

APPENDIX G: I&AP DATABASE AND ISSUES TRAIL

WARD COUNCILLORS

Volksrust	Cllr Name	Ward
	TA Mazibuko	1
	BG Mavuso	2
	NE Hlakutse	3
	D Jager	4
Amersfoort	Cllr Name	Ward
	OT Shabangu	7
	EM Thwala	8
Pederkop	Cllr Name	Ward
	SJ Mazibuko	6
Daggakraal	Cllr Name	Ward
	BJ Mhlanga	9
	MS Motho	10
	ZE Dludu	11

ORGANS OF STATE

ORGANS OF STATE	
Department	Contact Person
MDEDET - Head Office	Directorate: Environmental Services
MDEDET - Gert Sibande Region	Surgeon Marebane
Department of Agriculture, Forestry and Fisheries - National	Ivan Riggs
Department of Mineral Resources - Directorate: Mineral Regulation: Mpumalanga Region	Aubrey Tshivhandekano
Department of Water Affairs - Regional	JM van Aswegen / MJ Musekene
	CJ Vermaak
Department of Water Affairs - Head Office	Paul Meulenbeld
	Mike Mokgwabone
Mpumalanga Department of Health - Directorate Environmental Health	Careen Swart
Department of Labour	Reuben Sibuyi
Pixley ka Seme Local Municipality	Oupa Mavuso
Pixley ka Seme Local Municipality	Leon Grove
Pixley ka Seme Local Municipality	Sifiso Kunene
Gert Sibande District Municipality	Municipal Manager - DR Mango
Gert Sibande District Municipality -Senior Manager - Municipal Health and Environmental Services	Dan Hlanyane
Mpumalanga Tourism and Parks Agency	
Mpumalanga Public Works, Roads and Transport	Stephan Pienaar
Department of Public Enterprises	Ndalisa Jele
Department of Human Settlements - Mpumalanga	David Dube
Department of Trade and Industry	Nomonde Mesatywa
MDARDLA	G.O Xaba (Acting)
Mpumalanga Social Development	HOD: Ronnie Masilela
SAHRA - Mpumalanga & Limpopo	Phillip Hine
National Treasury	Mzukisi Mhlifili
Pixley ka Seme Local Municipality	PM Mazibuko
	MS Mndebele

ORGANS OF STATE

ORGANS OF STATE	
Department	Contact Person
	Busiswe Mavuso
	CH du Plooy
	L de Jager
	Sipho Msthal
	Mdu M
	Sam Ngwenya
	Paul de Kock
	BJ Mhlanga
	Zanele Msomi
	L Jordan
	Nadia Kadanyo
	SP Khumalo
	Zilindile Luhlanga
	PB Malebye
	S Shongwe
	L Kubheka-Nxumalo
	Mapaseka Madonsela
	Oscar Ngwenya
	Vincent Malatsi
	Lungile Skosana
MTPA	Nomcebo Malatsi
MTPA	Simon Shoba
MTPA	Frans Krige
DAFF - Directorate Land Use & Soil Management	TS Mabunda
Council for Geoscience	Henk Coetzee
EWT	Bradley Gibbons

LANDOWNERS

Farm Name	Portion	Contact Person
Roodekopjes 67HS	4	MJ Louwrens
Bergvliet 65HS	1; 8	EJJ Deacon
	3; 7; 20	MM Lambrechts
	4; 12; 16; 17; 18; 24	JJ van Niekerk
	11	Jomar Trust (JJ van Niekerk)
	22; 23	Landless People of Daggakraal Hlanganani Trust - Mr Sibiya
Koppieskraal 53HS	0; 10; 11; 12	Izak Abraham Fourie
	2	Willem Andries Labuschagne
	13	Kleinboet Lotz Trust - JH Lotz / Natie van der Merwe
Palmietspruit 68HS	1	S E A Barnard Familie Trust - Nick Tuohy
	2; 5; 6; 8	Johan Bam Trust - Andre Labuschagne
	3	Honingvlei Trust - NJ de Wet
	4	Jacomina Hendrina Lotz - Natie vd Merwe
Strydkraal 53HS	0; 2; 5	Daniel Els Testamentere Trust - Daniel Els
	1; 3	Johannes Paul Fick - Deon Nel
	4	Jacobus Johannes Petrus Swart - Koos Swart
	6	S E A Barnard Familie Trust - Nick Tuohy
	7	Honingvlei Trust - NJ de Wet
Tweedepoort 54HS	1; 5	Jan Daniel Jacobus Swart - Jan Swart

		2 Pieter Gerhardus Richards
Weiland 59HS		0 Ewoud van der Merwe Pty Ltd - Hennie Moldenhauer

GENERAL

GENERAL	
Name	Company
Bam, Dolf	Voorsitter - Amersfoort Distrik Landbou Unie
Beetge, Pierre	Grondeienaar: Welgedacht
Clark, Sharon	BHP Billiton Energy Coal South Africa
Ntiwane, Bongane	Department of Public Works
de Jager, Ria	Volksrust Public Library
Hayes, Janel	Kleinkopje Colliery
Hlatshwayo, Bawinile	Roodekopies Portion 3
Hlatshwayo, Selby	Department of Agriculture and Land Administration
Kunene, Simphiwe	Local Government & Housing
Labuschagne, André	Plase Koppieskraal en Palmietspruit
Lesufi, Nik	Chamber of Mines South Africa
Mabuza, Thokozile	Chief's Council Daggakraal
Meulenbeld, Paul	Department of Water Affairs
Mokhine, Mabule	Earthlife Africa
Nkosi, Pat	Local Government & Housing
Norje, Pieter	Verteenwoordiger: Mev Ria Beukes
Pretorius, Koos	FSE
Swanepoel, Gousie	Plaas Tweedepoort
Swart, Careen	Department of Health
Van Zyl, Donnie	Landowner
Vermaak, C. J.	DWAF
Gazide, M	Department of Agriculture, Forestry and Fisheries - Directorate Land Use and Soil Management
Kubheka, Vusi	Private
Erica	
Cowden, Gavin	Mpumalanga Wetland Forum
Bonnet, Wessel	Sasol New Energy Clean Coal Division
Botha, Bertie	Sasol Mining
Taylor, Tristen	Earthlife Africa
Coetzee, Jasper	Sasol Technology
Scheepers, Hardus	Sasol New Energy Holdings
Charpentreau, Cedric	Sasol Technology

GENERAL

Cassim, Mahomed	Gert Sibande Shared Audit Committee
Botha, C	Private
Khumalo, Mpume	COGTA
Maphanga, Jabuwe	COGTA
Makuwerere, Charles	WWF SA
Coetzee, Henk	Council of for Geoscience
Arron Gama	Private
Carol Ntuli	Private
Winnie Simelane	Private
Thoko Mndebele	Private
Philemon Sekhoto	Private
Mduduzi Khumalo	Private
Gabriel Pillay	Private
Sieghard Knocklein	KZK Urban Planning
E Silinda	Private
Kubheka, Vusi Jethro	Private
Grobler, Phil	Private
Duvenage, Elmarie	Private
Botha, Johan	Eskom
Duvenage, Ronel	Private
Mthunzi, Siphon	Private
Nkosi, Stan	Private
Mabaso, Ntombincane B	Private
Masuku, Amanda Neoh	Private
Mahaye, Phindile Cynthia	Private
Thwala, Lungile Fortunate	Private
Zungu, Nomsa Merriam	Private
Vilakazi, Gallina Christina	Private
Mwelase, Zanele	Private
Bongwa, Bonginkosi	BEC Member
Nzimande, Makhosazane	Private
Mshayisa, Nonhlanhla	Private
Malindisa, Xolisile	Private
Nkosi, Zandile	Private
Madonsela, Lindiwe	Private
Mnisi, Bheki	Private
Motsamai, Siyabonga	Private
Habile, Sebenzile	Private
Kubheka, Cebisile	Private
Mangaliso, Cebisile	Private
Nzimande, Makhosi	Private
Simelane, Nkosinathi	Private
Gamede, ME	Private
Madonsela, D	Private
Khumalo, IM	Private
Nkosi, BP	Private
Msibi, JS	Private
Gama, Elvis	Private
Kubheka, Joseph	Private

GENERAL

Madonsela, Mapaseka	Councillor
Nkonde, Sbusiso	Private
Yende, Mduduzi	Private
Mkhaliphi, Jabulane	Private
Mahlalela, Fana Hendry	Private
Zondi, Celumusa	Private
Maoke, Selby	Private
Madonsela, Sizwe	Private
Madela Siphelele Njabulo	Private
Mkhwanazi, Bafana	Private
Nkosi, Thembekile	Private
Nkosi, Mandla	Private
Madela, Lungile	Private
Mthethwa, Jabulile	Private
Mazibuko, Makhosazana	Private
Mthembu, Emmanuel	Private
Hlophe Krees	Private
Thwala, Patrick	Private
Zwane, Ras Lucky	Private
Kubheka, Siyabonga	Private
Maseko, Bongane	Private
Ntshangase, Thulane	Private
Vilakazi, Mbuyiseni	Private
Mahlangu, Zakhele	Private
Dlamini, Nkosinathi	Private
Maseko, Ntobeko	Private
Mtshali, Thoko	Private
Nkambule, Mbali	Private
Nkosi, Zama	Private
Ngwenya, Lusi (Lucy)	Private
Kunene, Ellis	Private
Masina Ellen	Private
Kunene, Nomvula	Private
Kunene, Thandiwe	Private
Vilakazi, Lindiwe	Private
Dlamini, Zodwa	Private
Mabasa, Ntombifuthi	Private
Kunene, Sibongile	Private
Mabuza, Sinnah	Private
Mnisi, Monica	Private
Moloi, Matsidiso	Private
Ndaba, Busisiwe	Private
Maseko, December	Private
Maseko Siphesihle	Private
Mokoena, Njabulo	Private
Nzimande, Sibongile	Private
Dladla, Brenda	Private
Msibi, Sizakele	Private
Maseko, Nonhlanhla	Private
Gamede, Lindiwe	Private

GENERAL

Shabangu, Gabisile	Private
Sibeko, Beauty	Private
Dlamini, Thembi	Private
Msibi, Nondumiso	Private
Mkhwanazi, Sonto	Private
Khumalo, Xolile	Private
Nkosi, June	Private
Nkambule, Mfanmpela	Private
Vilakazi, Charles	Private
Nkambule, Zandile	Private
Dladla, Sonto	Private
Mnisi, Zanele	Private
Madonsela, Busisiwe	Private
Ngobeza, Fikile	Private
Ngobeza, Zanele	Private
Dhludhlu, Layi	Private
Dlamini, Nomvula	Private
Sibanyoni, Sibongile	Private
Dladla, Sibongile	Private
Nhlabathi, Maria	Private
Simelane, Thobile	Private
Thwala, Zanele	Private
Thwala, Zandile	Private
Thabethe, Thokozile	Private
Madela, Phindile	Private
Nkwanyana, Nomusa	Private
Cathro, Rene	Leads to Business
Rev JH Mostert	Private

2014

**PROPOSED UNDERGROUND COAL GASIFICATION PROJECT AND
ASSOCIATED INFRASTRUCTURE IN SUPPORT OF CO-FIRING OF
GAS AT THE MAJUBA POWER STATION, AMERSFOORT,
MPUMALANGA
ISSUES TRAIL (DEA REF 14/12/16/3/3/3/61)**

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Table of Contents

1.	EIA STUDY	1
2.	UCG TECHNOLOGY	4
3.	WATER RESOURCES	8
4.	HERITAGE	18
5.	SOCIAL	21
6.	ANIMAL HEALTH	24
7.	AIR	25
8.	BIODIVERSITY	25
9.	GENERAL	26

1. EIA STUDY

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. Environmental aspects and mitigation proposals</p>	<p>Bertie Botha Sasol Mining – Business Manager Tel: 017 614 3369 Email: bertie.botha@sasol.com Correspondence type: Comment form Receipt date: 19 November 2012</p>	<p>Email response from RHDHV – 08 January 2013:</p> <p>1. An Environmental Scoping Study has been conducted for the proposed project and environmental aspects and potential positive and negative impacts have been identified. During the next phase of the study i.e. the EIA study, these aspects and impacts will be rated according to its nature, extent, duration, intensity, probability and significance. A draft Environmental Management Programme will be compiled that will provide actions for the management of identified environmental impacts emanating from the project and will contain a detailed outline of the implementation programme to minimise and/or to eliminate the anticipated negative environmental impacts.</p>
<p>1. Noting environmental legal status and legislative requirements in terms of other policies, plans and acts. 2. Noting listed activities triggered. 3. Potential significant matters within the EIA process and expected change management processes and potential impacts.</p> <p>In support: In view of RSA energy shortage alternative and sustainable utilisation of stranded coal reserves needs to be developed. In support: If fundamentally understood and designed and managed properly UCG operation can be safely done with an improved environmental footprint if compared to conventional coal gasification.</p>	<p>Hardus Scheepers Sasol New Energy Holdings – Senior Technical Manager Tel: 011 344 0624 Email: hardus.scheepers1@sasol.com Correspondence type: Comment form Receipt date: 22 November 2012</p>	<p>Email response from RHDHV – 08 January 2013:</p> <p>1. The draft Environmental Scoping Report has identified a number of significant pieces of environmental legislation that will be to be complied with – refer to Chapter 2 of the draft Environmental Scoping Report. 2. Listed activities were identified in terms of Listing Notice 1, 2 and 3 of the EIA Regulations (2010), Category A and B of Government Notice R 718 of the National Environmental Management: Waste Act (No 59 of 2008) as well as Section 21 of the National Water Act (No 36 of 1998). These activities have been subsequently applied for under the relevant application processes. 3. An Environmental Scoping Study has been conducted for the proposed project and environmental aspects and potential positive and negative impacts have been identified. During the next phase of the study i.e. the EIA study, these aspects and impacts will be rated according to its nature, extent, duration, intensity, probability and significance. A draft Environmental Management Programme will be compiled that will provide actions for the management of identified environmental impacts emanating from the project and will contain a detailed outline of the implementation programme to minimise and/or to eliminate the anticipated negative environmental impacts.</p> <p>Support for the project has been noted.</p>
<p>1. The Underground Coal Gasification technology on its environment.</p>	<p>Cedric Charpentreau Sasol Technology – Research and Development Tel: 083 709 3515</p>	<p>Email response from RHDHV – 08 January 2013:</p> <p>1. Eskom is committed to investigating and evaluating various options for the diversification of the energy mix over time (including renewable resources). As part of an ongoing effort to assess the viability/feasibility of all supply-side options, a number of power generation technologies, not</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
	<p>Email: cedric.charpentreau@sasol.com Correspondence type: Comment form Receipt date: 23 November 2012</p>	<p>yet implemented in South Africa on a commercial basis, are being evaluated in terms of technical, socio-economic and environmental aspects.</p> <p>In the context of a primary energy supply option for utility scale power generation, the following characteristics of UCG technology are attractive from Eskom’s perspective:</p> <ul style="list-style-type: none"> • UCG mining, in conjunction with a combined cycle gas turbine power station, is potentially a cleaner method of coal-based power generation. Once Eskom has proven commercial feasibility, the exact technology footprint will be compared to traditional coal power generation technologies. • The UCG process at a commercial scale would likely create a large underground gas and heat storage inventory, making the gas supply very stable and consistent. • Dependant on the area and coal resource, the cavity created by UCG could provide a suitable CO₂ sequestration option. This consideration is very embryonic, and will be explored by Eskom during further research. • The commercial scale UCG production plant is essentially made up of a number of modular underground reactors with largely independent outputs. Thus, the coal extraction and overall gas output from the gasification process may be optimised by varying and then mixing the outputs of the individual modules. • No ash or slag removal and handling are necessary as there is minimal particulate carry over in the gas, and most of the solids remain underground. • The operating pressure of the underground gasifier is such that it maintains a negative hydraulic gradient into the cavity, thus preventing contamination of surrounding aquifers in the underground environment. • Ground water influx into the gasifier creates an effective “steam jacket” around the reactor making the heat loss in situ tolerably small. <p>UCG has the potential to extract coal resources previously regarded as either uneconomic or inaccessible due to depth, seam thickness, seam slope, seam fracturing and displacement, or other mining and safety considerations. The ideal requirements for UCG are generally the opposite of the requirements for conventional underground mining, and hence UCG offers opportunity for expanding South Africa’s mineable coal reserve base by extracting coal previously disregarded as being unminable. The Underground Coal Gasification concept therefore provides promising prospects for future energy supplies.</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. According to the last update on the project (<i>Construction of a 140 MW OCGT demonstration plant and additional infrastructure in the Amersfoort area, Mpumalanga</i>) it was indicated that the EIA process is ongoing. The Scoping Report has been submitted to the Authorities for approval. Please provide and update and if possible please can you provide me with the contact details of the professional team involved with this project.</p>	<p>Rene Cathro Leads to Business Tel: 0860 836 337 Email: ReneC@L2B.co.za Correspondence Type: Email Receipt date: 02 July 2013</p>	<p>Email response from RHDHV – 04 July 2013:</p> <p>1. Please note that an Environmental Scoping Study (ESS) was initiated in 2009 for the 40 – 140 MW OCGT demonstration plant and additional infrastructure (DEA Ref 12/12/20/1617). The final Environmental Scoping Report for the project was accepted by the Department of Environmental Affairs (DEA) in March 2010. Due to the research and development (R&D) nature of the project, detailed engineering information / design hindered the progress of the EIA process, which resulted in a time lapse between the ESS and the EIA study. The applicant (Eskom) was then advised by the Department of Environmental Affairs to start the EIA study afresh under the EIA Regulations (2010). The project study area has since also been reduced to focus only on the farm Roodekopjes 67H and the 40 – 140 MW OCGT demonstration plant does not form part of the scope of the current ESS.</p> <p>The current ESS is for the EIA and Waste Management License application for the Underground Coal Gasification and associated infrastructure in support of co-firing of gas at the Majuba Power Station, Amersfoort.</p> <p>Prashika Reddy is the project manager for the project and all enquiries can be addressed to her.</p>
<p>1. Thank you for your email it is greatly appreciated. Private Projects follows construction related developments in South Africa and Africa from conceptual to completion. <i>The project study area has since also been reduced to focus only on the farm Roodekopjes 67HS and the 40 – 140 MW OCGT demonstration plant does not form part of the scope of the current ESS. Does this mean that the OCGT demonstration plant is not longer going to happen, or will this be done in a separate EIA?</i></p>	<p>Rene Cathro Leads to Business Tel: 0860 836 337 Email: ReneC@L2B.co.za Correspondence Type: Email Receipt date: 11 September 2013</p>	<p>Email response from RHDHV – 13 September 2013:</p> <p>1. At present the 40 – 140 MW OCGT demonstration plant has been removed from the current scope and consideration for it at a later stage has not been determined. Should the proponent reconsider, the construction thereof must comply with the National Environmental Management Act, 1998 (No 107 of 1998) as amended, and the Environmental Impact Assessment (EIA) Regulations (2010).</p>
<p>1. Is the study a BA or EIA and when will the documents be made available?</p>	<p>Koos Pretorius Cell: 083 986 4400 Email: d.zoekop@lando.co.za Correspondence type: Focus Group Meeting Date: 02 October 2013</p>	<p>Response from RHDHV – 02 October 2013:</p> <p>1. The Scoping study is complete and extension has been granted by DEA to keep the application open. We will make the draft EIAR available early next year. The WULA has been submitted to the DWA following a pre-directive issued in November 2012. A rectification process in terms of Section 24G is also been conducted for the current pilot plant infrastructure. I&APs will be contacted in due course.</p>

2. UCG TECHNOLOGY

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. What is the difference between underground coal gasification (UCG) and fracking in the Karoo? The difference in terms of the depth and the water table was requested and a question was raised on why there is a lot of negativism in the Karoo and what is foreseen with UCG.</p>	<p>Paul de Kock Pitsofane Local Municipality Tel: 082 553 2195 Email: pauldekock@sanlam4u.co.za Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012: The EAP explained how UCG works and referred to the fracking presentation. The EAP explained that with UCG technology only a small amount of water is used and the process takes place much closer to the surface. He further indicated that with fracking more water is required and it's deeper and operates at a higher pressure. It was further explained that Eskom will use a washing system where they wash a natural path through the coal before ignition.</p>
<p>1. What is the area that will be impacted underground when the area at the top is 50 ha?</p> <p>2. What are the negative impacts experienced in the five years of operation of the plant and what can be done to minimise these impacts?</p> <p>3. What size area was burned underground already?</p> <p>4. Should something happen, how quickly can you identify and isolate such an incident and stop pollution?</p> <p>5. Is this the first project of this kind in the world?</p> <p>6. Why did they shut off? Did the gas run out?</p> <p>7. Why do we still do this then?</p> <p>8. We are farmers, we love the ground. Will the ground be useable after this project? It will be very sad to see out of a "test project" land that is a mess and that it leaves ground un-useable.</p>	<p>Pierre Beetge Landowner Tel: 082 385 4544 Email: 0823854544@vodamail.co.za Correspondence: Public Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Public Meeting 27 November 2012:</p> <ol style="list-style-type: none"> Should the area at the top be 50 ha, it should be 10% extra underground, due to this being a controlled process. It was indicated that they have a bit of an over sweep over the borehole. Thus it will be 10% larger than the surface area. The Eskom representative indicated that they cannot continue with research forever, and that Eskom will go larger during time, but to determine the true impacts Eskom have added another 5 years to the research period. The 70000 Nm³ is five times bigger than the current process, ensuring that Eskom focus on a larger scale where they will see an impact and not just focus on small scale. Eskom have picked up soil erosion due to the access roads, Scotch Thistle and other minor environmental impacts similar to what you get on the farms. Underground they have not had any problems, not even subsidence or any other negative (safety or other) effects. There were other safety issues such as motor vehicle accidents, vehicles skidding on muddy dirt roads, but no process related safety or environmental issues. This is also the reason Eskom are going bigger. Eskom also still have questions that they are not sure about yet, this is why they are scaling up to 70000 Nm³ to answer these questions and make 100% sure of everything. The first five years Eskom burned an area of approximately 350 m x 25 m. This is extremely small. There is no subsidence yet. Thus Eskom are going to a larger scale for another 5 years to determine the bigger plant impact. The Eskom representative indicated that they would immediately react should there be an incident. Eskom have the rehabilitation programmes in place. They will probably pick it up sooner than the water results, through the process parameters. Eskom can pick up gas leaks immediately through the process and check for the problem. When Eskom picks it up, they will

ISSUE/COMMENT	RAISED BY	RESPONSE
		<p>isolate it immediately. He further indicated that the only way gas can get into the water, is via a casing break or it being forced into the water. Eskom has different ways to isolate, either to isolate directly at the bottom and then rehabilitate. Eskom do not expect anything like this, but should it happen they have the steps in place to rectify it.</p> <ol style="list-style-type: none"> 5. This is the second one in the Western world; the first one was Kingaroy in Australia during 1999 – 2001. An Eskom observer went to look at the plant in 2001. Eskom have been busy with desktop studies since 2001 and only started operation during 2007. The plant is the only one currently running. New Zealand had one that was running earlier this year. They were only running a 6-month test project. Russia ran these projects from 1930's to the 1960's, 13 commercial plants in total. Their largest plant was 3 times bigger than what Eskom is planning. That plant was running up to about 5 years ago. 6. They discontinued it due to economic reasons. 7. South Africa does not have natural gas or oil in the ground, but we have a lot of coal. Should we have had these other resources, we would not have had to test this technology. We have approximately 200 years of coal available that is mineable. With this technology, we can increase this to 900 years, through accessing coal deemed as un-mineable. 75% of the coal in South Africa is deemed as un-mineable, due to it being too deep or the coal seam too thin, and this technology can access this coal. 8. This is an alternative mining process. Opencast mining removes 60 m of the soil to reach the coal. It gets put on heaps and "rehabilitated" where only the top 300 mm is done, in which you cannot plant anything. This process has none of that. It has boreholes. A 50 ha pieces of land (gasifier) will last us up to 5 years. The top 6 m of the borehole's casing is removed and the hole is plugged with cement. The ground is still the same as when we started. The advantage is that we can take the coal out for the country in a much better way than conventional mining methods.
<ol style="list-style-type: none"> 1. Should overburden cave-in be anticipated during UCG operations? 2. What subsidence should be expected? 3. What is the principal distinction between the type of rock deformation in the overlying units when carrying out UCG-related activities and operations vs. underground mining of coal? 4. What major types of deformation would we be expecting? 5. Will the dyke not act like a pillar with same impact? 6. How does UCG affect the permeability of the overlaying strata? 7. Is there ash/char residue remaining in the gasification cavity 	<p>Koos Pretorius Cell: 083 986 4400 Email: d.zoekop@lando.co.za Correspondence type: Focus Group Meeting Date: 02 October 2013</p>	<p>Response from Dr Blinderman of Ergo Exergy Technologies Inc (EETI) and Eskom – 02 October 2013:</p> <ol style="list-style-type: none"> 1. EETI's technology uses a 3D reactor/system. The principle of gasification is analogous to long-wall mining however no pillars have to be left behind. During this process of UCG, the coal seam is constantly consumed and after the gasification moves forward, ash is left behind. Then the roof immediately over the coal seam previously consumed collapses caves into the spent cavity. The extent to which the resulting deformation propagates to the surface typically depends on the depth, seam thickness, and nature and strength of the strata above the seam. EETI's technology needs the roof to collapse to keep the gasification process continuing. The reactor increases in size because of coal being consumed and at some point the roof collapses

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>after the gasification of coal? What are the typical physical properties of bottom ash?</p> <p>8. What volume of the cavity will be filled with ash from UCG?</p> <p>9. What constitutes the chemical composition of ash? How will the ash react with water ingress and remnant gas?</p> <p>10. Can the leaching of ash components be expected after the gasification process has run its course?</p> <p>11. In the 70s lots of prospecting holes were drilled that were not sealed. 118 are in the Majuba area and none have been sealed. What would the impact be?</p> <p>12. Pilot Plant</p> <ul style="list-style-type: none"> • What is the size of the pilot plant? • Has the pilot plant been shut-down? • Is it near wetlands? 		<p>and closes the cavity. This is the principle of the technology and allows the steady production of gas.</p> <p>2. Subsidence will occur but it is important to understand the nature of the subsidence. The extent of subsidence is determined by the geological features of the coal seam, so has to be modelled for the specific coalfield.</p> <p>With UCG there is continuous extraction of coal and the roof continuously collapses therefore there is no difference in surface topography as the area will have subsided uniformly. This is possible only because in εUCG™ technology no pillars are left behind.</p> <p>3. Both UCG and underground mining create voids underground and the overburden needs to cave in as there is nothing to support it. The process of deformation during εUCG™ is more complex than experienced with conventional coal mining as UCG involves a high temperature process which leaves behind the incombustible ash within the coal seam.</p> <p>The chemical rate of reaction for εUCG™ is slow, therefore slow advancement of the coal extraction is experienced. Gradual deformation of the overburden causes less destruction of the overlying strata. Deformation is critical factor for εUCG™. Therefore, we are more interested in induced permeability of the overlying strata, the nature of deformation, how many fractures does it create, what is the extent of these fractures, are they connected and continuous etc.? If there is continuous fracturing propagating to the surface, UCG cannot be done in the area as gas escapes to the surface. This explains the need for diligent site selection, research and piloting at each new site.</p> <p>In εUCG™, panels are analogous to long-wall mining, and no pillars need to be left behind. The roof is allowed to collapse and it falls uniformly and continuously.</p> <p>4. Past EETI experience indicates that as a rule most of the overburden undergoes primarily plastic deformation without developing significant induced fractures, or none at all. The primary concerns are the amount of water that comes into the gasification cavities and the gas escaping. Usually the permeability of UCG is lower than that created by long wall mining.</p> <p>For Majuba, Eskom will undermine the dolerite sill and deformation may eventually reach the surface and cause subsidence, but this must be done in such a way that connection between the upper aquifer and cavity will be temporary (transient). The cavity will receive a certain amount of water for a period of time then the created fractures will close.</p> <p>In Majuba conditions, the analytical model predicts a width of 90 m when you will start experiencing dolerite movement. The numerical model estimated this critical width at 250 m – as it has assumed that the dolerite is very strong.</p> <p>5. Areas in Majuba have substantial dykes and dolerite outcrops. The Eskom pilot UCG site is such</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
		<p>an area with dykes and outcrops. EETI recognise that dykes potentially may be water and gas conduits, so one should avoid implementing UCG close to the dykes. Identified dykes are to be quarantined as they can create a leak.</p> <p>6. The specific figures of permeability increase are not yet known for the Majuba coalfield, but by assumption the permeability increase for UCG may be 100 times less than that of underground mining and is also transient if it closes. But this is at a conceptual level and for Majuba it could be different.</p> <p>This question was flagged as a research question.</p> <p>7. An actual sample from the cavity can only be obtained after gasification, where the cavity is drilled and core samples are taken - this is called verification drilling. Verification drilling has not been done as yet at the Majuba site as the temperature is still high for sampling.</p> <p>In the meantime, we have taken samples from two wells and prepared the ash in bench-scale furnaces. The process conditions are however not the same e.g. we do not have the effects of lithostatic pressure and the actual underground water etc., so the lab test results are purely qualitative.</p> <p>EETI's many years of experience in the former Soviet Union has shown that the ash remains below in the form of agglomerates of slag and ash. The hardness of the agglomerate can be significant as it may reduce the rate of leaching and affect the leaching product composition.</p> <p>8. This has not yet been tested and verified at Majuba. 2 million tons of coal was mined at the old Majuba colliery prior to it being closed in 1993, and according to the tests run this coal is very inert with no swelling properties.</p> <p>The volume of the cavity to be filled with ash from UCG needs to be added to the list of research questions.</p> <p>9. EETI acknowledges the risk of reaction between the remnant ash and groundwater, and this must be studied in ash leaching tests by using the water found underground or likely to come through the overburden.</p> <p>Standard lab tests call for acidic solutions and also require the grinding of ash, which defeats the purpose of testing.</p> <p>For Majuba, actual leaching tests need to be done with the water from the cavity and the ash.</p> <p>10. The gasification process is followed by a controlled shut-down procedure. As a result, the cavity is left filled with groundwater, with no organic contaminants, at the temperature close to natural temperature of the rock (20 °C). The water that filled the cavity would have nearly ambient temperature, alkaline/ close to neutral pH and its composition could be purposefully adjusted, thereby minimizing leaching effects. In these conditions, very limited leaching may be expected.</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
		<p>11. Every well that has been identified is cleared as much as possible and then either sealed or used. For UCG, uncapped old wells are an immediate problem as gas escapes if wells are open, and this immediately puts the environment at risk and decreases the process economics. All wells are grouted from the bottom up, or cased and grouted, with a valve at the top to be used for sampling.</p> <p>12. Pilot plant:</p> <ul style="list-style-type: none"> • The current pilot gasifier was 250 x 30 m, and is essentially a long channel. • Yes it is undergoing shut-down. The idea is then to commission the 300 x 500 m plant within the same farm i.e. Roodekopjes (that is Eskom-owned). • A small surface stream is present but not near it.

3. WATER RESOURCES

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. Possible pollution of public streams and rivers. The planned area falls within the catchment of the Grootdraai Dam which supplies water to the Eskom power stations as well as Sasol II and III.</p>	<p>Neels Vermaak Department of Water Affairs Control Technician - Civil Tel: 017 712 9427 Email: VermaakC@dwa.gov.za Correspondence type: Comment form fax Receipt date: 10 October 2012</p>	<p>Email response from RHDHV – 13 November 2012</p> <p>1. A number of potential hydrological impacts have been identified in the Environmental Scoping Study. A hydrological baseline and impact assessment will be conducted with the focus on these potential impacts and included in the EIA Study.</p> <p>A Scoping phase wetland assessment has been undertaken that identified the presence / absence of wetlands across the site, and in so doing allowed the identification of parts of the site not falling within wetlands and a buffer zone in which the proposed infrastructure will be able to be located. The study also identified the potential impact of the proposed development on the wetlands on the site through the various life stages of the project, from construction to post-operation. This scoping-level assessment has primarily been undertaken through desktop methodologies using GIS technology. A detailed wetland assessment and delineation exercise will also be conducted during the EIA Study.</p> <p>In addition, an aquatic ecological assessment is being conducted to support the Integrated Water Use License Application (IWULA). The scope of the aquatic ecological assessment includes:</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
		<ul style="list-style-type: none"> • A field survey of all significant wetland and river sites. • Soil classification for wetland and river delineation qualification. • A field survey of characterising aquatic biotic and ecological constituents (River Vegetation Index, River Index of Habitat Integrity, River Ecological Importance and Sensitivity, Wetland Classification, Wetlands Habitat Integrity, Wetlands Ecosystem Goods and Services). • Water quality baseline sampling of significant effluent discharge points and downstream receiving surface water resource habitats. • An identification assessment of potential impacts, cumulative impacts and suggested mitigation measures will be included in a detailed aquatic ecology report will be compiled utilising EcoClassification derived River Health and Wetland Health assessment and reporting technologies. The Present Ecological State (PES), will provide an indication of the health of the rivers and wetlands in their current state, as well as a water quality baseline assessment.
<ol style="list-style-type: none"> 1. The test holes that were drilled on the farm has never been filled. 2. How will this affect underground water? 3. What is the influence that the gas will have on acid rain? Will it increase it? 	<p>Johan H Deacon Landowner: Ptn 1 & 8 of farm Bergvliet 65HS Tel: 083 650 2564 Email: deaconjj@eskom.co.za Correspondence type: Comment form fax Receipt date: 07 November 2012</p>	<p>Email response from RHDHV – 13 November 2012</p> <ol style="list-style-type: none"> 1. Eskom will follow up with the Bergvliet Mine closure team to complete this activity. 2. Groundwater impacts resulting from the UCG operation will be examined in detail during the EIA phase of the project. Eskom currently does extensive monitoring at the UCG site as well as the Majuba Power Station and the results and data from these monitoring studies will be reviewed. 3. Acid mine drainage is caused by surface water flowing through opened up coal reserves and thereby leaching elements out of the coal into the water as it enters the water aquifers. UCG technology is carried out 300 m below the surface that is below the water aquifers. Water in this region does not feed any upper aquifer system; it is normally fed from surface water over thousands of years. Water is extracted out of the cavities via the wells after which it is treated to remove hydrocarbons and other by-products that will be sold.
<ol style="list-style-type: none"> 1. What will be the water demand and what will be the impact on the environment? 	<p>Sabatha Shongwe Pixley ka Seme Local Municipality Tel: 017 734 6100 Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012:</p> <p>A Water Use License application process is being undertaken by Eskom and as part of this process a detailed reserve determination will be done by the Department of Water Affairs. All water uses and impacts on the environmental will be assessed as part of this process.</p> <p>The Eskom representative further indicated that Eskom have been running a small pilot study for the past 5 years to check and monitor the impact of the proposed technology in the surrounding area. The results thus far have showed that there is no negative impact and that is the reason Eskom are</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. How will the UCG influence the water both aboveground and below the ground?</p> <p>Comment: I am glad that the project is proposed on a smaller area because agriculture and food security is serious issue and land in Mpumalanga is being used for mining and other industry in large numbers.</p>	<p>Johan van Niekerk Landowner Tel: 017 753 1772 Email: margaret@lantic.net Correspondence: Public Meeting Date: 27 November 2012</p>	<p>upscaling before proceeding with a full commercial plant. The abstraction rate is minute - approximately a cubic meter depending on the type of coal.</p> <p>RHDHV and Eskom Response – Public Meeting 27 November 2012: An application for a water use licence has a variety of technical reports that have to be compiled in terms of Section 21 of the National Water Act, where all the different water uses are looked at. The DWA conducts a reserve determination to determine how much water is in the catchment area and how the proposed project will influence the water, how much water will be used, how much will be put back into the system, and the quality of the water abstracted, both above ground and underground. This is an extremely technical and independent process that is managed by the DWA, under its own legislation and all reports will be provided to the landowners for comment. This is in essence a very detailed process. The DWA takes into consideration all statements made by Eskom and then the Department will visit site to see if all is up to standard.</p> <p>Eskom added that the small pilot plant ran for five and a half years before it was shut down. In this time, the water was monitored both aboveground and underground. It was determined that there are two distinct water systems: one at 60 m – 80 m level that the landowners use for irrigation and both human and animal consumption. The water in the coal seam (300 m) is called brine water with a chloride composition of approximately 1000 ppm, which is not suitable for irrigation, animal or human consumption. This is ancient water probably trapped in this coal seam for thousands of years. These two systems are completely separate. Over the five and a half years of monitoring, no impact was seen on the upper water levels. 28 boreholes around the process were used to monitor the levels. From this baseline data was gathered. The only fluctuations seen were the seasonal fluctuations, which are normal. The water levels in these boreholes are still the same as before the process was started. Thus, no effect or impact was noticed on either the water levels or water quality.</p> <p>The reason Eskom is initially up scaling to a 70000 Nm³ plant instead of a full commercial plant and building a power station, is to make sure they know what will happen. Eskom have to duplicate what they did at small scale on a bigger scale to ensure that they receive the same results. This is the reason for taking a step back, to make sure the technology works 100%. Eskom had a casing break in the gasifier, which they picked up immediately, just to demonstrate how effective their detection systems are. The break was 21 m from the surface and Eskom sealed the borehole immediately and rehabilitated the area. Within 8 weeks, the small surrounding area of 4 boreholes was flushed to show that Eskom can keep it clean. The reports regarding incidents such as these are also provided to the Department of Water Affairs (DWA) and this is part of Eskom’s rehabilitation plan. Should there</p>

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		<p>be a large-scale incident, Eskom have already proven how they will handle the incident through the process put into place. This is why the Eskom UCG is still a research project. Should Eskom be able to prove the technology is safe on a larger scale, then they will go commercial. The Eskom representative indicated that this is a very safe matter of handling it, instead of going commercial, first having one panel at large scale before continuing with commercial. Up to now, Eskom have had no impact on the quality or level of the water. Eskom even looked at the water abstracted from 300 m level. He further went to say that they are in this case a net producer of water, thus Eskom indirectly abstracts the water from the 300 m seam and brings it to the surface. This is one of Eskom's main problems, thus as part of our water use licence Eskom will apply for a licence to either re-inject this water back into the coal seam, or to send the water to Majuba, who has to pump water for 68 km from the Vaal system, to decrease those water need amounts. The other option is to use the extra water (after being cleaned) for irrigation for the benefit of the community. Thus there are different options given to the DWA as Eskom are the net producer of this particular underground water. The water Eskom take out of the 300 m seam is refilled, and they are still attempting to determine where this seam is fed from. Thus far it seems like it is not out of the immediate environment, but rather from quite far away. This is part of the further studies to identify the catchment area for the deep system.</p> <p>Statistical information about the mine when it was operational: the big dams were pumped with a lot of water, although it was the brine water. Eskom will, like the old mine, become a producer of water. The Eskom representative indicated that they have systems and plans for the future to see up to which quality the water has to be cleaned. Should Eskom supply the water the Majuba, they will only clean up to raw water quality. Eskom have water plants to clean it further to their requirements. With irrigation, it will be other standards. Currently tests are being conducted to leave the ammonia and potassium in the water, which the farmers need (as fertilizer). These options are available to Eskom, depending on which use, will be decided on. There may be more than one use, being it supply to Majuba as well as the manufacture of liquid fertilizer.</p>
<p>1. How do you handle and monitor the groundwater quality?</p>	<p>Pierre Beetge Landowner Tel: 082 385 4544 Email: 0823854544@vodamail.co.za Correspondence: Public Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Public Meeting 27 November 2012:</p> <p>1. With the complete monitoring system, Eskom monitors four different water systems. Eskom monitors the water system up to 80 m, and they monitor the dolerite-sill running through approximately 120 m thick of volcanic rock. At the top and bottom contact of the dolerite, Eskom gets water in 2 – 3% of the boreholes. This means it is local water systems that gathered where the dolerite is porous. Eskom monitor those points and the coal seam as well as monitor in each of the major wind directions, east, west, north and south. All four directions, one well for each</p>

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		<p>depth are monitored. The samples are taken by an independent laboratory once a month, tested by an accredited laboratory and gets reported directly to DWA. In addition to this, Eskom will add hydrocensors to the surrounding landowners' boreholes to monitor the water levels. This is part of the hydrology study for the 70000 Nm³ plant. There Eskom will probably look at Rietfontein, Weiland, Rietspruit, Bergvliet and the other bordering farms. Eskom will not only look very intensely at the area they are working in, but also at the surrounding areas thus forming a network of monitoring points.</p>
<p>1. Concerned about the effect of the process on the underground water as well as the negative effect of heavy metals in the water and the effect on cattle farming.</p>	<p>Koos Swart Landowner Tel: 072 860 4000 Email: phine@sahra.org.za Correspondence type: Letter Receipt date: 03 December 2012</p>	<p>Email response from RHDHV – 09 January 2013: Eskom currently does extensive monitoring at the UCG site as well as the Majuba Power Station and the results and data from these monitoring studies will be reviewed. With the complete monitoring system, Eskom monitors four different water systems. Eskom monitors the water system up to 80 m, and they monitor the dolerite-sill running through approximately 120 m thick of volcanic rock. At the top and bottom contact of the dolerite, Eskom gets water in 2 – 3% of the boreholes. This means it is local water systems that gathered where the dolerite is porous. Eskom monitors those points and the coal seam as well as monitor in each of the major wind directions, east, west, north and south. All four directions, one well for each depth are monitored. The samples are taken by an independent laboratory once a month, tested by an accredited laboratory and gets reported directly to DWA. In addition to this, Eskom will add hydrocensors to the surrounding landowners' boreholes to monitor the water levels. This is part of the hydrology study for the 70000 Nm³ plant. There Eskom will probably look at Rietfontein, Weiland, Rietspruit, Bergvliet and the other bordering farms. Eskom will not only look very intensely at the area they are working in, but also at the surrounding areas thus forming a network of monitoring points.</p> <p>A small pilot plant ran for five and a half years before it was shut down. In this time, the water was monitored both aboveground and underground. It was determined that there are two distinct water systems: one at 60 m – 80 m level that the landowners use for irrigation and both human and animal consumption. The water in the coal seam (300 m) is called brine water with a chloride composition of approximately 1000 ppm, which is not suitable for irrigation, animal or human consumption. This is ancient water probably trapped in this coal seam for thousands of years. These two systems are completely separate. Over the five and a half years of monitoring, no impact was seen on the upper water levels. 28 boreholes around the process were used to monitor the levels. From this baseline data was gathered. The only fluctuations seen were the seasonal fluctuations, which are normal. The water levels in these boreholes are still the same as before the process was started. Thus, no effect or impact was noticed on either the water levels or water quality.</p>

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		<p>The reason Eskom is initially up scaling to a 70000 Nm³ plant instead of a full commercial plant and building a power station, is to make sure they know what will happen. Eskom have to duplicate what they did at small scale on a bigger scale to ensure that they receive the same results. This is the reason for taking a step back, to make sure the technology works.</p> <p>Ongoing groundwater monitoring is currently being conducted. For the EIA study, a hydrological assessment, aquatic assessment as well as wetland delineation study is being conducted. A water use license application is also being lodged with the Department of Water Affairs.</p>
<p>MTPA has no objection to the proposal. The development site lies within an area low in terrestrial biodiversity.</p> <ol style="list-style-type: none"> MTPA is however concerned about the impact of the gasification of the underground layers of coal on the underground water and future water use. How will the ash effect pollution of underground aquifers and how will the ignition be terminated. 	<p>FN Krige Mpumalanga Tourism and Parks Agency Tel: 013 254 0279 Email: frans@mtpa.co.za Correspondence Type: Letter Receipt date: 01 February 2013</p>	<p>Email response from RHDHV – 07 February 2013:</p> <ol style="list-style-type: none"> Water pollution - the wells are drilled 300 m below surface. Casings are inserted into the wells to ensure that the gas generated 300 m below does not get in contact with the various water aquifers. Eskom further monitors the water by means of three different depths (shallow, medium and deep) of water monitoring wells on a monthly basis to ensure that no pollution takes place. The water in the coal seam 300 m below surface is not fit for human or animal consumption. Furthermore, the technology does not make use of the top water aquifer and does not have any effect on the top water aquifer used for human consumption. Ash Pollution – The ash stays behind in the coal seam 300 m below surface and has no effect at all on the above ground systems or water aquifers. <p>Termination of ignition – Gasification is initiated in the coal seam (300 m deep) by adding oxygen (air) to the coal (fuel) and creating heat by means of an ignition device. As soon as you would like to shut down the system, you can remove the oxygen and the process will shut down.</p>
<ol style="list-style-type: none"> The implementation of the gasification process and the quality of water before and after at 300 meters below surface sounds too good to be true. My understanding of water is that there are movement of water up as well as downwards and the potability of it is surely determined by the geology that surrounds the aquifers. Information needed is the current chemical analyses of the water found amongst the coal layers at 300 meters as a baseline, even if it is too toxic for human consumption and then measure it at different intervals after the gasification process in order to compare it. In the future water bodies at that depth (300m +) 	<p>FN Krige Mpumalanga Tourism and Parks Agency Tel: 013 254 0279 Email: frans@mtpa.co.za Correspondence Type: Email Receipt date: 08 February 2013</p>	<p>Email response from RHDHV & Eskom – 25 March 2013:</p> <ol style="list-style-type: none"> The quality, quantity and movement of ground water aquifers are highly dependent on the specific geology of the area. The general description of the hydrogeology of the area has been provided on a CD (Appendix A), which describes the aquifer systems together with their migration and recharge properties as determined from the hydrogeological monitoring and modelling work carried out on the site. The baseline chemical result from the coal seam aquifer is provided in Appendix B (CD), together with the monthly monitoring of the deep aquifer over the last 7 years. The baseline tests started on 2 deep wells surrounding the initial gasification pilot tests and this was further expanded this to include other monitoring wells. Part of the integrated water use license application is to provide monthly monitoring results of all

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>might be needed for human or industrial usage.</p> <ol style="list-style-type: none"> 3. I doubt it that DWA will monitor the water quality at different depths or be able to do anything if worse toxification is detected. 4. The extent of the proposed gasification projects on the highveld where dolorite dykes makes it difficult to mine, is of such a large extent that if you put all together it might have a serious negative effect on the underground water and future usage thereof. 5. Surely there will be a pollution plume that might migrate and contaminate clean aquifers, higher up. 6. The vacuum left by the removal of the coal layers, do you foresee that it will be filled with water or will subsidence takes place? 		<p>4 aquifers in the area at 4 positions surrounding the gasification process. It must be noted that as part of its due diligence that Eskom had to consider and plan for a water contamination response. We have therefore taken the precaution of establishing a rehabilitation program, should any contamination be detected.</p> <ol style="list-style-type: none"> 4. Eskom shares your concern, and identified this as a major risk in the pre-feasibility studies. This was one of the reasons why Eskom motivated that the technology is still in research phase, and could not qualify as commercial prior to resolving such risks. Eskom is presently in the process of researching and proving the technology in the Majuba coalfield. Eskom has piloted the technology at the Majuba site from 2007 to 2011, and is currently proposing to extend the piloting for another 5 years. The objective of this extension is to complete the research and engineering required to ensure our understanding of the technology, before we contemplate commercial implementation of the technology. <p>Eskom can confirm, based on experience thus far, that the Majuba experience cannot be extrapolated to any other coalfield, and that only certain coal resources can be mined using UCG technology. There are very specific geological, hydrogeological and rock mechanic criteria that must be clearly understood, in order to apply the technology. These include a thorough understanding of the dykes that you have mentioned. We subscribe to the principle that there are no short-cuts in defining and understanding these criteria.</p> <p>It should be emphasized that Eskom's phased development of the technology requires several gatekeepers to be met before approval of the next phase, and environmental compliance is key to any such approval. The next phase represents the opportunity to ensure that all concerns are tabled, thoroughly debated, researched and resolved. Eskom therefore welcomes specific technical concerns you may have.</p> <ol style="list-style-type: none"> 5. This is highly dependent on the geology of the site. Eskom are monitoring for this and to-date have not seen migration of the gasification products contained within the initial pilot cavity, that ran between 2007 and 2011. 6. There is a combined effect that occurs, described as follows: During the gasification process, ash and char is left behind which partially fills the cavity that has been created. Initial roof collapse of the overlying strata also takes place during the process, which further fills the cavity not occupied by ash and char. Ultimately water will percolate through the cavity and occupy remaining voids. The extent of percolation, the quality of the water, and the leachability of the remnant ash is the subject of current research. Although goafing and initial roof collapse will

ISSUE/COMMENT	RAISED BY	RESPONSE
		<p>occur, the extent of surface subsidence also needs to be researched to determine the optimal size of gasifier panels. Conceptually, gasification panels could be discrete with the unmined coal seam between panels remaining essentially as pillars to support the roof structure. Alternatively, continuous mining could be considered with no remnant pillars. The effects of these two options, or any combination in-between, can be modelled but ultimately needs to be validated by the research underway. The main option presented in Eskom's EIA application proposes smaller gasifiers with remnant pillars, due to the risk of surface subsidence and potential goaf formation to the upper aquifers.</p>
<p>1. The Department of Agriculture, Forestry and Fisheries – Directorate: Land Use and Soil Management support the project. The applicant is advised to: avoid the disturbance of sensitive areas such as wetlands</p>	<p>TS Mabunda Department of Agriculture, Forestry and Fisheries Directorate Land Use and Soil Management Tel: 013 754 0733 Email: TselengM@nda.agric.za Correspondence Type: Letter Receipt date: 15 May 2013</p>	<p>Email response from RHDHV – 29 May 2013:</p> <p>a) A sensitivity mapping exercise was carried out during the EIA study. Results of the respective floristic, faunal, wetlands and soils sensitivity analysis were combined to present an overview of the ecological sensitivity of the study area. This sensitivity map will be used by Eskom to determine the final layout of infrastructure as well as the mining plan. Further to this a wetland delineation study as well as assessment was carried out by a wetland specialist. The following recommendations were made:</p> <ul style="list-style-type: none"> • Very sensitive wetlands and their catchments must be avoided. No UCG mining should occur within the stipulated buffer areas i.e. no undermining should occur in the buffer. The following buffers are applicable: <ul style="list-style-type: none"> – Very High wetland sensitivity – the entire catchment of the reach should be included as part of the buffer. – High wetland sensitivity – a 100 m buffer beyond the boundaries of the wetland. – Moderately High to Moderate wetland sensitivity – a 50 m buffer beyond the boundaries of the wetland. <p>In addition the following exclusions must apply to the buffer areas:</p> <ul style="list-style-type: none"> • No UCG mining activities should occur within the buffer area – i.e. no undermining should occur in the buffer. • No irrigation of land with effluent should occur within the buffer. • The construction footprint should not affect the buffer zone in any way. • No storage areas for hazardous materials (such as fuel), parking areas for vehicles or any temporary toilets should be located within a 50 m zone beyond the buffer. <p>In certain areas existing / new linear infrastructure (e.g. new road) would run through the buffer zones. It is recommended that:</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
		<ul style="list-style-type: none"> Existing access roads and tracks across wetlands must be used as far as possible, as these are typically associated with an existing impact on a wetland / stream. Where wetlands cannot be spanned by bridges, road design must incorporate a sufficient number and volume of culverts to allow flow within the wetland to pass under the road in as natural a manner as possible; i.e. flow within wetlands should be kept as diffuse as possible where diffuse flow occurs. Road construction through wetlands must occur in the drier winter months. At this time the predominantly vertic soils will be drier in many parts of the wetland, and less likely to be compacted by machinery. Vegetation is also dormant and less likely to be damaged. There is likely to be less surface flow that could potentially carry silt and pollutants into the wetland, and which could act as an erosive force. Alignment of roads should aim to cross wetlands perpendicularly to the direction of flow in the wetland, as this is usually the shortest route across the wetland.
<ol style="list-style-type: none"> Should we expect groundwater ingress from the upper aquifer into the depleted gasification cavity following the deformation of overlying units? Will/should wetlands be undermined? What are the products of the bottom ash leaching? Will the presence of pyrite in surrounding rocks have an impact on the chemical composition of groundwater filling the gasification cavity? Samples were taken from 10 mines in the Witbank area and pyrite was encountered. This also depends on how much water from the top is coming in to the cavity and contact with the water at the bottom. What is the direction of flow and the extent of contaminated groundwater plume boundaries over 30 years? What response measures exist to prevent contaminated groundwater from migrating off-site? Is the dissolved oxygen expected to enter the gasification cavity with groundwater ingressing from the aquifers and what is its quantity? What is the likelihood of AMD occurring subsequent to the gasification process? 	<p>Koos Pretorius Cell: 083 986 4400 Email: d.zoekop@lando.co.za Correspondence type: Focus Group Meeting Date: 02 October 2013</p>	<p>Response from Dr Blinderman of Ergo Exergy Technologies Inc (EETI) and Eskom – 02 October 2013:</p> <ol style="list-style-type: none"> This is one of our biggest concerns. Through a hydraulic link that may be created between the upper aquifer and the gasification cavities, ingress of water from the upper aquifer and into the cavity is possible and likely even though the amount of the ingress and time to get there is not known and requires research. In the Majuba coalfield this process will be much less prominent than in underground mining due to the lower permeability of the overburden rock. The next question arising is what will happen when the water gets into the cavity? This affects the gasification process, and the extent of the water ingress determines if its effect is positive or negative. A research question is whether UCG should subside the strata uniformly under wetlands (i.e. not changing surface topography), or leave pillars to support the strata (i.e. causing new surface topography). Furthermore, how would the wetlands even be accessed to do the mining - this is another research question than needs to be answered. A University of Texas study has shown that at 20 °C no leaching occurs, whereas at 100 °C, leaching can be expected. This is the only study where leaching tests were done with groundwater samples. How relevant this is to Majuba remains to be seen as the water quality in the decommissioned cavity still needs to be tested.

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>8. Decanting of underground mines.</p>		<p>4. There will probably be some pyrite remaining in the coal seam. However water in the cavity will react with remnant ash, which is alkaline in nature. The pH of water in the cavity is therefore likely to be more alkaline than acidic. Pyrite will probably be present in the surrounding rocks, however, the acid/base count and content is not known. The UCG gasifier water pH is likely to be more alkaline to neutral than acidic, but the conditions once this combines with pyrite in surrounding rocks must still be modelled and studied in the field.</p> <p>5. For Majuba, there is generally very slow water movement due to the low permeability of the strata. This does minimise the long-term distribution of UCG groundwater. Furthermore, in the UCG area we expect a cone of depression (sink), which will initially contain any contamination within the cavity. The contaminated water could be pumped out, cleaned and re-injected. Besides, the mobility of any leachate to migrate out of the cavity may be greatly reduced by pumping silt into the cavity after it is cooled in the controlled shut-down.</p> <p>6. Some dissolved oxygen may enter the gasification cavity but the amount is not expected to be significant due to the depth and pressure. We do not know how much oxygen is in the groundwater, but this is a good research question.</p> <p>7. UCG has the following features:</p> <ul style="list-style-type: none"> • UCG maintains a cone of depression to draw in surrounding water. • The remnant ash and water in the UCG cavity is alkaline. • It is intended to leave far less unmined coal behind, due to the greater extraction efficiency of UCG. • EETI's experience in the former Soviet Union showed the spent UCG cavity remains neutral pH. <p>The leaching of pyrite from surroundings rocks due to dissolved oxygen content will be added to the research questions.</p> <p>8. This has been added as an important research question.</p>

4. HERITAGE

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. Section 36 of the National Heritage Resources Act (No 25 of 1999).</p>	<p>Godfrey Tshivhalavhala SAHRA Tel: 012 362 2536 Email: gthivhalavhala@sat.sahra.org.za Correspondence type: Comment form fax Receipt date: 17 October 2012</p>	<p>Email response from RHDHV – 13 November 2012:</p> <p>1. A Heritage Scoping Assessment has been conducted and the following sites were heritage sites were identified in the study area:</p> <ul style="list-style-type: none"> • An old farmstead and associated outbuildings. • A number of semi-circular walls of packed stone are located on a ridge overlooking a valley to the north of the core development area. The function of these is unknown at present. They remind one of shelters erected by soldiers during the Anglo Boer War, known as sangars. However, as yet no information could be traced of any such activities that took place here. • A number of farm labourer homesteads occur on the farm, fortunately outside the area where the plant is to be developed. However, experience has taught that there might be graves associated with any of these homesteads. <p>A more detailed assessment of the study area will be undertaken during the EIA study.</p> <p>2. The draft Scoping Report and the Heritage Scoping Assessment for the project has been uploaded onto the SAHRIS online system (CaseID 756) and has been assigned to Phillip Hine responsible for commenting on Mpumalanga cases.</p>
<p>1. In terms of the National Heritage Resources Act (NHRA), no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer (or mine) to ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.</p> <p>2. Decision: It is noted in the background information that a heritage impact assessment will be undertaken for the proposed project. Please note that the heritage assessment must also</p>	<p>Phillip Hine SAHRA – Heritage Officer Tel: 021 462 4502 Email: phine@sahra.org.za Correspondence type: Letter Receipt date: 21 November 2012</p>	<p>Response and document uploading directly on SAHRIS system:</p> <p>1. A Heritage Scoping Assessment has been completed for the project and uploaded onto the SAHRIS online system on 05 November 2012. A more detailed heritage assessment will be conducted during the EIA phase of the study.</p> <p>2. A Phase I Paleontological Assessment was conducted by Prof Marion Bamford and a report compiled on 30 November 2012. The desk-top study has indicated that no vertebrate fossils are likely to be found but fossil plants are likely to be encountered in the drilling project, associated with the shale and coal seams. This type of flora is common and of little scientific interest. The recommendation was therefore that at this stage no Phase 2 or 3 palaeontological assessments are recommended, however, it is strongly recommended that in the Environmental Management Plan a person is made responsible to look out for good fossils, collect them and give them to a suitable institute for further study. The Phase I Palaeontological Assessment as well as letter of exemption were forwarded to SAHRA (Mariagrazia Galimberti on 30 November 2012). A copy of the report as well as the letter of exemption we uploaded onto the SAHRIS system on 03 December 2012.</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>include a palaeontological study, undertaken by a professional palaeontologist (see www.palaeontologicalsociety.co.za) or at least a letter of exemption from a professional palaeontologist to motivate that such a study is not necessary. Heritage resources such as archaeology, built environment, burial grounds and graves and any other significant heritage issues such as cultural landscapes should also be addressed.</p>		
<ol style="list-style-type: none"> 1. The heritage scoping report submitted to SAHRA APM Unit mentions that the survey was conducted for the development area, whilst the rest of the area was subject to a desktop assessment. Considering that the project requires additional infrastructure such as access roads, an extra waste water treatment plant, a power line and a fire break which could involve significant disturbance of the study area, it is not clear if the archaeologist investigated all the areas that will be earmarked for infrastructure development. This is because according to the draft Scoping Report additional infrastructure will not be located on the farm Roodekopjes 67HS, but rather on farms Bergvliet 65HS and Rietfontein 66HS. In addition, a palaeontological assessment was not undertaken for the proposed project. This is normally compiled by a professional palaeontologist. 2. The archaeologist did identify heritage resources on the property, although these are only described very briefly and not in acceptable detail. Since this is a scoping heritage assessment, it is expected that the actual heritage impact assessment will indeed address the missing information that would then enable informed comments from the SAHRA APM Unit. 3. The following aspects should be considered in the heritage report: <ul style="list-style-type: none"> – The reference list must be reflected in the text and it must be clear which type of heritage resources are present in the 	<p>Phillip Hine SAHRA – Heritage Officer Tel: 021 462 4502 Email: phine@sahra.org.za Correspondence type: Letter Receipt date: 03 December 2012</p>	<ol style="list-style-type: none"> 1. The heritage scoping report is a desk-top assessment conducted to determine the presence of any objects of heritage significance supplemented by a site visit. During the EIA phase, a more detailed site visit will be taken for the entire study area (farm Roodekopjes 67HS – Ptns 1, 2, 3 and remaining extent; Ptns 17 and 21 of the farm Bergvliet 65HS and Ptns 4 and 5 of the farm Rietfontein 66HS). A Phase I Paleontological Assessment was conducted by Prof Marion Bamford and a report compiled on 30 November 2012. The Phase I Palaeontological Assessment as well as letter of exemption were forwarded to SAHRA (Mariagrazia Galimberti on 30 November 2012). A copy of the report as well as the letter of exemption we uploaded onto the SAHRIS system on 03 December 2012. 2. The heritage impact assessment conducted during the EIA phase will address the missing information and will be forwarded to SAHRA for comment. 3. Noted. These requirements have been forwarded to the appointed heritage consultant to incorporate into the study as well as report. 4. This statement is indeed correct. UCG technology will only be implemented on the farm Roodekopjes 67HS during this phase of the study. There are plans to expand UCG operations into the surrounding farms, however, this does not fall under the scope of this study. As soon as Eskom decides to scale the operations to a full scale commercial operation and incorporate the adjacent farms, this study will be subject to a new EIA study and mining rights application. 5. Noted. These requirements have been forwarded to the appointed heritage consultant to incorporate into the study as well as report. 6. The heritage impact assessment report will be uploaded onto the SAHRIS online system as soon as it is available.

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>broader areas and what could be expected on site.</p> <ul style="list-style-type: none"> – Full survey of the area impacted by the development including areas dedicated to the establishment of ancillary infrastructure. – Detailed description of each identified heritage resource. – Description of the survey methodology including GPS trackways of the areas surveyed. – Since in most sections dense vegetation has limited archaeological visibility, the specialist must make provision for an alternative plan. If it is expected that the survey undertaken is a reflection enough of the heritage sensitivity of the area, the author should say so, otherwise monitoring or another source of mitigation must be proposed. – Proposed mitigation measures must be site specific: a general section such as the following is not enough for heritage resources of different origin and with different requirements. <i>Mitigation should take the form of isolating known sites and declare them as no-go zones with sufficient large buffer zones around them for protection. In exceptional cases mitigation can be implemented after required procedures have been followed.</i> – Palaeontological assessment that must be undertaken by a professional palaeontologist or a letter of exemption from further palaeontological studies if the specialist deems it sufficient. – It is noted that a palaeontological report has since been submitted to SAHRA APM Unit. <p>4. The specialist mentions that as the development details for the larger region is not yet available, this would be subjected to intensive surveys once these details are available. SAHRA expects the next report to include these areas.</p> <p>3. The report must reflect the scope of the proposed project. It is advisable that the specialist receives all available information</p>		

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>regarding the proposed project before the field survey is conducted.</p> <p>4. SAHRA APM Unit awaits the updated report before issuing further recommendations regarding this case.</p>		

5. SOCIAL

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. The Learnership issue: As the Municipality we are obliged to fund learnership for the unemployed and the employed (municipal employees) and one of your colleagues who was sitting at the public gallery indicated that there will be learnership programmes funded from this initiative. For every financial year, as HR we conduct a skills analysis for the personnel and also consider possible learnership programmes and internship for the unemployed community members. This data is included in the Workplace Skills Plan (WSP) and submitted to Council for adoption. I therefore request information as to what learnership may be funded e.g. artisan 12 months training program, basic electrical etc. The template requires that we indicate the funder and I would also like to be advised whether we should put Royal HaskoningDHV as a funder or Eskom.</p> <p>2. I would also like to advise that your recruitment drive should be extended to the Department of Labour which is mandated to keep the database for the unemployed. This may prevent some challenges that we normally encounter as Municipality with regard to recruitment for such projects that are not funded by the Municipality. We however have our database and we utilise it for internal projects. You may send your adverts through to us for any possible vacancies.</p>	<p>Sipho Mtshali Pixley ka Seme Local Municipality Tel: 017 734 6122 Email: siphom@pixleykaseme.gov.za Correspondence type: Email Receipt date: 29 November 2012</p>	<p>Email response from RHDHV – 06 December 2012:</p> <ol style="list-style-type: none"> As mentioned during the Focus Group Meeting held on 27 November 2012, Eskom submitted the Social and Labour Plan (SLP) which is in line with the Department of Mineral Resources (DMR) SLP requirements. The requirement is for Eskom to assist the community with the implementation of the SLP. The UCG project is currently a research project and does not make any profit which can be invested back in the community. As soon as the project goes into the commercial phase and generate income, the SLP will be rolled out. Eskom have a recruitment directive which was approved by organized labour organisations. The positions will be advertised as per the Eskom directive. The Department of Labour will be informed when the positions will be available in the market to give everybody an equal opportunity to apply for the available positions.

ISSUE/COMMENT	RAISED BY	RESPONSE
1. What will happen to people residing around the area and are they informed about the project?	<p>Cllr EM Twala Pixley ka Seme Local Municipality Tel: 072 815 8137 Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012: For this phase of the project, UCG will only take place on the farm Roodekopjes. It was further explained that public meetings will be held at the UCG mine site in close vicinity to the Majuba Power Station and later another public meeting with the community in Amersfoort at Ezamokuhle Community Hall to provide the community and landowners with more information regarding the project.</p>
1. If the project becomes a success how many jobs would be created by the project? Also note that the street names have changed and RHDHV should also change street names accordingly for report availability notices.	<p>Sam Ngwenya Pixley ka Seme Local Municipality Tel: 017 734 6334 Email: sam@pixleykaseme.gov.za Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012: Eskom needs to comply with the approved mining rights and conditions issued by the Department of Minerals and Resources. The Eskom representative further explained that Eskom has drafted a Social Labour Plan (SLP) that has been submitted to the Department of Minerals and Resources for approval whereafter it will then be presented to the council and the community. It was further indicated that the project is still at research phase and it is difficult to indicate the number of job opportunities that will be available. However, once the project proceeds into the commercial phase, the focus will be on local community. Potential employment opportunities will be advertised locally and applicants will have to fill in relevant application forms for advertised posts.</p>
1. Eskom was supposed to discuss the Social Labour Plan (SLP) with the Municipality and agree on it before it was submitted for approval. It was indicated that it is ironic that Eskom has submitted the plan and that there is a possibility that the SLP is not in line with the Municipal Integrated Development Plan (IDP) strategy. Why was the plan submitted without Municipal consultation? He raised his concerns that the plan might be addressing issues which are not a priority to the Municipality. The Municipality will be expected to support and be accountable for some of those things. He further added that Eskom cannot decide and then consult after submitting the SLP without contacting the beneficiaries, as such decision may have social implications on the Council.	<p>Sipho Mtshali Pixley ka Seme Local Municipality Tel: 017 734 6122 Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012: 1. The EAP explained that the EIA study will be used to inform the MPRDA process and that the SLP was developed by Eskom and were undertaken as part of the mining application process with the Department of Mineral Resources. The Eskom representative further added that that the SLP will still be updated and provided to the Municipality for comments as part of the mining right application process.</p>
<p>1. The project team must visit the 5 administration wards under the Municipality which are Volksrust, Vukuzakhe, Wakkerstroom, Amersfoort and Perdekop.</p> <p>2. Is there some organized information for communities like starting of new projects and whether Eskom be willing to support such</p>	<p>Speaker (MMC Zilindile Luhlanga) Pixley ka Seme Local Municipality Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012: 1. The project is situated within Amersfoort. Interested and Affected Parties from all areas have been registered on the project database and will be consulted during the project. 2. The Eskom representative referred to the S&LP as discussed above.</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>projects?</p>		
<p>1. Since the project has started, we have noted that there have been guys from our own community joining UCG and we are very glad. Now that the project has been five years, is there any social plan to rope in the young people out of the community and give them opportunities to go study, especially in scarce skills like water management science or has there been any plan or initiative to try and fill in the schools about careers (career counselling) as the people don't know of all the skills needed for power generation.</p> <p>How can the members of the community be filled in on the new methods of power generation you are using? Safety information etc. Has any plan been put in place for something like this and can UCG maybe look into something like this? Having a larger involvement of the community and informing them of topics like these. Having a power generation expo for information purposes.</p>	<p>Vusi Kubheka Independent Community Member Tel: 071 464 2068 Email: vusikasi@gmail.com Correspondence: Public Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Public Meeting 27 November 2012:</p> <p>1. A lot of issues have been mentioned that is outside of the scope of this meeting. The Social Labour plan being developed as part of the mining right application process would also be provided to the community for comments.</p> <p>Eskom has a wide variety of opportunities and career fields and also a large field of scholarships, bursars and graduates in training. Nedbank are doing movie clips regarding career choices to go to schools and inform them of career opportunities. An attempt can be made to get a copy of DVD and provide to him for use at schools.</p>
<p>1. Since UCG is in our community and our brothers and sisters are working here. I want to see a strong bond between UCG and the community. The only way this will work is if somebody takes the information from the UCG to the community and the comments of the community back to the UCG.</p>	<p>Stan Nkosi Community Member Tel: 082 475 7724 Email: S.Nkosi@gmail.com Correspondence: Public Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Public Meeting 27 November 2012:</p> <p>All the councillors were represented with the Council meeting. Eskom will see that the councillors take the message into the community and bring the comments back to us. Eskom is using the channels that are available to them. Part of the implementation of the Social and Labour Plan is a future forum which has to be set up, and a huge drive to get the community involved in this future forum and as the project grows, things will change tremendously.</p>
<p>1. What will the project do in terms of Local Economic Development to ensure that the community is developed and skilled so that when Eskom brings projects to the communities they are well equipped?</p> <p>2. What facilities or community structures will Eskom leave behind for the benefit of community as they will be affected directly?</p>	<p>Bonginkosi Bongwa Tel: 078 230 8115 Correspondence: Public Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Public Meeting 27 November 2012:</p> <p>When the Social Labour Plan (SLP) is approved Eskom will discuss the plan with the communities. Meetings will be arranged.</p>
<p>1. How will the SLP assist the communities, Eskom often indicates that people do not have skills? Is there an institution that trains</p>	<p>Various Community members Correspondence: Public Meeting</p>	<p>RHDHV and Eskom Response – Public Meeting 27 November 2012:</p> <p>1. There are certain requirements for the training of local people. Eskom is aware that people do</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>people locally to empower them with skills which are needed by Eskom? Local people are always appointed for unskilled labour because they lack required skills.</p> <p>2. In terms of employment opportunities, people are segregated by political parties and councillors are usually the ones who handle employment issues. People get segregated by political affiliation and how will Eskom ensure that this does not happen in this project?</p> <p>3. Does Eskom only consider skills development which is offered by them. Posts are advertised and people apply but Eskom does not respond to applicants to inform them whether their applications were rejected and why.</p>	<p>Date: 27 November 2012</p>	<p>not have skills and the SLP plan is still under review. Skills development is mentioned in the SLP and as indicated Eskom will come in future to liaise with the communities on the provisions in this regard.</p> <p>2. Eskom does not discriminate and use political parties for appointments. Eskom will look at the skills requirement and qualifications the person has obtained.</p> <p>3. Each person who meets the necessary requirements and qualifications have the potential to be employed even though they do not have the experience. Training will be offered by Eskom. Eskom further indicated that every effort will be made to hire people with the same skills that exist within the local communities.</p>

6. ANIMAL HEALTH

ISSUE/COMMENT	RAISED BY	RESPONSE
<p>1. What impact will the gas have on animals?</p>	<p>Johan H Deacon Landowner: Ptn 1 & 8 of farm Bergvliet 65HS Tel: 083 650 2564 Email: deaconjj@eskom.co.za Correspondence type: Comment form fax Receipt date: 07 November 2012</p>	<p>Email response from RHDHV – 13 November 2012</p> <p>1. During the previous EIA study for the 40 – 140MW OCGT, a rapid animal health assessment was conducted by the Department of Production Animal Studies, Veterinary Faculty (Onderstepoort) of the University of Pretoria. The study only focused on production animals (beef cattle) given the fact that the study area is a major extensive beef producing area and complaints were received from cattle farmers.</p> <p>A local veterinarian (Dr Andre Visser) was requested to supply the consultants with previous and current disease and fertility records. The farms chosen were based on willing farmers in the area and also on based on the geographical location of the project - especially in terms of prevailing winds. Some of the farmers that were selected (in this case not purposively) experienced an increase in the incidents of a disease that was diagnosed as cor pulmonale (CP) or high altitude disease. An interesting finding is that the water, in some other places in the world tested, actually became more alkaline with the implementation of UCG technology. Many believe that carbon monoxide (CO) may contribute to the increased incidents of CP seen in</p>

ISSUE/COMMENT	RAISED BY	RESPONSE
		cattle in the Eastern Highveld due to its much higher affinity towards haemoglobin than oxygen. With this method of mining (i.e. UCG) the CO is re-burned and should thus reduce the incidents of the disease in this area.

7. AIR

ISSUE/COMMENT	RAISED BY	RESPONSE
1. An air quality study has to be undertaken as it triggers an air emissions license application and that no mention has been made of the air quality assessment.	Sipho Mtshali Pixley ka Seme Local Municipality Tel: 017 734 6122 Correspondence: Focus Group Meeting Date: 27 November 2012	RHDHV and Eskom Response – Focus Group Meeting 27 November 2012: 2. The air emissions license is being amended for the Majuba Power Station. A separate air quality study is being undertaken which does not form part of this EIA process.

8. BIODIVERSITY

ISSUE/COMMENT	RAISED BY	RESPONSE
1. Please can you provide the point localities of the Sungazer lizards. Dr. Hannes Botha and Dr Little will be grateful to receive this valuable data.	FN Krige Mpumalanga Tourism and Parks Agency Tel: 013 254 0279 Email: frans@mtpa.co.za Correspondence Type: Email Receipt date: 08 May 2013	Email response from RHDHV – 29 May 2013: A .kml files was forwarded to Mr Krige. This .kml does not include the known localities immediately south of the Majuba Power Station's existing ashing facility.
2. The Department of Agriculture, Forestry and Fisheries – Directorate: Land Use and Soil Management support the project. The applicant is advised to: control weeds and invasive plants during and post the mining operations.	TS Mabunda Department of Agriculture, Forestry and Fisheries Directorate Land Use and Soil	Email response from RHDHV – 29 May 2013: b) A comprehensive Alien Invasive Management Plan has been included in the Environmental Management Programme included as part of the draft Environmental Impact Assessment Report. Mitigation measures and controls include:

ISSUE/COMMENT	RAISED BY	RESPONSE
	Management Tel: 013 754 0733 Email: TselengM@nda.agric.za Correspondence Type: Letter Receipt date: 15 May 2013	<ul style="list-style-type: none"> • Compile and implement environmental monitoring programme, the aim of which should be ensuring long-term success of rehabilitation and prevention of environmental degradation. Environmental monitoring should be conducted at least twice per year (Summer, Winter). • All declared aliens must be identified and managed in accordance with the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). • Weed control methods should be confirmed with the Eskom Environmental Officer to prevent any undesirable secondary impacts. • Monitoring the potential spread of declared weeds and invasive alien vegetation to neighbouring land and protecting the agricultural resources and soil conservation works are regulated by the Conservation of Agricultural Resources Act, No. 43 of 1983 and should be addressed on a continual basis. • Remove invasive and alien vegetation, particularly in vicinity of riparian zones where alien and invasive trees are known to occur. The implementation of a monitoring programme in this regard is recommended, being the responsibility of the ECO/ ecologist.
3. I will forward the kml files of the Sungazer location to our herpetologist Hannes Botha. Is it possible that you can demarcate those areas as no go areas in the mine plan? We would like to protect the habitat at all costs because we are not sure of relocation can be done successfully.	FN Krige Mpumalanga Tourism and Parks Agency Tel: 013 254 0279 Email: frans@mtpa.co.za Correspondence Type: Email Receipt date: 04 June 2013	<p>Email response from RHDHV – 04 June 2013:</p> <ol style="list-style-type: none"> 1. The locality of the Sungazers provided to you falls outside the boundary of the farm Roodekopjes. The current EIA study and Mining Right application is only for the farm Roodekopjes. The Environmental Management Programme further advises the implementation of a relocation plan for the location and removal of Sungazer Lizards, but only from sites that will be directly affected. Individuals present nearby activity sites should be conserved in situ.

9. GENERAL

ISSUE/COMMENT	RAISED BY	RESPONSE
<ol style="list-style-type: none"> 1. Please send me an electronic copy to the address below (i.e. Box 201, Belfast, 1100). 2. What has happened to the EIA and EMPR process? 	Koos Pretorius Cell: 083 986 4400 Email: d.zoekop@lando.co.za Correspondence type: Email Receipt date: 09 October 2012	<p>Email response from RHDHV – 10 October 2012:</p> <ol style="list-style-type: none"> 1. A hard copy of the background information document (BID) was posted to Mr Pretorius on 10 October 2012 via registered mail (RD 742 333 666 ZA). The electronic copy of the BID was forwarded on 09 October 2012. 2. An Environmental Scoping Study (ESS) was initiated in 2009 for the UCG pilot project and

ISSUE/COMMENT	RAISED BY	RESPONSE
		<p>associated infrastructure including the 40 – 140 MW OCGT demonstration plant and gas treatment plants (DEA Ref 12/12/20/1617). The environmental impacts associated with the project required investigation in compliance with the EIA Regulations (2006) published in Government Notice No. R. 385 to No. R. 387 and read with Section 24 (5) of the National Environmental Management Act - NEMA (Act No 107 of 1998) - as amended). The final Environmental Scoping Report for the project was accepted by the Department of Environmental Affairs (DEA) in March 2010.</p> <p>Due to the research and development (R&D) nature of the project, detailed engineering information / design hindered the progress of the EIA process, which resulted in a time lapse between the ESS and the EIA study.</p> <p>Prior to the initiation of the current ESS, advice was sought from DEA, as to whether the applicant could continue with the process and obtain an Environmental Authorisation in terms of the NEMA EIA Regulations (2006). The DEA indicated that in terms of Regulation 77 of the EIA Regulations (2006) – “An application or appeal in terms of these Regulations lapses if the applicant or appellant after having submitted the application or appeal fails for a period of six months to comply with a requirement in terms of these Regulations relating to the consideration of the application or appeal” – that the application has lapsed. The applicant (Eskom) was advised to start the process afresh under the EIA Regulations (2010). Therefore, the environmental impacts associated with the proposed project require investigation in compliance with the EIA Regulations (2010) published in Government Notice No. R. 543 to No. R. 546 and read with Section 24 (5) of the National Environmental Management Act - NEMA (Act No 107 of 1998) - as amended, as well as the National Environmental Management: Waste Act – NEM:WA (Act No 59 of 2008). An integrated environmental authorisation process is therefore being carried out.</p> <p>The project study area has since also been reduced to focus only on the farm Roodekopjes 67HS, Ptns 4 & 5 of the farm Rietfontein 66HS and Ptns 17 & 21 of the farm Bergvliet 65HS. In the previous ESS the following farms were also included as part of the study area: Rietfontein 66HS (including Klein Rietfontein 117HS); Japtrap 115HS; Palmietspruit 68HS; Tweedepoort 54HS; Koppieskraal 56HS; Bergvliet 65HS; Weiland 59HS and Strydkraal 53HS. The 40 – 140 MW OCGT demonstration plant also does not form part of the scope of the current ESS.</p>

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<ol style="list-style-type: none"> The properties identified to be affected by the activities of the proposed development in the background document are found as not owned by state/RSA. It would be appreciated if we can be provided with the site plan showing affected and adjacent properties. 	<p>Bongane Ntiwane Chief Town Planner – National Department of Public Works Tel: 012 406 1041 Email: Bongane.Ntiwane.dpw.gov.za Correspondence type: Email Receipt date: 10 October 2012</p>	<p>Email response from RHDHV – 10 October 2012:</p> <ol style="list-style-type: none"> In agreement. Portions 1, 2, 3 and remaining extent of the farm Roodekopjes 67HS, Portions 4 and 5 of the farm Rietfontein 66HS and Portion 21 of the farm Bergvliet 65 HS is owned by Eskom Holdings SOC Ltd. Portion 17 of the farm Bergvliet 65HS is owned by MM Lambrechts. Locality Map forwarded on 10 October 2012.
<ol style="list-style-type: none"> I am interested in the public consultation process I&EA hearing to be conducted in the Dr Pixley Isaka Seme Local municipality areas Volksrust, Amersfoort, Perdekop Wakkerstroom and Daggakraal. Please give me more information on consultation dates, venues and times. I am residing in Vukuzakhe township Volksrust, I would also like to assist you to reach out to local community, the opportunity will give you the benefits of optimizing the participants. Your enhancing society together it encourages ordinary community members like myself to take up responsibility for our own socio-environmental development and general community development. Attached accompanying this email is my profile background I am also interested in working relations with the project as community liaison. 	<p>Vusi Kubheka Tel: 071 464 2068 Email: vusikasi@gmail.com Correspondence type: Email Receipt date: 22 October 2012</p>	<p>Email response from RHDHV – 25 October 2012:</p> <ol style="list-style-type: none"> More information on consultation dates, venues and times – the details thereof will be communicated (through an advertisement in the newspaper, letters, faxes, emails and post) in due course to all registered I&APs. <i>Adverts for public meetings appeared in the Volksrust Recorder and City Press on 09 November 2012 and 10 November 2012 respectively. In addition, all registered I&APs were notified of the public meetings on 05 November 2012.</i> Royal HaskoningDHV has put together a public participation strategy to ensure an inclusive, transparent and robust public participation process complying with Section 54 of the EIA Regulations (2010). We will be working closely with the Ward Councillor for the study area (Cllr Twala – Ward 8: Amersfoort) as well as the Local Municipality in this regard. As indicated in Point 2 above we will be working closely with the Ward Councillor for the study area (Cllr Twala – Ward 8: Amersfoort) as well as the Local Municipality. The appointment of a community liaison officer at this stage in the project has not been decided.
<ol style="list-style-type: none"> What is the life span of the project is and how it is linked to the lifespan of the power station? How will Eskom transport the coal and how it will influence the gas project? 	<p>L de Jager Pixley ka Seme Local Municipality Tel: 082 5505507 Email: dejager.lood@gmail.com Correspondence: Focus Group Meeting Date: 27 November 2012</p>	<p>RHDHV and Eskom Response – Focus Group Meeting 27 November 2012:</p> <p>Currently Eskom is planning a 70000 Nm³/hr gas production operation and the lifespan is 8 years. The amount of gas production depends on the amount of coal available. At present there is enough coal in the area and the project can produce 6000 MW of electricity for 40 years. During the research phase there will not be any coal trucks but should the project go into the commercial in future, the use of trucks should will be addressed.</p>

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1. The next five-year plan - this will have to wait and depends on getting your permits and licences as mentioned?	JJ Lambrechts Landowner Tel: 082 825 2134 Email: Bergvliet@vodamail.co.za Correspondence: Public Meeting Date: 27 November 2012	RHDHV and Eskom Response – Public Meeting 27 November 2012: That is correct, that is the process Eskom is following now. Eskom has it approved in principle although certain reports have to still be submitted to enable them to make the final decision.
1. Eskom started the project a long time ago and they are still busy with the process of applications.	M Nkosi Tel: 079 285 6460 Correspondence: Public Meeting Date: 27 November 2012	RHDHV and Eskom Response – Public Meeting 27 November 2012: The project has been on hold because Eskom has been conducting detailed research on the proposed technology. The EAP further added that while the technology has been researched the environmental applications with DEA expired and a new application has been submitted.
1. Why is it that Eskom keeps on changing consultants, Eskom had a meeting in the past with the communities together with Lidwala and today Eskom is back with other consultants. 2. When will the project start?	Various Community members Correspondence: Public Meeting Date: 27 November 2012	RHDHV and Eskom Response – Public Meeting 27 November 2012: 4. Eskom has other environmental applications and they appoint various consultants to work on different projects. 5. The project will start in approximately three years from now.
1. The Department of Agriculture, Forestry and Fisheries – Directorate: Land Use and Soil Management support the project. The applicant is advised to: apply necessary control measures to prevent any form of erosion such as wind or water.	TS Mabunda Department of Agriculture, Forestry and Fisheries Directorate Land Use and Soil Management Tel: 013 754 0733 Email: TselengM@nda.agric.za Correspondence Type: Letter Receipt date: 15 May 2013	Email response from RHDHV – 29 May 2013: a) A comprehensive Erosion Management and Control Plan has been included in the Environmental Management Programme included as part of the draft Environmental Impact Assessment Report. Mitigation measures and controls include: <ul style="list-style-type: none"> • Limit construction, maintenance and inspection activities to dry periods in order to curb occurrence/ augmentation of erosion in areas of existing erosion. • No vehicles should be allowed to cross rivers or streams in any area other than an approved crossing, taking care to prevent any impact (particularly erosion) in a surrounding habitat. • Disturbed areas of natural vegetation as well as cut and fills must be rehabilitated immediately to prevent soil erosion. • The use of silt fences and sand bags must be implemented in areas that are susceptible to erosion. • Sensitive areas need to be identified prior to construction so that the necessary precautions can be implemented. • Sealing of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces. • Retention of vegetation where possible to avoid soil erosion. • Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.

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		<ul style="list-style-type: none">• Where possible re-vegetation of disturbed surfaces should occur immediately after construction activities are completed.• Vehicle movement has to be restricted to an absolute minimum that is required for the mining exercise. Unnecessary movement of vehicles will increase the degradation of paths and dirt roads leading to an increased erosion risk.