further benchmarked, and adjusted/inflated where necessary, with typical underground coal mining contractor unit costs (verbal cost estimations were provided by Hatch) in order to arrive at the final operating and capital cost estimations applied in this study. ABGM assumed a 25% profit margin in order to arrive at the modelled underground contractor costs.

The mining cost of R300/tonne was confirmed by SRK during the mine visit to Tshikondeni Mine. Tshikondeni uses conveyor belt systems whereas Somkhele will use LHDs and articulated dump trucks. The capital and operating costs for these operations are not expected to be the same: Tshikondeni is expected to be more capital intensive with lower operating costs whereas Somkhele is expected to have a lower capital cost and a relatively higher operating cost. Direct comparisons of Somkhele and Tshikondeni reveals that the Somkhele mining method is less expensive when compared with Tshikondeni and therefore the mining cost estimation used in the study of R300/tonne which is equivalent to R560/tonne is justifiable with a 10% contingency.

Coal Reserve Estimate

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK Coal Reserves for Emalahleni are shown in Table 7-1 and Table 7-5.

Mining Risk

The main risk is that the proposed mining method is not common within the South African coal mining industry and has not been tested at dips as severe as those that occur at Somkhele. It is possible that mining will be compromised, resulting in a reduction of available reserves. Further detailed geotechnical work to support the proposed mine design is required.

6.11 Somkhele Life of Mine

The underground operations will commence in 2028 and cease in 2033. The Somkhele historical forecasted production and equipment capacity is shown in Figure 6-14. The results show that the available equipment capacity matches the production rates. The 20 year Life of Mine plan is shown in Figure 6-15.

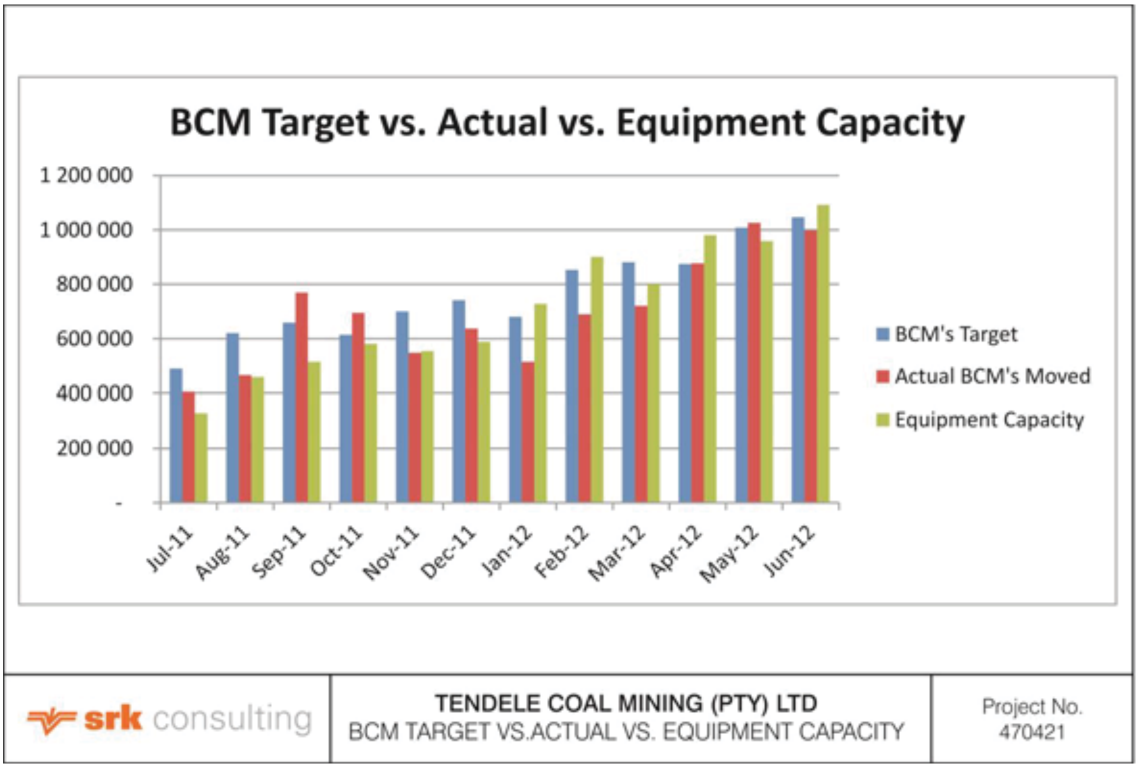

Figure 6-14:Somkhele Historical Forecast Production and Equipment Capacity

6.12 Risks

No major operational risks have been identified at any of the operational areas; i.e. North Pits 1 and 2, South Pit and Luhlanga.

Similarly, no significant risks are foreseen at the future open pit areas of Emalahleni, KwaQubuka, Ophondweni, Gwabalanda and KwaQubuka North. However, the faulting at Mahujini may restrict the practical pit design and is likely to present some challenges to the mining.

The proposed mining method for the underground operation at Emalahleni is unusual in the South African coal mining industry and has not been tested at dips as severe as those that occur at Somkhele. It is possible that mining will be compromised, resulting in a reduction of available reserves.

6.13 Opportunities

6.13.1 Blasting

Blast monitoring is done by an independent contractor, Blast Analysis Africa. Permanent blast monitors are installed at strategic positions. Both noise and ground vibration is monitored. The results show that there is no excessive ground vibration that may cause damage to the structures at the current operating distances according to United States Bureau of Mines guidelines.

There is an opportunity to save costs during overburden blasting. The technical powder factor used is 0.9 m^3/t; this is higher than that commonly used for similar operations. A powder factor of 0.45 – 0.6 kg/m^3 is commonly used in the industry for this type of operation.

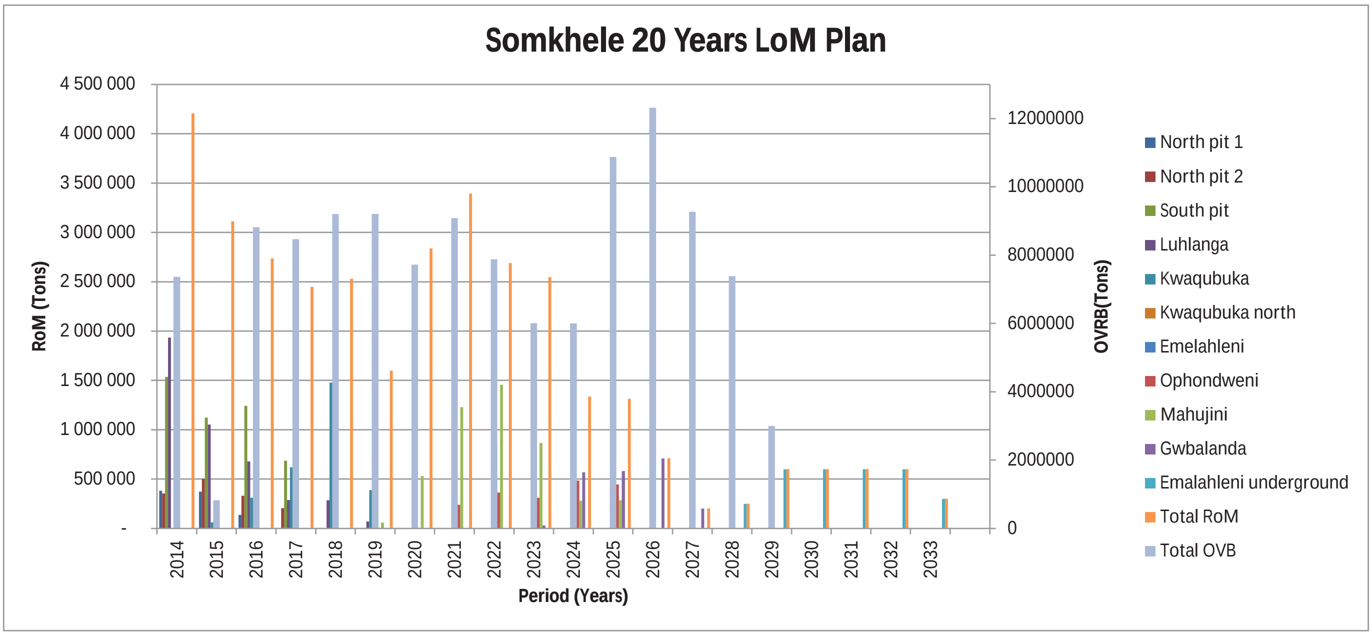

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Figure 6-15:Somkhele Forecast Production

7 Coal Reserve Estimates

[12.9 (h) (ix), SR5.5 (C) (iv), SV2.6]

7.1 Introduction

The difference in total tonnages is estimated at 2 %, which is within acceptable limits of ± 10 %. The open pit resources/reserves for current and future projects are show in Table 7-1 below. Table 7-1 shows SRK's Audited Coal Resources and Reserves for Somkhele as at 01 December 2013.

7.2 Basis for Classification

Classification of the Coal Reserves in terms of geological confidence complies with the terms, definitions and guidelines given in the SAMREC Code (and SANS 10:320). The main criterion for classification of Coal Resources is the density and spatial distribution of boreholes (cored intersections with analytical results), with cognisance also given to the regional and local geological complexities.

Coal Reserves are subdivided in order of increasing confidence into Probable Coal Reserves and Proved Coal Reserves.

Probable Coal reserves are the economically mineable material derived from a Measured and/or and Indicated Coal Resource. They are estimated with a lower level of confidence than proved Coal Reserves and must be demonstrated to be economically mineable by a Pre-feasibility Study.

Proved Coal Reserves are the economically mineable material derived from a Measured Coal Resource. They are estimated with a high level of confidence and must be demonstrated to be economically mineable by a Feasibility Study or actual mining activity.

Coal Reserves are furthermore reported, per proved or probable category, as:

- Mineable *In Situ* Coal Reserves;
- Run of Mine Coal Reserves; and
- Saleable Coal Reserves (saleable product).

7.3 Modifying Factors

The RoM reserves are modified by taking into account several modifying factors:

- Mining Losses/Production losses;
- Moisture – added moisture;
- Contamination; and
- Processing losses.

7.4 Coal Reserve Estimates

[12.9 (h) (ix), SR5.5(C) (iv), SV2.6]

SRK has previously signed off on Coal Reserves for Luhlanga, KwaQubuka, Emalahleni opencast and Emalahleni underground. The estimates of potential mineable tonnes for Gwabalanda, KwaQubuka North, Mahujini and Ophondweni were obtained from VBKOM, and the modifying factors as per Table 7-1 were applied. The modifying factors for Area 1 were obtained from publicly available documentation. Proved and probable coal reserve estimates are shown in Table 7-1 and Table 7-3 and the respective coal qualities in Table 7-2 and Table 7-4.

Table 7-1: SRK Proved and Probable Coal Reserve Estimates (adb)

Area	SAMREC Category	Mining Method	Seam	MTIS	Contam-ination	Extraction Factor	Recovery Factor	Moisture Correction	Previous RoM	Depletion	Current RoM	Practical Plant Yield	Theoret-ical Yield	Saleable
				(Mt)	(%)	(%)	(%)	(%)	(Mt)	(Mt)	(Mt)	(%)	(%)	(Mt)
Luhlanga	Proved	OP	B	8.61	2.00	95.00	96.00	2.00	8.17	0.45	7.72	96	43.96	3.26
Subtotal OP	*Proved*	*OP*	*B*	*8.61*	*2.00*	*95.00*	*96.00*	*2.00*	*8.17*	*0.45*	*7.72*	*96*	*43.96*	*3.26*
Emalahleni	Probable	OP	B	9.29	2.00	95.00	96.00	2.00	8.81	-	8.81	96	46.49	3.93
Gwabalanda	Probable	OP	B	2.09	2.00	95.00	96.00	2.00	1.98	-	1.98	96	49.97	0.67
KwaQubuka	Probable	OP	B	3.94	2.00	95.00	96.00	2.00	3.74	-	3.74	96	45.50	1.63
KwaQubuka North	Probable	OP	B	1.51	2.00	95.00	96.00	2.00	1.43	-	1.43	96	47.73	0.64
Luhlanga	Probable	OP	B	1.03	2.00	95.00	96.00	2.00	0.98	-	0.98	96	43.96	0.41
Mahujini	Probable	OP	B	4.57	2.00	95.00	96.00	2.00	4.34	-	4.34	96	50.49	1.95
Ophondweni	Probable	OP	B	1.85	2.00	95.00	96.00	2.00	1.76	-	1.76	96	49.14	0.79
Subtotal OP	*Probable*	*OP*	*B*	*24.28*	*2.00*	*95.00*	*96.00*	*2.00*	*23.04*	*-*	*23.04*	*96*	*47.55*	*10.03*
Total OP	**Proved & Probable**	**OP**	**B**	**32.89**	**2.00**	**95.00**	**96.00**	**2.00**	**31.21**	**0.45**	**30.76**	**96**	**46.61**	**13.28**
Emalahleni	Probable	UG	B	1.35	32.00	35.00	96.00	2.00	0.61	-	0.61	96	45.00	0.26
Subtotal UG	*Probable*	*UG*	*B*	*1.35*	*32.00*	*35.00*	*96.00*	*2.00*	*0.61*	*-*	*0.61*	*96*	*45.00*	*0.26*
Grand Total	**Proved & Probable**	**OP & UG**	**B**	**34.24**			**96.00**	**2.00**	**31.82**	**0.45**	**31.37**	**96**	**46.55**	**13.54**

10. OP = Open Pit; UG = Underground
11. adb = air dry basis
12. MTIS = Mineable Tonnes *In Situ*; RoM = Run of Mine
13. 24 cm contamination has been allowed for in the open pit estimates
14. Option 2 is quoted for Mahujini
15. Reserve estimates for Area 1 are publicly available estimates
16. Slight differences may arise due to rounding
17. Effective date 01 December 2013

Table 7-2: SRK Proved and Probable Coal Reserve Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	Saleable	Average Theoretical Product Qualities (adb)			
					Ash Content	Volatile Matter	Fixed Carbon	Moisture Content
				(Mt)	(%)	(%)	(%)	(%)
Luhlanga	Proved	OP	B	3.26	16.25	6.89	75.29	1.57
Subtotal OP	*Proved*	*OP*	*B*	3.26	16.25	6.89	75.29	1.57
Emalahleni	Probable	OP	B	3.93	16.72	6.25	74.86	2.17
Gwabalanda	Probable	OP	B	0.67	24.79	3.64	66.54	5.03
KwaQubuka	Probable	OP	B	1.63	15.66	5.52	76.90	1.92
KwaQubuka North	Probable	OP	B	0.64	30.57	6.43	60.79	2.21
Luhlanga	Probable	OP	B	0.41	16.25	6.89	75.29	1.57
Mahujini	Probable	OP	B	1.95	17.97	5.77	72.71	3.55
Ophondweni	Probable	OP	B	0.79	17.89	3.50	72.80	5.81
Subtotal OP	*Probable*	*OP*	*B*	10.03	18.41	5.65	73.06	2.89
Subtotal	**Proved & Probable**	**OP**	**B**	**13.28**	**17.84**	**5.97**	**73.64**	**2.54**
Emalahleni	Probable	UG	B	0.26	16.72	6.25	74.86	2.17
Subtotal UG	*Probable*	*UG*	*B*	0.26	16.72	6.25	74.86	2.17
Grand Total	**Proved & Probable**	**OP & UG**	**B**	**13.54**	**17.80**	**5.98**	**73.69**	**2.53**

6. adb = air dry basis
7. Qualities have been weighted on the MTIS
8. The Volatile Matter Content for Gwabalanda and Ophondweni is lower than expected and the Moisture Content higher than expected due to the increasing coal rank compared with the other areas
9. Slight differences may arise due to rounding
10. Effective date 01 December 2013

Table 7-3: Area 1 Proved and Probable Coal Reserve Estimates (adb)

Area	SAMREC Category	Mining Method	Seam	MTIS	Contam-ination	Extraction Factor	Recovery Factor	Moisture Correction	Previous RoM	Depletion	Current RoM	Practical Plant Yield	Theoret-ical Yield	Saleable
				(Mt)	(%)	(%)	(%)	(%)	(Mt)	(Mt)	(Mt)	(%)	(%)	(Mt)
Area 1	Proved	OP	B	9.82	Not stated	95.00	Not stated	Not stated	9.33	4.65	4.68	69	Not stated	3.21
Area 1	Probable	OP	B	13.25	Not stated	95.00	Not stated	Not stated	12.59	-	12.59	69	Not stated	8.64
Total	**Proved & Probable**	**OP**	**B**	**23.07**	Not stated	**95.00**	Not stated	Not stated	**21.92**	**4.65**	**17.27**	**69**	Not stated	**11.85**

8. OP = Open Pi
9. adb = air dry basis
10. MTIS = Mineable Tonnes *In Situ*; RoM = Run of Mine
11. Reserve estimates for Area 1 are publicly available estimates
12. Slight differences may arise due to rounding
13. SRK has depleted the RoM by current mining and otherwise applied the various factors as publicly available
14. Effective date 01 December 2013

Table 7-4: Area 1 Proved and Probable Coal Reserve Qualities (adb)

Area	SAMREC Category	Mining Method	Seam	Saleable	Average Theoretical Product Qualities (adb)			
					Ash Content	Volatile Matter	Fixed Carbon	Moisture Content
				(Mt)	(%)	(%)	(%)	(%)
Area 1	Proved	OP	B	3.21	15.86	8.74	73.60	1.8
Area 1	Probable	OP	B	8.64	16.80	9.10	72.30	1.8
Total	**Proved & Probable**	**OP**	**B**	**11.85**	**16.40**	**8.95**	**72.85**	**1.8**

5. adb = air dry basis
6. Qualities have been weighted on the MTIS
7. Slight differences may arise due to rounding
8. Effective date 01 December 2013

It should be noted that these estimates have been classified as reserves on the basis of their inclusion in the financial model with a resulting positive Net Present Value (“NPV”). However, SRK are of the opinion that additional studies are required to confirm that the modifying factors used for each area are valid. An example would be a thorough geotechnical investigation in each area, to fully understand the impact of faulting or burnt coal on highwall stability. Although initial work has been done in this area, SRK believe that this work is indicative only and that follow up work is required.

Table 7-5 below compares the RoM tonnages audited by SRK (except for Area 1, which is a publicly available estimate) and the RoM obtained from the Somkhele 20-year LoM plan. The difference of 14.69 Mt for Area 1 is due to Tendele’s recent optimisation of strip ratios for the various areas, resulting in lesser quantities of the declared reserves being planned. The estimate of 7.23 Mt as per the 2013 20-year LoM plan is believed to be more appropriate. The estimate for Area 1 was done seven years ago and requires updating with the current modifying factors and mining blocks.

The Emalahleni UG 2013 SRK RoM estimate has been derived using the figures contained in the AB Global Mining (“ABGM”) 2012 report and applying the modifying factors as shown in Table 7-6. The 2013 20-year LoM RoM plan shows a figure of 2.95 Mt for this area, double ABGM’s 1.44 Mt LoM RoM estimate. It is recommended that this estimate is revisited by Somkhele.

It is believed that the use of slightly different mining blocks also accounts for the difference in the estimates for Luhlanga and Emalahleni OP. Differences in the smaller reserve areas are not significant in terms of actual tonnage, although the percentage difference is high.

Table 7-5: SRK 2013 RoM Estimate vs. Somkhele 2013 RoM Estimate

Area	Mining method	Seam	2013 SRK RoM (Mt)	2013 20-year LoM Plan RoM (Mt)	Difference (Mt)	Difference wrt SRK 2013 RoM (%)
Luhlanga	OP	B	9.14	4.71	4.43	48.47
KwaQubuka	OP	B	3.74	2.86	0.88	23.53
Emalahleni OP	OP	B	8.81	7.40	1.41	16.00
Ophondweni	OP	B	1.76	1.85	*-0.09*	*5.11*
Gwabalanda	OP	B	1.98	2.09	*-0.11*	*5.56*
KwaQubuka North	OP	B	1.43	1.56	*-0.13*	*9.09*
Mahujini	OP	B	4.34	4.71	*-0.37*	*8.53*
Area 1	OP	B	21.92	7.23	14.69	67.02
Emalahleni UG	UG	B	0.61	2.95	*-2.34*	*383.6*
Total			**53.73**	**35.36**	**18.37**	

1. OP = Open Pit; UG = Underground
2. wrt = with respect to
3. The 2013 SRK RoM figure for Area 1 has been taken from publicly available documentation; note that the area concerned has been reduced by Somkhele since and therefore the estimates are not directly comparable

Table 7-6: Modifying Factors used for Emalahleni Underground

Description	ABGM (%)	SRK (%)	Comment
Contamination	35	32	Comparable
Extraction Factor	29.2	35	Additional tonnage will be added during retreat
Recovery	98	96	Further losses due to blasting, boulders pinched on roof bolts and muck pile profile
Added Moisture	-	2	Not accounted for by ABGM
Plant Efficiency		96	Not accounted for by ABGM

7.5 Coal Qualities

The coal qualities that were considered for the operations were: fixed carbon, ash content, volatile matter, yield and moisture content (Figure 7-1; Table 7-2; Table 7-4).

7.6 Coal Resources Excluded from LoM Plan

Inferred Coal Resources have been excluded from the LoM plan, as have areas that do not support the LoM production schedules (Table 7-7).

Table 7-7: Coal Resources Excluded from the LoM

Property	Mining Method	Resources not used in LoM (Mt)	
		Measured and Indicated	Inf
Emalahleni	OP & UG	9.95	-
Gwabalanda	OP	5.06	1.77
KwaQubuka North	OP	2.81	2.28
Luhlanga	OP	9.07	7.77
Mahujini	OP	2.47	0.71
Ophondweni	OP	3.87	0.12
Area 1	OP	20.35	8.60
Area 2	OP	2.67	-
Area 3	OP	-	42.85
KwaQubuka	OP	1.75	-
Sub-total		**58.00**	**64.10**

1. Inf Res = Inferred Resources

7.7 Reconciliation to Historical Reserve Estimates

[SV2.7, SR1.3(c), SR8(C) (vi)]

SRK reviewed the Coal Reserve estimates compiled by VBKOM in 2011.The material difference between 2011 and 2013 Coal Reserves is the exclusion of the depleted Area 1 Coal Reserves and the completed Area 2 reserves.

The Coal Resources classified in the Measured and Indicated categories were converted to Mineable Reserves for 2013. The Mineable Reserves were categorised as Proved or Probable Coal Reserves. The 2011 Coal Reserves were estimated on an air dried and uncontaminated basis.

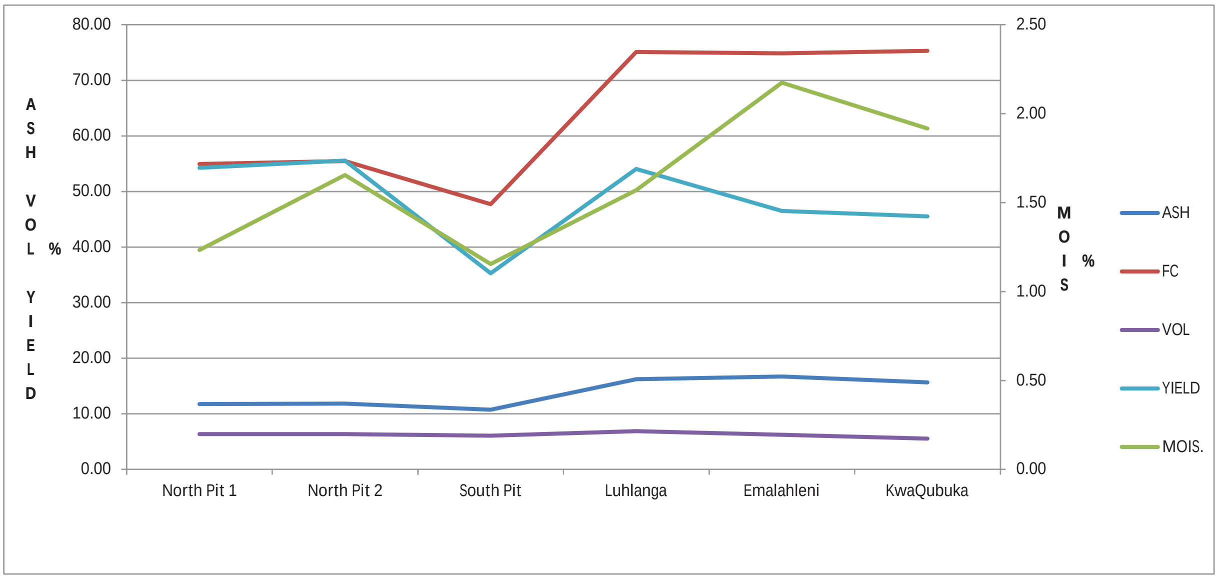

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Figure 7-1: Somkhele Historical and Predicted Coal Qualities

8 Coal Processing

[12.9 (h) (vii), SR5.5, SR5.7 (B/C), SV2.7]

8.1 Introduction

The Somkhele coal preparation plant was visited on 12 November 2013. The objective of the visit was to inspect the plant and obtain an impression of the condition of the plant as well as the standard of maintenance and operation of the plant.

Table 8-1 Source of information

Section Number	Section Title	Reference/Key Data	Source
8.2	Plant description	Plant overview Somkhele	Somkhele data room and site visit data
8.3	Safety	Standard presentation	Somkhele data room and site visit data
8.4	Operating hours	12 Process wash summary	Somkhele data room and site visit data
8.5	Plant throughput capacity	Month end survey file October 13	Somkhele data room and site visit data
8.6	Plant utilization	Availability and utilization file	Somkhele data room and site visit data
8.7	Sales production	Month end survey file October 13, Management accounts FY12	Somkhele data room and site visit data
8.8	Manpower	Process organogram	Somkhele data room and site visit data
8.9	Quality control	Consolidated plant 1/2/3 results	Somkhele data room and site visit data
8.10	Product yield	Month end survey file October 13	Somkhele data room and site visit data
8.11	Plant accounting	Month end survey file, Process wash summary	Somkhele data room and site visit data
8.12	Magnetite consumption	Magnetite and Floc consumption file	Somkhele data room and site visit data
8.13	Cost of operation	Somkhele reporting pack June 12	Somkhele data room and site visit data

8.2 Plant Description

8.2.1 Somkhele Overview

Somkhele consists of three plants. Somkhele coal processing plants are fed from various mining areas, South Pit 1, North Pit 1, and North Pit 2 and more recently from the Luhlanga Pit. Because of the different washability characteristics of the Luhlanga pit coal, the coal is fed only to Somkhele Plant 2.

Somkhele Plants 1, 2 and 3 consists of a coarse, smalls and fines circuit (except for Plant 3). The coarse circuits is a single stage wash only circuit, the smalls circuits is a double stage wash circuit apart from Somkhele 3 which is a single stage circuit.

The design capacities of the three plants are:

- Plant 1 220 tph;
- Plant 2 330 tph; and
- Plant 3 250 tph.

Somkhele produces a wide range of products and exhibits operational flexibility to alter product sizes and qualities.

The plant designs are based on typical industry norms and typical available plant data.

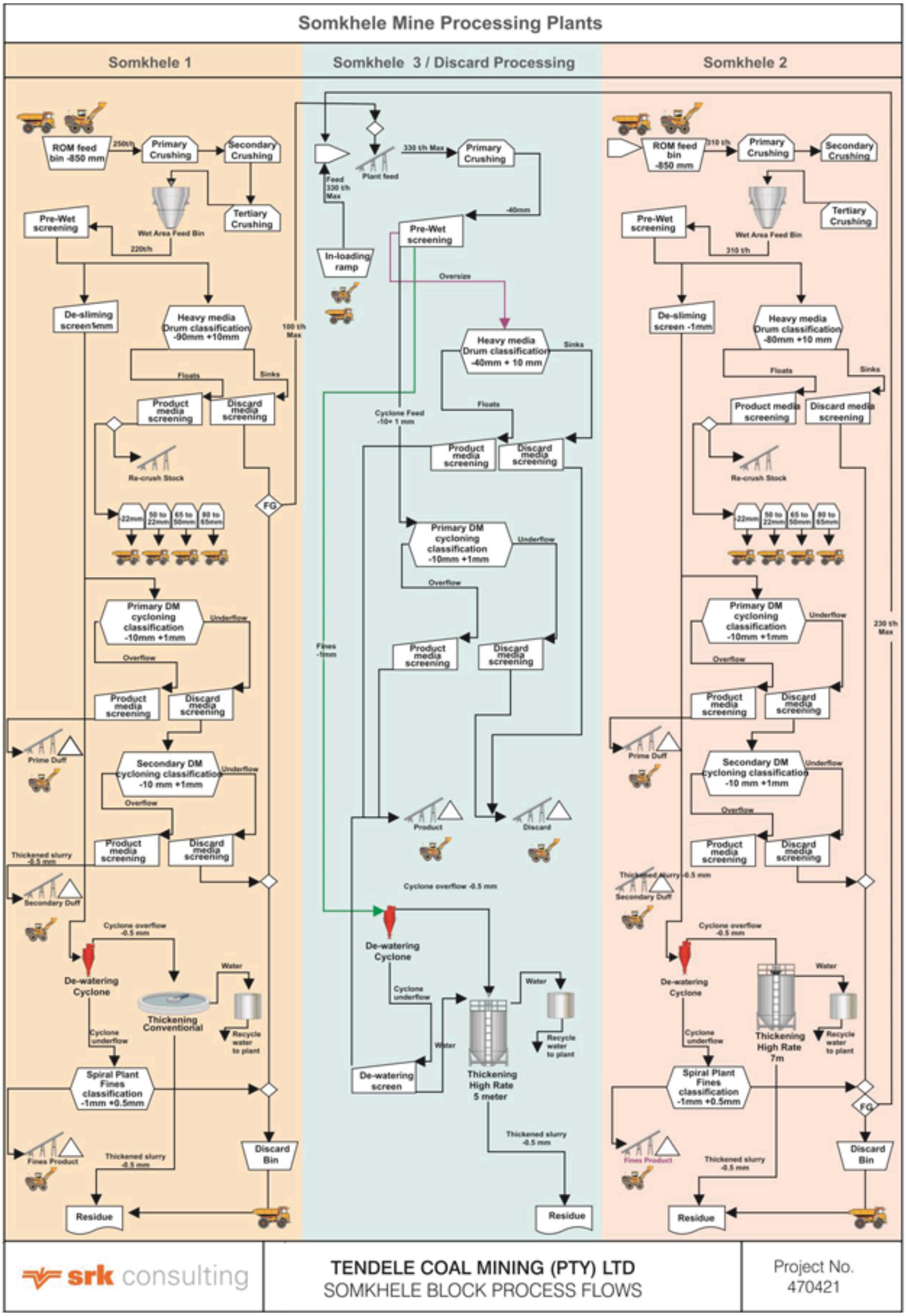

Figure 8-1: Somkhele Mine Processing Plants

8.2.2 Somkhele Plant 1

Raw coal is fed into a 60 t tipping bin via dump trucks and/or Front-End-Loaders (FEL) protected by an 850mm square static grizzly. Raw coal is extracted from the tipping bin by means of a vibrating grizzly feeder, rate at 250 tphr. The -850 +150 mm oversize is reduced to 150 mm in a primary jaw crusher. The Jaw crusher product and vibrating grizzly undersize is collected on a conveyor and delivered to the secondary static inclined grizzly where the -90mm undersize is removed. The -150 + 90mm oversize is crushed to –90 mm in a secondary double roll crusher. The –90mm crushed raw coal is collected on a conveyor and delivered to a tertiary static inclined grizzly. The –75mm raw coal is removed by the grizzly and the -90 + 75mm oversize is crushed to –75mm in a tertiary double roll crusher.

The –75mm raw coal is collected on a conveyor and delivered to a 128t capacity raw coal surge bin. Raw coal is extracted from the bin and delivered by a variable speed conveyor to the coal washing plant at a controlled feed rate of 220 tphr.

The coal washing plant is designed to process –90mm raw coal at a feed rate of 220 tphr. The plant consists of the following sections:

- Dense Medium (DM) drum plant (-90 x 10mm);
- Primary DM cyclone plant (-10 x 1 mm);
- Secondary DM cyclone plant (-10 x 1 mm);
- Magnetite medium make-up plant;
- Spirals plant (-1 x 0.1 mm);
- Thickener and slimes disposal system (-0.1 mm);
- Flocculent make-up and dosing plant; and
- Water circuits.

The raw coal from the raw coal bin is conveyed to the pre-wet screen. The screen oversize (+10 mm) is mixed with magnetite medium and delivered into the dense medium drum and separated into product (Floats) and discard (Sinks) fractions. Product and discard coal and adhering medium then discharges onto a common horizontal product drain and rinse screen.

Medium drained through the drain section of the screen is returned directly to the primary correct medium tank from which it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. The dilute medium is pumped to a magnetic separator for magnetite recovery. The over-dense medium is returned to the correct medium tank. Dirty effluent from the magnetic separator is used as pulping water on the pre-wet screen and clean effluent as primary wash water on the drain and rinse screen.

Large clean coal (+10 mm) is conveyed to the product screen for final sizing and the large discard is discharged onto the discard conveyor. The –10 mm raw coal gravitates from the pre-wet screen to the primary cyclone plant desliming section via an inclined launder.

Fresh magnetite medium is periodically added from a magnetite mixing and make-up system and pumped to the DM drum or cyclone plants when required.

Slurry consisting of dense medium and coarse coal (-10x1mm) is pumped into a single dense medium cyclone. Product coal and dense medium collect in the DMC overflow box and, in turn, discharge onto a fixed sieve where the majority of the medium is removed. Product coal and adhering medium then discharges onto a horizontal product drain and rinse screen.

Medium drained through the drain section of the screen is returned directly to the primary correct medium tank from which it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. Product discharges from the drain and rinse screen and reports to the washed duff conveyor.

Primary discards and dense medium from the underflow of the primary DMC collect in an underflow box prior to discharging onto a fixed sieve. Discard and adhering medium discharge onto a horizontal discards drain and rinse screen. Medium drained through the drain section of the drain and rinse screen is returned directly to a common correct medium tank from where it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the discards and reports to the common dilute medium sump. Discard solids from the drain and rinse screen report to the secondary DM cyclone plant.

Slurry consisting of dense medium and primary DM cyclone discard is pumped into a single dense medium cyclone. Product coal and dense medium collect in the DMC overflow box and, in turn, discharge onto a fixed sieve where the majority of the medium is removed. Product coal and adhering medium then discharges onto a common horizontal product drain and rinse screen.

Medium drained through the drain section of the drain and rinse screen is returned directly to the correct medium tank from which it is re-circulated by means of the correct medium pump. Any adhering medium after the drain portion of the drain and rinse screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. Product discharges from the drain and rinse screen reports to the primary product conveyor, termed as middling’s product. Discards and dense medium from the underflow of the secondary DMC collect in an underflow box prior to discharging onto a fixed sieve. Discard and adhering medium discharge onto a common horizontal discards drain and rinse screen. Medium drained through the drain section of the drain and rinse screen is returned directly to the correct medium tank from where it is re-circulated by means of the correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the discards and reports to the common dilute medium sump. Discard solids from the drain and rinse screen report to the discard conveyor. A bypass gate allows for middling coal to report to the discard conveyor.

The –1 mm raw coal gravitates to the deslime tank and pumped to desliming cyclones classifying at ~150 microns. A portion of the cyclone overflow is used as pulping water for the pre-wet screen feed. The balance gravitates to the thickener via a velocity breaker feed tank. Deslime cyclone underflow gravitates to the spiral circuit.

De-sliming cyclone underflow is collected in a launder and overflows onto an inclined drain panel acting as oversize protection. The oversize material is flushed into a collection launder and piped to the spirals plant effluent tank. The panel underflow gravitates to the spiral feed distributor. The fine coal is upgraded in a bank of eight twin-start coal spirals. Spiral discards report to the discard fines dewatering screen. Screen oversize discharges to the discard conveyor. Screen undersize reports to the spiral feed tank. Spiral product gravitates to a tank, which is pumped to the product coal classifying cyclones. Underflow gravitates to the fines dewatering screen. Screen undersize is re-circulated back to the feed classifying cyclones. Screen oversize reports to product conveyor. Dewatering cyclone overflows is utilized for spiral feed dilution whereas the balance is piped to the effluent tank.

Coal ultra-fines (-150 microns) gravitates to a thickener, flocculated and pumped to the pit for disposal. Thickener overflow reports to a clarified water tank and utilized as process water.

8.2.3 Somkhele Plant 2

Raw coal is fed into a 60 t tipping bin via dump trucks and/or Front-End-Loaders (FEL) through an 850mm square static grizzly. Raw coal is extracted from the tipping bin via a plate feeder, rated at 330 tph. The -850 +200 mm oversize is reduced to 200 mm in a primary jaw crusher. The Jaw crusher product and vibrating grizzly undersize is collected on a conveyor and delivered to the secondary vibrating grizzly. The -200 + 80mm oversize is crushed to –80 mm in a secondary double roller crusher. The –80mm crushed raw coal is collected on a conveyor and delivered to a double deck sizing screen at 100 and 80mm aperture respectively. The oversize of the top deck (+100mm) is discarded into a waste bunker for removal via front-end loader. The oversize of the bottom deck (80mm) is fed to a tertiary double roller crusher and reduced to 80mm.

The –80mm raw coal is conveyed to a 120 t capacity raw coal surge bin. Raw coal is extracted from the bin through a vibrating feeder and delivered to the coal washing plant.

The coal washing plant is designed at a feed rate of 330 tphr. The plant consists of the following sections:

- Dense Medium (DM) drum plant (-80 x 10mm);
- Primary DM cyclone plant (-10 x 1 mm);
- Secondary DM cyclone plant (-10 x 1 mm);
- Magnetite medium make-up plant;
- Spirals plant (-1 x 0.1 mm);
- Thickener and slimes disposal system (-0.1mm);
- Flocculent make-up and dosing plant; and
- Water circuits.

The raw coal from the raw coal bin is conveyed to the pre-wet screen. The screen oversize (+10 mm) is mixed with magnetite medium and delivered into the dense medium drum where it is separated into product (Floats) and discard (Sinks) fractions. Product and discard coal and adhering medium then discharges onto a common horizontal product drain and rinse screen.

Medium drained through the drain section of the drain and rinse screen is returned directly to the primary correct medium tank from which it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the drain and rinse screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. The dilute medium is pumped to a magnetic separator for magnetite recovery. The over-dense medium is returned to the correct medium tank. Dirty effluent from the magnetic separator is used as pulping water on the pre-wet screen and clean effluent as primary wash water on the drain and rinse screen.

Large clean coal (+10 mm) is conveyed to the product screen for final sizing and the large discard is discharged onto the discard conveyor. The –10mm raw coal gravitates from the pre-wet screen to the primary cyclone plant desliming section via an inclined launder.

Fresh magnetite medium is periodically added from a magnetite mixing and make-up system and pumped to the DM drum or cyclone plants when required.

Slurry consisting of dense medium and coarse coal (-10x1 mm) is pumped into a single dense medium cyclone. Product coal and dense medium collect in the DMC overflow box and, in turn, discharge onto a fixed sieve where the majority of the medium is removed. Product coal and adhering medium then discharges onto a horizontal product drain and rinse screen.

Medium drained through the drain section of the drain and rinse screen is returned directly to the primary correct medium tank from which it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the drain and rinse screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. Product discharges from the drain and rinse screen reports to the washed duff conveyor. Primary discards and dense medium from the underflow of the primary DMC collect in an underflow box prior to discharging onto a fixed sieve. Discard and adhering medium discharge onto a horizontal discards drain and rinse screen. Medium drained through the drain section of the drain and rinse screen is returned directly to a common correct medium tank from where it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the discards and reports to the common dilute medium sump. Discard solids from the drain and rinse screen report to the secondary DM cyclone plant.

Slurry consisting of dense medium and primary DM cyclone discard is pumped into a single dense medium cyclone. Product coal and dense medium collect in the DMC overflow box and, in turn, discharge onto a fixed sieve where the majority of the medium is removed. Product coal and adhering medium then discharges onto a common horizontal product drain and rinse screen.

Medium drained through the drain section of the drain and rinse screen is returned directly to the correct medium tank from which it is re-circulated by means of the correct medium pump. Any adhering medium after the drain portion of the drain and rinse screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. Product discharges from the drain and rinse screen reports to the primary product conveyor, termed as middling’s product. Discards and dense medium from the underflow of the secondary DMC collect in an underflow box prior to discharging onto a fixed sieve. Discard and adhering medium discharge onto a common horizontal discards drain and rinse screen. Medium drained through the drain section of the drain and rinse screen is returned directly to the correct medium tank from where it is re-circulated by means of the correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the discards and reports to the common dilute medium sump. Discard solids from the drain and rinse screen report to the discard conveyor. A bypass gate allows for middling coal to report to the discard conveyor.

The –1 mm raw coal gravitates to the deslime tank and pumped to desliming cyclones classifying at ~150 microns. A portion of the cyclone overflow is used as pulping water for the pre-wet screen feed. The balance gravitates to the thickener via a velocity breaker feed tank. Deslime cyclone underflow gravitates to the spiral circuit.

De-sliming cyclone underflow is collected in a launder and overflows onto an inclined drain panel acting as oversize protection. The oversize material is flushed into a collection launder and piped to the spirals plant effluent tank. The panel underflow gravitates to the spiral feed distributor. The fine coal is upgraded in a bank of eight twin-start coal spirals. Spiral discards report to the discard fines dewatering screen. Screen oversize discharges to the discard conveyor. Screen undersize reports to the spiral feed tank. Spiral product gravitates to a tank, which is pumped to the product coal classifying cyclones. Underflow gravitates to the fines dewatering screen. Screen undersize is re-circulated back to the feed classifying cyclones. Screen oversize reports to product conveyor. Dewatering cyclone overflows is utilized for spiral feed dilution whereas the balance is piped to the effluent tank.

Coal ultra-fines (-150 microns) gravitates to a thickener, flocculated and pumped to the pit for disposal. Thickener overflow reports to a clarified water tank and utilized as process water.

Figure 8-2 Somkhele Plant 2, 3D layout

8.2.4 Somkhele Plant 3

The coal washing plant is designed to process –80 mm material at a feed rate of 330 tphr. The plant consists of the following sections:

- Dense Medium (DM) drum plant (-50 +10 mm material);
- Primary DM cyclone plant (-10 +1 mm);
- Fines management (-1 mm +0.15 mm);
- Thickener system;
- Flocculent make-up and dosing plant; and
- Water circuits.

Plant 3 is designed to receive material from three areas namely:

- Plant 1, the existing drum discard chute was modified to alternately feed either the existing discard system or the new Plant 3;
- Plant 2, discard bin. A new chute was built to divert the total discard stream to Plant 3 or in open position to the Plant 2 discard bin; and
- External in-loading facility. Old discard dump material. This circuit consists of an in-loading bin and corresponding feed ramp arrangement and a feed conveyor.

All of the above mentioned feed points supplies the main feed conveyor feeding the primary double roll crusher. The crusher reduces material to -50 mm, the grizzly underflow and crusher product is fed to a Dabmar pre-wet screen fitted with a 10mm top and 1mm bottom deck panels.

The screen oversize (+10 mm) is mixed with magnetite medium and delivered into the dense medium drum where it is separated into product (Floats) and discard (Sinks) fractions. Product and discard coal and adhering medium then discharges onto a common horizontal product drain and rinse screen.

Medium drained through the drain section of the drain and rinse screen is returned directly to the primary correct medium tank from which it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the drain and rinse screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. The dilute medium is pumped to a magnetic separator for magnetite recovery

The product is delivered to the product conveyor for stockpiling and discard reports to the common discard conveyor for stockpiling. Size fractions from the drum, cyclone and fines fractions are stockpiled together. The fines fraction reports to the product stockpile.

Slurry consisting of dense medium and coarse coal (-10 x 1 mm) is pumped into a single dense medium cyclone. Product coal and dense medium collect in the DMC overflow box and, in turn, discharge onto a fixed sieve where the majority of the medium is removed. Product coal and adhering medium then discharges onto a horizontal product drain and rinse screen.

Medium drained through the drain section of the drain and rinse screen is returned directly to the primary correct medium tank from which it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the drain and rinse screen is rinsed from the coal by water sprays as the coal travels across the rinse portion of the screen and transferred to the common dilute medium tank. Product discharges from the drain and rinse screen reports to the washed duff conveyor. Primary discards and dense medium from the underflow of the primary DMC collect in an underflow box prior to discharging onto a fixed sieve. Discard and adhering medium discharge onto a horizontal discards drain and rinse screen. Medium drained through the drain section of the drain and rinse screen is returned directly to a common correct medium tank from where it is re-circulated by means of the primary correct medium pump. Any adhering medium after the drain portion of the screen is rinsed from the discards and reports to the common dilute medium sump

The product is delivered to the product conveyor for stockpiling and discard reports to the common discard conveyor.

The –1 mm fines fraction from the Pre-wet screen is pumped to the de-sliming cyclone and classified at ~150 microns. The cyclone overflow gravitates to the thickener and the underflow is dewatered via a high frequency dewatering screen.

Coal ultra-fines (-150 microns) report to a thickener and settles with the aid of flocculation. The thickener underflow reports to the pit and the thickener overflow is re used as process water.

Figure 8-3 Somkhele Plant 3, 3D layout

8.2.5 Product Handling

Somkhele Plant 1

Large clean coal from the drum plant is conveyed to a double deck product screen.

- The –75 + 50 mm clean coal reports to a 75 t capacity large nuts bin;
- The -50 + 25 mm fraction reports to a 75 t capacity small nuts bin;
- The –25 + 10 mm fraction reports to a 75 t capacity peas bin; and
- The –10 mm duff fraction reports to a 75 t capacity breakage duff bin.

The Large Nuts, Small Nuts and Peas products are loaded into trucks via luffing conveyors and dumped on the designated stockpile areas for each product.

A bypass chute to feed a crusher is provided prior to the product screen reducing the coal top size to either 25 mm or 10 mm. The crushed coal is conveyed to an intermediate stockpile prior to final stockpiling or loading onto trucks and dispatch. Sized coal products, i.e. nuts and peas can be reclaimed by FEL and fed via a reclaim hopper and conveyor to the product crusher.

The washed duff from the cyclone plant is conveyed to the washed duff stockpile.

The –1 +0.1 mm fines are conveyed to the fines stockpile where the excess surface moisture is allowed to drain.

Discard is conveyed by a common discard conveyor to a 50 t discard bin. Discard is extracted from the bin and transported to the discard dump.

The discard from the drum section is either fed to the common discard conveyor that feed the discard bin, or it is diverted to the feed conveyor that transports the discard to Plant 3 for further processing. The maximum feed rate for this conversion is 100 tph.

Somkhele Plant 2

Large clean coal from the drum plant is conveyed to the double deck product screen.

- The –80 + 50 mm clean coal reports to a 75t capacity large nuts bin;
- The -50 + 25mm fraction reports to a 75t capacity small nuts bin;
- The –25 + 10mm fraction reports to a 75t capacity peas bin; and
- The –10 mm duff fraction reports to a 75t capacity breakage duff bin.

The Large Nuts, Small Nuts and Peas products are loaded into trucks via vibrating feeders and dumped on the designated stockpile areas for each product.

A bypass chute is provided prior to the product screen, feeding a product crusher reducing the top size too either 25 mm or 10 mm. The crushed coal is conveyed onto a crushed coal intermediate stockpile prior to final stockpiling or loading onto trucks and dispatch. Sized coal products can be reclaimed by FEL and fed via a reclaim hopper and conveyor to the product crusher.

The washed duff from the cyclone plant is conveyed to the washed duff stockpile.

The –1 + 0.1 mm fines are conveyed to the fines stockpile where the excess surface moisture is allowed to drain.

Discard from the plant is conveyed by a common discard conveyor to a 50 t discard bin. Discard is extracted from the bin into dump trucks and transported to the discard dump.

The plant discard is either fed to the common discard conveyor that feeds the discard bin or it is diverted to the feed conveyor that transports the discard to Somkhele 3 plant for further processing. The maximum feed rate for this conversion is 230 tphr.

8.3 Safety

From observations made during the visit, it appears as if safety is given priority. Appropriate safety signs and instructions are prominently displayed; employees were all wearing the required personal protective equipment, fire extinguishers are present and properly maintained and potential hazards are clearly marked. The figures following indicates a reported lost time injury of 1 for year 2012/2013 and a reducing trend in injury frequency rates.

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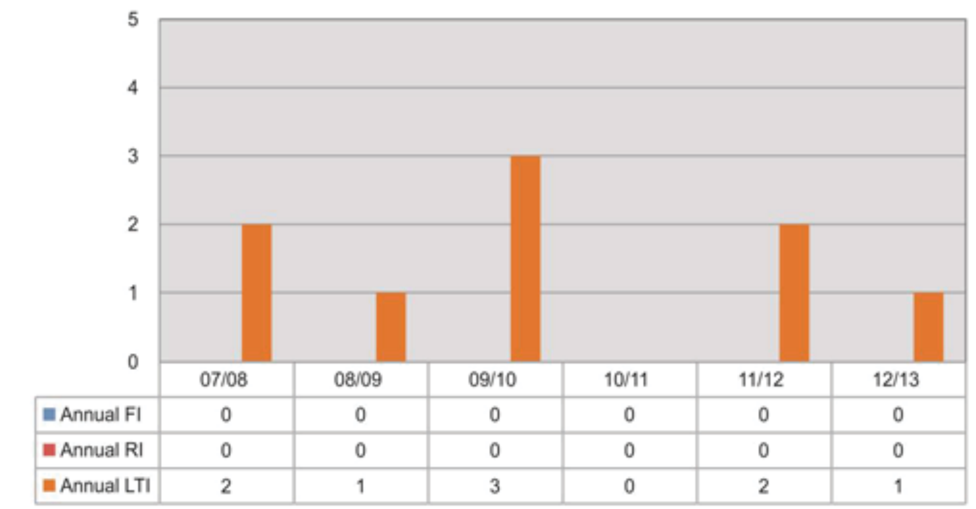

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INJURIES

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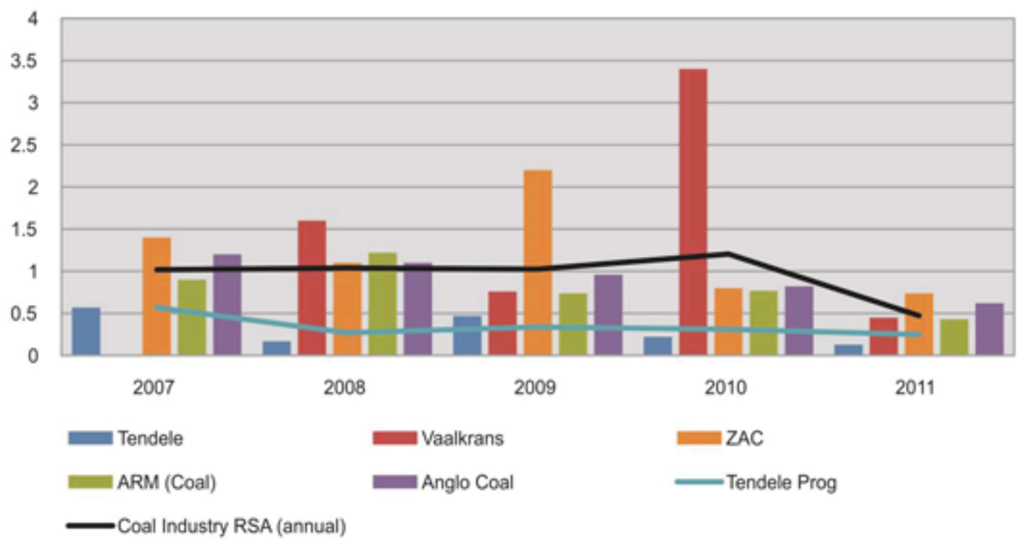
470421

Figure 8-4: Injuries



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470421

Figure 8-5: Annual Lost Time Injury Frequency Rate

8.4 Plant Operating Hours

The plants are operated on a twenty four hour basis, 4-shift system, seven days a week. The total available hours per month is 744 hours. The actual operating hours "on coal hours" is determined by deducting scheduled maintenance and other site specific time when the plant would not run. This will result in an availability figure for the plant, normally expressed as a percentage. This can be further affected by unforeseen stoppages, breakdown, strikes or other outside influences which further reduces actual working hours. This results in a final percentage utilization figure.

8.5 Plant Throughput Capacity

The reported rated capacity of the processing sections in the plant is:

- Plant 1 220 tph;
- Plant 2 330 tph; and
- Plant 3 250 tph.

The table following reflects the plant production statistics and it is evident that the process plants are operated within its design capacity.

Table 8-2: Plant Feed Parameters

Description	Unit	Year 2012/2013	Jul 13	Aug 13	Sep 13	Oct 13
RoM feed scale Plant 1	t	1 036 226	110 577	100 412	60 360	43 563
RoM feed scale Plant 2	t	1 214 769	164 091	148 214	85 594	65 833
Discard washed as RoM	t	129 246	-	-	-	-
Discard washed for Energy (Plant 3)	t	615 301	130 905	123 230	50 518	42 755
RoM feed scale total (Plants 1+2)	t	2 250 995	274 668	248 626	145 954	108 396
Saleable Anthracite	t	823 509	109 261	97 049	68 366	49 283
Saleable Energy coal	t	159 808	27 338	23 874	11 388	10 522
Plant yield as % of mined RoM	%	43.7	49.7	48.6	54.6	55.2
Survey yield	%	47.3	52.3	49.9	53.5	56.2
Plant 1 feed	tphr	176	181	173	174	167
Plant 2 feed	tphr	218	263	254	228	215
Plant 3 feed	tphr	195	208	201	180	159

The particle size distribution to the three plants for August 2013 is tabled below. The table indicates that Plant 1 feed distribution is finer when compared with Plant 2 at 49.8% and 68.9%, respectively for a 10 mm particle cut size. On average the particle size distribution indicates 3.6% and 3.0 % slimes loss. This is low when compared to the average month end figures reported of 11.9% and 8.1%, respectively. The month end figures are the more appropriate number.

Table 8-3: Particle Size Distribution

Somkhele - ROM Screening - 12-17-08-2013										
	Plant1			Plant2			Plant 3			
Size mm	Mass	%	Cum %	Mass	%	Cum %	Mass	%	Cum %	
+ 75	16.97	11.2	11.2	12.96	12.2	12.2	0.0	0.0	0.0	
75 x 65	5.24	3.5	14.7	6.43	6.1	18.3	0.0	0.0	0.0	
65 x 50	6.08	4.0	18.7	13.13	12.4	30.6	0.0	0.0	0.0	
50 x 40	6.41	4.2	22.9	7.24	6.8	37.4	0.0	0.0	0.0	
40 x 25	14.29	9.4	32.4	15.85	14.9	52.4	31.0	20.3	20.3	
25 x 22	2.14	1.4	33.8	1.62	1.5	53.9	6.0	3.9	24.2	Drum Fraction
22 x 20	3.33	2.2	36.0	3.06	2.9	56.8	10.9	7.1	31.4	
20 x 16	7.16	4.7	40.7	5.34	5.0	61.8	26.1	17.1	48.4	
16 x 12	8.07	5.3	46.0	4.92	4.6	66.4	14.8	9.7	58.1	
12 x 10	5.72	3.8	49.8	2.62	2.5	68.9	7.9	5.2	63.3	
10 x 8	6.90	4.6	54.4	3.10	2.92	71.82	7.60	4.97	68.2	
8 x 6	7.34	4.9	59.2	2.65	2.50	74.31	8.86	5.80	74.0	Cyclone Fraction
6 x 3	15.87	10.5	69.7	7.11	6.69	81.01	14.24	9.31	83.3	
3 x 1	31.94	21.1	90.8	12.11	11.40	92.41	18.97	12.41	95.7	
1 x 0.5	8.42	5.6	96.4	4.91	4.62	97.03	5.45	3.56	99.3	Spirals Fraction
- 0.5	5.46	3.6	100.0	3.15	2.97	100.00	1.05	0.69	100.0	Thickner Fraction
	151.34	100.0		106.20	100.0		152.88	100.0		

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SOMKELE-ROM SCREENING 12-17/08/2013

Project No.
470421

8.6 Plant Utilization

The plant availability and utilization percentage are illustrated for each plant below (Figure 8-6 to Figure 8-8). During September and October 2013 the operational running hours were considerably lower due to mine strikes and the plant being run on a one shift basis. All three plants exhibit a medium to high level of utilization.

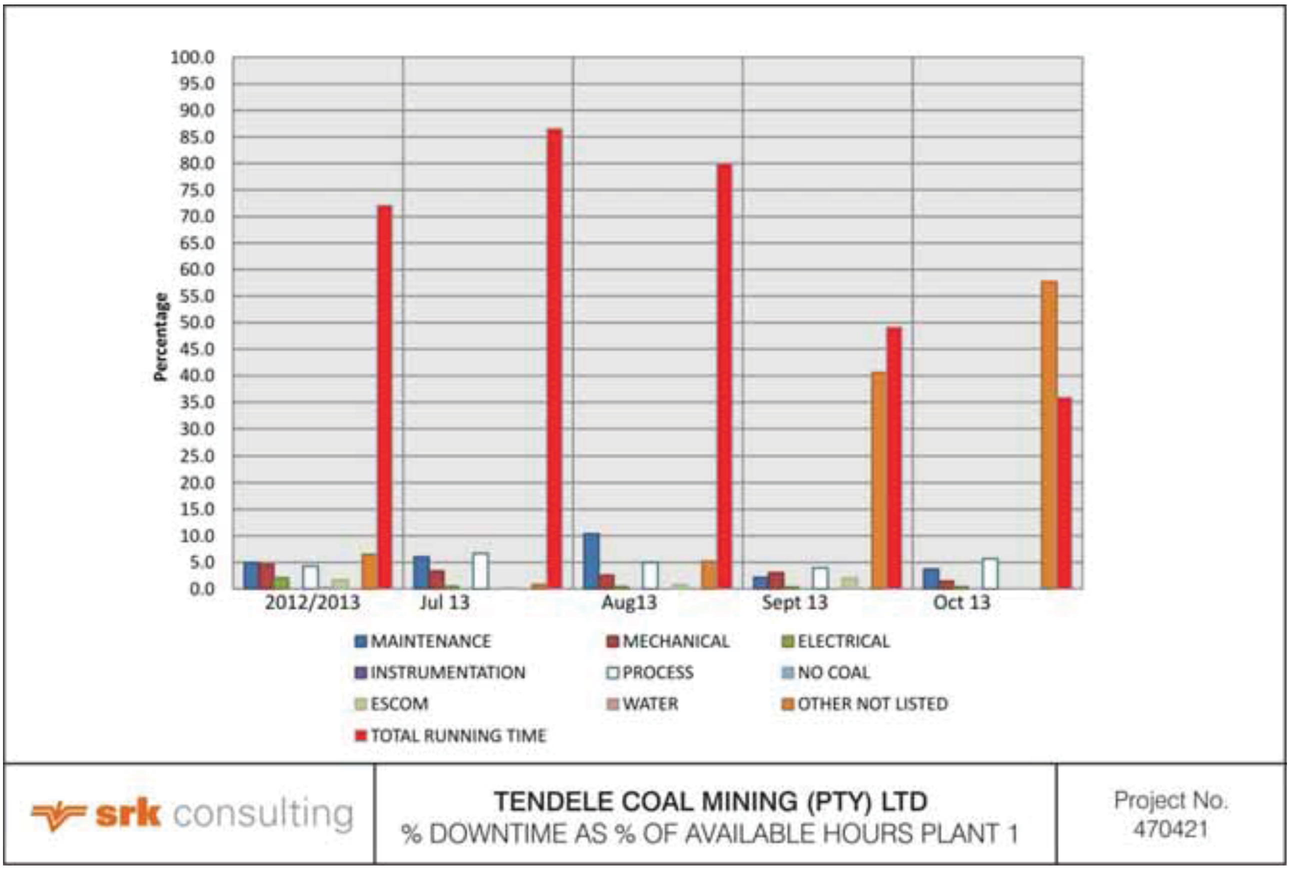

Figure 8-6: Plant 1 Downtime

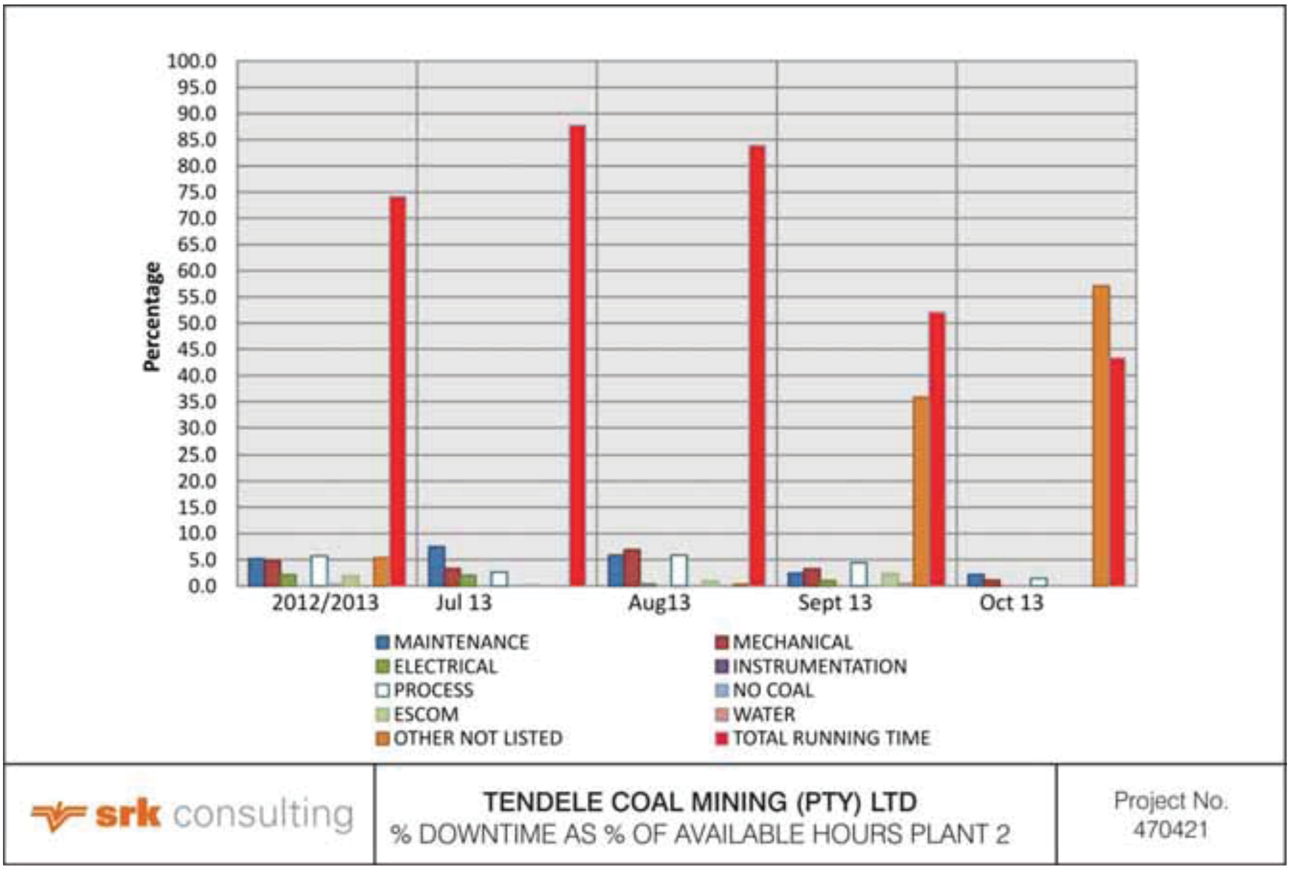

Figure 8-7: Plant 2 Downtime

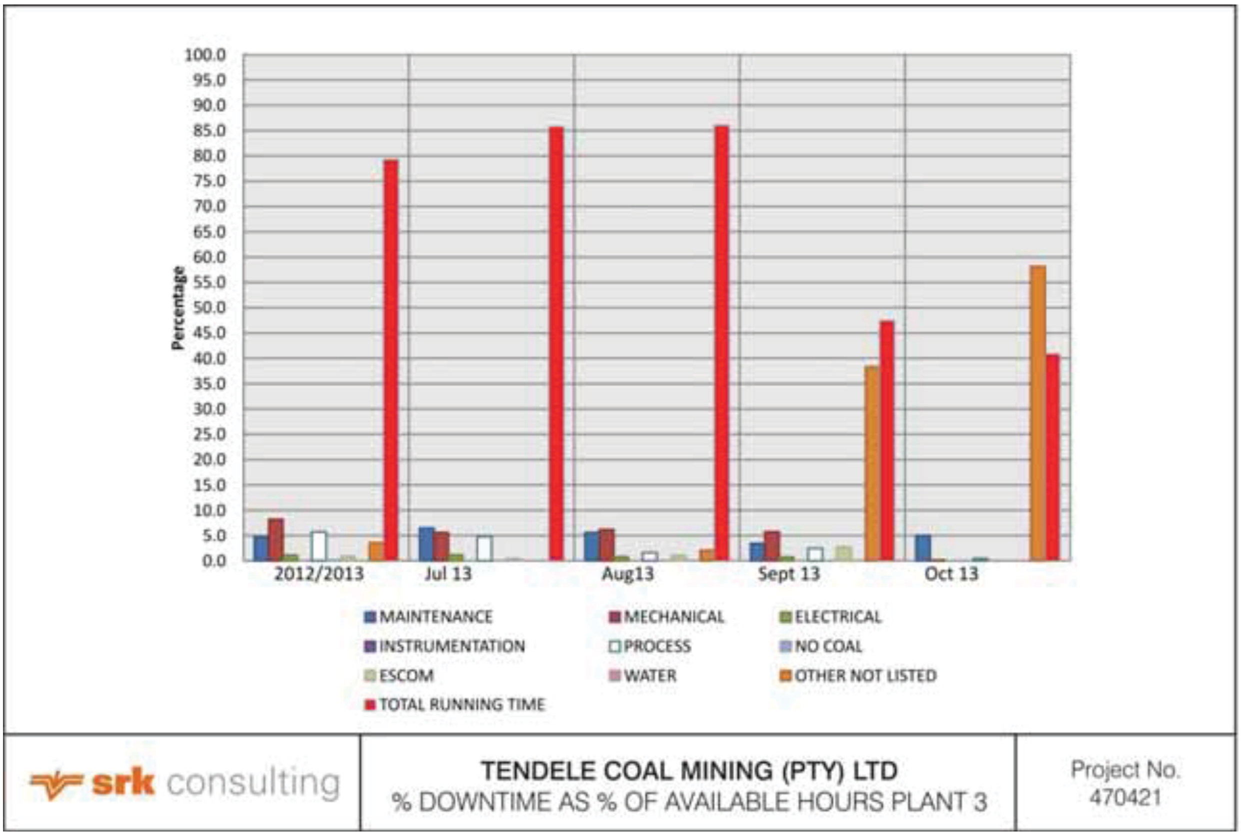

Figure 8-8: Plant 3 Downtime

8.7 Sales Production Statistics

A number of sized products are produced and sold as Anthracite or Thermal coal to the domestic and export market. The table following summarizes the tonnages produced.

Table 8-4: Sales Production Data

Description	Unit	Year 2012/2013	Jul 13	Aug 13	Sep 13	Oct 13
Anthracite sales	**t**	**823 509**	**109 261**	**97 049**	**68 366**	**49 283**
Large nuts	t	41 591	5 115	5 223	3 590	2 217
Small nuts	t	96 034	15 504	11 433	9 826	7 549
Peas	T	127 508	25 051	16 962	17 231	7 760
Drum (10x90)	t	40 493	8 537	8 757	5 471	1 549
Energy coal	t	0	0	0	0	0
Re-crushed sized	t	708	286			
Prime duff	t	334 885	33 748	37 762	14 666	25 153
Middling duff	t	39 861	9 219	5 742	111	0
Spiral	t	58 299	11 800	2 171	5 110	2 617
Blends	t	84 130	0	9 000	12 361	2 437
Thermal sales	**t**	**206 611**	**27 338**	**23 874**	**11 388**	**10 522**
Fine product	t	206 611	11 752	10 644	5 554	15 413
Coarse product	t	0	15 586	13 231	5 834	(4 892)

Negative adjustment on coarse product for October due to survey correction

The percentage product split is illustrated below and as expected the duff (-10mm) portion is the largest contributor to the product mix.

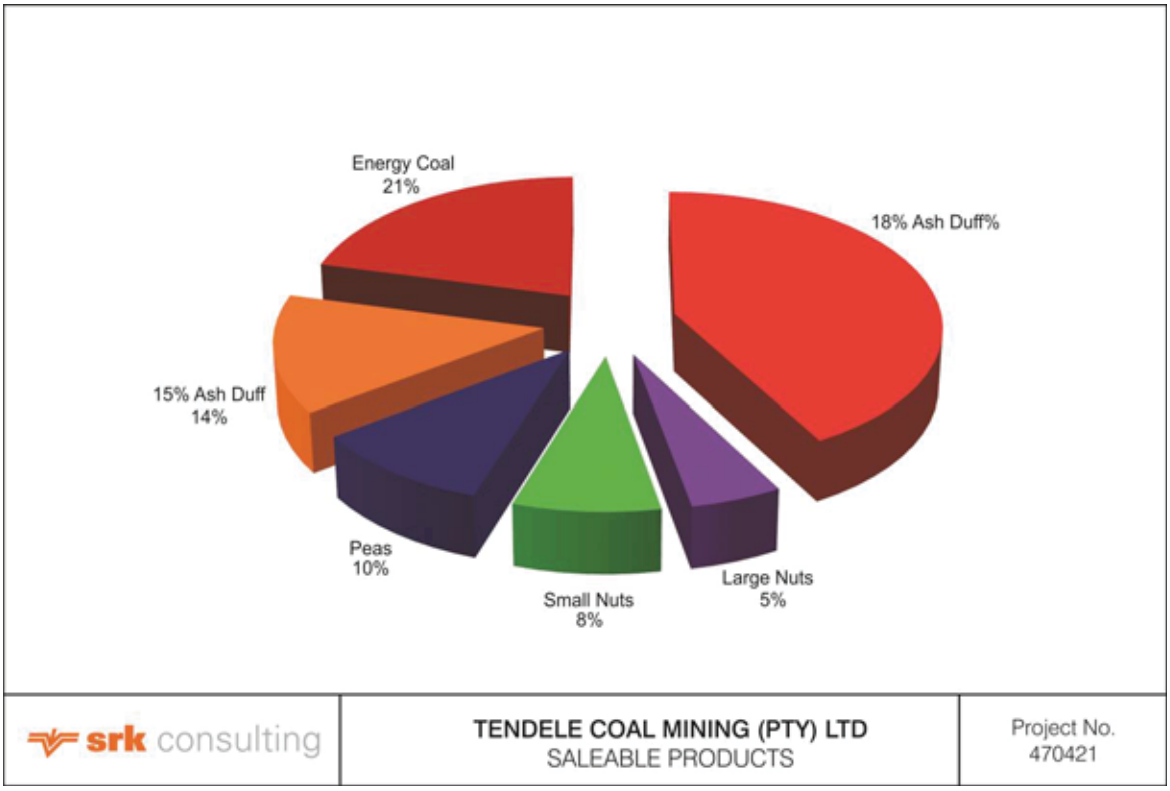

Figure 8-9: Saleable Products

8.8 Manpower

The plants operate on a 4 shift basis and consist of process, engineering, logistics and laboratory personnel.

The labour complement is categorized below:

Table 8-5: Process Plant Compliment

Area	No of people
Management	8
Operational	94
Engineering	49
Logistics	44
Laboratory	27
Total	**222**

8.9 Quality Control

Inspectorate Bureau Veritas is appointed and is SANAS/ISO 17025 accredited. All conveyors of the plants have automatic samplers installed for quality purposes. Four hourly ash analyses are performed and results used for density control. Weekly and monthly washabilities are done to reconcile actual plant performance against anticipated performance. The figures following illustrate the ash contents of the products. It is clear from the graphs that densities are adjusted to maintain the target ash contents for the various products.

The target product qualities are tabled below (Table 8-6):

Table 8-6: Target Product Qualities

Description	Unit	Ash value
Plant 1 and 2		
Large nuts	%	19.0-20.0
Small nuts	%	17.5
Peas	%	17.0-17.5
Duff	%	16.5
Prime duff (-10mm)	%	15.0
Secondary duff	%	28.0
Spiral	%	15.0-19.5
Export blend	%	18.5
Plant 3		
Nuts (50x10)	%	35.0
Duff	%	28.0

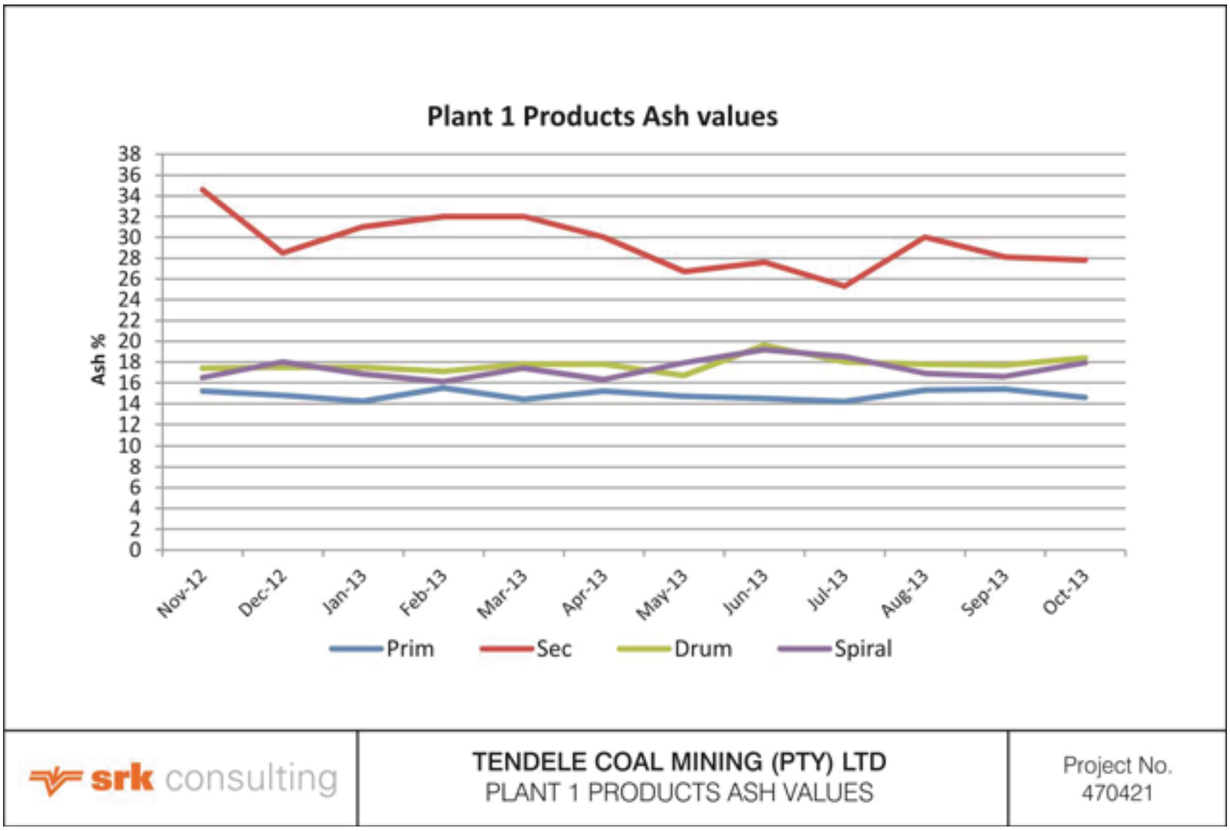

Figure 8-10:Plant 1 Product Ash Values

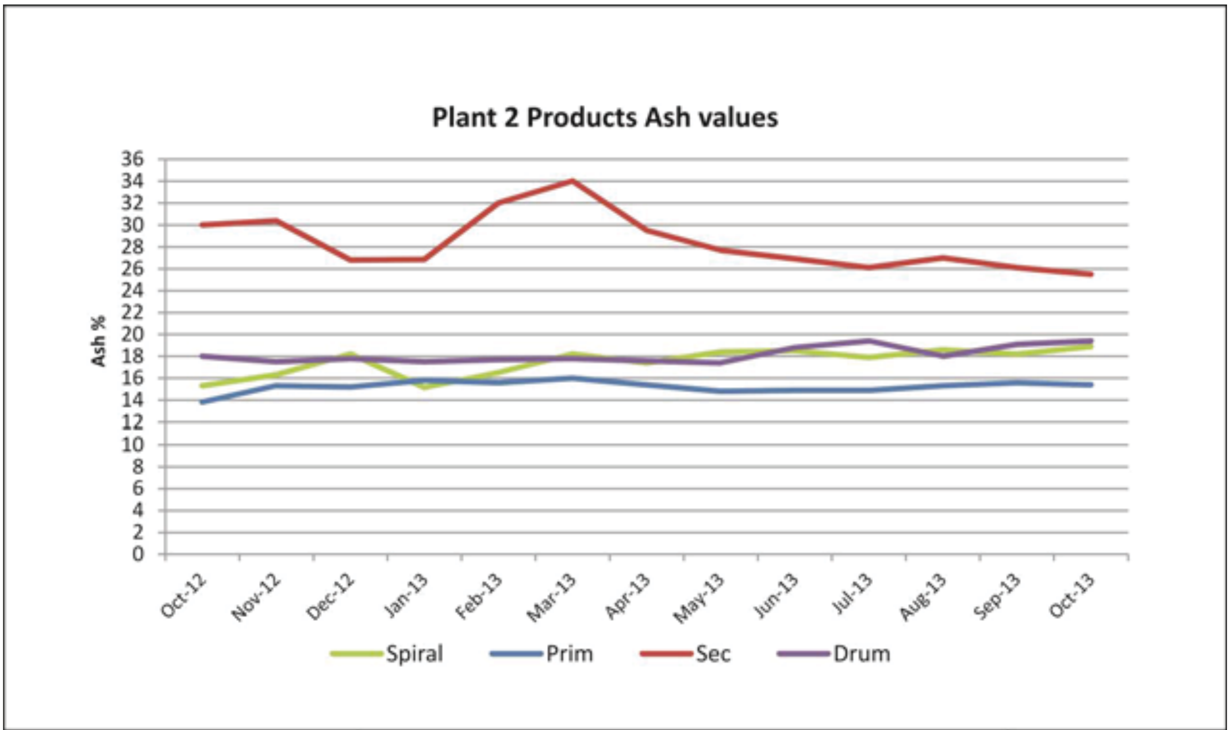

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Figure 8-11: Plant 2 Product Ash Values

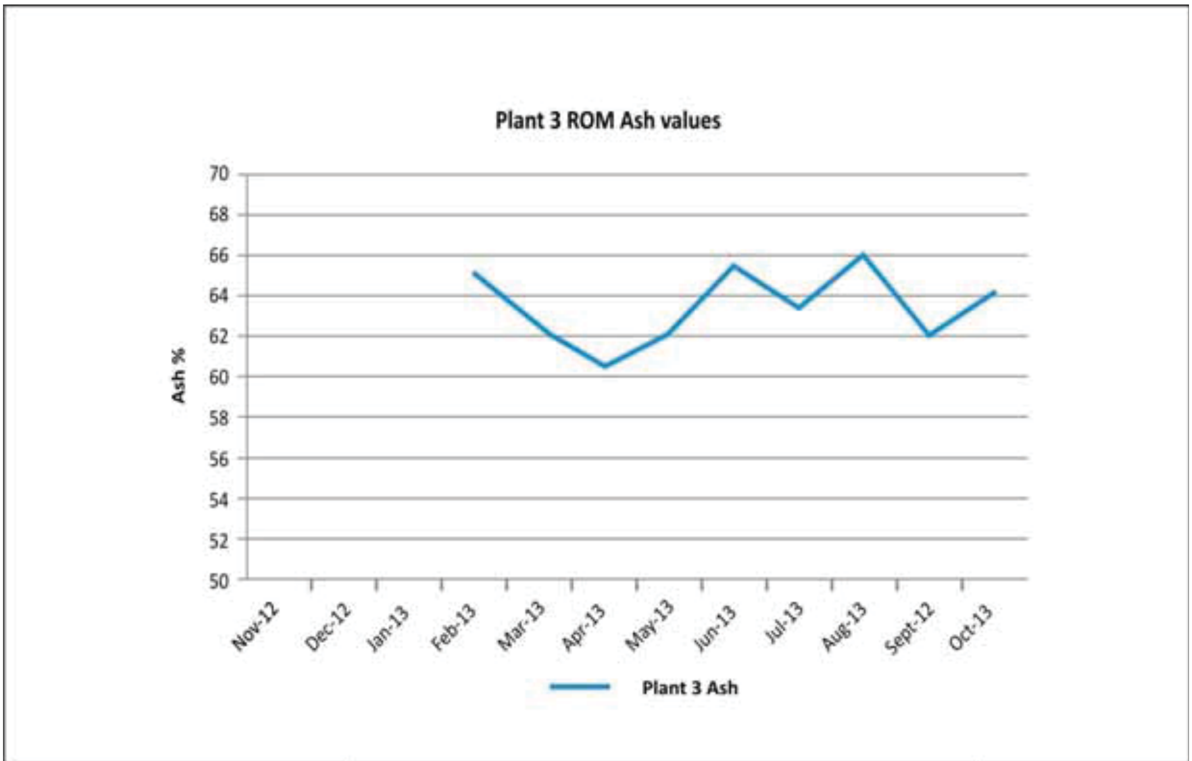

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Figure 8-12:Plant 3 Run of Mine Ash Values

8.10 Product Yield

The table following reflects the reported survey and plant yields. The Luhlanga pit raw coal exhibits a higher quality and yield which is reflected in the last few months. The plant yields reflected include the thermal product yield achieved through plant 3 and is expressed as % RoM feed. The table exhibits a close correlation between plant scale and survey yields.

Table 8-7: Plant Yields

Description	Unit	Year 2012/2013	Jul 13	Aug 13	Sep 13	Oct 13
Plant yield	%	43.7	49.7	48.6	54.6	55.2
Survey yield	%	47.3	52.3	49.9	53.5	56.2

8.11 Plant Accounting

All conveyor belts have weightometers installed for control and accounting purposes. The figures and values are reported into a plc scada system and used for hourly and daily reporting. Product coal weights are dispatched and recorded by 3 assize weighbridges. Month end surveys are conducted and all production is reconciled back to survey figures.

8.12 Magnetite Consumption

The magnetite consumption for the plants is tabled below. Industry norm and best practice is achieving consumption not higher than 1.0Kg/t. Somkhele usage of magnetite is slightly higher than the industry norm. The higher magnetite consumption can be attributed to the introduction of plants 2 and 3 since January 2012 and the day shift operations of the plants due to strike action which required daily start-ups and shutdowns.

Table 8-8: Magnetite Consumption

Description	Unit	Year 2012/2013	Jul 13	Aug 13	Sep 13	Oct 13
Plant feed	t	2 906 437	406 383	371 856	196 472	151 151
Magnetite used	t	3 813	479	425	264	224
Consumption	kg/t	1.34	1.18	1.14	1.34	1.48

8.13 Cost of Operation

A detailed operating cost breakdown of the plant, as supplied by Tendele is given in Table 8-9. The Rand/RoM t for FY 13 is 61.97 compared to the previous FY 12 of 51.34. The main contributors to the cost increase are costs associated with plants 2 and 3, introduced during the last 12 months as part of the operations and are:

- The operating cost associated with the new plant 3 during FY 13;
- The increase in operating costs associated with plants 1 and 2;
- Employee costs for Plant 2; and
- Equipment hire for Plant 2.

Table 8-9: Historical Plant Operating Costs

Description	FY 2012 Value (ZAR)	FY 2012 (ZAR/RoM t)	FY 2013 Value (ZAR)	FY 2013 (ZAR/RoM t)
Operating Plant 1	10 929 961	7.50	17 314 937	8.33
Operating Plant 2	5 322 828	3.65	13 007 212	6.26
Discard disposal Plant 1	6 299 496	4.32	6 962 125	3.35
Discard disposal Plant 2	2 108 912	1.45	5 981 816	2.88
Employee costs plant1	20 562 800	14.1	20 932 937	10.07
Employee costs plant 2	5 704 367	3.91	14 244 667	6.85
Engineering screening plant	-	0.00	-	0.00
Plant maintenance	93 883	0.06	-	0.00
Equipment hire plant 1	15 153 761	10.39	15 118 565	7.27
Equipment hire plant 2	793 343	0.54	18 482 105	8.89
Power costs plant 1	4 321 474	2.96	4 872 403	2.34
Power costs plant 2	1 503 650	1.03	5 410 248	2.60
Sampling on site	2 341 199	1.61	5 393 308	2.59
Stockpile loading	168 000	0.12	-	0.00
Employee costs capitalized	(430 172.44)	(0.30)	-	0.00
Off-site processing cost	-	0.00	1 071 422	0.52
Total	**74 873 502**	**51.34**	**151 080 005**	**61.97**

Plant 3 incurred an operating cost of R22 288 260 for processing discard from Plants 1 and 2, the equivalent of R10.72/RoM t (Plants 1 and 2 RoM tonnes).

8.14 Plant Condition/Capex

The plants are in good condition. No corrosion or structural wear was detected. No Capex is required to attend to refurbishment of buildings, structural steel or platework. Stay in Business Capex is budgeted for of which a portion of 2.03% of revenue is allocated to the process plants.

8.15 Future Plans

The mine is in the process of installing a spiral plant for Plant 3. The spirals will upgrade the fines to a middling grade quality and further enhance the yield of the overall operation

8.16 Risks

The Somkhele Updated Bank Model_5 December 2013 may be optimistic in terms of plant feed tonnages applied to Plants 1 and 2. By applying the average plant utilization figures and plant feed rates for FY12/13 the annual Plant 1 and 2 capacities are 1.1 and 1.4 million tonnes respectively.

Plant designs with coarse and smalls circuits, as in the case of Somkhele, are sensitive to variations in particle size distributions often leading to over and under loading of circuits with a resultant loss in efficiency. Historical data as shown in Table 8-9 has indicated particle size variations at 10mm cut size.

9 Tailings and Discard Disposal

[12.9 (h) (vii), SR 5.2, SR 5.6 (C), SV2.7]

9.1 Current and Future Coal Discard Production

Coal discard and slurry disposal rates are approximately 1.5 million tpa and 300 000 tpa respectively.

9.2 Current Legal Requirement/Obligations

Mining waste, coal discard and slurry disposal is regulated in terms of the Minerals and Petroleum Resources Development Act. The legal situation in this respect is in a state of flux and it is anticipated that the National Environmental Management: Waste Management Act will apply to mine wastes at some future date.

9.3 Current Coal Discard Infrastructure and Operations

While there is an existing discard dump on site the current practice is to dispose of coal discard in the mined out pits, with all carbonaceous material stored below the water table to create anaerobic conditions and hence minimize oxidation and the formation of Acid Mine Drainage. Similarly, slurry is disposed of in mined out open pits.

9.4 Future Coal Discard Disposal Infrastructure Requirements

Discard and slurry disposal options will only need to be revised in the event that the planned use of the open pits for such disposal is found, as a result of further ground water modelling and / or monitoring, to be no longer acceptable, or authorization required in terms of legislation other than the Mineral and Petroleum Resources Development Act not being obtained (for example, failure to gain a Water Use Licence). This is discussed in Section 12.1.4

9.5 Future Legal Requirement/Obligations

In terms of future legislation it is possible that an Integrated Waste Management Plan may become a requirement for mining waste. This could result in the need for additional Environmental Impact Assessments being required in terms of the National Environmental Management Act.

9.6 Closure Plans

Given that it is proposed that both coal discard and slurry will be disposed of in the open pits, closure of these facilities will form an integral part of overall mine closure plan.

9.7 Risks

[12.9 (h) (x)]

As noted in Section 12 of this report, the acceptability of the proposed use of the open pits for the disposal of coal discard and slurry may be questionable in terms of ongoing monitoring and updating of the ground water model. It may become necessary at some point to revise the disposal methods. Should that happen conventional facilities would have to be designed and constructed. Such facilities exist on numerous coal mines and, while this possibility is noted, any risk is unlikely to be material. There is, however, also a risk that ground water contamination as a result of the current practice is more significant than anticipated and unforeseen remediation of ground water is required. With adequate management this risk can be managed. Attention will have to be paid to the envisaged disposal of discard below the water table to ensure that this is achieved throughout the operational life of the mine.

10 Engineering and Infrastructure

[SR5.6 (C)]

10.1 Introduction and Background of Somkhele

Somkhele open pit operations were visited on the 12th November 2013. The purpose of the site visit was to examine the existing infrastructure with a view to ensure whether the infrastructure and maintenance provisions were capable of supporting the present LoM plans. The areas visited were the main incoming substation, the generators, mechanical-, electrical- and boilermaker workshops, Plant 2 MCC 2, maintenance planning department, safety department and a review of the 2013 Capex and Opex. The process department is split into three sections, namely Plant 1, Plant 2 and Plant 3.

The mine was commissioned in 2007, and currently has an agreed Notified Maximum Demand of 3.8 MVA at 22 kV with Eskom, signed by the mine and Eskom in February and April 2011 respectively. Prior to the 2011 NMD agreement, another agreement, dated April 2007, although not signed by both parties, shows that the previous agreement was 1.8 MVA, which was increased to 3.8 MVA due to mine expansion. The mine currently employs about 991 personnel, including contractors.

10.2 Surface Electrical Reticulation

[12.9 (h) (x)]

The mine is fed by a single, 22 kV overhead line (mink conductors) supplied from Eskom’s 132/22kV main substation, located in Mtubatuba, approximately 20 km from the mine. The Eskom supply is on a Nightsave Rural kVA Interval tariff system. The mine is equipped with four 1 MVA, 400 V generators, to supply power to the whole mine in case of Eskom power failures. From the generators, voltage is stepped up to 22 kV via four 1 MVA transformers, which then supply power to the mine’s main incoming substation, better known as the generator substation. The generators are also equipped with a safety cooling circuit, which allows the generators to run for approximately four minutes before shutting down completely.

Allowance has been made for switching the switchgear/generators remotely via control boxes mounted on the outside of the generator substation, for operator safety. The generators are tested on a weekly basis, ensuring that they will operate efficiently in the case of Eskom power failures. During Eskom power failures, the procedure is that the mine will first communicate with Eskom with regard to the estimated duration of the power failure, before starting up generators. This is to avoid the generators running for short time durations as they are designed to operate continuously or for extended periods of time. Allowance for security monitoring by camera in the main incoming substation yard has been provided for. On inspection, the main generator substation equipment was found to be in a good condition and properly maintained. However, it is recommended that the substation logbook be signed by everyone who enters the substation. The log book intent is to provide a history of events and people entry in case there is a later problem. The history can then be analyzed to provide an answer quickly as opposed to searching for phantom problems. At the time of the visit, the substation logbook indicated that it was last signed on the 9th September 2013.

From the main incoming generator substation, power is distributed around the mine at 22 kV, where it is further stepped down to 525 V or 400 V at the load centres, as required. Power factor correction has been allowed for at Somkhele 2 substation 1, with future allowance at Somkhele 1 substation. Power factor correction is crucial in electrical network distribution, especially where inductive loads, for example electric motors and lamp ballasts, are installed. At low values of power factor or where power factor correction equipment is not installed, more apparent power needs to be transferred to produce real power, resulting in wasted energy and high energy costs.

The Plant 2 MCC 2 substation although equipped with a fire detection system, has no automatic fire suppression system installed, but fire extinguishers are positioned on the inside and outside of both the substation entrances. Quotes have also been obtained for automatic fire suppression systems to be installed in the near future, the same as the CO_2 bombs installed at Plant 1 substation. It must be noted that once a fire starts in the substation, it can escalate rapidly before any manned response is able to arrive and extinguish the fire, thus resulting in a large amount of damage. Automatic fire suppression systems are recommended in this situation.

The electricity bills for the months of July, August and September 2013 were reviewed and it was evident that the mine has not exceeded the agreed NMD of 3.8 MVA with Eskom. Energy demand for the months of July and August was in the region of 3.2 MVA, while energy demand for the month of September was in the region of 3.1 MVA. This is proof that the mine has a good energy management system in place, and the future introduction of power factor correction at Somkhele 1 substation, as shown on the single line diagram, will reduce power usage and power costs.

Table 10-1 below shows the Eskom power outages that took place between August and October 2013. From this table, it can be seen that most of the power failures took place in September, whereby in some instances power failures and/or voltage dips occurred for about five consecutive days, two or three times a day.

Table 10-1: Monthly Power Outages for the Mine and Processing Plant (Aug. to Oct. 2013)

Shift Date	Description	Time From	Time To	Total Time (Hrs)
01 August 2013	Power Failure	20:50	21:30	0.67
01 August 2013	Change from generator to Eskom and having another power failure	00:20	02:00	1.67
06 August 2013	Eskom Power Failure	06:00	07:00	1
08 August 2013	Eskom Power Failure	04:10	04:40	0.50
18 August 2013	Eskom Power Failure	06:00	06:30	0.50
27 August 2013	Eskom Power Dip	07:30	08:30	1
03 September 2013	Eskom Power Dip	10:50	11:20	0.50
03 September 2013	Eskom Power Failure	16:20	19:00	2.67
03 September 2013	Power Failure	19:40	20:30	0.83
04 September 2013	Eskom Power Dip	10:05	10:35	0.50
05 September 2013	Eskom Power Dip	05:15	05:35	0.33
06 September 2013	Eskom Power Failure	02:00	06:00	4.00
07 September 2013	Eskom Power Failure	06:00	10:15	4.25
07 September 2013	Eskom Power Dip	13:14	14:00	0.77
11 September 2013	Eskom Power Dip	07:50	08:10	0.33
11 September 2013	Eskom Power Dip	14:20	14:40	0.33
October 2013	No Power Failures and Power Dips in October 2013			
3 Months Total				***19.85***

10.3 Security and Weighbridge Complex

The mine has a perimeter fence for access control, as there are a number of community homesteads in the vicinity of the mine. The main entrance to the mine and the entrance to the training centre are controlled by manned security, and there is also security lighting allowed for around the mine perimeter. The main generator substation is also accessed via lockable gates, and has CCTV camera to monitor any unauthorized access to the substation. Although the mine security has been upgraded during the past few years, it was noted that there are still a few instances where cable theft is experienced, especially in remote areas like pump stations.

The mine is currently equipped with three weighbridges, two of 70 t and one of 60/80 t. The weighbridges are used to monitor material that is being trucked to the port and for product collected by different customers. These weighbridges are serviced and tested at least every two years by an independent consultant, Trek Scale Company (Pty) Ltd. Once tested and serviced, and requirements found to be in accordance with the Trade Metrology Act of 1973 (Act No.77), a verification certificate, valid for a period of two years, is issued to the mine. The weighbridge has CCTV cameras to monitor the operations via the control room. The weighbridge complex seemed to be well managed and maintained at the time of the visit.

10.4 Surface Administration Offices and Workshops

The main administration offices are pre-fabricated buildings. This will result in rehabilitation cost savings at the end of LoM, as these administration offices can be dismantled, transported and re-used somewhere else by the mine, or sold to any interested third party. Maintenance planner, maintenance planner’s clerk, safety manager, chief executive officer, mine manager, geologist, secretaries etc. have offices in the main administration offices. There is allowance for boardrooms, parking area and ablutions. The administration offices were well laid out and sized to support the LoM.

The workshops consist of contractors’ workshops and plant workshops. Plant 2 workshops were visited. These workshops are split into electrician/fitter and boilermaker workshops, and foreman’s office. There is also allowance for fast moving spares storage. There are no motor repairs being carried out at the mine. Defective motors are replaced by new motors, as it is cheaper to replace motors instead of fixing them. Plant 2 workshops walkways were properly marked on the floor. The boilermaker area is further divided into three, by means of “welding” screens. Housekeeping in the Plant 2 workshop was of high standard, and there were enough fire extinguishers in the vicinity of the area. It is recommended that the mine keeps track of the service on the fire extinguishers, as a single fire extinguisher, located in the boilermaker workshop, was found to have expired at the time of the visit. All other fire extinguishers were, however, recently exchanged and without any default.

10.5 Engineering Complements

Table 10-2 below shows the planned plant and outside services engineering complements for 2014 versus the actual that is currently being employed by the mine.

Table 10-2: Plant and Outside Engineering Complement

Position	2014 Budget	Actual			
		Permanent	Temp	L/Hire	Variance
Engineering Manager	1	0	0	0	-1
Engineering Foreman	3	3	0	0	0
Artisan - Boilermaker	8	8	0	0	0
Artisan - Electrician	6	6	0	0	0
Artisan - Fitter	8	8	0	0	0
Planning Clerk	1	1	0	0	0
Driver - TLB	1	1	0	0	0
Driver - Crane	2	2	0	0	0
Engineering Assistants	21	17	2	0	-2
Handyman	4	5	0	0	+1
Stores Clerk	0	2	0	0	2
Plumber	1	0	0	0	-1
Engineering Planner	1	1	0	0	0
Instrument Technician	1	0	0	0	-1
Total	***58***	***54***	***2***	***0***	***-2***

Besides the positions that require to be filled, the mine's plant and outside services engineering labour compliment seems adequate to support the LoM plans.

10.6 Safety

In addition to the safety manager, who is SAMTRAC and Comsoc 1 and 2 qualified, the mine has appointed fifty safety representatives. These safety representatives have all been nominated by the teams that they work with and are sufficiently trained through the NOSA safety representatives' course. It was noted by the safety manager that the mine is planning to train more safety representatives, to make provision for leave and resignations. There are currently twenty-three safety representatives who are trained and qualified in fire-fighting and first aid. Safety meetings are conducted on a monthly basis and it is the responsibility of the safety representatives to give feedback to their respective teams via the minutes of meeting. Every head of department is responsible for discussing the monthly safety topic with his employees after which an attendance register will be signed and kept by the safety department. The safety department receives a monthly Newsflash from the DMR which is also discussed between the heads of departments and employees. Safety statistics are discussed in the monthly safety meetings and mitigation methods discussed on how to minimise any incidents that might have occurred during that particular month. In addition to the monthly meetings, there are risks/safety related meetings and audits such as:-

- Quarterly review of progress against mitigations/actions; and
- Annual baseline risk assessment review conducted to identify all risks
- Quarterly external audit and verification of safety systems by NOSA
- Quarterly external review of high wall designs and conditions
- Daily monitoring of dust and noise in community
- Frequent official DMR audits on mine

The baseline risk register is in place for the operations, whereby risks such as community relations and non-compliance with HSE legislation were identified and mitigations put in place. Mini risk assessments are also conducted before any work can be carried out, whereby risks are identified and mitigation measures agreed on. Depending on the duration of the task, a toolbox talk will be held every day before any work commences, until the job is completed. There are isolation procedures in place and all the mini risk assessments, signed by every person involved with that particular work, are kept by the maintenance planning department for records. There are also disciplinary procedures in place should deliberate unsafe acts be identified.

The safety performance report illustrates that the mine has not experienced any fatalities since 2007 when the mine was commissioned. Since the inception of the mine there were nine lost time injuries recorded. The mine's current Lost Time Injury frequency rate is a commendable 0.25. The mine is aiming to reduce the accident frequency rate by at least 0.02, during 2013/2014 financial year.

10.7 Capital Costs

Table 10-3 below shows a summary of the capital cost application, approved capital and actual capital spent to date for financial year 2013/2014, while Table 10-4 illustrates approved and already committed capital for financial year 2012/2013. Table 10-5 illustrates abnormal expenditures already spent during financial 2013/2014.

Table 10-3: Somkhele Approved Capital Budget Summary (2013/2014)

Description	2013/2014 Application Budget (ZAR million)	2013/2014 Approved (ZAR million)	Actual YTD (Sept.) (ZAR million)	Year-end Variance (ZAR million)
Exploration	10.0	10.0	0.3	9.7
Critical Spares for Plant 1, 2 and 3	7.1	7.1	0.7	6.5
Upgrade Pit A pumping system	1.2	1.2	0.02	1.18
New screening plant	2.5	2.5	2.1	0.4
Pump station in new mining area	2.4	2.4	0.5	1.9
New mining workshop	1.6	1.6	-	1.6
Vehicle replacement	1.5	1.5	-	1.5
Additional store	1.2	1.2	-	1.2
Survey equipment	0.5	0.5	-	0.5
Bobcat	0.9	0.9	-	0.9
Office furniture	0.3	0.3	0.04	0.26
Tools plant 3	0.3	0.3	-	0.3
Additional carports in parking area	0.1	0.1	-	0.1
Changes to exploration office	0.1	0.1	-	0.1
KwaQubuka relocation	26.3	26.3	0.7	25.6
IT	0.8	0.8	0.1	0.7
Road maintenance	1.0	1.0	-	1.0
New clinic	1.4	1.4	-	1.4
Concrete slabs under Plant 3 stockpile	1.8	1.8	-	1.8
Spare tailings pipeline for Plant 2 and Plant 3	0.5	0.5	-	0.5
Total approved capital projects	**61.5**	**61.5**	**4.4**	**57.1**

1. Slight differences may arise due to rounding

SRK is of the opinion that this Capital provision is adequate, given the scale of Somkhele operations. Only about 7% of the approved capital has been spent so far. All the approved Capital is deemed necessary to support Somkhele Operations (Table 10-4).

Table 10-4: Somkhele Approved and Already Committed Capital Budget Summary (2012/2013)

Description	2012/2013 Application Budget (ZAR million)	2012/2013 Approved (ZAR million)	Actual YTD (Sept.) (ZAR million)	Year-end Variance (ZAR million)
Luhlanga relocation	20.7	20.7	1.8	18.9
SLP	8.5	8.5	0.4	8.1
Change house	-	-	0.04	-0.04
Discard Plant	-	-	0.03	-0.03
Weighbridge 2 cameras	-	-	0.01	-0.01
Total approved 2012/2013 and already committed	**29.2**	**29.2**	**2.6**	**26.6**

Although the capital spent on the change house, discard plant and weighbridge cameras was not budgeted for, this abnormal expenditure was necessary to comply with security, health and environmental requirements. This abnormal expenditure (Table 10-5) was approximately 1.3% of the total approved budget, which is acceptable.

Table 10-5: Somkhele Abnormal Expenditure Summary (2013/2014)

Description	2013/2014 Application Budget (ZAR million)	2013/2014 Approved (ZAR million)	Actual YTD (ZAR million)	Year-end Variance (ZAR million)
TV for open pit	-	-	0.01	-0.01
Siyaya relocation	-	-	0.8	-0.8
Total Abnormal Expenditure	***-***	***-***	***0.81***	***-0.81***

10.8 Operating Costs

The electricity operational costs for Plant 1 are estimated at R4.39/t while Plant 2 electricity operating costs are estimated at R3.94/t. This was estimated by taking into account the electricity costs for financial year 2012/2013, which ended in June 2013, and the production achieved for that financial year. Although Plant 1 production was less than Plant 2 production by about 20%, electricity costs for Plant 2 were only about 10% more than those of Plant 1, in financial year 2012/2013. It was mentioned by the mine that due to Plant 3 starting in February 2013, the electricity costs for Plant 3 were split between Plant 1 and Plant 2. The mine indicated that the actual electricity costs for Plant 2 are currently 20% more than that of Plant 1. This is based on the separate allocation of the costs for each of the three plants in financial year 2013/2014. Future installation of power factor correction at Plant 1 substation, as shown on the single line diagram, will further reduce the electricity costs for this plant.

10.9 Plant and Outside Services Maintenance Planning and Scheduling

The maintenance planning and scheduling is run on a Microsoft Access based programme, developed in 2010 by the current maintenance planner. However, it was noted by the maintenance planner that this program is continually being improved, as more maintenance planning and scheduling needs arises. The planned maintenance scheduling involves the input of the foreman together with the maintenance planner. The planned maintenance (PM) job number will then be created by the planner and a job card issued, for planned maintenance work to go ahead. The maintenance system also allows for filtering of planned maintenance work. Once the planned maintenance work has been carried out the foreman will then sign off the job card and the system updated to reflect the maintenance work carried out, and the next scheduled maintenance date. If there is no PM number, it means that the work that was carried out was ad-hoc or unplanned work. Unplanned work is usually remedial work identified in the field by the foreman or technician, which requires immediate attention. All work orders for ad-hoc work, which are normally created by the artisans, get scanned and saved on the network. Spares management is carried out by the foreman and the stores department.

The planned maintenance scheduling includes but is not limited to the following:-

- Weekly calibration on weightometers by Process Automation;
- Annual generator service carried out by MTU;
- Quarterly condition monitoring / oil sampling on gearboxes by Wear Check Africa;
- Annual insulation test on transformers by TSS;
- Quarterly infra-red testing on switchgear and overhead lines by CMM Consultants;
- Periodic inspection and testing on lifting equipment by SL Services;
- Annual injection testing by H&LV Services; and
- Weekly statutory tests on conveyor safety carried out by the mine.

The plant and outside services maintenance planning system, although still in an ongoing development phase, seems to be well structured and effectively managed.

10.10 Risks

There is always a potential for fire in spite of every care being taken to prevent faults. Although substation fires are likely to occur occasionally, once they occur the results become catastrophic, as this will result in a loss in production and revenue. As substations are not always manned, once the fire starts, it can escalate rapidly before any manned response is able to arrive and extinguish the fire. Automatic fire suppression systems have been installed in Plant 1 substation and the mine plans to equip the other substations with similar systems.

10.11 Conclusions

The mine infrastructure appears to be well maintained and designed to support the mine operations. The safety statistics show that the mine regards safety as a priority, and the logistics contracts appears to be working efficiently. Maintenance planning and scheduling appears to be well managed. Although the mine had issues with power dips and power failures during the months of August and September 2013, four generators provide backup to operate the whole mine in the event of power supply failure.

11 Logistics

[12.9 (h) (vii), SR5.6(C)]

The main products produced by the mine are anthracite in various sizes (18% ash duff, 15% ash duff, peas, small nuts and large nuts) and some thermal coal produced from rewashed discard.

Approximately 50% of the product is sold off-shore and is transported to the Port of Richards Bay for loading onto ships. The remainder of the product is sold to local customers that are responsible for their own collection and transport from the mine.

The mine has different contracts in place, to haul RoM material from the pit to the plants, and finished product from the plants to the Richards Bay Port for export. The following contracts are currently in place.

11.1 Transport Contract Agreement

A five year transport contract agreement between Tendele and Mpukunyoni Business Association, for transporting the product from Somkhele Mine to the Storage Facility known as GP1/Kusasa/Navitrade) at the Port of Richards Bay. This contract agreement, which came into effect on the 1st July 2011, is based on the supply of ten tipper trucks by the contractor, estimated to deliver 300 000 tonnes of product per annum. However, the contract agreement allows for additional trucks to be supplied by the contractor should the mine's customers require additional quantities.

In the agreement the Mine is responsible for loading the trucks.

- The contractor will work Monday – Friday 24 hours and Saturday until 18:00. Work on Sundays and public holidays is also included if required by the mine;
- There is a monthly contract adjustment provided for fuel and an annual escalation allowance based on the Producer Price Index; and
- The mine has a right to terminate the contract if the contractor does not maintain 51% equity in terms of the Broad Based Black Economic Empowerment Act of 2003.

11.2 Throughput Agreement

The throughput agreement between Tendele and Grindrod Terminals Richards Bay allows for the export of up to 600 000 tonnes of anthracite per annum through the Port of Richards Bay; the agreement came into effect on 1 February 2012. This contract provides for:

- 45 000 tonnes of exclusive storage capacity;
    - 30 000 tonnes storage capacity under cover; and
    - 15 000 tonnes storage capacity on open stockpile.
- Commitments by Grindrod Terminals or its appointed sub-contractor:
    - The receipt and unloading of product at the terminal;
    - Security;
    - Transfer from the storage area via conveyor to Transnet's conveyor at the terminal;
    - Loading of product onto vessels at the berth;
    - Provide capacity to load 10 000 tonnes per day once the vessel is alongside; and is
    - Subject to Transport Port Terminals (TPT, a division of Transnet) ability to convey the loads.
- Commitments by Tendele:
    - Export at least the annual tonnage;
    - Provide a six month shipping schedule;

  - Provide documents proving the quantities loaded on each shipment;
  - Deliver by road or rail to the terminal;
  - Nominate vessels using their own shipping agent;
  - Weight measurements to be made by Tendele's weighbridge at the mine; and
  - There will be a "hot coal" fee to cover all costs incurred by Grindrod (i.e. the cost of managing any incidence of spontaneous combustion).
- Take or Pay agreement:
  - Minimum of 50% of annual tonnage commitment must be shipped in each six month period. If more is shipped, Grindrod will not be liable for insufficient storage capacity and may stop additional receipts; and
  - Grindrod must supply capacity to load 1/12 of annual commitment per month.
- Throughput fee:
  - Fee to be paid per metric tonne exported; and
  - Annual escalation of rates escalated at the Consumer Price Index plus the TPT rate.

The above mentioned contract agreements are deemed to be critical and necessary for the smooth operation of the mine. It is important that the mine monitors the performance of the contractors on an ongoing basis, to ensure uninterrupted logistics operation. There were no logistics concerns raised by the mine during the site visit.

12 Environmental and Social Compliance

[12.9 (h) (viii), SR5.2 (B/C)]

12.1 Authorisations and Licenses

12.1.1 Mining Rights

Two mining rights cover Areas 1 – 3 (Figure 3-1):

- **Area 1:** New Order Mining Right granted to Tendele Coal Mining (Pty) Ltd in June 2007 (KZN 30/5/1/2/2/135MR); and
- **Areas 2 and 3:** Existing plant and mine is held over a converted New Order Mining Right, executed in March 2011 (KZN30/5/1/2/2/216MR). The Luhlanga and KwaQubuka areas are included in KZN30/5/1/2/2/216MR through a Section 102 conversion

12.1.2 Prospecting Rights

Prospecting Rights KZN86PR and KZN30/5/1/1/2/93PR for Areas 4 and 5 respectively, have lapsed and were replaced by a Mining Right application, which was accepted by the DMR on 9 September 2013.

12.1.3 Environmental Management Programme (EMP)

[SR5.2 (B), SR5.2(C)]; [12.9 (h) (x), SR5.2 (A/B/C)]

An approved EMP exists for the current operations in Area 2, as well as an approved amendment for current operations in Area 1. An EMP has been approved for planned expansions adjacent to Area 2 (Luhlanga and KwaQubuka), as well as an amendment to cover the second coal washing plant in Area 2. This latter EMP was approved on 29 May 2012. An EMP has been approved for the third coal washing plant and the DMR has acknowledged that the associated impacts have already been addressed by virtue of the fact that the third washing plant is in an area which has already been disturbed and impacts are covered in the EMP for the second plant.

12.1.4 Water Use License

[SR5.2 (B/C)]

The mine has an approved Water Use Licence for water abstraction from the Umfolozi River. It must be noted that, at times of low flow in the Umfolozi River, the amount of water which the mine is entitled to abstract may be halved. The Water Use Licence does not include waste disposal or other relevant activities other than abstraction of water but three Water Use Licence applications are pending to cover these activities.

12.1.5 Mine Waste Disposal

A small, rehabilitated discard dump exists on the site. The EMP makes provision for future mine waste, including overburden, to be disposed of in the open pit workings.

All three plants are situated in Area 2 and it is proposed that slurry from these plants will be disposed of in Pit A, in Area 2, and North Pit, in area 1. It has been estimated that these two pits will be able to accommodate all slurry generated for 21 years.

The EMP provides a schedule in terms of which it is intended that the various pits will be used for coal discard and slurry disposal.

12.1.6 Social and Labour Plan

The Social and Labour Plans (SLPs) for the periods 2008 – 2012 and 2013 - 2017 were reviewed. The mine is not strictly in compliance with the requirements of the first SLP, with two out of ten Local Economic Development projects having been rolled over for implementation between 2013 and 2017. The implications of this are discussed in Section 12.11.

12.2 Environmental Issues

Geohydrological modelling indicates that post closure decant of water will occur in Area 1 with decant water flowing towards the Umfolozi River. The model also indicates that the aquifer will be contaminated. The contaminant of concern in both instances is sulphate. Indications are that impacts associated with this are unlikely to be excessive and will be less than would normally be expected from a typical thermal coal mine. This contamination could, however, result in unforeseen closure costs if post closure water treatment is required. In this respect it is noted that ground water monitoring has been comprehensive. The likelihood of the associated liability is regarded as low because:

- The levels of contamination are relatively low;
- Indications from the geohydrological model suggest that decant will not occur for several years following cessation of mining; and
- Flow rates are predicted to be low.

In terms of the current Water Use Licence water availability could be halved during dry periods, potentially impacting on operations.

In terms of other environmental issues it should be noted that the mine is situated in an environmentally sensitive area, being close to the Umfolozi River and the Hluhluwe game reserve. This sensitivity must be taken into account in assessing any environmental risks associated with the operation and final closure.

In general terms, environmental management and housekeeping on the mine is of a high standard with the current management team clearly aware of requirements, which are being proactively addressed. Some potential issues do, however, exist in this regard, associated with the following:

- The materials balance for backfilling and discard and slurry disposal in mined out pits;
- The continued acceptability of the use of open pits for discard and slurry disposal;
- Rehabilitation requirements which may be difficult to meet in terms of the establishment of a wetland. (The mine has, however, noted that the EMP is being revised in this respect);
- Product stockpile capacity; and
- Reliance on monitoring as a management measure, such as the proposed management of biodiversity in the streams.

These issues are discussed in some detail in the following paragraphs.

The EMPs commit the mine to backfilling open pits to return the topography to as close as possible to its original state. Management of this is required throughout the operation, and during closure. It is apparent that this has received considerable attention and planning is underway to ensure that the backfilling operation can be designed to achieve the objective cost effectively with a combination of concurrent backfilling and the use of the open pits for coal discard and slurry disposal. To some extent the implementation of the planning is complicated by the need, at least in the early stages of mining, to ensure adequate access to the coal seam, and possibly constraints imposed by the steep dip of the coal seam. Adequate management throughout the operational phase will address this issue.

The use of mined out pits for slurry and discard disposal has been approved in terms of the requirements of the Department of Minerals and Energy. Other environmental legislation is, however, also applicable in this respect. This includes the National Water Act that requires a Water Use Licence. The application for this licence is still pending and could be unsuccessful, or result in the imposition of onerous conditions. In addition to this, ongoing monitoring and / or future ground water monitoring may result in impacts being identified which may result in additional liabilities.

There is an EMP commitment for the establishment of a wetland in the post mining scenario, as well as a commitment that the area be free draining. As for backfilling in general terms, this can be addressed in terms of appropriate planning and the mine reports that a revision of the plan is underway.

At the time of the site visit it was apparent that design stockpile capacity in the plant area had been exceeded. This was attributed to constraints imposed by difficulties in securing a berth at the terminal at Richards Bay, resulting in the need to stockpile more than anticipated product at the mine. If this situation is not resolved and stockpile capacity continues to be an issue, unforeseen liabilities could result.

Bio diversity management in the aquatic environment, as described in the EMP for proposed mining expansions is limited to ecosystem health monitoring. This is the case for other environmental aspects as well. Monitoring may result in the discovery of unforeseen liabilities. In the specific case of biodiversity it is recognized that the streams are non-perennial and that they are impacted on by activities other than mining, notably cattle grazing.

12.3 Groundwater

Extensive ground water modelling has been done and indications are that ground water management does not represent a significant liability. Should this not be the case, however, the associated risk could become material as a result of the costs associated with post closure water treatment.

Pit dewatering is required but indications are that ground water quality is not likely to deteriorate significantly except in terms of sulphate concentration, which is predicted to increase to 250 mg/l 200 m from the mine, but will not increase above the current 137 mg/l at the Umfolozi River. In Area 1 decant will occur post closure and the flow of decant water will be towards the Umfolozi River. Sulphate concentration in the decant water is expected to increase to 200 mg/l, as opposed to background levels of around 137 mg/l. This limited deterioration is based on the deposition of dried slurry in worked out pits in Area 2.

For the expansion project, information on groundwater is very sketchy and decant is mentioned only in terms of monitoring and the need for a free draining topography post closure to limit water ingress. In general, it is noted that water make in the pits is not excessive and can be absorbed in the process water system, despite the fact that the depth to ground water is relatively shallow.

12.4 Water Supply

Process water is sourced from the Umfolozi River and potable water from a pipeline, tanker or boreholes.

12.5 Surface Water Management and Surface Water Discharge

Surface water management involves a drainage system in which clean and contaminated water is separated and contaminated water contained. In terms of contaminated water, the mine has been planned for zero discharge. Run-off control is achieved through a system of drains, (for clean and contaminated water) pollution control dams and settling dams.

12.6 Wetlands

The EMP notes the loss of wetland potential as an impact and commits the mine to the creation of an artificial wetland on de-commissioning. The mine is in the process of revising the EMP in this respect.

12.7 Mine Waste Disposal

All non-mining waste is removed and disposed of under contract. This includes hazardous waste such as oils and grease that are removed by recycling agents.

12.8 Open Pit Rehabilitation

The EMP makes provision for the use of open pit areas for the disposal of both overburden and plant discard material. Backfilling therefore involves a combination of mine waste disposal and the rollover mining method whereby overburden is returned to the pit. A high standard of rehabilitation was observed during the site visit but a backlog related to constraints in the rollover method was noted. The backlog is due to overburden which, according to plan, should have been deposited in the pit being placed on surface, resulting double handling to backfill the pit to meet closure objectives. This was attributed to need to establish adequate access to the coal seam in the early stages of the operation.

12.9 Proposed Future Operations

Future operations will require authorisation in terms of amendments to the EMP and the requirements of other environmental legislation. It is SRKs view that environmental considerations for such operations will be similar to those discussed for existing operations in this report.

12.10 Environmental Studies

[SR5.2 (B/C)]

Environmental studies have been carried out in support of the EMPs.

12.11 Social Aspects

[SR5.3]

As is the case for environmental management, any risks associated with social issues may be exacerbated by the sensitivity of the area related to proximity of the local community to the mine.

The Social and Labour Plan (SLP) addresses the normal requirements. The objectives of the plan are aimed at promoting the socio-economic development of the area and, as required, the major labour sending area that is the Mpukunyoni Tribal Authority area. The more significant impacts identified in the SLP are all positive in terms of job creation. Tendele currently employs some 267 permanent employees with contractors bringing the total workforce to over 950 employees. In terms of compliance, the SLP specifies 232 permanent employees out of a total of 954.

The land is managed by the Ingonyama Trust Board, which is a trust created for the benefit of the Zulu Kingdom. The SLP makes provision for a forum that has been set up between the mine and the Tribal Authority. In the past, a mining committee was established and required to meet once a month with the manager of the mine. This committee has since been replaced by the Mpukunyoni Tribal Authority, with whom the mine now works directly in terms of a Memorandum of Understanding.

The mine achieved the majority of its targets set in the SLP in 2012, according to standards required by the Mining Charter. Non-compliance relates to two of the Local Economic Development projects not having been implemented, and targets for Adult Basic Education and Training for employees not having been met. The non-implementation of the two LED projects resulted in an under expenditure for that budget item of approximately R4 million out of a total LED budget of some R32 million.

Assessment of the SLP suggests that, subjects to the comments below, social compliance will not be a significant concern as long as responsible management of social commitments is maintained. To some extent this comment is based on observations regarding implementation of the legislation as opposed to a strict interpretation thereof. Certain commitments, notably two of the Local Economic Development projects have been identified, however, as having to be rolled over to the new SLP to cover the period 2013-2017. This represents a risk in that, while there is some tolerance for annual commitments not being met during a five year period covered by an SLP, failure to address all commitments before the end of the five year period is viewed in a more serious light. There are risks to the mine in this respect in that the imposition of fines is a possibility. Apart from this, failure to comply with SLP commitments could impact on relations between the mine and the community. This could lead to labour unrest and the associated problems.

Families that had to be relocated as a result of mining operations have been given the opportunity to nominate one person per household, who is afforded the opportunity to attend interviews for work at the mine, until such nominee is actually employed.

Access to the mine by farming stock owned by the local community is difficult to control as a result of on-going damage to fences.

12.12 Financial

[SR5.2 (C) (ii)]; [12.9 (h) (x), SR5.2 (A/B/C)]

12.12.1 Additional Capital Expenditure

Subject to the risks noted under Section 12.2 and possible upgrades of the surface water management system, SRK has not identified significant liabilities that will require capital expenditure over and above that normally included in the mine's operational budget. Good ongoing management can ensure that this situation does not change. In the event that liabilities do develop, however, this could have a significant impact, with particular reference to the estimated closure costs. In this respect comments relating to backfilling requirements, and possibly water treatment requirements need to be taken into consideration.

12.12.2 Closure Cost Estimates

[SR5.2(C) (iv)]

The total closure cost has been estimated. This estimate, which allows an offset for salvageable material, is approximately R59.8 million at 2013 rates. Best practice and the requirements of the Department of Minerals Resources (DMR) are that sale of equipment and salvageable material is not taken into account in the closure cost estimate. The calculations provided indicate that the value of 450 tonnes of steel from the plant has been deducted. At a rate of R1 092 per tonne for the demolition of this steel this figure amounts to some R500 000, suggesting that the closure cost would be closer to R60.3 million.

Rates provided by the DMR, escalated by the CPI rate were used where more accurate rates were not available but actual contractor rates were used where such rates could be obtained. For demolition and rehabilitation, therefore, it is SRK's view that the estimate provides a reasonable assessment of the closure cost. For water treatment, however, a master rate per hectare was used based on parameters listed in the report for a hypothetical mine. This master rate is then applied as suggested in the DMR guidelines. For this purpose an area of 13 ha for Areas 1 and 2 has been assumed. It is SRK's view that should water treatment be required, the resulting cost estimate for this component of the closure cost is significantly underestimated. It is noteworthy that the closure cost estimate does provide for additional ground water and surface water specialist studies, reflecting the fact that actual costs may only become apparent once those studies have been done.

Similarly, if the planned operational practice of backfilling the pit with overburden concurrently with the mining operation is not implemented overburden will be stockpiled on surface, the required backfilling operation will then become a load and haul operation involving double handling of the overburden as result of the development of a backfilling backlog during the operational phase. If this happens, additional costs may be incurred at closure.

Indicative additional closure costs are:

- Backfilling backlog: R20 million; and
- Water treatment: R15 million.

12.13 Social and Labour Plan Provision

The total budget for social and labour issues for the period 2008 – 2012, as documented in the SLP, was approximately R36 million. This includes Human Resource Development, Local Economic Development (LED) Projects and Downscaling. The largest component of this budget was for LED projects and amounted to R32 million. The recently compiled SLP for the period 2013 - 2017 reflects a total budget of R54.5 million, with LED projects still a considerable portion of this at R24.5 million and skills development also at R24.5 million, up from R2.9 million in the previous five year period. Actual expenditure during the period 2008-2011, as reflected in an internal evaluation of SLP compliance, was some R32 million, indicating an expenditure close to the budget amount for the five year period to 2012, despite under expenditure on the LED budget.

In terms of the Memorandum of Understanding with the Tribal Authority the mine is committed to financial support in the area.

12.14 Risks

[12.9 (h) (x), SR5.2 (A/B/C)]

Risks are discussed in Sections 12.3 and 12.12.

13 Water Management

[12.9 (h) (viii)]

13.1 Surface Water Management

13.1.1 Site Layout

The current operations are centered around the open pits in Area 1 and 2 and the plant complex.

The mine operations comprise:

- Open Pits:
  - Area 1 - North Pit 1, North Pit 2 and South Pit;
  - Area 2 - Pit A, currently used to deposit slurry;
  - Area 2 - Pits B, C, D, E currently used to deposit coarse discard; and
  - Area 8 - Luhlanga pit, development only recently started;
- Waste, discard and overburden stockpiles;
- Haul and access roads;
- Process Plant area and associated RoM and Product stockpiles;
- Return water dam (Mnyenge 1) and Process water storage dam (Mnyenge 2);
- Pollution Control Dams and Settling dams; and
- Office and Workshop buildings.

The current operations cover an area of 4.5 km^2 with approximately 3 km^2 with active mining operations.

The plant area drains in a south westerly direction via a combination of formalized channels and natural uncontrolled flow paths through a series of silt traps to the main return water dam (Mnyenge 1 Dam). The Mnyenge 1 Dam serves as the main control structure between the plant area and the natural watercourse which flows between Pit A and B and down to the Umfolozi River.

13.1.2 Separation of 'Clean' and 'Dirty' Run-off

<u>Overview</u>

A review of the surface water aspects of the EMP and Somkhele Storm Water Management Plan indicates at concept level that the separation of clean and dirty water will be achieved by:

- Preventing clean run-off from entering contaminated areas by diverting clean run-off around the various operations (pits, stockpiles etc.) using 'clean storm water diversion berms" (earth embankments between 1 and 1.5 m high) which divert the run-off into concrete lined open 'v' drains with energy dissipation structures at the point where the flow enters the natural environment;
- Diversion berms and lined open 'v' drains are also used to manage the dirty run-off but, in this case the outflow is directed into Pollution Control Dams (PCDs) designed to contain the 50 year flood with 0.8 m freeboard;
- The PCDs are excavated into the ground (typically approx. 60 m x 60 m x 3 m deep) and are lined to prevent seepage;
- Water collected in the PCD, is pumped into settling dams (recycle ponds 1, 2, 3 and 4) to settle out the solids from where it is pumped to the plant dam located above the emergency generator site; and

- The mining operations in Area 1 (catchment B), because of the natural drainage lines, could affect the water quality at the Mbukwini Pan. Routine water quality monitoring is carried out at two points which to date have not shown evidence of contamination.

Plant

Surface run-off from the plant area, the RoM and product stockpiles areas is channelled via berms into storm water pipes that discharge into settling dams just upstream of Mnyenge 1 Dam.

Mining Areas

In general the pits are located at or near the ridges of the local topography which results in surface flow generally moving away from the mining areas.

Where small watercourses are intercepted by the pit, the clean surface water run-off from the catchments upstream of the open pit mining areas is diverted around the pits as described in the section above.

Rain falling within the pit catchment, which is usually from the high wall to the back of the pit but also includes some of the run-off from the overburden and waste rock stockpiles, is stored in the pit and pumped to the Return Water dams (North Pit Dam for Area 1 and Recycle Dams 1 - 4 for Area 2).

The sediment settles in these dams and the decant water is pumped to the plant dam (Recycle Dams 1 - 4) for dust suppression (North Pit Dam).

Contamination Management/PCD

Contamination of surface water is typically primarily in the form of:

- Sediment, which is managed by the various settling ponds;
- Some contamination by explosive residue (nitrates);
- Some acid mine drainage from exposure to coal primarily in sulphate form; and
- Dust, generally managed by watering areas.

These issues are not significant in terms of this assessment but should be noted and if necessary appropriate action taken.

Other areas that can generate surface water contaminants are:

- The workshops which have their own pollution control dam to catch oils and other contaminants;
- There is a significant quantity of diesel stored on site. The diesel is stored in above-ground tanks within a bounded area. The tanks are fitted with an outer shell that provides leak containment capacity; and
- There are also a number of spill containment kits to manage other spills around the site primarily from machinery.

Based on the information reviewed and site observations surface water contaminants are adequately managed.

Erosion/ Siltation

The EMP document notes that the soils in the area are highly erodible and as these soils are used in the construction of the berms and the rehabilitation of the various stockpiles, this should be carefully managed.

Due to the nature of the operations at the site, a significant quantity of silt is generated. There are a number of silt collection facilities around the site, generally located in-line with the storm water system around the plant and stockpile areas. The general topography of the site is such that the majority of the surface run-off flows down to Mnyenge 1 Dam. During the site visit it appeared that the run-offs were in general maintained and there was no evidence of significant silt build-up in these facilities.

The run-off falling away from the Mnyenge 1 system, mainly from stockpiles and roads is likely to contain silt and based on the observations during the site visit there is some silt movement into the natural watercourses surrounding the site.

The product stockpiles at the plant were extensive and comments from mine personnel were that this was unusually high due to recent problems associated with scheduling of vessels at Richards Bay Port.

A portion of this area drains northwards towards the Mnyenge 2 Dam and there was evidence of product material on the roads adjacent to the dam. The product storage area will require additional silt containment infrastructure to manage this should the volume of product stockpiles on site persist.

13.1.3 Make-up Water

The make-up water is sourced from the Umfolozi River.

A review of the water balance provided by Groundwater Consulting Services ("GCS") shows that on an annual basis almost the full allocation (98%) of make-up water (in terms of the DWA licence) is abstracted from the river.

A more detailed discussion of this is given under the discussion of the water balance.

Potable water is sourced via a municipal water supply system which is unreliable. This supply is supplemented by boreholes belonging to the mine which are purified by a treatment works owned and operated by the mine.

Water Re-cycling/RWD

Run-off from the plant and stockpile area is collected in the Mnengeni 1 Dam from where it is recycled for use by the mine. An annual average of some 85% of water is re-cycled for use as process water, dust suppression, etc.

The majority of the water is used to transport the slurry to Pit A.

Pit Dewatering

The water in the pits is primarily from rainfall. There is limited ingress of groundwater into the pits.

The pit dewatering is pumped either to the appropriate return water dams where it is re-cycled or is used for dust suppression.

The information available supported by observations during the site visit, is that pit dewatering is well managed and that pit water is generally not an issue for the operations on the mine.

In addition, during extreme rainfall periods the pits are used to store excess water.

13.1.4 Systems and Controls

Monthly monitoring of rainfall, river abstraction, pit dewatering, plant usage, dust suppression volumes as well as potable water usage and borehole abstraction is carried out by the mine.

13.1.5 Water Balance

The water balance available for review is the annual water balance prepared by GCS.

The mine monitors the water balance on a monthly basis.

The details with respect to the assumptions made in the determination of the volumes used, was not available so comments on run-off volumes and losses, etc. cannot be made by SRK.

Of concern is that in the water balance, one of the highest users of water is that used to dispose of the slurry to pit. Almost the full volume used is available for re-use and is returned to the Pit A return water dams. SRK would anticipate that there would be an interstitial loss of water in the slurry in the order of 10 – 20%. This would add a possible additional 100 000 to 200 000 m^3 to the make-up demands.

The site monitoring records show that the return water from Pit A is on average 50% of that used in the water balance which may be due to the fact that the water balance allowed for Plant 3, which only came on line early in 2013. The records where Plant 3 is operational show an average of 85% of the water balance allowance, which is consistent with the comments in the paragraph above.

It is also noted that approximately 50% of the water used is from the abstraction from the Umfolozi River with the remainder from rainfall (30%) and seepage (20%) into the pits.

The majority of the losses (70%) is to product (50%) and discard moisture (20%) with the remainder to evaporation and dust control. SRK anticipate that this could be higher if the losses to the moisture in the slurry are taken into account.

Flow monitoring data provided by the mine (June 2012 – May 2013) indicates that the abstraction from the Umfolozi River is on average 60% of that estimated in the Annual Water Balance from GCS and varies from 20% to 104%.

13.1.6 Complaints

The mine has bi-annual Interested and Affected Parties meetings with stakeholders and to date there have been no complaints.

13.1.7 Key Issues

In general, the impression gained from the site visit and a review of the documentation provided was that the surface water issues were well managed. There is evidence of planning taking into account the basic principles of surface water management and the implementation of the systems appears to be following these plans.

In SRK's opinion, based on the information provided, the storm water management and water balance should be addressed / documented in more detail.

13.1.8 Stormwater Control Systems

A Hydrological and flood line analysis report has been compiled (GCS, Aug 2008) that formed part of the EIA submission. Flood lines have been determined for the on-site watercourses (in Area 1 and 2) and for the Umfolozi River.

There was no evidence of flood line delineation for the various watercourses around the site, which should be reflected in the EMP and SWMP documentation, particularly with regard to management of activities within the flood lines. (e.g. 1:10 year, 1:50 year and 1:100 year).

The storm water peak flows have been determined for only two main catchments on the site. A more detailed breakdown of sub-catchments and associated design peaks would be required to provide effective flood peaks for the design of storm water control infrastructure.

The assessment of anticipated velocities on the diversion berms is required to ensure the integrity of the diversions and the prevention of failure due to erosion.

The information provided supported by observations during the site visit indicate that more comprehensive storm water management, particularly with regard to silt control, will be needed around the product stockpile areas, should the current volume of product stockpiled on site persist.

13.1.9 Water Balance

The water balance provided is an annual water balance that reflects a large dependence of the make-up water supply from the Umfolozi River abstraction. This is a potentially high risk as in recent years - which have been relatively dry - the flow in the river has been very low and there has been a significant increase in the water demands in the area. However, the mine has not run out of water since it has been in operation. The water licence states that the abstraction should be reduced by 50% to ensure the downstream users assurance of supply. If this is the case, particularly in the dry months, additional sources of make-up water would be required. The mine has already implemented a system where a three month emergency storage is provided in the dams. Provision for additional storage in the pits to extend the period of emergency supply has been included in the IWULA application, which is due for approval at the end of 2013.

13.2 Ground Water Management

13.2.1 Aquifer Characteristics/ Baseline Hydrogeological Setting

Groundwater within the study area generally occurs in secondary aquifers created by weathered and fractured geological processes. Two aquifers occur in the area, the one overlying the other with some interaction between the two. However, the interaction is limited and it is still possible to distinguish individual groundwater depth trends.

The Somkhele aquifer zones indicate:

- An upper weathered zone (average depth 11 m with a max 25 mbgl) with some perched aquifer; and
- A lower fractured rock aquifer system (most water strikes are expected to be encountered in this zone).

Higher hydraulic conductivity and groundwater flow will occur along fracture, faulting and dyke contact zones. In general, groundwater mimics the surface topographical setting of the area and has a generally SW direction of flow:

- Area 1 Water table 9 – 37 mbgl; and
- Area 2 Water table 02 - 20 mbgl.

Groundwater quality in the area is generally poor with elevated calcium, chloride, magnesium, iron, aluminium and manganese concentrations.

There were no private groundwater users identified in the catchment area.

The aquifer is classified as a minor aquifer of low importance to the local community.

Ground water recharge from rainfall is typically 0.5 – 15% of MAP and will most probably between 5% and 10%.

Mining is anticipated to extend below 60 mbgl and groundwater ingress can be expected to occur from 10 mbgl with most occurring below 20 mbgl.

No significant impact on the groundwater environment.

Geochemistry

ABA test results indicate:

- Overburden - is generally alkaline (pH 7 - 8);
- Discard - high to medium acid generation potential; and
- Slurry - approximately neutral (low acid potential).

Disposal of Waste Material

In the initial stages of the mine operation waste disposal was to a single discard dump and included co-disposal of slurry. This has been revised to in-pit waste disposal in Pits B, C, D and E, with slurry disposal in Pit A.

The geo-chemical analyses conducted on slurry, discard and other waste material indicates that coal waste will pose a threat in terms of long-term salinity leachate. The potential for acidity is minimal though. It is therefore proposed that in-pit disposal occur only to a level of approximately two metres below the groundwater level. This will allow for reduced oxidation and associated leachate.

All surface discard dumps will be constructed on top of an engineered impermeable clay layer. The clay layer will act as a barrier zone between sub-surface waste and surface waste material. A minimum permeability of 3.2×10^{-09} m/sec to 7×0^{-10} m/sec must be obtained. An under-drain and collector drain system will be implemented to take water from the dump during the construction and operational phase. All surface dumps will be rehabilitated during the de-commissioning phase to ensure that no recharge from rainfall occurs in the long-term period after closure; a sustainable solution will therefore be engineered.

13.2.2 Legal Setting

Existing lawful water use must be registered in terms of Section 32 of the National Water Act, 1998. Any new use in terms of this Act must be licensed. The following water uses as set out in Section 21 of the National Water Act, 1998, must be registered or licensed:

- Section 21 (g) - Disposing of waste in a manner which may detrimentally impact on a water resource;
- Section 21 (i) Altering the beds, banks, course and characteristics of a water course (applies to any activity within the 1:100 year flood line);
- Section 21 (j) - Removing and discharging of water found underground - basically volumes and quality; and
- Exemption from GN 704 - Altering the beds and slurry disposal.

Mining Activities (R1499)

The DWA has published Regulations on Use of Water for Mining and Related Activities aimed at the Protection of Water Resources (Government Notice Number 704). The Regulations cover the various ways in which mining activities can impact upon water resources. The responsibility for the compliance rests with the person in control of the mine (usually the Mine Manager).

Restrictions on locality prevent the establishment of mine-related activities within the 1:100 year flood line (or a horizontal distance of 100 m) from a surface or groundwater resource, limit the mining by open pit or underground methods to beyond the 1:50 year flood line (or 100 m horizontal distance), and place restrictions on the disposal of residue or similar in workings (underground or open pit). In Area 1, the anticipated south westerly extent of the South Pit mining area extends within very close proximity of the north bank of the Umfolozi River. The 100 m restriction should be verified.

Under the capacity requirements for water systems, mines are to separate clean and dirty water, limit the spillage of dirty water into the clean water systems to 1 in 50 years (and vice versa), contain contaminated water, ensure the proper functioning of all hydraulic conveyances (pipes, canals, ditches, etc.) and ensure that they are designed to cope with a 1 in 50 year flood event. In ensuring the protection of water resources, the mine is required to:

- Capture, collect and re-use contaminated water and not allow it to pollute water resources;
- Prevent damage to the riparian or in-stream habitat;

- Control the flow of surface or groundwater into mine-related workings, voids, etc.;
- Ensure the stability of mine residue deposits (e.g. discard dumps, tailings dams);
- Limit the pollution emanating for mine residue deposits; and
- Practice continuous recycling of mine water.

Also included are restrictions on use of material, security measures and requirements for closure of the mine.

13.2.3 Hydrogeological Risk Assessment

[12.9 (h) (x)]

Risk for Acid Mine Drainage

During the operational phase the groundwater gradients will be directed towards the mine area due to mine dewatering. This will effectively assist in preventing any contamination from leaving the mining area.

The risk of AMD during the closure phase has been assessed by GCS and the potential of the waste disposal to generate AMD is considered to be low. Some components of the waste to be disposed of into the pits have been outlined in detail in the GCS groundwater report. In general, the waste material deposited in the pits does not have a high risk of AMD generation as waste will be deposited below the water table and in a reducing environment (enhanced by the co-disposal). This aspect requires that the separation of the overburden from waste material needs to be done effectively to prevent any of this material falling into the waste rock stockpiles

Groundwater Monitoring

There are adequate monitoring boreholes and the sampling and recording thereof are carried out regularly. There is a program to ensure that potential contaminant / migration zones are identified and that monitoring boreholes are placed in these zones. The following suggestions are made:

1. Groundwater monitoring sites must be located along the more active flow zones like dykes and faults. This will require geophysical surveys to confirm the exact locations for drilling.
2. The numerical flow and mass transport model should be calibrated every two years to assist in pro-active groundwater management.
3. A more comprehensive geochemical assessment should be undertaken in order to refine predictions on future in-pit processes and leachate quality over time. This will include geochemical kinetic samples and modeling.

Groundwater Seepage into Mine Workings

During the operational phase the groundwater gradients will be directed towards the mine area due to mine dewatering.

It is not expected that the mine dewatering will have direct influence on the flow volumes in the Umfolozi River by drawing water directly from it. The maximum reduction in base flow contribution to the Umfolozi River over the LoM is 8.8 m^3/day. The Umfolozi River flow volumes are unknown and therefore the impact of this reduction on the flow volumes cannot be calculated as a percentage of the total flow of the river. However, the impact is considered to be negligible (less than 1%).

The maximum extent of the drawdown cone is expected to be approximately 600 m from the pit areas, and the maximum depth approximately 100 m.

Pit inflow volumes range between 100 and 450 m^3/day, depending on the depth below the groundwater table and the size of the mining area. However, it is expected that a reduction in base flow contribution to the river will have an indirect influence on the flow volumes.

Recovery of Groundwater Levels

Groundwater levels will recover during the decommissioning and post operational phase due to mine dewatering being stopped. The nature of rehabilitation, rainfall and sloping of the rehabilitated area will influence the groundwater level recovery.

It is possible that the groundwater level in the rehabilitated area will rise to levels above the surrounding natural groundwater level due to higher transmissivity and storage and recharge from rainfall in the disturbed / rehabilitated area.

The groundwater levels will initially recover at a faster rate due to higher flow gradients. Over time, as the groundwater levels rise and the flow gradient decreases, the recovery rate will decrease. The groundwater levels in the pit areas will stabilize after approximately 60 years.

Decant

It is expected that decant will occur from North Pit 1, North Pit 2 and South Pit. This is due to the fact that some areas at the pit edges are topographically lower than the level to which the groundwater level in the rehabilitated pit will recover. Decant can cause contaminated water in the pit area to daylight onto surface. The decanting water can impact surrounding surface water bodies and aquifers.

It is expected that decant will start occurring after 30 to 40 years in the vicinity of North Pit 2 and South Pit. Decant at North Pit 1 will start 55 years after mining stops. The expected decant volumes from the decant points are 28, 18 and 60 m^3/day for North Pit 1, North Pit 2 and South Pit respectively, if no mitigation measures are put into place.

Groundwater migrating away from the pit areas will transport contaminants. Acid base accounting and leach testing of the rock material indicate that only sulphate concentrations can be expected to significantly increase during the long term. The expected contaminant plume will extend approximately 300 to 400 m away from the pit areas 100 years after mining ceases. There are no groundwater users that will be impacted and it is not expected that there will be any significant influence on the water quality of the Umfolozi River.

It is recommended that expected decant points be inspected on an annual basis for evidence of decant. In the event that decant does occur, the water must be stored in the lined evaporation pond.

Financial liabilities for hydrogeological aspects are covered in Section 12.12.

14 Material Contracts

[12.9 (h) (iv) (viii), SR5.8(C)]

14.1 Operational Contracts

Mpukunyoni Mining (Pty) Ltd is the appointed mining contractor, responsible for all mining, load-and-hauling and rehabilitation activities at Somkhele. The operational contracts for the open pit mining, plant and equipment supply and maintenance are detailed in Table 14-1.

14.2 Distribution Agreements

The contracts for distribution and transport of the products are shown in Table 14-2.

14.3 Export Allocations

A throughput agreement exists between Tendele and Grindrod Terminals Richards Bay for the export of up to 600 000 tpa of anthracite through the Port of Richards Bay, which came into effect on 1 February 2012.

A contract agreement is in force between Tendele and The Corporate Agency cc, for the cargo supervision, logistics, clearing and forwarding services. This agreement came into effect on the 20th April 2007.

14.4 Sales Contracts

Somkhele has a number of contracts for both export and local sales in force (Table 15-1 and Table 15-2).

Table 14-1: Operational Contracts

Description	Company	Start Date	Period	Termination	Date Signed	Duties
Open Pit Mining - previous	Sandton Plant Hire (Pty) Ltd 2/005699/07	1 Dec. 2006	Indefinite	Three months written notice by either party	20 Mar. 2008	Blasting; excavating; hauling of RoM coal from mine to RoM crusher/stockpile
Open Pit Mining - current	Mpukunyoni Mining (Pty) Ltd[1] M2005/034981/07	1 Jul. 2012	Indefinite	Three months written notice by either party provided that no such notice shall be given by the other Party within the first 5 (five) years of the Agreement calculated from the commencement date	07 Feb. 2013	Drilling & blasting; excavating; hauling of overburden and RoM coal from mine to RoM crushers/stockpile. Approximate annual production rate: *Overburden:* 12.6 Mbcm/a at 1.05 Mbcm/m; *Coal:* 3.3 Mtpa RoM at 0.275 Mtpm
Plant & Equipment Supplier	Mpukunyoni Mining (Pty) Ltd[1] M2005/034981/07	1 July 2012	Indefinite	Three months written notice by either party provided that no such notice shall be given by the other Party within the first 5 (five) years of the Agreement calculated from the commencement date	7 Feb. 2013	
Plant & Equipment Maintenance	Sandton Plant Hire (Pty) Ltd 2/005699/07	1 July 2012	Indefinite	Three months written notice by either party provided that no such notice shall be given by the other Party within the first 5 (five) years of the Agreement calculated from the commencement date	7 Feb. 2013	Supply, manage and maintain the fleet of equipment
Drill & Blast Subcontractor	Sandton Plant Hire (Pty) Ltd 2/005699/07	1 July 2012	Indefinite	Three months written notice by either party provided that no such notice shall be given by the other Party within the first 2 (two) years of the Agreement calculated from the commencement date	7 Feb. 2013	Drilling & blasting of overburden and RoM

1. Formerly Petmin Logistic (Pty) Ltd

Table 14-2: Distribution Contracts

Company	Start Date	Period	Description
Mpukunyoni Business Association	1 July 2011	5 years	Delivery of product to Port of Richards Bay; a minimum of 10 tipper trucks to deliver 300 000 tpa
Grindrod Terminals Richards Bay	1 February 2012		Export of up to 600 000 tpa through the Port of Richards Bay
The Corporate Agency cc	20 April 2007		Cargo supervision, logistics, clearing and forwarding services

15 Utilisation and Marketing Overview

[12.9 (h) (vii), SV2.18, SR 5.7C, SR 5.8 A/C]

15.1 Introduction

Anthracite is the highest ranking of all coals; as the most transformed coal it is the least abundant, accounting for less than 2% of world reserves. The carbon content of anthracite can be as high as 98%, whereas volatiles and impurities are low. This makes anthracite a clean-burning and smokeless fuel source. Since carbon is a vital component associated with the production of titanium slag and pig iron from mineral sands, ferrochrome, ferromanganese and silicon carbide, anthracite offers a cost-effective alternative to coking coal and is in high global demand.

In South Africa, the gap between anthracite demand and supply – both local and imported – was expected to be almost 800 kilotonnes in 2012. It is estimated that by 2015 the global supply shortfall will be some 21.7 Mt.

15.2 Utilisation

Anthracite, a carbon-rich source, has several potential fields of use. Most commonly, these are:

- As smokeless fuel for domestic heating and similar processes, typically in urban areas/cities where pollution restrictions apply; and
- As a carbon feedstock (reductant) in several metallurgical applications such as Submerged Arc Furnaces (SAF), as pulverized coal injection (PCI) and in the manufacture of C-rich products, including Soderberg electrodes and carbon blocks.

In the latter fields of use, anthracite often competes against coke (including petroleum coke), char and even bituminous coals. Increasingly, anthracite offers a cost-effective alternative to coke and char provided it is characterized by the right form of carbon accompanied by other acceptable characteristics. In other cases, that are process dependent, anthracite is capable of replacing bituminous coal. Calcined anthracites (the process of heating the anthracite to a high temperature but below the melting point or fusing point, causing a loss of moisture, reduction or oxidation and the decomposition of carbonates and other compounds) compete against graphite and it is expected that it could also compete against other materials (wood, char, etc.) in the making of activate carbons for use in water treatment, chemical processing and pollution control.

Somkhele anthracites are typically low in volatile matter and rich in carbon, particularly the low ash products. Somkhele products are characteristically lower in the contaminants sulphur (<1%S) and phosphorus (expressed as P in coal). Combined with its other qualities, Somkhele anthracite has the unique opportunity to penetrate niche metallurgical markets, such as the Titanium and Ferrochrome smelting industries as well as the international steel sintering and pelletizing industries.

15.3 Global Outlook

15.3.1 Competitors

South Africa faces competition from three sources:

- Two producing countries, Ukraine and Vietnam;
- Local anthracite producers; and
- One alternate product in the form of a low sulphur coke breeze

While Ukraine anthracite is higher quality than the typical South African quality, Ukraine suffers from ice bound ports during winter, longer freight hauls to Brazil and the inability to load vessels larger than 45 000 tonnes due to port constraints. Ukrainian anthracite also contains large amounts of clay material. Brazil is a very wet country and unless Ukrainian anthracite is stored under cover, the addition of high moisture significantly reduces the handleability of Ukrainian anthracite.

Vietnam is the largest anthracite producer in the world and produces the best quality material. However, the freight distances to Brazil are prohibitive and Vietnam prefers to sell to the steel mills of China, Korea and Japan as a pulverized coal injection fuel where their anthracite commands higher prices. Most Vietnamese anthracite production is state controlled and increasingly prevented from being exported in order to supply the growing energy demands of its growing economy.

15.4 Somkhele Markets

Somkhele sells anthracite into both the export (Brazil) and local market, while the thermal product, produced from rewashed discard material, is exported. The coal products are sold under contract as well as on the spot market. Export coal is dispatched out of the Grindrod Terminal at Richard's Bay, while the local sales are sold Free-on-Truck at the mine gate. Table 15-1 and Table 15-2 list the sales contracts made available to SRK.

Table 15-1: Historical Sales Contracts

Customer	Market	Product	Sales Tonnes (Annual)
Xstrata (Glencore)	Export	18% Ash Duff	259 790
Xstrata (Glencore)	Inland	Large Nuts	38 982
Xstrata (Glencore)	Inland	Small Nuts	56 647
Xstrata (Glencore)	Inland	Peas	13 011
Xstrata (Glencore)	Inland	15% Ash Duff	98 869
Samancor	Inland	Large Nuts	49 849
Samancor	Inland	Small Nuts	2 665
Oreport (Pty) Ltd	Inland	Nuts	15 852
Oreport (Pty) Ltd	Inland	Peas	19 980
ASA Metals	Inland	Peas	12 795
International Ferrometals SA (Pty) Ltd	Inland	Peas	8 518
		Total	**576 958**

Table 15-2: Forward Sales Contracts

Customer	Market	Product	Volume per annum
Confidential until finalized	Export	18% Ash Duff	400 000
Xstrata (Glencore)		Large Nuts	99 996
Xstrata (Glencore)		Small Nuts	110 004
Xstrata (Glencore)		Peas	48 000
Xstrata (Glencore)		15% Ash Duff	221 328
Hernic Ferrochrome		Peas	86 000
ASA Metals		Peas	36 000
ECS Resources	Export	Thermal Coal	100 000
Confidential until finalized	Export	Thermal Coal	250 000
		Total	**1 551 328**

15.5 Anthracite Prices

Anthracite prices depend on the quality of the product and whether it is sized or not.

15.5.1 Local Prices

Local prices are usually quoted Free on Truck (FOT) and can vary from about R1 300/t FOT currently for premium nuts or peas (i.e. less than 10% ash) to in the region of R850/t FOT for the same size product but of lower quality. Premium duff (-10 mm) can sell at around R1 200/t FOT, whereas lower quality products sell at R800/t to R850/t.

15.5.2 Anthracite Export Prices

Current anthracite prices range from about USD95 to USD105 Free on Board (FOB); these are forecast to rise to USD105 to USD120 FOB by the end of 2018 (Ariy Consulting and Advisory, 2013, pers. Comm.). Prices for Somkhele 15% ash product (prime duff) are forecast to be at the top end of the market, while the price for the 18% ash product is forecast to be slightly higher than that for the minimum Metallurgical Anthracite Price Index (Figure 15-1).

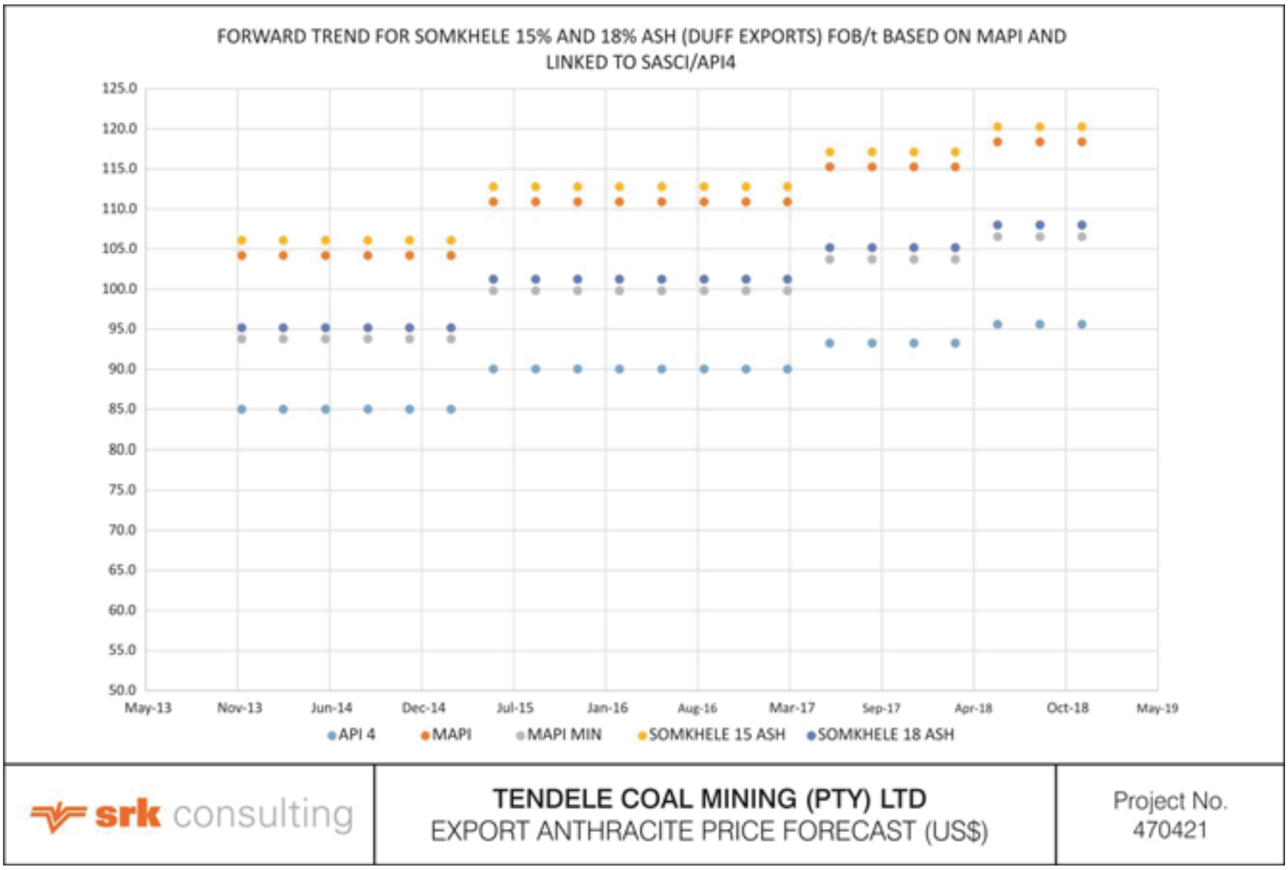


Figure 15-1: Export Anthracite Price Forecast (Ariy Consulting and Advisory, *pers. Comm.*)

15.6 Thermal Export Prices

Historical South African export thermal coal prices for the last fifteen years are shown in Figure 16-2.

Forecast prices for international thermal coal, compiled by SRK's United Kingdom office are shown in Table 15-3. Prices are forecast to average around USD85 for most of the next twelve years, with a slight rise to USD90 forecast in 2016.

Table 15-3: Forecast Thermal Coal Prices

Commodity	Units	SPOT 21/203	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	LTP
Thermal Coal	USD/t	84	80	85	85	90	85	85	85	85	85	85	85	85	85	85

16 Valuation of Material Assets

[12.8 (a) (i), 12.9 (f), SV2.8]

16.1 Valuation Methodology

16.1.1 Valuation Guidelines

There are numerous recognised methods applied in valuing "mineral assets". There is also a diversity of situations in which a valuation may be required and hence no simple formula or recipe can be used without critical appraisal of the specific situation at hand. The most appropriate application of the various methods must make use of valuation methods suitable for the mineral assets under consideration and will depend on such factors as:

- The nature of the valuation;
- The development status of the mineral or petroleum assets; and
- The extent and reliability of available information.

Regardless of the technical application of various valuation methods and guidelines, the valuator should strive to adequately reflect the considered risks and potentials of the project in the valuation ranges and the preferred values.

16.1.2 Valuation Approach and Valuation Methods

The valuation of Somkhele and the contained coal deposits has been prepared in accordance with the SAMVAL Code.

In general there are three main and generally accepted analytical valuation approaches that are in common use for determining the "Fair Market Value" of mineral assets, each of which is described below and which largely rely on the principle of substitution, using market derived data.

The "Fair Market Value" in respect of a mineral asset is defined as the amount of money (or the cash equivalent of some other consideration) determined by the relevant expert for which the Mineral or Petroleum Asset or Security should change hands on the Valuation Date in an open and unrestricted market between a willing buyer and a willing seller in an "arm's length" transaction, with each party acting knowledgeably, prudently and without compulsion. The "fair market value" of a mineral asset usually comprises two components: the underlying or "technical value" of the assets and a premium or discount relating to market, strategic and other considerations. The fair market value is therefore more likely to fluctuate with time.

The "Technical Value'" is an assessment of a Mineral or Petroleum Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by an Expert or Specialist, excluding any premium or discount to account for factors such as market or strategic considerations.

SRK has determined the Technical Value for Somkhele.

The three generally accepted approaches to mineral asset valuation, as given in Section 20 of the SAMVAL Code and shown in italics below, are:

- "**Cash Flow Approach**" *which relies on the 'value-in-use' principle and requires determination of the present value of future cash flows over the useful life on the mineral asset*.

  The most widely used valuation method for pre-development, development and operating mines is the discounted cash flow ("**DCF**").

This method considers the majority of factors that can influence the value of a business enterprise, including expected changes in the mineral asset or property's operating activity. Under this approach, it is necessary to utilize projections of revenues, operating expenses, depreciation, income taxes, capital expenditures and working capital requirements. The present value of the resulting cash flows provides an indicated value of the operating business enterprise.

In order to eliminate the impact on value of the different long-term financing arrangements that have been or could be implemented, analysis is generally done on a debt-free basis. The net present value ("NPV") of the projected real terms pre-finance cash flows, using either mid-year or end-year discounting, provides an indication of the value for the mineral asset or property appraised. This NPV at the appropriate discount rate would have to be reduced by the value of the debt at the valuation date to derive the net value of the property or asset.

- "**Market Approach**" *which relies on the principle of 'willing buyer-willing seller' and requires that the amount obtainable from the sale of the mineral asset is determined as if in an arm's-length transaction*.

  The Market Approach utilizes information relating to transactions in either public or private firms similar to the subject. The approach is based on the principle of substitution and the assumption that comparable opportunities yield appropriate values. The various methods apply multiples from such data to the subject's financial information in order to obtain comparable measures of value (Hanlin and Claywell, 2010). The Market Approach generally provides fair value, since it is based on transactions that are normally consummated between willing buyers and willing sellers in an open market.

  Hanlin and Claywell (2010) present two primary valuation methods in the Market Approach:

  - Completed Transaction Method ("CTM") – looks at completed sales transactions in the subject's industry that are a qualified substitute, i.e. the comparable businesses or items need only to be substantially quantitatively and qualitatively similar.
  - Guideline Company Method ("GCM"), also known as the Market Capitalization Method – share prices of actively-traded publicly owned companies are applied to the subject through valuation multiples. The valuation multiple is derived from the market capitalization, adjusted for the value of options, convertible securities, preference shares and debt.

  Where **Comparable Transactions** relating to the sale, joint venture or farm-in/farm-out of anthracite assets are known, such transactions may be used as a guide to, or a means of, valuation. For a transaction to be considered comparable it should be similar to the asset being valued in terms of **location, timing and commodity**, and the transaction should be regarded as of "arm's length" (that would take place between a willing buyer and willing seller) (Lawrence, 2010). If the transaction was the result of a forced or distressed sale, the resulting unit value would not be applicable. The Comparable Transactions method is best suited to Exploration and Advanced Exploration areas, and Pre-Development Projects. Its application to more advanced mineral assets is generally restricted to recent sales (whole or part) of the actual assets under consideration.

  An alternative market approach that is frequently appropriate is the In Situ Resource (or "**Yardstick**") method of technical valuation for such assets. The In Situ Resource technique involves application of a heavy discount to the value of the total in-situ metal contained within the resource. The discount is usually taken as a range of a certain percentage of the spot metal price as at the valuation date. The actual range varies for different commodities, being typically between 2% and 4.5% for gold (Lawrence, 1994) and diamonds, and between 0.5% and 3% for base metals (including platinum group elements) (van der Merwe and Erasmus, 2006), but may also vary substantially in response to a range of additional factors such as physiography, infrastructure and the proximity of a suitable processing facility. The depth (and hence cost) of a potential mining operation on the asset is also a determining factor. It is mostly used for exploration, pre-development and development properties.

- "**Cost Approach**" *which relies on historical and/or future amounts spent on the mineral asset*.

  Where previous and future committed exploration expenditures are known, or can be reasonably estimated, the Multiple of Exploration Expenditures ("MEE") method can be applied to derive a cost-based technical value. The method requires establishing a relevant Expenditure Base ("EB") from past and future committed exploration expenditure. A premium or discount is then assigned to the EB through application of a Prospectivity Enhancement Multiplier ("PEM"), which reflects the success or failure of exploration done to date and the future potential of the asset. The PEM usually ranges between 0.5 and 3.0, but can be as low as 0 and as high as 5 (Lawrence, 2010). The lower factor would reflect disappointing exploration results and the higher identification of potentially economic mineral resources. The basic tenet of this approach is that the amount of exploration expenditure justified on a property is related to its intrinsic technical value. This reasoning is usually valid in a qualitative sense, but the quantity (i.e. the actual amount expended) may vary greatly for properties of similar intrinsic value, hence the experience of the valuer in carefully weighing up the PEM and the final result is of great import.

  The MEE method is best suited to Exploration and Advanced Exploration Areas.

The applicability of the three valuation approaches to the different property types as set out in the SAMVAL Code is shown in Table 16-1.

Table 16-1: Applicability of Valuation Approaches to Property Types

Valuation Approach	Exploration Properties	Development Properties	Production Properties	Dormant Properties		Defunct Properties
				Economically Viable	Not Viable	
Cash Flow	Not generally used	Widely Used	Widely Used	Widely Used	Not generally used	Not generally used
Market	Widely Used	Less widely used	Quite widely used	Quite widely used	Widely Used	Widely Used
Cost	Quite widely used	Not generally used	Not generally used	Not generally used	Less widely used	Quite widely used

The SAMVAL Code requires that at least two valuation approaches must be applied and the results from the valuation approaches and methods must be weighed and reconciled into a concluding opinion on value. A range of values is provided, together with the estimated value.

The currency of valuation used in this report is South African Rand ("ZAR").

16.1.3 Materiality

The SAMVAL Code definition for materiality requires that a public report contains all the relevant information that investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgment regarding the mineral asset valuation.

The determination of what may be material depends on both qualitative and quantitative factors. Something may be material in the qualitative sense because of its very nature, e.g. country risk. In the case of quantitative issues, SRK considers that if omission or inclusion of an item could change the value or post-tax pre-finance annual operating cash flow by more than ten per cent (10%), the item is material and would have to be included.

16.1.4 Transparency

In terms of the SAMVAL Code, the reader of a Public Report (this CPR) must be provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled.

16.2 Previous Valuations

[SV2.12]

SRK is not aware of any valuations for Somkhele that have appeared in the public domain within the past two years.

16.3 Cash Flow Approach

[SR 5.7C (v) (iv), SV2.8]

Tendele compiled a financial model ("FM") for Somkhele, which SRK has updated ("SOMKHELE UPDATED BANK MODEL excl UG Final 07022014.xlsm") which incorporates LoM production schedules for the various coal deposits within the licence areas. SRK has adopted a shorthand notation for Tendele's financial year so that, for example, the financial year from 01 July 2014 to 30 June 2015 is represented as F2015. Given that the Valuation Date is 01 December 2013, F2014 will represent the seven months from 1 December 2013 to 30 June 2014, unless indicated otherwise. The seven months of F2014 have been taken from Tendele's forecast as set out in the Excel workbook "Forecast 18 November updated 14h30 21 Nov 2013 5 Dec 2013.xlsm".

16.3.1 LoM Production Schedules

Many of the LoM production schedules in the FM as provided by Tendele are based on conceptual mine designs (see Section 6 – Mining). These designs have used current mining practice from Area 1 in terms of pit slope angles and mining losses, and applied a target strip ratio of 4:1 (bcm:t), which is less than the current strip ratio of up to 5:1. Limited geotechnical investigations have been done in many of these deposits, so the pit slope geometry for each deposit has not been verified. This is not necessarily a problem as most of the mining operations are of short duration, with the open pit backfilled at the end of the mine life for each deposit.

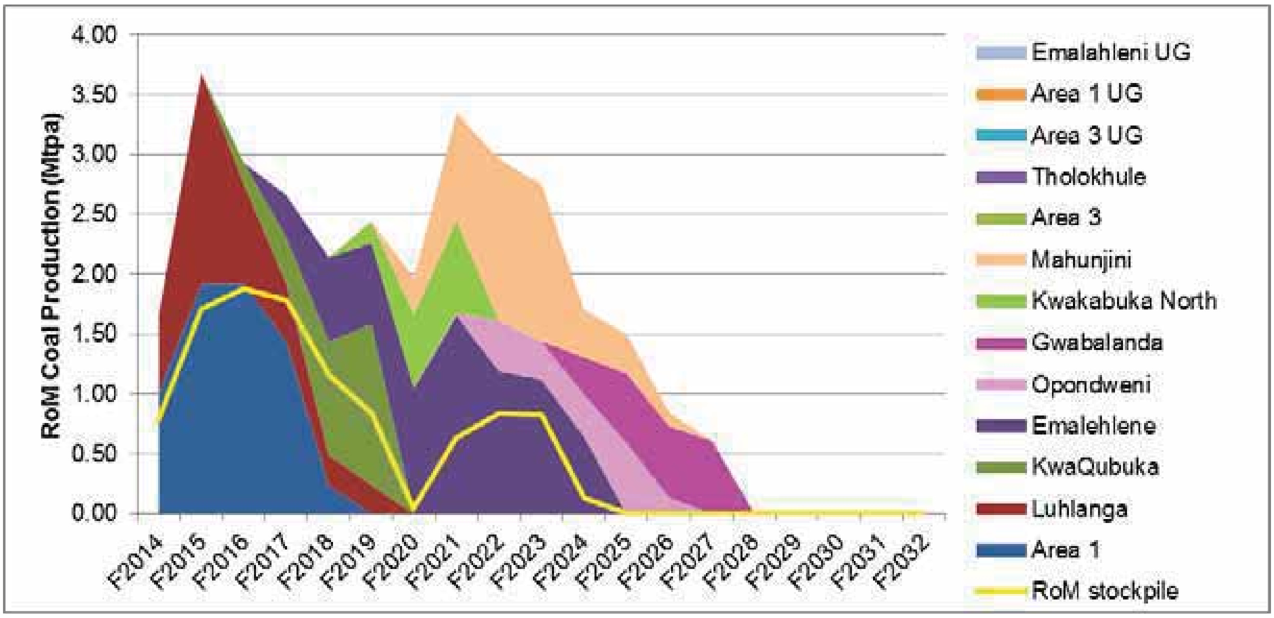
Certain of the LoM production schedules in the FM as provided by Tendele have been excluded from the FM and cash flow analysis, for the reasons set out in Table 16-2.

Table 16-2: Somkhele – LoM Production Schedules to be excluded from FM

Coal Deposit	Comment
Tholokhule	Only Inferred Resource declared.
Area 1 and Area 3 underground	SRK has not been provided with any mining study, mine plans or details of modifying factors used in the mine design. The mining cost in the FM is based on open pit mining rates.
Area 3 (Esiyembeni)	Only Inferred Resources declared in Petmin Annual Report, no details of the deposit provided to SRK.
Emalahleni underground	The operation will not be viable by itself and will need additional underground production from other areas to justify. The mining cost in the FM is based on open pit mining rates.

SRK noted Tendele's comments that the mine plan as set out in the FM allowed for periods where there would be significant increases in the RoM coal stockpiles. Tendele believed that production could be smoothed to maintain the plant feed rate and prevent a build-up in RoM coal buffer stockpile. SRK discussed this possibility with VBKOM who indicated that this would be complicated by the nature of the coal deposits and the need to remove coal exposed immediately, so as not to impact on the sequencing of coal and waste mining. The extent, to which the sequence of mining the coal and waste blocks can be changed to reduce the build-up in coal buffer size, would need to be assessed in an optimisation process. SRK is concerned though that the three pits of Area 1 (north and south) and Luhlanga may not provide sufficient pit room to allow the sequencing of blocks to be optimised. If this does prove to be the case, some of the future mining areas may then have to be developed sooner to provide the flexibility needed to optimise the block sequencing.

The variability in the annual mining rate as contained in the current LoM production schedules of the FM can be seen in Figure 16-1.



	TENDELE COAL MINING (PTY) LTD LoM COMBINED PRODUCTION SCHEDULES IN CASH FLOW ANAYLSIS	Project No. 470421

Figure 16-1: LoM Combined Production Schedule in Cash Flow Analysis

It is important to note that the LoM production schedules accepted for Somkhele are based on Measured and Indicated Coal Resources.

Values for the coal deposits excluded from the FM will be determined according to the Market and Cost valuation methods based on the in-situ coal resources.

16.3.2 Plant Yields

The projected plant yields included in the FM for the different coal deposits were not consistent with the predicted yields from the washability analyses.

The theoretical yields per coal deposit as determined from the coal washability analyses are set out in Table 16-3. SRK has converted these to practical yields as could be reasonably expected in the coal washing plant by applying a factor of 90%. The predicted plant yields on this basis are also shown in Table 16-3 and these have been used in the FM.

Table 16-3: Somkhele – Theoretical and Practical Plant Yields

Coal Deposit	Theoretical Yield	Estimated Practical Yield
Area 1	42.0%	37.8%
Luhlanga	44.0%	39.6%
KwaQubuka	45.5%	41.0%
Emalahleni	46.5%	41.8%
Ophondweni	46.7%	42.0%
Gwabalanda	35.0%	31.5%
KwaQubuka North	46.7%	42.0%
Mahunjini	46.7%	42.0%

16.3.3 Macro-economic Projections

Incorporated into the FM are various macro-economic projections regarding inflation rates, exchange rates and product prices (Table 16-4). SRK has accepted these for evaluation purposes.

Table 16-4: Macro-economic Projections (2014 to 2019)

Parameter	Units	F2014	F2015	F2016	F2017	F2018	F2019
Country Inflation Rates							
USA – CPI	(%)	1.50%	2.50%	2.50%	2.50%	2.50%	2.50%
South Africa – CPI	(%)	5.80%	5.80%	5.80%	5.80%	5.80%	5.80%
ZAR:USD exchange rate		10.00	10.32	10.65	11.00	11.35	11.72
Average Selling prices (Nominal)							
Anthracite - export	(USD/t)	80	109	117	120	123	126
Anthracite - local	(ZAR/t)	1,029	1,089	1,152	1,219	1,290	1,365
Thermal	(ZAR/t)	388	445	461	480	503	525
Cost Inflation							
Mining - variable costs	(%)	8.49%	5.95%	5.86%	5.86%	5.86%	5.86%
Processing, equipment, transport, RoM transport, fixed costs	(%)	8.57%	5.72%	5.72%	5.72%	5.72%	5.72%
Power	(%)	9.60%	9.60%	9.60%	9.60%	5.80%	5.80%
Loading at port	(%)	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Payroll, security, health & safety, sampling	(%)	8.00%	7.50%	6.80%	6.80%	6.80%	6.80%
plant maintenance, expenses	(%)	5.80%	5.80%	5.80%	5.80%	5.80%	5.80%
Mining/capex inflation	(%)	5.80%	6.00%	6.00%	6.00%	6.00%	6.00%

16.3.4 Operating Costs

The operating costs for F2014 in the FM are the base costs and then escalated in each subsequent year according to the parameters in Table 16-4. SRK has reviewed the F2014 costs relative to the actual costs for F2013, which are compared in Table 16-5. Reasons for significant differences from F2013 to F2014, as provided by Tendele, are included in Table 16-5. The F2014 fixed costs represent the full 12-month period of the financial year.

Table 16-5: F2014 Base Costs and Comparison to F2013 Actual Costs

Item	Units	F2013 Actual	F2014 Budget	Comment
Variable Costs				
Mining - coal	(ZAR/t RoM)	24.07	25.25	According to contract
Mining - waste	(ZAR/bcm)	47.90	50.14	According to contract
Processing	(ZAR/t feed)	5.62	13.46	Additional cost allocation
Processing - Discard	(ZAR/t discard)	15.31	23.18	Additional cost allocation
Other				
Equipment	(ZAR/t)	8.04	12.53	-
Power	(ZAR/t)	4.00	4.49	-
Transport	(ZAR/t)	79.95	72.73	Cost of weighbridge and dispatch clerks incorrectly allocated in F2013; adjusted to new contract rates
Loading	(ZAR/t)	117.00	82.20	Contract tonnes not achieved in F2013, penalties incurred; Adjusted to new contract rates.
Transport from pit to plant	(ZAR/t-km)	-	1.01	To cater for hauling of coal from distant deposits to the processing plant.
Fixed Costs				
Mining	(ZARm)	34.84	48.02	
Processing (Mining & Discard)	(ZARm)	34.58	-	moved into variable costs
Discard Disposal	(ZARm)	6.89	7.29	Inflationary increase
Equipment	(ZARm)	12.43	13.15	Inflationary increase
Petmin Management Fee	(ZARm)	9.84	10.53	Inflationary increase
Infrastructure Overheads	(ZARm)	2.27	2.39	Inflationary increase
Other Overheads	(ZARm)	105.62	104.00	
Payroll	(ZARm)	34.58	43.20	Reallocation of costs
Security	(ZARm)	12.45	11.15	Reduction reallocated into payroll cost
Safety and Health	(ZARm)	4.90	7.47	-
Plant maintenance	(ZARm)	0.20	-	
Sampling on Site	(ZARm)	4.96	7.26	-
Expenses - Other/admin	(ZARm)	27.24	34.92	
Other	(ZARm)	21.30	-	Reallocated
Total cost at Mine gate	**(ZAR/t saleable)**	**743**	**790**	

The distances from the various deposits to the processing plant to determine the RoM coal transport costs are set out inTable 16-6.

Table 16-6: Haul Distances Deposit to Plant

Coal Deposit	Haul Distance (km)
Area 1	5.9
Luhlanga	0.8
KwaQubuka	2.4
Emalahleni	5.2
Ophondweni	12.4
Gwabalanda	15.0
KwaQubuka North	3.4
Mahunjini	4.2

16.3.5 Capital Costs

The capital budget included in the FM was reviewed by SRK to the level of detail provided by Tendele. SRK noted that some of the projected capital expenditure items were shown in real terms, while others were presented in escalated terms. The corrected capital budget in real constant-money terms is set out in Table 16-7. The capital for F2014 in Table 16-7 represents the full 12-month period for the financial year.

Stay-in business capital is provided in the FM at 2.03% of the gross revenue in a given year.

16.3.6 MPRDA Royalty Calculation

SRK has reviewed the methodology used in the FM to calculate the MPRDA royalty payable in terms of the Royalty Act. The methodology is consistent with current practice in the coal industry:

Where coal with a calorific value ("CV") below 19 MJ/kg is extracted and sold, the taxpayer must determine gross sales for royalty purposes as though he did sell coal with a CV of 19 MJ/kg, i.e. for royalty purposes, the taxpayer is subject to the royalty on a 'deemed' gross sales amount, which must be determined with reference to the amount he would have received, had he in fact transferred coal with a CV of 19 MJ/kg (KPMG, 2013).

The deemed sales value for the Somkhele operation is set at R168/t, with a royalty percentage of 0.5%. This is consistent with the royalty Somkhele actually paid during F2013. Tendele advised SRK that this approach has been accepted by the South African Revenue Services.

SRK understands that the recently released Taxation Laws Amendment Bill No. 39 of 2013 ("TLAB") contains proposed amendments to the Royalty Act which could have a significant impact on the methodology set out above (KPMG, 2013).

The important change on or after 1 March 2014, assuming the proposed amendments of the TLAB are enacted, relates to coal that is transferred anywhere within the new range of 19MJ/kg to 27MJ/kg, in which case gross sales would be determined with reference to the value received on transfer (KPMG, 2013). The royalty payable would then be determined per the formula for an unrefined mineral, which is a maximum of 7% of gross sales. The possible impact can be assessed in the sensitivity tables below.

16.3.7 Summary of FM

A summary of the FM has been extracted and is given in Table 16-8. The values for F2014 are per Tendele's forecasts for the seven months December 2013 to June 2014.

SRK notes that at 30 November 2013 Tendele had R275.8 million of unredeemed capital.

Table 16-7: Corrected Capital Budget in Real Constant-Money Terms

	Units	Total	F2014	F2015	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027
Exploration Capital	(ZARm)	65.0	10.0	5.0	5.0	5.0	20.0	5.0	5.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
SLP Capital	(ZARm)	99.5	8.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Mining Development	(ZARm)	209.0	0.0	25.0	22.0	48.0	0.0	27.0	33.0	0.0	20.0	0.0	0.0	10.0	0.0	0.0
Haul Road new areas	(ZARm)	17.0	0.0	0.0	0.0	8.0	0.0	4.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0
Plant 2	(ZARm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plant 3	(ZARm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mine Rehabilitation	(ZARm)	195.0	0.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Capex (real)	**(ZARm)**	**585.5**	**18.5**	**52.0**	**49.0**	**83.0**	**42.0**	**58.0**	**60.0**	**32.0**	**47.0**	**22.0**	**22.0**	**32.0**	**22.0**	**22.0**

N.B. F2014 entries represent full 12-month period for the financial year.

Table 16-8: Summary Extract of FM (in nominal terms)

	Units	Totals / Averages	F2014	F2015	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027
Mining (RoM)	**(Mt)**	**31.17**	**1.63**	**3.68**	**2.93**	**2.66**	**2.14**	**2.44**	**1.97**	**3.35**	**2.96**	**2.75**	**1.70**	**1.50**	**0.85**	**0.61**
Area 1	(Mt)	6.45	0.95	1.92	1.91	1.44	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Luhlanga	(Mt)	4.26	0.67	1.77	0.84	0.48	0.26	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KwaQubuka	(Mt)	2.86			0.18	0.39	0.95	1.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emalehlene	(Mt)	7.40				0.36	0.70	0.68	1.05	1.65	1.19	1.12	0.64	0.00	0.00	0.00
Opondweni	(Mt)	1.85					0.00	0.00	0.00	0.02	0.41	0.32	0.35	0.59	0.14	0.00
Gwabalanda	(Mt)	2.09									0.00	0.00	0.31	0.58	0.59	0.61
Kwakabuka North	(Mt)	1.56					0.00	0.18	0.61	0.77	0.00	0.00	0.00	0.00	0.00	0.00
Mahunjini	(Mt)	4.71					0.00	0.00	0.31	0.89	1.36	1.31	0.39	0.33	0.12	0.00
RoM stockpile	(Mt)		0.78	1.71	1.88	1.78	1.16	0.84	0.05	0.63	0.84	0.83	0.13	0.00	0.00	0.00
Processing																
Plant feed	(Mt)	32.01	1.68	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.40	1.63	0.85	0.61
Average P1/P2 yield	(%)	40.3%	43.0%	38.6%	38.5%	39.1%	40.7%	41.1%	41.9%	41.9%	42.0%	42.0%	40.1%	38.0%	34.7%	31.5%
Discard treated	(Mt)	17.20	0.88	1.65	1.66	1.64	1.59	1.57	1.33	1.33	1.33	1.33	1.20	0.85	0.47	0.36
Discard yield	(%)	24.8%	22%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Sales	(Mt)															
Anthracite - export contract	(Mt)	4.79	0.44	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.20	0.10	0.05
Anthracite - export spot	(Mt)	1.80	0.08	0.11	0.10	0.12	0.16	0.18	0.20	0.20	0.20	0.20	0.00	0.14	0.05	0.07
Anthracite nuts - local	(Mt)	2.35	0.13	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.10	0.05	0.03
Anthracite peas - local	(Mt)	1.95	0.10	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.09	0.04	0.02
Anthracite duff - local	(Mt)	2.15	0.14	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.09	0.05	0.02
Thermal - local contract	(Mt)	3.49	0.18	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.20	0.12	0.09
Thermal - local other	(Mt)	0.88	0.12	0.12	0.12	0.12	0.11	0.10	0.04	0.04	0.04	0.04	0.01	0.01	0.00	0.00
Revenue (Nominal)	**(Rm)**	**21838.9**	**894.7**	**1364.3**	**1463.2**	**1565.8**	**1711.9**	**1821.5**	**1934.9**	**2043.0**	**2157.6**	**2278.0**	**2004.2**	**1387.9**	**708.4**	**503.6**
Anthracite - export	(Rm)	10118.4	399.5	570.4	626.8	686.1	789.0	851.6	935.0	989.6	1047.8	1108.6	786.9	703.1	338.6	285.5
Anthracite - local	(Rm)	9309.8	375.3	610.0	645.4	682.8	722.4	764.3	808.6	855.5	905.2	957.7	1013.2	536.0	283.5	150.0
Thermal	(Rm)	2410.7	120.0	183.8	191.0	196.9	200.5	205.6	191.3	197.9	204.7	211.7	204.1	148.8	86.3	68.1
Operating Costs (Nominal)	(Rm)	**16585.6**	**754.1**	**1116.9**	**1086.6**	**1115.5**	**1108.1**	**1251.8**	**1189.4**	**1562.5**	**1571.0**	**1609.2**	**1372.2**	**1305.6**	**929.0**	**613.6**
Mining	(Rm)	8873.7	323.4	683.1	621.7	618.3	574.1	687.8	597.5	939.1	902.2	899.7	696.0	697.2	453.0	180.6
RoM stockpile movement	(Rm)	235.8	134.8	-17.4	2.5	10.4	27.1	17.6	28.2	-22.0	-8.2	0.4	31.3	6.0	0.0	25.2
RoM transport - pit to plant	(Rm)	252.9	6.2	13.6	14.0	13.9	9.5	10.1	12.4	22.8	26.8	25.5	24.7	32.5	21.8	19.1
Processing	(Rm)	1318.7	70.1	90.7	95.5	100.1	104.3	108.8	104.1	110.1	116.3	123.0	116.3	89.1	56.9	33.4
Power, other	(Rm)	999.2	38.5	80.8	71.5	70.6	63.3	73.9	66.6	106.1	101.7	101.4	75.0	72.9	54.7	22.2
Overheads + Somkhele management	(Rm)	2429.6	63.0	124.1	131.9	140.2	149.2	158.7	168.8	179.5	190.8	202.9	214.5	225.7	237.7	242.6
SLP costs	(Rm)	145.1	5.0	7.4	7.9	8.3	8.8	9.4	9.9	10.5	11.2	11.8	12.5	13.3	14.1	14.9
Transport & Port costs	(Rm)	2293.9	111.7	131.2	138.8	151.0	169.6	182.9	199.5	212.4	226.1	240.7	199.4	166.7	89.4	74.5
Royalties - MPRDA	(Rm)	36.6	1.4	3.3	2.8	2.6	2.3	2.7	2.3	4.2	3.9	3.8	2.5	2.3	1.4	1.1
Operating Profit	(Rm)	5253.4	140.6	247.3	376.6	450.2	603.7	569.7	745.6	480.5	586.6	668.8	632.0	82.3	-220.5	-110.0

	Units	Totals / Averages	F2014	F2015	F2016	F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027
Capital Costs (Nominal)	(Rm)	**1055.7**	**18.9**	**75.4**	**76.9**	**122.3**	**78.9**	**105.2**	**114.5**	**79.1**	**107.6**	**71.6**	**67.5**	**75.6**	**30.2**	**32.0**
Exploration Capital	(Rm)	76.8	5.8	5.3	5.6	6.0	25.2	6.7	7.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining Development	(Rm)	242.2	0.0	26.5	24.7	57.2	0.0	36.1	46.8	0.0	31.9	0.0	0.0	19.0	0.0	0.0
Haul Road new areas	(Rm)	22.9	0.0	0.0	0.0	9.5	0.0	5.4	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0
Mine Rehabilitation	(Rm)	300.2	0.0	15.9	16.9	17.9	18.9	20.1	21.3	22.6	23.9	25.3	26.9	28.5	30.2	32.0
Stay in Business capex	(Rm)	413.7	13.1	27.7	29.7	31.8	34.8	37.0	39.3	41.5	43.8	46.2	40.7	28.2	0.0	0.0
Cash Flow																
Operating Profit	(Rm)	5253.4	140.6	247.3	376.6	450.2	603.7	569.7	745.6	480.5	586.6	668.8	632.0	82.3	-220.5	-110.0
Capital pre-strip adjustment			88.4	111.2	-1.7	-53.8	-133.0	-41.3	-165.9	129.3	128.0	224.3	-26.0	-38.8	-13.4	0.0
Capital expenditure	(Rm)	1055.7	18.9	75.4	76.9	122.3	78.9	105.2	114.5	79.1	107.6	71.6	67.5	75.6	30.2	32.0
Change in working capital	(Rm)	-108.2	91.7	4.0	-11.7	-6.0	-7.9	-3.4	-10.5	2.9	-13.1	-9.2	-11.3	-18.4	-82.9	-36.0
Net cash flow before tax	(Rm)	4296.9	301.8	287.2	286.3	268.2	383.9	419.8	454.7	533.6	593.9	812.3	527.2	-50.6	-347.0	-178.1
Company tax payable	(Rm)	1280.2	23.1	73.5	84.4	77.2	111.8	115.3	132.8	138.4	169.6	229.6	150.7	-26.3	0.0	0.0
Cash Flow	(Rm)	3016.7	278.6	213.7	201.9	191.0	272.1	304.5	321.9	395.2	424.3	582.7	376.5	-24.3	-347.0	-178.1

16.3.8 WACC

Tendele derived its weighted average cost of capital ("**WACC**") according to the parameters set out in Table 16-9.

Table 16-9: Tendele – Derivation of the WACC for Somkhele

Parameter	Value	Source / Comment
Asset beta	1.57	Peer average for Petmin
Re-levered beta	2.46	relevered Beta = Beta asset * {1+(1-tax rate)(Debt/Equity)}
Equity market risk premium	5.50%	Typical market premium
Risk free rate	6.77%	Yield on RSA government bond 2026
Risk premium	13.56%	
Cost of equity	20.33%	
RSA prime interest rate	8.50%	
Tax rate	28%	
After tax cost of debt	6.12%	
Equity	55.8%	Actual at June 2013
Debt	44.2%	Actual at June 2013
WACC (nominal)	14.05%	
WACC (real)	7.80%	RSA inflation rate 5.8%

The nominal WACC to apply to the cash flows for Somkhele is therefore 14.05%.

16.3.9 Sensitivities

The following tables present the NPVs of the nominal post-tax pre-finance cash flows as determined from the FM. In summary they include the following:

- The variation in nominal NPV with discount factors (Table 16-10);
- The variation in nominal NPV at the WACC based on twin (revenue and operating expenditure) sensitivities (Table 16-11).
- The variation in nominal NPV at the WACC based on twin (capital and operating cost) sensitivities (Table 16-12).

Table 16-10: Somkhele – Variation in Nominal NPV with Discount Factors

Discount Rate (Nominal)	NPV (ZAR million)
0.0%	3013.0
10.0%	1962.2
12.0%	1819.7
14.05%	1690.5
16.0%	1581.4
18.0%	1481.6
20.0%	1392.7

Table 16-11: Somkhele – Variation in Nominal NPV at 14.05% WACC based on Twin (revenue and operating costs) Sensitivities

All amounts in ZAR million		Revenue Sensitivity						
		-30%	-20%	-10%	0%	10%	20%	30%
Operating Cost Sensitivity	-30%	1,120	1,881	2,642	3,403	4,163	4,924	5,685
	-20%	548	1,310	2,071	2,832	3,593	4,353	5,114
	-10%	(83)	739	1,500	2,261	3,022	3,783	4,544
	0%	(842)	154	929	1,691	2,451	3,212	3,973
	10%	(1,623)	(575)	353	1,120	1,881	2,641	3,402
	20%	(2,404)	(1,356)	(309)	546	1,310	2,071	2,832
	30%	(3,185)	(2,137)	(1,090)	(57)	737	1,500	2,261

Table 16-12: Somkhele – Variation in Nominal NPV at 14.05% WACC based on Twin (capital and operating costs) Sensitivities

All amounts in ZAR million		Capital expenditure sensitivity						
		-30%	-20%	-10%	0%	10%	20%	30%
Operating Cost Sensitivity	-30%	3,516	3,478	3,440	3,403	3,365	3,327	3,289
	-20%	2,945	2,907	2,870	2,832	2,794	2,756	2,719
	-10%	2,374	2,337	2,299	2,261	2,223	2,186	2,148
	0%	1,804	1,766	1,728	1,691	1,653	1,615	1,577
	10%	1,233	1,195	1,158	1,120	1,082	1,044	1,007
	20%	660	622	584	546	508	470	432
	30%	68	27	(14)	(57)	(132)	(176)	(220)

16.4 Market Approach

16.4.1 Comparable Transactions

SRK subscribes to the SNL Metals Economics Group ("MEG") and IntierraRMG ("Intierra") databases, which have been used for more than five years to obtain comparable transaction information. In SRK's experience, the information provided on these databases is reliable and trustworthy. Using the MEG and Intierra databases, SRK extracted during December 2013 data on all anthracite projects that were located in South Africa for which transactions were reported. To ensure that a sufficiently large data set was obtained, a search criterion of January 2000 to November 2013 was used.

The following key technical and economic parameters were extracted for the relevant projects from the two databases:

- Project name and status;
- Geology (to distinguish between thermal coal and anthracite);
- Date interest purchased;
- Interest purchased in the project;
- Price paid to acquire the interest (consideration paid, whether as cash and/or shares, including any farm-in arrangements);
- The total resources (tonnes) declared in the Measured and Indicated Resource and Inferred Resource categories for the project at the date the interest was purchased.

Information related to six transactions was obtained from this search, with the key information summarized in Table 16-13.

Table 16-13: Anthracite Project Transaction Information (copyright MEG 2013, Intierra 2013)

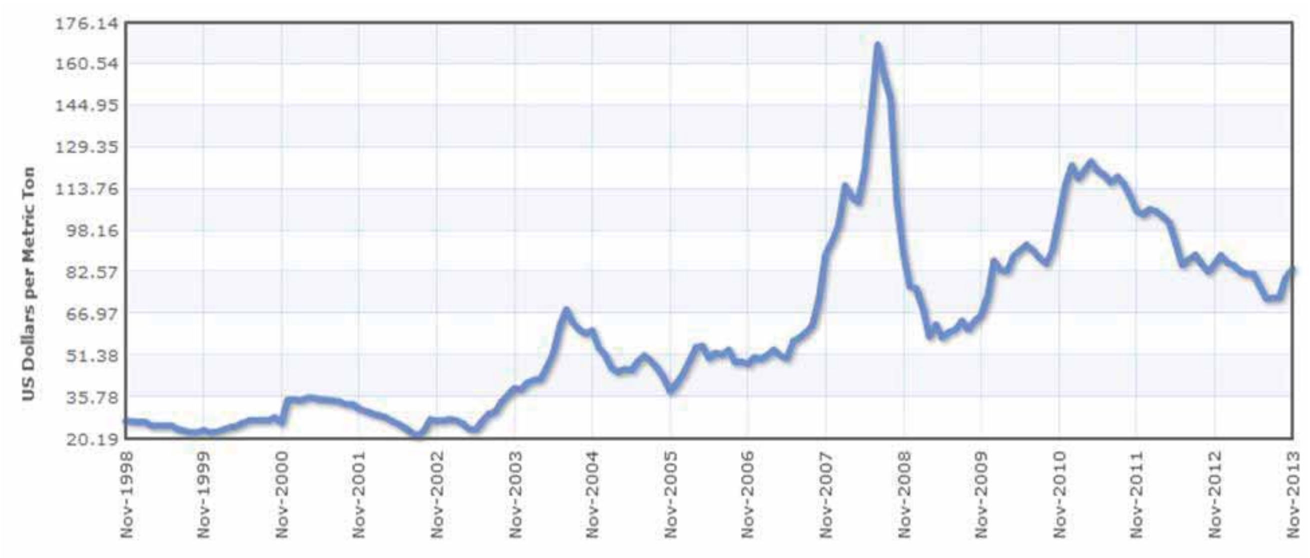
Property	Status	Trans. Date	Price Paid (USDm)	% acquired	M&I Res (Mt)	Inf Res (Mt)	Amount paid at transaction date (USD/t)		Ruling Coal Price at Transaction Date	Adjustment Factor	Adjusted Price paid (USD/t)	
							M&I Res	Inf Res			M&I Res	Inf Res
KaNgwane	Feas	Jul-10	3.6	30%	46.9	67.2	0.151	0.074	90.61	0.925	0.140	0.068
Mbila	Feas	Sep-11	27.0	44%	86.5	2.6	0.695	0.482	115.62	0.725	0.504	0.349
Springlake	Prod	Oct-08	10.1	100%	30.5	1.9	0.317	0.218	109.7	0.764	0.242	0.167
Balgray	Exp											
Braakfontein	Feas	Feb-11	10.8	64%	60.7		0.195	0.131	117.74	0.712	0.139	0.093
Mpati	Exp											
Vaalkrantz	Prod				17.8	11.8						
KaNgwane	Feas			70%	240.1	48.5						
Marble	Target	May-12	12.6	60%		15.0	0.055	0.035	93.77	0.894	0.049	0.032
Mbila	RD			30%	95.9	32.8						
Riversdale Anthracite	Target	Sep-12	54.8	74%	Assumed same as ZAC							
Zululand Anthracite	Prod				14.3	23.6	1.460	0.684	85.82	0.977	1.425	0.668

2. M&I Res = Measured and Indicated Resources
3. Inf Res = Inferred Resources

All transaction metrics as presented are based on the total consideration paid divided by the total attributable 'resource' (inclusive of reserves) of contained coal, expressed in USD/t of coal.

Many of the transactions were based on Measured, Indicated and Inferred Mineral Resources. There were instances where the transactions had been based on Inferred Resources only. By inspection, the average of these transaction values was approximately 70% of the average USD/t value for the combined Measured, Indicated and Inferred Resources. Accordingly, SRK has used 70% as a factor to extract the value for the Inferred Resources only out of a transaction value based on all resources. This value is applied to total Inferred Mineral Resources and the resultant value subtracted from the total consideration paid. The balance of the total consideration paid is then attributed to the Measured and Indicated Mineral Resources and the resultant USD/t for Measured and Indicated Mineral Resources determined.

Comparable transactions result in market-related value estimates, but if the target commodity market or any other material influences on the market's perception of the value of a mineral asset have changed significantly during the time elapsed between the comparable transaction occurring and the Valuation Date, then an adjustment must be made. The adjustment factor is derived as the ratio of the applicable export coal price at the Valuation Date (see Figure 16-2) to the ruling export coal price at the time of each transaction. No such historical anthracite price information is available in the public domain, so SRK had to rely on the export coal price for this purpose. The adjustment factor converts all transaction information to be valid/usable at the Valuation date of the CPR.



srk consulting	**TENDELE COAL MINING (PTY) LTD** HISTORICAL SOUTH AFRICAN EXPORT COAL PRICE (source: www.indexmundi.com)	Project No. 470421

Figure 16-2: Historical South African Export Coal Price

The derived value in USD/t for a given transaction is multiplied by the appropriate adjustment factor for that month and year. This then brings all transacted USD/t values from Table 16-13 on to the common time basis of the Valuation Date. The resultant adjusted values are given in the two right-hand most columns of Table 16-13.

The minimum, average and maximum metrics have been extracted from Table 16-13 for use in the valuation process and are summarized in Table 16-14.

Table 16-14: Valuation Metrics (comparable transactions)

Item	Minimum (USD/t)	Average (USD/t)	Maximum (USD/t)
Measured and Indicated Resources	0.049	0.417	1.425
Inferred Resources	0.032	0.229	0.668

16.4.2 Resources used in LoM

Applying the metrics in Table 16-14 to the resources that support the LoM production schedules gives a range of values as set out in Table 16-15. The resultant values in USDm for Measured and Indicated and Inferred are summed and converted to SA Rands at R10.18 = USD1.00 (the rate ruling at the Valuation Date).

Table 16-15: Market Valuation of Resources in the LoM

Item	Units	Minimum	Average	Maximum
Total Value	(USDm)	1.6	13.5	46.2
	(ZARm)	16.1	137.4	470.1

This does not agree with the value derived from the cash flow approach. SRK therefore places more reliance on the cash flow value for the LoM production.

16.4.3 Resources not used in LoM Production Schedules

The coal resources not used in the LoM production schedules are set out by property in Table 16-16. The metrics from Table 16-14 have been applied to the Measured and Indicated Resources and Inferred Resources at Somkhele and the resultant USDm values converted to SA Rands as above.

Table 16-16: Market Valuation of Resources not used in LoM

Property	Resources not used in LoM (Mt)		Value Resources not used in LoM (USDm)					
			Measured and Indicated			Inf		
	M&I Res	Inf Res	Min.	Av.	Max.	Min.	Av.	Max.
Emalahleni	9.95	-	0.5	4.1	14.2	0.0	0.0	0.0
Gwabalanda	5.06	1.77	0.2	2.1	7.2	0.1	0.4	1.2
KwaQubuka North	2.81	2.28	0.1	1.2	4.0	0.1	0.5	1.5
Luhlanga	9.07	7.77	0.4	3.8	12.9	0.2	1.8	5.2
Mahujini	2.47	0.71	0.1	1.0	3.5	0.0	0.2	0.5
Ophondweni	3.87	0.12	0.2	1.6	5.5	0.0	0.0	0.1
Area 1	20.35	8.60	1.0	8.5	29.0	0.3	2.0	5.7
Area 2	2.67	-	0.1	1.1	3.8	0.0	0.0	0.0
Area 3	-	42.85				1.4	9.8	28.6
KwaQubuka	1.75	-	0.1	0.7	2.5			
Sub-total	58.00	64.10	2.8	24.2	82.7	2.0	14.7	42.8
Total value (USDm)			**4.9**	**38.9**	**125.5**			
Total value (ZARm)			**49.4**	**395.7**	**1277.5**			

3. M&I Res = Measured and Indicated Resources
4. Inf Res = Inferred Resources

16.4.4 In-Situ / Yardstick Approach

The In Situ Resource technique involves application of a heavy discount to the value of the total in-situ resources. The discount is usually taken as a range of a certain percentage of the spot coal price as at the valuation date. In the absence of any published ranges for coal, SRK has used the range for base metals (0.5% to 3.0%) as a basis. Additional discount factors are applied to this range to account for various technical issues *inter alia* stage of development of the project, infrastructure (or lack thereof), mining difficulty, metallurgical complexity, environmental issues, likely capital costs to develop, operating costs, and logistics. The resultant factors used by SRK for Measured/Indicated and Inferred Resources are set out in Table 16-17.

The average price received by Somkhele for its coal in F2014 is shown to be R880/t. Multiplying this price by the yardstick factors of Table 16-17 and the unused resources of Table 16-16 yields the values set out in Table 16-17.

Table 16-17: Somkhele - Yardstick Valuation of Resources not used in LoM

Item	Unused Resources (Mt)	Minimum	Mid	Maximum
Measured/Indicated Resources		0.30%	1.00%	2.00%
Inferred Resources		0.21%	0.70%	1.40%
Measured/Indicated Resources	58.01	153.1	510.5	1020.9
Inferred Resources	64.09	118.4	394.8	789.6
Total (ZARm)		**271.6**	**905.3**	**1810.6**

16.5 Cost Approach

Historic exploration expenditure on Somkhele, correct at the Valuation Date in this CPR, is R48.0 million. The forecast exploration expenditure is summarized in Table 16-18.

Table 16-18: Somkhele – Budgeted Exploration Expenditure

Item	F2014	F2015	F2016	F2017	F2018	F2019	F2020	F2021
Exploration Budget	5.8	5.3	5.6	6.0	25.2	6.7	7.1	15.0
Probability will be spent	100%	95.0%	90.0%	85.0%	80.0%	75.0%	70.0%	65.0%
Weighted exploration expenditure	5.8	5.0	5.1	5.1	20.2	5.0	5.0	9.8

The NPV at Somkhele's WACC of the weighted expenditure in Table 16-18 is R38.2 million. The sum of this and the historical expenditure is then R86.2 million. Applying a PEM of 4.5 to the combined exploration expenditure yields a value for Somkhele according to the Cost Approach of R388.1 million. This is in close agreement with the value in Table 16-16. The value derived in Table 16-17 is not considered.

16.6 Derivation of Fair Values for Coal Resources

The resultant minimum, preferred and maximum fair values from each metric were evaluated and aggregated, as shown in Table 16-19.

Table 16-19: Market Valuation – Minimum, Preferred and Maximum values

Property	Minimum Value (ZARm)	Preferred Value (ZARm)	Maximum Value (ZARm)
LoM schedule	1481.6	1690.5	1819.7
Resources not in LoM plan	310.4	395.7	465.7

16.7 Summary Value for Tendele

[SV2.8, SV2.10, SV2.15]

The summary Market Valuation for Tendele at 01 December 2013 has been done on a sum-of-the-parts basis, as set out in Table 16-20. The effects of debt/loans and debt servicing have been excluded in the derivation of the fair value for Somkhele.

Adjustments have been made in Table 16-20 for balance sheet items at the Tendele level, which include cash on hand, consolidated debt and net current assets. Tendele confirmed to SRK that there are no hedge or derivative contracts in force.

Table 16-20: Tendele Summary Market Valuation

Item	Values (ZARm)
Somkhele (NPV@14.05% nominal)	1690.5
Resources not in LoM plans	395.7
Sub-total	2086.2
Adjustments	
Cash on hand	-5.5
Consolidated debt	-379.6
Net Current Assets (accounts receivable – current liabilities)	-62.6
Hedge contracts – mark to market	nil
Environmental liabilities	Incl. in cash flows
Net Tendele Value	1638.6

SRK repeated the construction of Table 16-20, using the minimum and maximum values for Somkhele (LoM schedule) and the resources not used in the LoM.

In SRK's opinion, the fair value for Tendele is ZAR1 639 million, in the range of ZAR1 344 million to ZAR1 838 million.

16.8 SRK Comments

There are a number of risks and opportunities associated with Somkhele Anthracite Mine.

16.8.1 Risks

<u>Tenure</u>

Although the Mining Right Application ("MRA") for Areas 4 and 5 has been accepted by the DMR, and two milestone dates for submission of key documents have been met, the New Order Mining Right ("NOMR") for Areas 4 and 5 has not been awarded to Tendele. While the probability that the NOMR will not be awarded is low, it presents a risk to Tendele in terms of continued coal production once the coal in the current permitted areas is depleted (within five to six years).

The MRA was submitted two weeks before the NOPRs for Areas 4 and 5 lapsed. As the NOPRs had already been renewed once, in terms of the MPRDA they cannot be renewed again. As long as the MRA is being processed, Tendele is deemed to be the holder of the coal rights over these areas. However, if the Regional Manager rejects the MRA for whatever reason, Tendele will no longer hold the coal rights over these properties.

<u>Mine Designs</u>

SRK is satisfied that there are more than sufficient resources to support the mine design and LoM production schedules. However, the mine designs on which the production schedules are based for most of the future mining areas are at a conceptual level. Further, the mine designs are premised on assumed slope geometry which needs to be confirmed. In this regard, a single geotechnical borehole per deposit is insufficient to adequately quantify the slope geometry.

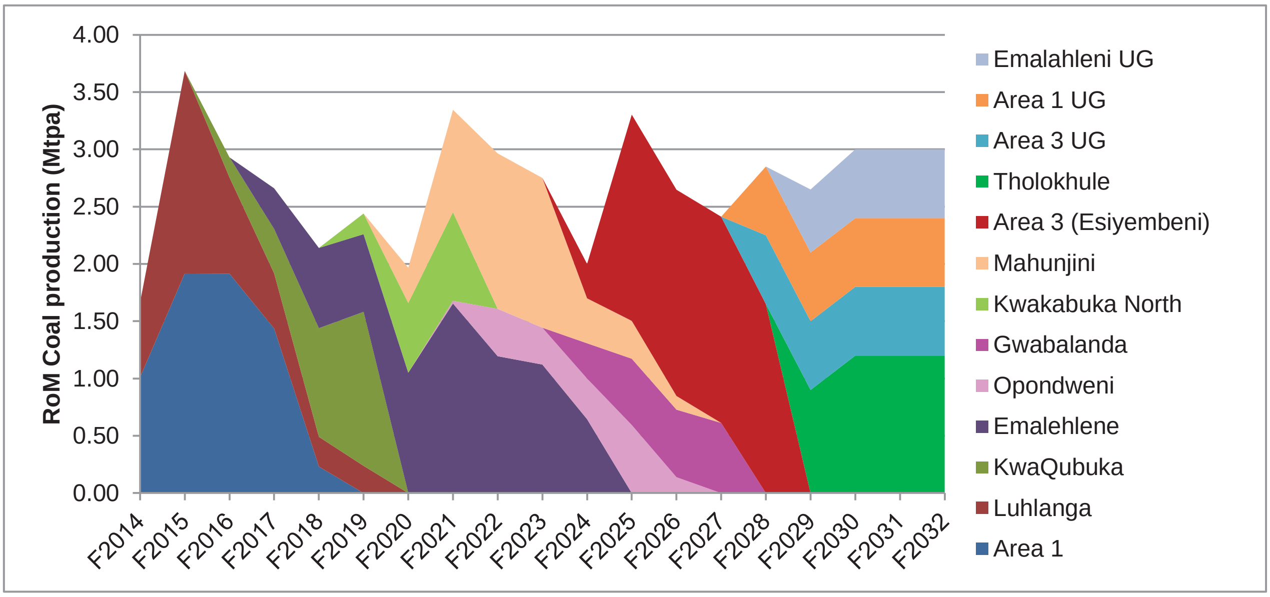
The mine designs were based on an incomplete set of design parameters. While this omission is not material, the mine designs should be redone with a complete set of modifying factors.

Since the FM yields a positive NPV, SRK is satisfied that the coal can be economically extracted and that Coal Reserves can be declared.

16.8.2 Opportunities

The combined production schedule for Somkhele as incorporated into the cash flow analysis is shown graphically in Figure 16-1. The opportunity exists to optimise the production schedule, to reduce the large swings in production from one year to the next, thereby reducing the working capital requirements of holding large RoM stockpiles.

Assuming that all deposits can be incorporated into the cash flow analysis as proposed by Tendele, the combined production schedule for all deposits is shown in Figure 16-3. This represents upside potential for Somkhele.



srk consulting	TENDELE COAL MINING (PTY) LTD LoM COMBINED PRODUCTION SCHEDULES IN CASH FLOW ANAYLSIS	Project No. 470421

Figure 16-3:LoM Combined Production Schedule in Cash Flow Analysis

17 Summary Valuation and Concluding Remarks

[SV2.10, SV2.9, SV2.14]

SRK has conducted a comprehensive review and assessment of all material issues likely to influence the future operations of Somkhele based on information available up to 01 December 2013, which is the Effective Date and Valuation Date for this CPR. The CPR and Market Valuation of Somkhele have been done according to the requirements of the SAMREC and SAMVAL Codes.

SRK has reviewed the information provided by Tendele and is satisfied that the extents of the properties described in the various rights are consistent with the maps and diagrams received from Tendele.

This report contains statements of a forward looking nature which are subject to a number of known and unknown risks, uncertainties and other factors that may cause the results to differ materially from those anticipated in this report. The achievability of LoM plans, budgets and forecasts is neither assured nor guaranteed by SRK. The forecasts as presented and discussed herein have been proposed by Tendele management and staff and have been reviewed and adjusted where appropriate by SRK. The projections cannot be assured as they are based on economic assumptions, many of which are beyond the control of Tendele. Future cash flows and profits derived from such forecasts are inherently uncertain and actual results may be significantly more or less favourable.

Nevertheless, SRK believes that the projections set out in this report should be achievable, provided that the required management resources and adequate capital necessary to achieve the projections are sustained.

17.1 Mineral Resources and Mineral Reserves

All Mineral Resources and Mineral Reserves as stated in this CPR are reported as at 01 December 2013 in accordance with the terms and definitions of the SAMREC Code. Mineral Resources are reported on an inclusive basis of Mineral Reserves.

17.2 Summary Valuation

[12.9 (h) (xii), SV2.10, SV2.15, SV2.16]

In SRK's opinion, the fair value for Tendele is ZAR1 639 million, in the range of ZAR1 344 million to ZAR1 838 million.

17.3 Material Change Statement

[SV2.9]

From the Effective Date of this CPR until the date this CPR was issued, SRK is not aware of any material changes that have occurred in relation to the Somkhele.

As far as SRK has been able to ascertain, the information provided by Tendele was complete and not incorrect, misleading or irrelevant in any material aspect. SRK has no reason to believe that any material facts have been withheld.

SRK is aware that arbitration proceedings are underway with Osho SA Coal Trading (Pty) Ltd ("Osho"). According to Tendele, this is regarding the sale of discard material to Osho. SRK has been served with a subpoena from Osho, requesting SRK to provide:

- Any and all correspondence, reports, memoranda, notes and any other document prepared by SRK (or any of its associates, affiliates or related companies) for Tendele/Somkhele/Petmin relating to all and any coal, coal product or discard mined from or produced bat Somkhele;
- Any and all geological reports which have been produced by SRK for Somkhele/Petmin on or relating to any coal, coal product or discard mined from or produced at Somkhele;
- Any and all mining reports which have been produced by SRK for Somkhele/Petmin on or relating to any coal, coal product or discard mined from or produced at Somkhele; and
- Any and all reports which have been prepared by SRK for Somkhele/Petmin on or relating to any and all mining, washing, rewashing, coal and/or discard plant at Somkhele.

17.4 Risks

[SR6 (i – iii)]

The risks identified for the Material Assets are described below and summarized, along with the rankings before and after mitigation, in Table 17-1.

- Geological:
  - Logging, Sampling and Analysis Protocols: Although well understood by personnel, the core logging, sampling and analysis protocols are not documented, which may give rise to inconsistencies developing in the logging, sampling and analysis;
  - Geophysical Logging: The geophysical sondes are not calibrated for depth, which may lead to depth errors exists; and
  - Coal Analysis: Although an accredited laboratory was used, no duplicate analysis of samples was done to confirm reliability of the analytical results.
  - It should be noted that the impact of the geological risks is low.
- Geotechnical:
  - Quality of Information: No laboratory testing has been carried out, which will be required for detailed design work when slope heights exceed 100 m in future;
  - Analysis of Stability: The Haines Terbrugge Method is not considered to be an appropriate method for design beyond pre-feasibility stage. The method is not applicable to the higher slopes at Somkhele which lie beyond the limit of the data set used;
  - Groundwater: The current understanding of groundwater is insufficient for slope stability analysis, potentially leading to unforeseen dewatering and depressurization requirements with deeper pits; and
  - Slope Design: Adversely orientated joints have combined to cause bench scale collapse in places, resulting in a rock fall risk. Remediation measures will result in a consequent loss of coal and an increase in stripping ratio.
- Mining:
  - Faulting at Mahujini: The faulting may restrict the practical pit design and is likely to present some challenges to the mining. Additional exploration and cover drilling will improve the ore body knowledge.
  - Emalahleni Underground Mining Method: The proposed mining method is unusual in the South African coal mining industry and has not been tested at dips as severe as those that occur at Somkhele. It is possible that mining will be compromised, resulting in a reduction of available reserves. Further detailed geotechnical work to support the proposed mine design is required.
- Coal Processing:
  - Plant Feed Assumptions: The Somkhele Updated Bank Model_5 December 2013 may be optimistic in terms of plant feed tonnages applied to Plants 1 and 2; annual Plant 1

and 2 capacities of 1.1 and 1.4 million tonnes, respectively are believed to be more likely; and

- o Particle Size Distribution: The particle size distribution variations at 10 mm cut size may lead to over- and under-loading of circuits with a resultant loss in efficiency.

- Tailings and Discard:
  - o Discard and Slurry Disposal: The acceptability of the proposed use of the open pits for the disposal of coal discard and slurry may be questionable in terms of ongoing monitoring and updating of the ground water model, which may require the revision of the current disposal method; and
  - o Groundwater Contamination: There is a risk that ground water contamination may be more significant than anticipated and unforeseen remediation of ground water may be required.
- Infrastructure:
  - o Fire Risk in Substations: Unmanned substations in Plants 2 and 3 pose a risk of catastrophic fires, resulting in a loss in production and revenue.
- Environmental:
  - o Additional Capital Expenditure: Estimated closure costs may be higher than expected. SRK believes that the cost estimate for water treatment is significantly underestimated. Additional costs may be incurred at closure if a backfilling backlog develops. Indicative additional closure costs are estimated at R15 million for water treatment and R20 million for a backfilling backlog;
  - o Acid Mine Drainage: The risk of AMD during the closure phase and the potential of the waste disposal to generate AMD is considered to be low, provided that the separation of the overburden from waste material is done effectively to prevent this material falling into the waste rock stockpile;
  - o Groundwater: Ground water management does not represent a significant liability. However, groundwater migrating away from the pit areas will transport contaminants, specifically sulphate compounds. There are no groundwater users that will be impacted and it is not expected that there will be any significant influence on the water quality of the Umfolozi River;
  - o Pit Dewatering: Pit dewatering will be required but ground water quality is not likely to deteriorate significantly except in terms of sulphate concentration. Water make in the pits is not excessive and can be absorbed in the process water system. Mine dewatering is unlikely to impact directly on the flow volumes in the Umfolozi River;
  - o Decant: Decant in Area 1 may cause contaminated water in the pit area to daylight onto surface, impacting surrounding surface water bodies and aquifers. The flow of decant water will be towards the Umfolozi River, with possible limited deterioration in the sulphate concentrations; and
  - o Local Economic Development Projects: Two commitments have been rolled over to the 2013 – 2017 SLP. Failure to address all commitments before the end of the five year period incurs the risk of the imposition of fines. Failure to comply with SLP commitments could impact on relations between the mine and the community, possibly leading to labour unrest.
- Social: Social:
  - o Failure to comply with the Social and Labour Plan may result in community dissatisfaction and hence unrest, or prosecution.
- Water Supply:
  - o The Water Use License provides for the authorized volume of water abstracted from the Umfolozi River to be halved during water stressed times. This could have negative consequences.

- Valuation of Material Assets:
  - Tenure: The NOMR for Areas 4 and 5 has not yet been awarded to Tendele. This presents a risk, albeit low, to Tendele in terms of continued coal production once the coal in the current permitted areas is depleted (within five to six years). If the MRA is rejected, Tendele will no longer hold the coal rights over these properties; and
  - Mine Designs: The mine designs on which the production schedules for future mining areas are based are largely at a conceptual level. The assumed slope geometry needs to be confirmed and the plans redone using a complete set of modifying factors.

Table 17-1: Summary of Identified Risks

Type	Description of Risk	Initial Risk Rating	Mitigation Possible?	Risk Rating after Mitigation
Geological	Logging, Sampling and Analysis Protocols	Low	Yes	Very Low
	Geophysical Logging	Low	Yes	Very Low
	Coal Analysis	Low	Yes	Very Low
Geotechnical	Quality of Information	High	Yes	Low
	Analysis of Stability	High	Yes	Low
	Groundwater	Medium	Yes	Low
	Slope Design	High	Yes	Low
Mining	Faulting at Mahujini	High	Yes	Low
	Unproven UG Mining Method	High	Yes	Medium
Coal Processing	Plant Feed Assumptions	High	Yes	Medium
	Particle Size Distribution	Medium	Yes	Low
Tailings and Discard	Discard and Slurry Disposal	Low	Yes	None
	Groundwater Contamination	Medium	Yes	Low
Infrastructure	Fire Risk in Substations	High	Yes	Low
Environmental	Additional Capital Expenditure	Low	Yes	Very Low
	Acid Mine Drainage	Low	Yes	Very Low
	Groundwater	Medium	Yes	Low
	Pit Dewatering	Low	Yes	Very Low
	Decant	Medium	Yes	Low
Social	Community Dissatisfaction	Medium	Yes	Low
Water Supply	Reduction in Water Allocation	Medium	Yes	Low
Valuation of Material Assets	Tenure	Low	No	Low
	Mine Designs	Medium	Yes	Low

17.5 Opportunities

The opportunities identified within the Somkhele mining operation are:

- Mining
  - Blasting: Cost saving during overburden blasting may be possible if a lower powder factor is used.
- Valuation of Material Assets
  - Production Schedule: The opportunity exists to optimize the production schedule, to reduce the large swings in production from one year to the next, thereby reducing the working capital requirements of holding large RoM stockpiles.

Yours faithfully

SRK Consulting (South Africa) (Pty) Ltd

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18 References/Key Data

[SV2.11]

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19 Glossary of Terms, Abbreviations and Units

[SR10A (ii)]

GLOSSARY OF TERMS

aeromagnetic	an aeromagnetic survey is a common type of geophysical survey carried out using a magnetometer aboard or towed behind an aircraft.
arenaceous	arenite (Latin Arena, sand) is a sedimentary clastic rock with sand grain size between 0.063 mm (0.00256 in) and 2 mm (0.08 in) and contain less than 15% matrix. The related adjective is arenaceous.
bioturbation	the displacement and mixing of sediment particles by benthic fauna (animals) or flora (plants)
calorific	calorific value is the amount of chemical energy stored in a coal that is released as thermal energy upon combustion.
deltaic	adjective referring to river delta
dendritic	mineral growths
dolerite	igneous rock formed below the Earth's surface, a form of basalt, containing relatively little silica (mafic in composition)
drillhole	method of sampling rock that has not been exposed
Dwyka	glacial Permian deposit that is widespread in South Africa
dyke	thin, tabular, vertical or near vertical body of igneous rock formed by the injection of magma into planar zones of weakness
Ecca	Ecca series and are divided into three groups: the Lower Ecca (containing almost 1,000 feet of shales), the Middle Ecca (some 1,650 feet of sandstone, seams of coal, and fossilized plants), and the Upper Ecca (about 650 feet of shales again).
fluvial	refers to the processes associated with rivers and streams and the deposits and landforms created by them
geophysical	quantitative observation of the physical properties of the deposit
geotechnical	geotechnical engineering is the branch of civil engineering concerned with the engineering behavior of earth materials
glauconite	typically found as rounded aggregates or 'pellets' of very fine grained scaly particles, having a blue-green to yellow-green colour
lithological	the gross physical character of a rock or rock formation
nomenclature	the names or terms comprising a set or system
palaeotopographical	refer to palaeotopography: ancient topography.
palaeovalleys	ancient valleys recovered by sediments
palaeotopography	applications in geology requiring estimation of the depth and thickness of lithologic formations
paraglacial	during glacial deposition
seam	defined layers of rock / sand
sedimentary	pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks
shales	fine-grained sedimentary rock whose original constituents were clay minerals or muds
sill	a thin, tabular, horizontal to sub-horizontal body of igneous rock
strata	a layer of material, naturally or artificially formed, often one of a number of parallel layers one upon another
stratigraphy	study of stratified rocks in terms of time and space

tillites	coarsely graded and extremely heterogeneous sediments of glacial origin

ABBREVIATIONS

AD/UC	Air dried / uncontaminated
BEE	Black Economic Empowerment
CAT	Caterpillar, an OEM
CCTV	Closed Circuit Television
CM	Continuous Miner
CoP	Code of Practice
CP	Competent Person
CTM	Completed Transaction Method
CV	Competent Valuator
CV	Calorific Value
DAF	Dry Ash Free
DCF	Discounted Cash Flow
DM	Dense Medium
DMC	Dense Medium Cyclone
DMR	Department of Minerals and Resources
DTM	Data Terrain Model
DWA	Department of Water Affairs
ECA	Environmental Conservation Act (Act 73 of 1989)
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMPR	Environmental Management Programme Report
EPA	EPA (Pty) Ltd
Eskom	Eskom Limited
FEL	Front End Loader
Gemecs	Gemecs (Pty) Ltd
GBIS	Software, a trademark of Micromine Pty Limited
GCM	Guideline Company Method
GN	Government Notice
GTIS	Gross tonnes in situ (coal resources)
HDSA	Historically Disadvantaged South African
HMS	Heavy Medium Separation
HSEC	Health, safety, environment and community
CPR	Independent Engineer’s Report
JV	Joint Venture
LoM	Life-of-Mine
LV	Low Voltage
MCC	Motor Control Centre
MHSA	Mine Health and Safety Act, (Act 29 of 1996) and amendments
MPRDA	Mineral and Petroleum Resources Development Act (Act 68 of 2002)
MTIS	Mineable tonnes in situ (coal resources/reserves)
MV	Medium Voltage
NEMA	National Environmental Management Amendment Act (Act 62 of 2008)
NHRA	National Heritage Resources Act (Act 25 of 1999)
NMD	Notified Maximum Demand
NOMR	New Order Mining Right

NOPR	New Order Prospecting Right
NPV	Net Present Value
NWA	National Water Act (Act 36 of 1998)
OEM	Original Equipment Manufacturer
PEM	Prospectivity Enhancement Multiplier
PM	Planned Maintenance
PMOR	Pillar Mining on Retreat
RBCT	Richards Bay Coal Terminal
RoM	Run-of-Mine
SABS	South African Bureau of Standards
SAIMM	South African Institute of Mining and Metallurgy
SAMREC	South African Code for Reporting of Mineral Resources and Mineral Reserves
SANAS	South African National Accreditation System
SANS	South African National Standard
SAP	Business specific software
SHE	Safety, Health and Environment
SHEQ	Safety, Health, Environment and Quality
SLP	Social Labour Plan
SRK Group	SRK Global Limited
SRK	SRK Consulting (South Africa) (Proprietary) Limited
TEM	Technical Economic Model
TEP	Technical Economic Parameter
TFR	Transnet Freight Rail
TTIS	Total tonnes in situ (coal resources)
WACC	Weighted Average Cost of Capital
XPAC	Mine planning software

UNITS

%	percentage
‘	minutes
bcm	bank cubic metres
ha	a hectare (10 000 m^2)
hr/hrs	hours
k	one thousand units
kA	thousand amps
kg	a kilogram
kg/t	kilograms per tonne
km	a kilometre
kPa	unit of pressure
kt	a thousand metric tonnes
ktpm	a thousand metric tonnes per month
ktpa	a thousand metric tonnes per annum
kV	thousand volts
kVA	thousand volt amps
kW	thousand watts
m	a metre
m^2	a square metre – measure of area

m^3	a cubic metre
mamsl	metres above mean sea level
Ma	a million years ago
Mbcm	a million bank cubic metres
Mbcm/a	a million bank cubic metres per annum
Mbcm/m	a million bank cubic metres per month
mbgl	metres below ground level
mg	milligram
mg/l	milligram per litre
MJ	million joules
mm	a millimetre
mpa	metres per annum
m/s, ms^{-1}	metres per second
Mt	a million metric tonnes
Mtpa	a million metric tonnes per annum
Mtpm	a million metric tonnes per month
MVA	million volt amps
MW	a millions Watt
º	degrees
ºC	degrees centigrade
Pa	a pascal – a measure of pressure
RoM t	Run-of-Mine tonne
s	a second
t	a metric tonne
t/m^3, tm^{-3}	density measured as metric tonnes per cubic metre
tpa	metric tonne per annum
tpd	metric tonne per day
tphr	tonnes per hour
tpm	metric tonne per month
USD	United States Dollar
USD/t	United States Dollar per tonne
ZAR	South African Rand
ZAR/t	Rand per tonne
ZARm	South African Rand million

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