

| No. | Comments received | | Names, mode of communication and date | Response provided (as adapted for the purpose of the scoping report) |
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| 1. | Categories | Procedural Related Issues: Process | | |
| 1.1 | Regulatory Authorities Comments | We acknowledge receipt of your final scoping report dated 26 April 2016. Please be advised that the scoping report in question is currently being reviewed and we will respond in due course. | T Motloung, Petroleum Agency SA, Email, 28 April 2016 | Your comment has been noted. |
| 1..1.1 | | <p>The Final Scoping Report (FSR) and plan of study for the Environmental Impact Assessment received by this office on 26 April 2016 has reference.</p> <ol style="list-style-type: none"> 1. The Agency has evaluated the submitted FSR and plan of study for Environmental Impact Assessment and is satisfied that the documents comply with the minimum requirements of Appendix 2(2) of the National Environmental Management Act, 1998 (Act 107 of 1998) Environmental Impact Assessment Regulations 2014 (herein referred to as Regulations, 2014). The FSR is hereby accepted by the Agency in terms of regulation 22(a) of the EIA Regulations, 2014. 2. You may proceed with the environmental impact assessment process in accordance with the tasks contemplated in the Plan of study for Environmental Impact Assessment submitted with the FSR and Appendices 3-6 of the EIA regulations. 3. Please ensure that various state departments are consulted during the EIA process and their comments incorporated in the Environmental Impact Assessment Report (EIR) before submission to the Agency. State Departments/ Agencies to be consulted must include amongst others the Provincial Heritage Resources Authority/ South African Heritage Resources Agency, Provincial Environmental Department, Department of Agriculture, Forestry and Fisheries (DAFF), Department of Water and Sanitation (DWS), Department of Land Affairs (DLA) district and local municipalities. Should you be unable to obtain comments, proof of attempts made to obtain | T Motloung, Petroleum Agency SA, Email, 10 June 2016 | <p>The comments have been addressed in the EIA, where relevant.</p> <p>The change in the scope of the exploration work programme to only remote exploration techniques limited the need to address some of these items.</p> |

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| | | <p>comments should be submitted to the Agency.</p> <ol style="list-style-type: none"> 4. Identification and consultation with all affected land owners must be carried out during the EIA process. 5. The implementation of the plan of study for the EIA must be taken into consideration the following: <ol style="list-style-type: none"> a) Where desktop studies are used during the environmental assessments, they must be authenticated by physical assessment in order to provide definite characteristics of the proposed exploration area. In this regard, you and the specialists are required to undertake physical site assessments of the application area and present the results thereof in the EIR. b) Section 24P of the NEMA requires that an applicant for an environmental authorisation relating to prospecting, exploration, mining or production must before the Minister responsible for mineral resources issues the environmental authorisation, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts. You are therefore reminded to quantify the method of financial provision in line with the requirements of the National Environmental Management Act: Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations, 2015. The said must be carried out by a specialist. 6. Please ensure that the EIR includes the A3 size locality and layout maps of the application area. 7. You are requested to submit three (3) hardcopies of the EIR and EMPr and at least one electronic copy (USB/CD) of the EIR and EMPr to the Agency on or before 05 of October 2016. | | |
| 1.2 | Commenting Authorities Comments | <p>I would like to add that the Elundini local Municipal Council has strongly objected to the proposed activity. A formal signed letter from the Council will be forwarded on the 30th of June 2016</p> <p>During the process you have initiated you made it as difficult as</p> | <p>Charles Coetser, Elundini Local Municipality, Email, 17 June 2016</p> | <p>Your objection has been recorded. We will await the formal letter.</p> |

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| | | possible to interact and to obtain relevant information, we were assisted to obtain the relevant information and we are aware of the local community and the Council's legal rights. | | |
| 1.3.1 | Consultation | The Department of Minerals Resources (DMR) should come with Rhino to introduce them to the community and explain that Rhino have made an application to look for oil and gas. If they do find something then they will have to make more applications before they can take anything out and if there is extraction then there will be benefits for the community. If the company such as Rhino goes to the community without the government they could experience problems because the community will think they have just come to take their land. | Mr Vukile Matyeni, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | It would be better if the government came in before-hand to make the community aware of such projects but unfortunately that is not their role and they don't have the capacity/ people to do that. Instead, the applicant is supposed to inform the community and other interested parties of the proposed project(s) throughout the environmental impact assessment (EIA) process. These tasks have to be undertaken and facilitated by an independent EIA consultant. |
| 1.3.2 | | I concur with Mr Matyeni that Government should be the one informing the community about the role of Rhino. In addition, the local Traditional Authorities are suspicious of foreign companies. Their main concern is that some of these companies exploit the land and just leave without benefitting the community. | Clr Ntombizanele Gloria Ntaopane, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | |
| 1.3.4 | | The translated versions of the background information document (BID) are not difficult to understand. | | The technical terms used in the BID are difficult to translate into Sesotho and isiXhosa because there are no equivalent words in these languages. As a result, the translations usually take a whole sentence to describe one word which might be difficult to understand for some community members. The educated members of the community usually explain these documents to other members of the community. |
| 1.3.5 | | We are not against what Rhino is proposing but there should be proper participation from the local traditional authorities as the project unfolds. Rhino should find out if the traditional leaders want to be BBBEE stakeholder beneficiaries in the venture because normally what happens is that government people become the BBBEE partners and the local people do not benefit. These are the kind of things that Rhino needs to think about to ensure that the local people really benefit from the project. | Nkosi Thozama Zibi, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | Rhino will take all these comments into consideration. |
| 1.3.6 | | The consultants should be careful when dealing with traditional leaders because there was an awkward situation the previous day when the consultants came to me and it was found that they had been dealing with the wrong Chief Zibi through no fault of their own. They had been dealing with a headman appointed by the MEC who claims to be the chief so it is important to make | | Your comment has been noted. |
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| | | sure you are dealing with the real traditional leadership otherwise it could lead to a legal challenge further down the line. | | |
| 1.3.7 | | <p>The presentation did not make mention of the involvement of traditional leaders in the process.</p> <p>The process followed by the consultants is different to that followed by the DMR. While it is true that DMR says that any minerals below the surface belong to the state and not the land owners, when minerals are identified in an area by a company through the Council for Geoscience, DMR goes to the traditional leader for that area and explains that such and such a mineral could be present under their land and they introduce the company and explain that they will do prospecting in the area to see if those minerals are in fact present.</p> <p>DMR shows the copy of the prospecting license to the traditional leadership and explains the whole process to them. If the traditional leadership agrees with what is proposed then they will call the community to a meeting and say to them that this process is good for the community because of X, Y and Z.</p> <p>The process followed by SLR did not follow this approach and it will fail because as soon as you come to the politicians first then you will get derailed by vested interests and politicians who want to get involved to make money.</p> <p>If the councillor goes to the community and says that the project is no good they will tell him that the chief supports it and they will tell him to go away. The politicians have both a political and administrative role and these are not always the same.</p> <p>The traditional leaders need to be informed first before the politicians otherwise there will be problems.</p> | <p>Clr Jackie Bosman Magangana, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016</p> | <p>In terms of the DMR, mineral prospecting and oil and gas exploration are both governed by the same legislation. The difference in the process relates to whether a company already has a prospecting or exploration right or whether they are still applying for that right.</p> <p>At the moment Rhino are applying for the exploration right and once they have that right they can then go to the land owner and discuss what they want to do.</p> <p>As part of the exploration application process, an EIA must be done and there is a requirement for consultation as part of the EIA. The traditional leaders are being consulted in the current EIA process. Some of the traditional authorities were consulted in October and November last year and others will be consulted during the course of this week.</p> <p>The councillors are the elected representatives of the people, the traditional authorities are also leaders in the traditional areas, and therefore, both sets of authorities will be consulted in the EIA process.</p> |
| 1.3.8 | | <p>It appears that this project has created a situation where the rich are opposing each other. Ms Mcleod and her people are against Rhino. She has been spreading all this negativity about this project and telling the councillors and traditional leaders that they shouldn't meet with Rhino but the people must decide for themselves what they think about the project.</p> | <p>Clr Jackie Bosman Magangana, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016</p> | <p>Most of the people opposing the project do not want their lifestyles to change but at the same time everybody wants the economy to improve. They want change in the economy but do not consider what kind of industries could make that happen. This project will create jobs at a later stage should any minerals be found beneath the surface and if an oil and gas industry can develop in South Africa like it has in America then it will make a massive difference to South Africa's economy and unemployment. Oil is not produced in South Africa and most of it has to be imported. If oil and gas is produced locally then there will be no need for oil and gas to be imported and that will strengthen the economy.</p> |

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| | | | | <p>Rhino will not destroy the environment because that will be detrimental to the company's reputation and it will never be able to do business. If oil or gas extraction is done carefully with the best technologies then nothing will be destroyed.</p> <p>SLR is not promoting Rhino or fracking but is there to ensure the safety of the environment. SLR is a neutral party that has the responsibility of showing the good and bad side of any proposed project and assessing the risks so that the bad impacts can be eliminated or reduced and the positive impacts can be maximised. SLR has also met with the NGOs who are against the project to understand the basis of their concerns and it is SLR's responsibility to write a balanced report which is then made available for public review.</p> |
| 1.3.9 | | It appears that those who are against this project are concerned more with maintaining their comfortable lifestyle than seeing the economy of Matatiele grow. When we wanted to build a mall in Matatiele they went to court to stop it while at the same time renovating all their buildings in town to accommodate the shops that wanted to go to the mall. | Clr Jackie Bosman Magangana, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | Your comment has been noted. |
| 1.3.10 | | Rhino must give a presentation to the full council meeting on Friday 29 January 2016 so that all the councillors and traditional leaders can be properly informed about this project. You must write a letter to the municipal manager requesting to be put on the agenda and I will then give you a slot for your presentation and a question and answer session. | | We will write a letter to the municipal manager requesting to be put on the agenda. |
| 1.3.11 | | We are happy that Rhino have come to our community to inform us about such a project but looking at map we cannot find the area we live in so how are we affected by this project? | Unidentified IAP, Moshoeshoe Traditional Authority Scoping Meeting, 26 January 2016 | Most of the Moshesh Traditional Authority area and the wards you reside in are within the exploration right application area and that is why the whole community has been notified of this project even if not everybody resides in the affected area. |
| 1.3.12 | | How will the community know when it has commenced? | | All registered IAPs will be informed of the decision made on the application to PASA once it has been issued. |
| 1.3.13 | | Have you been to other tribal authorities to give a presentation on the project? | Mofumahadi RIP Sibi, Sibi Traditional Authority Scoping Meeting, 26 January 2016 | There are four traditional authorities within the Exploration Right application area. A very small part of the Sibi Traditional Authority area falls within the application area. It is located to the south east side of the application area within wards 4 and 8 of Matatiele Municipality. The Amahlubi Traditional Authority occupies a small area on the south west side of the application area within Elundini Municipality and the major part of the application area falls within the Moshesh and Bakoena traditional authority areas. He said there are |

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| | | | | <p>also a few farming areas that fall within the application area. The project team are currently busy meeting with the tribal authorities during the week. There will be another meeting this morning with the Moshesh Traditional Authority and there will also a meeting arranged with the Amahlubi Traditional Authority on Thursday.</p> |
| 1.3.14 | | Why is it necessary for Rhino to meet with the Sibi traditional authority if there is only a small part of their land within the application area. | | It is important to consult with everybody who is potentially affected by the project. Even if the affected area within the Sibi traditional authority was only the size of a football field they would still be consulted about the project so that they were properly informed |
| 1.3.15 | | Can we look at a date for a full community meeting to present the project to the community. | Mofumahadi RIP Sibi, Sibi Traditional Authority Scoping Meeting, 26 January 2016 | We will look at our schedule and see when everybody is available and then we will liaise with you. We will also have to come when we have more than one meeting in the area because it is a long way for everybody to come for just one meeting It must be noted that the suggested meeting will be catering specifically for community members from the affected area rather than the whole of the Sibi Traditional Authority area. This is because those people who are not from the affected area might get concerned when in fact they will not be affected. |
| 1.3.16 | | Everything is fine. We understood your presentation and we look forward to you coming again to present to the community and we think and hope that the community will understand you too. | | |
| 1.3.17 | | I suggest that we hear the presentation first then maybe after we can discuss it because now we might miss the presentation. So please give the presentation first then after we can have the questions and comments because this will delay us. | Rev Mhlauli, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | The comments were noted. |
| 1.3.18 | | Sorry, please excuse me. I'm a civil engineer and when I'm here I need to know everything that is being said. When you say we must stop talking before I get to ask questions I will not know everything. Everything that I write down now, I will verify it later on the computer using the internet. I will check their background to see how they work. So what I'm doing is to ensure that we do not sit here for nothing. Sometimes if you wait until after the presentation you forget the questions you wanted to ask. I just wanted to clear that up. | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | |
| 1.3.18 | | There must be contracts in place for this project. When the signing of contracts has been completed by all parties then there will be an agreement. We must have the contracts because we cannot do anything without signatures. They confirm that we give you permission to do what you want to do. This is why I say this cannot take five minutes. It is only us who can speed up the process. | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | There are no contracts to be signed for now because the application is to the government. Contracts will be signed with the landowners once the government has approved Rhino's application and the exact locations of the drill sites have been identified and confirmed by Rhino. (Rhino) |

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| 1.3.19 | | <p>This land belongs to the chief and if the chief and his council gives you permission to proceed with your exploration in this area then there should be something written on paper that says the chief has given you permission to do this and this and this. Everybody should know that you are allowed to be here, even the people walking on the streets must know. People might ask you where you're coming from or what are you doing here but if you have that agreement you will be able to produce it.</p> | <p>C.M. Mlonyeni, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016</p> | <p>All that we are trying to make you understand is that we are only at the very beginning and we are still applying for the exploration right. We have to first consult with all the chiefs and councillors, the municipalities and other land owners and discuss the project. The project is still right at the beginning so we still need to get permission first from government and get the exploration right so that we can do work for the first two years to determine where are the best places to drill our 10 core holes. If we decide that we must come to this valley then we will have to come and speak to the chief responsible for this valley and get permission from him and his council. At the moment we do not know where all the work is going to done because that is still too far ahead. We are still consulting with affected parties for the EIA. When we reach a certain point and we know where we are going to drill our core holes then we will return and sign an agreement and pay rent for the area we are going to use. (Rhino)</p> |
| 1.3.20 | | <p>Are there any other meetings that will take place after this one? I ask this because most the people are not aware of this meeting and maybe next time we will let the others know that there is something like this that is taking place.</p> | <p>W.P. Dzingwa, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016</p> | <p>This is still the beginning of the project and we are still meeting with the communities and unfortunately most of the people did not make it. Once we have completed the EIA report we will still consult with the relevant areas and give feedback meetings in terms of the studies that were done. Hopefully the public will be able to attend those feedback meetings. (SLR)</p> |
| 1.3.21 | | <p>This is my third meeting with you. We would like to thank you as the Amahlubi and myself on behalf of the Amahlubi. One would have expected a better turn out than this but hopefully there will be more people next time. Human nature has it that when bad news appears in the headlines on television or the newspapers everybody wants to know. When we talk about things that affect the nation people are not as keen because they have been sensitised about the good in what we have been discussing. I think with time it will come that people will want to pick up a piece of paper and read. With time we will get there. At some stage we will find people participating in such matters. When meetings are called we do not attend and then decisions are made and we complain. This is not negative or a product of despair but a product of hope. I thank you.</p> | <p>Nkosi Thozama Zibi, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016</p> | |

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| 1.3.22 | | The presentation has given an overview of the project in the limited time available. When the Scoping Report is available I would like to propose that the service provider be invited to a Strategic Planning session to present the report so that we can discuss the project in more detail and make a decision from a more informed position. | Clr L E Stuurman, Matatiele Municipality's Council Scoping Meeting, 25 January 2016 | A representative from Rhino attended the Provincial Strategic Planning session. |
| 1.3.23 | | The situation we are in now we are facing a drought which is affecting the whole country and it would be difficult for us to allow this kind of business to take place. We don't really have time to dwell on this resolution here today and I support Clr Stuurman's proposal that this presentation must be taken to our Strategic Planning session so that we have time to consider it properly. | Clr R T Mnika, Matatiele Municipality's Council Scoping Meeting, 25 January 2016 | A representative from Rhino attended the Provincial Strategic Planning session. |
| 1.3.24 | | Clr Mnika you must use I when you give your views and not we or us because those are your personal views and not those of the council. | Clr J Bosman-Magangana, Matatiele Municipality's Council Scoping Meeting, 25 January 2016 | |
| 1.3.25 | | The proposal to invite Rhino Oil and Gas to the Strategic Planning session is seconded and we will extend an invitation to them to attend or Strategic Planning session from 7 to 11 February. | | |
| 1.3.26 | | From the presentation I have seen that they have visited the Amahlubi and Bakoena areas and I would just advise that they go and meet with the leaders of those areas. They can go to the Strategic Planning session after they have agreed with those people in those areas because those areas are going to lead us on this matter. | Chief T S Quali, Matatiele Municipality's Council Scoping Meeting, 25 January 2016 | Traditional council meetings were held with the Amahlubi, Sibi and Moshoeshoe traditional authorities in February 2016 (see Box 4). A representative from Rhino attended the Provincial Strategic Planning session. |
| 1.3.27 | | In the presentation it did say that they had consulted with the traditional leaders but I think it is proper to remind them to do it more so that we go to the Strategic Planning session with an informed decision from our traditional leaders. | Clr J Bosman-Magangana, Matatiele Municipality's Council Scoping Meeting, 25 January 2016 | A representative from Rhino attended the Provincial Strategic Planning session. |
| 1.4.1 | Additional comments | When will this project start? | Unidentified IAP, Moshoeshoe Traditional Authority Scoping Meeting, 26 January 2016 | Rhino will have to get the exploration right prior to commencement with the proposed exploration activities. Rhino has applied for the exploration right and this meeting is held as part of the application consultation process The application usually takes about a year before the right is granted, so exploration might commence next year or later this year. |

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| 1.4.2 | | Is the Exploration Right application process an NGO or government process. | Mofumahadi RIP Sibi, Sibi Traditional Authority Scoping Meeting, 26 January 2016 | <p>The EIA and exploration Right application processes are conducted in terms of government legislation and these processes have nothing to do with NGOs except that they form an important group of stakeholders in the consultation process. The NGOs are trying to stop the application because they are against change in the area but what they are actually doing is preventing the possibility of economic development in the future should a viable oil or gas resource be found in the area through the exploration process. The NGOs emphasise some of the negative issues related to fracking but never mention any of the positive benefits associated with the production of oil or gas because they are trying to prevent the application being approved. They don't want anybody to receive balanced and unbiased information about the project so that they can make up their own minds on whether they want the project or not which is not really fair on those people that do not necessarily share their views. It is up to the traditional authority and the community to decide whether they want the project or not and it is important for them to hear both sides of the story. Rhino cannot force you to support the project and we are merely requesting the opportunity to present the full information about the project to you so that you can make up your own minds. Rhino is not hiding anything from anybody and is presenting the facts about the project so that the people who are potentially affected by the project are fully informed and can reach their own decision on whether or not they support the project. It is true that there could be some negative risks associated with the project if it is not carried out properly and in a responsible manner but rhino oil and gas have a reputation to uphold and it is not in their interest to do things in an irresponsible way.</p> |
| 1.4.3 | | What happens if you find something in the area that is located outside the application area that you have applied for? | C.M. Mlonyeni, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | <p>Rhino is only looking for permission within the area that is demarcated on the map. Therefore, Rhino will not be allowed to touch the area outside their application area even if they believe there might be something worth investigating. It would be illegal for Rhino to do so</p> <p>It's a bit like mining. If two mines are mining next to each other the one mine cannot work on the area applied for by the other mine. The exploration for oil and gas is totally different for example to exploring for gravel. With the exploration for gravel you drill many holes but not as deep as for oil and gas. With gravel you drill an average depth of maybe 50 meters but for oil and gas they cannot be</p> |

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| | | | | so shallow. The core holes will be about 2 km into the ground using a specialised drill. You have to collect samples which will be boxed and sent to the laboratory for testing. This is to minimise the impact on the environment. We have to use specialised equipment for the exploration stage and even further down the line. We will be tendering to see who has got the best expertise to do this work both in terms of safety and operationally. (Rhino) |
| 1.4.4 | | Is it government who is sending you to explore for oil? Who is sending you to explore for oil? | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | The government did not send Rhino to explore for oil and gas. As an independent company Rhino, thinks there could be a possibility that there is oil and gas in the area. However, because you have the land rights and the government has the mineral rights, Rhino has to apply for the mineral rights from the government and also get permission from you (landowners) in order to access the land. (Rhino) |
| 1.4.5 | | That is why I'm saying that in order to get permission to explore on our land it has to be put on paper because we cannot do anything if it's not on paper. At the moment I'm building a mall in Lesotho. The chief approached me and asked me to build a mall and before I could start the investors did not give me any money until everything was signed in the presence of the legal authorities in Lesotho. Even though it is in Lesotho I could not start until there were contracts signed. We cannot do anything without contracts. | | Your comment has been noted. (Rhino) |
| 1.4.6 | | Where are we on that map? | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | Where we are now at Ezingonyameni is outside the exploration right application area but some of the Amahlubi area falls within the application area where Rhino want to do exploration work. The demarcated area is the application area and when we do the EIA we identify all the land owners in that area. Where we are meeting is not necessarily where we are going to drill because this is where the traditional council meets. The application area is only the area coloured in orange. That is why we are consulting with the Amahlubi Traditional Authority because a part of the application area falls within the Amahlubi area. (SLR) |
| 1.4.7 | | I was thinking about writing my comments on this Rhino Scoping Report and then decided, you know what, no more wasting precious time and energy! As you have not provided us with any details of the sites for exploration, you cannot hope that we would consider giving our consent to conduct a fatally flawed public participation | Judy Bell on behalf of Frack Free SA, Email 17 July 2016 | Thanks for your comments. I have forwarded these to PASA. I understand your position. The reasons for the applicant not being able identifying the target sites for the physical exploration are explained in the Scoping Report (specifically Sections 1.3, 2.3.1 ad 2.3.10). I reiterate that the scope |

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| | | <p>process. Until you provide us with the exact location of the sites, we cannot be expected to comment on such a vague process, which is stacked against us. It is like asking the intended victim to choose the gun and bullets with which they will be shot. Completely ludicrous and not fair at all. It is after all, our lives and livelihoods at stake.</p> <p>For this reason, I would like it formally recorded that the Scoping Report cannot be authorised until you give us “x marks the spot(s)” on which to comment on the predicted impacts for those specific areas. Until then, please do not expect otherwise.</p> | | <p>of the EIA is aligned with the early-phase exploration as proposed by Rhino Oil and Gas. SLR is assessing the impacts of the proposed early-phase exploration work programme as provided to us. We have acknowledged the limitations of this in the Scoping Report. (SLR via Email, 19 July 2016).</p> <p>Subsequent to the acceptance of the Scoping Report, Rhino Oil and Gas has excluded the ground-based core hole drilling and seismic surveys from proposed ‘early-phase exploration’ work for which they are seeking environmental authorisation. Thus the current focus of the application and the related environmental assessment work is now only related to the proposed remote exploration techniques (including analysis of existing data and an aerial full tensor gradiometry gravity survey). A benefit of this revised approach is that any future application for ground-based exploration activities will be focussed on specified sites, thereby enabling I&APs to know where Rhino Oil and Gas proposes to access land and conduct ground-based exploration activities.</p> |
| 1.4.8 | | <p>I echo Judy’s articulation below (see item 1.4.7): while we understand that the EIA process has to focus in through specialist studies on the target areas for exploration drilling, we have also, from the outset of this process, asked for exclusion zones which would, on the basis of biodiversity and water security criteria, preclude any exploratory core drilling, and thus be excluded from any assessment as no-go zones. These are not clear in the scoping report, and we would request that these no-go zones be made a priority during the EIA phase, so that the final EIR is not vague regarding ‘potential’ exploration sites.</p> <p>We have been told in response to concerns about WHY exploration is being applied for that it won’t involve hydraulic fracturing, but we reiterate again that it would be a likely outcome (what’s the purpose of the exploration?), and that consideration of target exploration drill sites MUST closely consider cumulative impacts of future activities. This affects the criteria used for exclusion zones, and again we submit that the target areas form essential water source catchments (in the case of EC ER295 with which i am more familiar, as well as most of</p> | Nicky McLeod on behalf of UCPP, Email, 18 July 2016 | <p>Thanks for your comments. I have forwarded these to PASA.</p> <p>As indicated in the Scoping Report, specifically the sections describing each specialist study, there will be various exclusion and restriction zones for on-the-ground exploration activities that are identified as the outcome of the EIA process. These will be derived from a variety of biophysical criteria as well as legislative, technical and practical considerations. Some of the criteria will be implemented as no-go zones with others resulting in various levels of restriction to activities. The determination and application of such criteria requires thorough investigation and interrogation and are therefore an outcome of the EIA rather than a scoping level finding.</p> <p>With regards your second point, I reiterate that the scope of the EIA is aligned with the early-phase exploration as proposed by Rhino Oil and Gas. SLR is assessing the impacts of the proposed early-phase exploration work programme. Thus the exclusion and restriction zones will be determined for the current exploration work programme.</p> <p>As I’m sure you are aware, both the MPRDA and the NEMA provide</p> |

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| | | the KZN application) which cannot be compromised through incompatible activities, and that the application should be withdrawn on this basis, without wasting further expense, time and anxiety on the part of the 'victims' in the target landscapes. | | for the separation of the exploration and production right applications and related environmental impact assessment processes. The same approach is applied to prospecting and mining rights. Any change to the scope of the current ER, or further exploration or future production activities would need to be subject to additional authorisation in terms of the MPRDA and thus NEMA. Each of these would require a separate EIA (or environmental authorisation amendment) process, which would include a further public participation process and in-depth assessment (potentially including specialist studies) of all project-related activities / issues. (SLR via Email, 19 July 2016) Subsequent to the acceptance of the Scoping Report, Rhino Oil and Gas has excluded the ground-based core hole drilling and seismic surveys from proposed 'early-phase exploration' work for which they are seeking environmental authorisation. Thus the current focus of the application and the related environmental assessment work is now only related to the proposed remote exploration techniques (including analysis of existing data and an aerial full tensor gradiometry gravity survey). |
| 1.5 | Strategic Environmental Assessment | | | |
| 1.5.1 | Further exploration or future production activities | <p>I trust you have all read and re-read the draft SEA report for the proposed Karoo Shale Gas Development. This quote below is the reason for this note (all quotes from the SEA documentation is in this smaller font for ease of identification – bold and highlighting is mine):</p> <p>Unconventional gas reserves may exist in other areas of the South African onshore and offshore territory, and would need separate consideration if their development was considered.</p> <p>While I understand that your work is not limited to shale gas, the following are the items I feel should be addressed in your EIA processes and documentation for exploration applications for oil and unconventional gas. Please Note that exploration is one of</p> | Judy Bell, Frack Free SA, Email, 12 July 2016 | <p>Thank you for the comments. We are reviewing and will give consideration to the draft SEA chapters as appropriate.</p> <p>We note that the Scenario 1 considered in the SEA is for exploration. However, the context of exploration considered in Scenario 1 is firstly for Shale Gas and more importantly includes the full range of the various exploration phases that could be necessary to take a project from conceptualisation to production ready. This includes all of the exploration, appraisal and development phases (refer to Figure 1.19 in Chapter 1).</p> <p>As noted in Section 2.3.6 of the Scoping Report, exploration is an iterative process where data acquired from a prior stage is required to improve the knowledge and understanding of the resource, which may then be subject to a later stage of more intensive exploration. Rhino Oil and Gas is at the beginning of an oil and gas exploration</p> |

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| | | the four scenarios considered in the SEA – namely Scenario 1. | | <p>process and is only seeking authorisation to undertake early-phase exploration activities. It is not possible to provide an informed assessment of potential future impacts where the proponent has no idea of the project plan, the methodology or the locality. The scope of the current EIA is, therefore, limited to the early-phase exploration work programme only. PASA has confirmed that the current EIA should be aligned with the proposed exploration work programme submitted with the exploration right application.</p> <p>The proposed exploration work programme is designed to improve the understanding of the regional geology and inform of the potential for the occurrence of an oil and / or gas resource. What can be stated categorically is that further detailed exploration and future production do not form part of the current exploration right application. No exploration / appraisal wells, extraction of hydrocarbons or water, or stimulation of wells (hydraulic fracturing) are proposed in the 3-year exploration work programme for which approval is sought.</p> <p>If a resource were to be identified for more advanced exploration based on the initial early-phase exploration programme, Rhino Oil and Gas would need to seek further approval from PASA in terms of the MPRDA and NEMA for the additional exploration work required to appraise the resource. Any further approval would be subject to an additional environmental assessment process with further public consultation. The assessment would be based on the known details of the work as proposed by the applicant. It is also expected that if/when this phase commences that the Karoo SEA for Shale Gas will be complete and will provide a sound basis on which to undertake an assessment of future exploration work.</p> <p>Subsequent to the acceptance of the Scoping Report, Rhino Oil and Gas has excluded the ground-based core hole drilling and seismic surveys from proposed ‘early-phase exploration’ work for which they are seeking environmental authorisation. Thus the current focus of the application and the related environmental assessment work is now only related to the proposed remote exploration techniques (including analysis of existing data and an aerial full tensor gradiometry gravity survey).</p> |
| 1.5.2 | Further | All sites are rehabilitated, wells permanently plugged and | Judy Bell, Frack Free | Refer to Response 1.5.1 with regard to potential future exploration or |

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| | exploration or future production activities | <p>monitoring of abandoned wells is implemented.</p> <ul style="list-style-type: none"> In all the documents we have seen, there has been no mention of these post exploration activities, but perhaps we have short memories, overloaded with all this bumpf. For those not abandoned, that is for the wells where sufficient gas is discovered, they therefore become permanent and thus exploration leads to production. We believe that this means that extraction cannot be excluded from your assessments! A precedent was set in the Netherlands where a judge made exactly this ruling. | South Africa. Sent via email on 12 July 2016 | <p>production phases.</p> <p>No exploration wells are proposed as part of the early-phase exploration work programme. Only ten core boreholes are proposed with the purpose of obtaining information pertaining to specific geological, structural and stratigraphic information that might lead towards the discovery of petroleum with no intent to produce from such holes.</p> <p>As noted in Section 2.3.6 of the Scoping Report, all boreholes would be capped or sealed. Rehabilitation would be undertaken to re-establish pre-exploration land use.</p> |
| 1.5.3 | Further exploration or future production activities | <p><i>Exploration is the first stage of the shale gas development cycle. It is concentrated in the initial 2-3 years of the development cycle, but is undertaken throughout the life of the development to inform the location of additional drilling and production operations.</i></p> <p>In our minds, this also adds to the requirement that exploration assessments deal with the production phase impacts.</p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>This EIA is aligned with the work proposed for the first 3 years of early-phase exploration. The exploration phase can extend beyond three years. In terms of the MPRDA, an exploration right is only valid for the period specified in the right, which may not exceed three years. An exploration right may be renewed for a maximum of three periods not exceeding two years each (see Figure 1-1). Thus, the exploration phase could be up to a maximum of nine years in duration.</p> |
| 1.5.4 | Further exploration or future production activities | <p><i>The appraisal stage follows exploration, and for a single campaign typically lasts about 2-3 years. It involves the drilling of appraisal wells, which are vertical wells with horizontal sections to ascertain potential yields of shale gas within the target formation, following test fracking. Drilling, fracking and other equipment and materials and waste receiving facilities are contained on the well pad. An area of similar extent to the well pads is developed for temporary accommodation of drilling crews in the region. If, during the exploration or appraisal phase, it is revealed that technically recoverable reserves cannot be</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | Refer to Response 1.5.1 with regard to potential future exploration or production phases. |

economically exploited, decommissioning is implemented.

- In the documentation SLR and EIMS has provided us so far, no mention of the test fracking is made, in fact they have specified that it will not take place. At which phase will this be done, if the SEA shows it is part of the Exploration activities?
- This means that the social assessment and other missing specialist studies is critical for completion during exploration phase EIA, as by the Appraisal stage it is too late – the damage to the social fabric of communities and municipalities will already be done!
- How is the activity monitored for compliance for example in terms of buffers, if the wells can be angled in all directions? How is it possible to check where it went?
- Fracking or flowback liquids – will the sand requirements mean more mining of our rivers and rural land? How will this issue be managed in view of the resulting erosion, destruction of riparian zones and loss of sand in terms of coastal sand budgets?
- The table below shows the exploration scenario impacts and activities. Does this align with the information provided by SLR and EIMS? If not, does this need to be reviewed?

| Activity | I. Exploration Only |
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| Number of wellpads [2 ha each] | 30 |
| New roads (km) [unpaved, 5 m wide] | 30 |
| Total area of wellpads and roads (ha) | 75 |
| Number of truck visits | 45 000 |
| Industry water needs (m ³) [assuming no re-use of fluids] | *488 250 |
| Industry water needs (m ³) [assuming re-use of 50% drill fluid & 30% frack fluid] | *319 110 |
| Flowback waste (m ³) [sludge+brine+water] | *101 400 |
| Other hazardous waste (t) e.g. oil, grease etc. | 85 |
| Worker domestic waste (t/yr) | 144 |
| Worker sanitary waste (m ³ /yr) | 44 531 |

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| | | <p>* For five exploration drilling campaigns, each with six exploration wells, total 30 wells over lifetime of Exploration Only activities. ** For 55 wellpads, each with 10 wells, total 550 wells over lifetime of Small Gas Development *** For 410 wellpads, each with 10 wells, total 4 100 wells over lifetime of Big Gas Development</p> | | |
| 1.5.5 | Air quality | <p><i>Air Quality</i></p> <p><i>Shale Gas Development without mitigation would be associated with a high risk of occupational exposure to air pollutants. There is insufficient information on air quality and GHG emissions in the Karoo to form a reliable baseline against which to measure the impacts of Shale Gas Development. There are no air quality monitoring stations within the study site, and only one near it, critically limiting information on air quality prior to shale gas development.</i></p> <ul style="list-style-type: none"> • Surely this means that baseline air quality monitoring must be done in all areas PRIOR to exploration? | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases. SLR is of the opinion that the need for baseline air quality monitoring would only need to be considered, as part of a future environmental assessment process, if a resource were to be identified for possible production.</p> <p>With regard to the proposed exploration work programme, ambient air quality may be affected by:</p> <ul style="list-style-type: none"> • Dust fallout from the movement of vehicles (elevated particulate matter levels); • Emissions generated by combustion-driven equipment and vehicles; and • The release of gas from stratigraphic core holes. <p>These impacts will be further investigated and assessed in the next phase of the EIA (see Sections 5.4.17, 6.3.1.4 and 7.5.6 of the Scoping Report).</p> |
| 1.5.6 | Climate Change and Greenhouse Gas (GHG) Emissions | <p><i>Climate Change and Greenhouse Gas (GHG) Emissions</i></p> <p><i>Shale gas presents both a risk of increased national greenhouse gas emissions and an opportunity to reduce emissions. The opportunity for emission reductions depends crucially on whether gas displaces coal (the main fuel in SA); or whether instead it displaces low-carbon energy sources; or whether gas is used in addition to coal. Shale gas used in place of coal for electricity generation provides an opportunity to reduce GHG emissions, but the scale of reductions is slight in relation to the magnitude of national GHG emissions now and as projected over the period of SGD.</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>As noted in Response 1.5.4 above, the potential release of gas from stratigraphic core holes will be assessed in the next phase of the EIA.</p> |

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| | | <ul style="list-style-type: none"> This aspect has not been properly assessed by either SLR or EIMS in their documentation to show these significant impacts. Note that the authors claim methane is 20-30 times that of carbon dioxide, while others claim it is closer to 100 times! | | |
| 1.5.7 | Tremors & Earthquakes | <p><i>Tremors & Earthquakes</i></p> <p><i>SGD by hydraulic fracturing increases the likelihood of small earth tremors near the well bores. Only a few are likely to be strong enough to be felt by people on the surface. Many studies, in several parts of the world demonstrate an increase in small earth tremors during hydraulic fracturing. The possibility that hydraulic fracturing will trigger damaging earthquakes (i.e. of magnitude 5 or greater) through interaction with natural faults cannot be excluded, but the risk is assessed as low because the study area very rarely experiences tremors and quakes.</i></p> <ul style="list-style-type: none"> This shows that a study needs to be done in each area to assess the impact, especially in the vicinity of buildings and dam walls! The extent of the impact will be location specific and as we do not have any idea yet as to where the exploration will be done, how can this impact be assessed effectively? This aspect needs to be monitored prior to exploration too! <p><i>The elements of the study area most vulnerable to earthquakes are heritage buildings made of unbaked clay bricks, and poorly-constructed low-cost housing. A denser network of seismographs is needed in the region prior to the commencement of hydraulic fracturing. The seismograph would need to function throughout operations and after closure until seismicity decays near to background levels.</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, the potential impacts of the energy generated during a seismic survey will be investigated and assessed in the EIA (see Sections 5.4.15.1 and 6.1.4.1 of the Scoping Report).</p> |

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| 1.5.8 | Water | <p><i>Water – both surface and groundwater</i></p> <p><i>Water availability in the study area is already severely constrained, and thus the capacity to supply water for SGD from existing local sources is very limited. Surface water availability is generally low. Most streams are non-perennial, episodic and ephemeral, with very high inter-annual variability. The surface water resources in the study area are already stressed (and in many areas over-allocated) to meet the demand of existing users. Central karoo landowners are mainly reliant on groundwater resources for domestic and stock water supplies. Groundwater recharge is typically low and sporadic. The development of groundwater resources to meet shortfalls in surface supplies is increasing, particularly during drought years, and in many areas already supplies 100% of the demand. The availability of potable groundwater resources in the study area to meet the additional demand of development plans not involving SGD – such as irrigated agriculture, tourism or mining - is seriously constrained.</i></p> <ul style="list-style-type: none"> • We are reeling from the effects of a drought which has been exacerbated by Climate Change driven by emissions from the use of fossil fuels. Who will have to go with less or without water, so that exploration and then extraction requirements can be met? This question has not been answered by either EAP so far. • Groundwater has to be considered a future resource, even if it is not being used presently and the quality is not of drinking water standard • Groundwater can daylight and flow into surface water resources. This needs to be acknowledged and taken into consideration when dealing with water issues. | <p>Judy Bell, Frack Free South Africa, via email, 12 July 2016</p> | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>The water requirement for the proposed exploration work programme is presented in Section 2.3.8 of the Scoping Report. It is acknowledged that any changes to the quality or quantity of water in near surface resources or aquifers may affect users who rely on these resources for domestic, agricultural and industrial use.</p> <p>The potential impacts on the quality or quantity of surface and groundwater will be assessed in the next phase of the EIA (see Section 5.4.8, 5.4.9, 6.1.3 and 7.5.2 of the Scoping Report).</p> |
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| 1.5.9 | Water | <p><i>Surface spills on-site and along transport networks are the most likely source of water resource contamination resulting from SGD. SGD-related activities such as hydraulic fracturing, road building and workforce accommodation will place an additional demand on water resources and present a risk of contamination. Non-SGD activities such as uranium exploration and mining will compound this demand and pose additional contamination risks. The impacts on water quantity and quality are cumulative.</i></p> <p><i>Impacts following the completion of SGD (e.g. from failed well linings or capping structures on spent production wells) are a cumulative and inevitable legacy issue far into the future.</i></p> <p><i>SGD must not proceed before a comprehensive set of baseline water resource data for the study area has been established. This must include surface water availability and verification of existing use (including the water resources needed to meet environmental requirements, the "Reserve"). The baseline must also include quantification of the quality of surface water and groundwater. Ongoing water resource quality monitoring including general and SGD-specific determinants is essential during and after SGD.</i></p> <p><i>There is currently a deficit of laboratories in South Africa to undertake the necessary analysis for water chemistry monitoring in relation to SGD. Although most accredited local (South African) laboratories are equipped to carry out routine water analyses (e.g. major cations and anions), none are presently capable of analysing for determinants such as $\delta^{11}\text{B}$, $^{36}\text{Cl}/\text{Cl}$, 4H, $3\text{H}/4\text{H}$, ^{26}H, and CH_4. Sufficient lead-in time must be allowed for such facilities to be set up prior to SGD; baseline establishment in the immediate term may require the use of internationally-accredited laboratories.</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | See Response 1.5.8. |
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| | | <ul style="list-style-type: none"> • These requirements need to be stated in the Exploration documentation, so that they can be assessed and plans put in place to implement. | | |
| 1.5.10 | Water | <p><i>Current lack of infrastructure and institutional capacity for water management is a constraint in the karoo. Insufficient institutional and human resource capacity is a severe constraint to the implementation and execution of a robust and effective water resource monitoring and management programme for SGD. This constraint will apply to regulatory authorities, who often lack the necessary skills and the will to exert enforcement, and less so to the SGD industry, which it is expected will mobilize the necessary resources to meet regulatory requirements in this regard. This constraint is particularly relevant to independent monitoring and evaluation activities directed at ensuring compliance of the SGD industry with the regulatory requirements. The likelihood of environmental non-compliance is increased by poorly capacitated regulators.</i></p> <ul style="list-style-type: none"> • This is relevant to all areas under threat of exploration. The lack of planning and capacity is especially noticeable with the deepening drought. For example, the KZN Mvoti WaterWorks is only able to treat 13% of capacity as there is no further water available from the river and the dam is perilously low. They are now drilling for groundwater in the river. • Industry in Richards Bay is already reeling from the downturn in the global economy and has had to cut production to meet the ever-reducing water allocations. • We already have mining companies in N. KZN allegedly stealing water from farm dams and other resources. | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | See Response 1.5.8. |
| 1.5.11 | Waste | <i>Waste Management</i> | Judy Bell, Frack Free | Refer to Response 1.5.1 with regard to potential future exploration or |

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| | management | <p><i>SGD will generate substantial volumes and new types of waste in the study area. These include liquid wastes such as flowback fluids, solid mining wastes such as bore fragments and cuttings, industrial wastes such as used machinery and supplies, as well as more conventional wastes such as sewage, domestic water and construction waste.</i></p> <p><i>The existing legislated waste management provisions are adequate to reduce the waste-related risks of SGD to low, if rigorously enforced. Currently, no hazardous waste sites are licensed for the disposal in the study area. This means that any hazardous waste would need to be transported and disposed of outside the study area. Mining-related waste, including that from SGD, is currently classified as hazardous, thus requiring specialized disposal sites and procedures. If this were to change with respect to SGD, wastes could legally be disposed in municipal landfills, which are currently completely inadequate for this purpose and could have health impacts if people are exposed to it. Technologies employed at municipal landfills are inappropriate to deal with the quality of the waste water generated by SGD and the design capacities of these facilities are also insufficient to deal with additional volumes. Leach management and treatment is a pre-requisite for disposal of shale waste to landfill due to the presence of a range of toxic chemical additives and potential radioactivity and salinity in flowback water (leachable Naturally Occurring Radioactive Materials (NORMS)). These substances require particular handling for safe disposal. The institutional capacity, skills and knowledge to implement and enforce waste regulations, norms and standards is limited, especially at local implementation level and will therefore have to be strengthened before SGD is approved.</i></p> | South Africa, via email, 12 July 2016 | <p>production phases.</p> <p>Waste generated as part of the proposed exploration work programme is described in Sections 2.3.6 and 2.3.9 of the Scoping Report. Impacts related to waste generated on site (including drill cuttings / fluids, spills and leaks) will be assessed in the next phase of the EIA (see Sections 5.4.8.2, 5.4.9.2, 5.4.11.2, 6.1.2 and 6.1.3.3 of the Scoping Report). It is acknowledged that an adequate waste management plan would need to be implemented for the proposed project.</p> |
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| | | <ul style="list-style-type: none"> • Self explanatory what is required prior to exploration! How will the rural towns cope with these additional wastes? | | |
| 1.5.12 | Biodiversity & Ecological Impacts | <p><i>Biodiversity & Ecological Impacts</i></p> <p><i>The study area includes relatively high levels of biodiversity, including highly sensitive and unique ecosystems and species. Seven different biomes and 58 vegetation types, 119 endemic or near endemic plant species, and threatened animal species have been recorded from the study area. Areas identified in this assessment as being of very high ecological importance and sensitivity are irreplaceable if substantively damaged. Widespread impacts in these areas would undermine the ecological integrity of the study area (and more broadly, the Karoo). Any activities, including but not restricted to SGD, in these areas are assessed as very high risk. The very high and high ecological importance and sensitivity areas make up an estimated 55 % of the study area. Only 5 % of the study area is formally protected in National or Provincial reserves. The primary mitigation for SGD with respect to biodiversity is securing the areas of very high and high ecological importance and sensitivity. This effectively frees up medium-low and low areas for development. The Karoo is an arid ecosystem characterised by ecological processes that operate over extensive areas. Mitigation of ecological and biodiversity impacts must take place primarily at the landscape scale rather than solely on the physically-disturbed footprint. Impacts on species, ecosystems and ecological processes extend well beyond the physical footprint of the activity. For many species the impacts of noise, pollution, erosion and disturbance can extend for hundreds of metres or kilometres from the source. A major concern is that the roads, pipelines and powerlines associated with SGD will result in fragmentation of the</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, impacts to the ecology could include:</p> <ul style="list-style-type: none"> • Loss of or disturbance to vegetation, including species of conservation concern, from vehicles traversing areas or on-site activities; • Loss or disturbances to faunal habitats as a result of on-site activities; • Disturbances to or motility of fauna, particularly species of conservation concern, as a result of on-site activities; and • Enabling the establishment of alien and invasive species in disturbed areas. <p>These impacts will be further investigated and assessed in the next phase of the EIA (see Sections 5.4.7, 6.2 and 7.5.1 of the Scoping Report).</p> <p>The potential impact on water resources is discussed in Response 1.5.8.</p> |

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| | | <p><i>landscape. Loss of connectivity, edge effects and disruption of ecological processes associated with a dense network of linear structures could undermine the biodiversity integrity of the study area. Impacts on species and ecological processes are likely to have cascading effects on other species and processes. The cumulative and unforeseen impacts of SGD on biodiversity, as well as effectiveness of mitigation, must be monitored. The outcomes of the monitoring programme need to dynamically inform ongoing strategic and regional level decisions on SGD.</i></p> <ul style="list-style-type: none"> • It is not acceptable to just count species and provide their status as is the usual way of assessing these impacts. • EAPs have to do better than provide the usual fare dished up in the reports we usually review, to ensure that biodiversity is properly studied so that the impacts can be effectively predicted and assessed. | | |
| 1.5.13 | Agriculture | <p><i>Impacts on Agriculture</i></p> <p><i>The biggest potential threat of SGD to agricultural production in the study area relates to the use and availability of water resources. SGD poses potential risks to both the quantity and agricultural usability of surface and groundwater resources. Opportunities may exist to use water produced through the SGD process for agricultural production purposes, should it be either of an acceptable quality or amenable to purification. SGD will not have a significant impact on agricultural productivity in the long term if the threat to ground water resources is adequately addressed. Any intervention that destroys current land-based livelihoods is likely to have a long-term impact on the resilience of both the area and its land users. Local land users draw on profound local knowledge to sustainably use these vulnerable land-based resources. Fragmentation of the landscape to accommodate SGD must be carefully planned to minimize the</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, potential impacts on existing land uses (see Sections 5.4.14 and 6.3.1.2) and the potential for loss of income by agricultural users (see Section 5.4.19 and 6.3.1.7 of the Scoping Report) will be considered in the next phase of the EIA. The potential impact on water resources is discussed in Response 1.5.8.</p> <p>In the next phase of the EIA, a sensitivity plan will be developed in order to identify potential ecological and socio-economic constraints. This plan, which will be based on specialist input (see Section 7.5), will consider, <i>inter alia</i>:</p> <ul style="list-style-type: none"> • Biodiversity features (including geology, soil, vegetation and surface water resources); • Sensitive habitat types (such as ridges, wetlands and rivers); |

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| | | <p><i>negative impacts on the viability of agricultural enterprises.</i></p> <ul style="list-style-type: none"> • We need a sensitivity index map for the areas where exploration is proposed. • The EAPs also need to quantify the amount of land that is deemed agriculturally sensitive as a % of the target area. In terms of water and food security, this is essential to have. • Existing livelihoods must be respected in terms of the resilience they provide to individuals, families and communities. | | <ul style="list-style-type: none"> • Threatened ecosystems; • Protected areas; • Groundwater resources / aquifer; • Heritage resources (including archaeology, palaeontology and cultural heritage); and • Soil resources / land use. |
| 1.5.14 | Access – Privacy, Safety and Security | <p><i>Access – Privacy, Safety and Security</i></p> <p><i>Shale gas exploration and exploitation will put the protection of the privacy and security of land users at risk. Currently land users enjoy high levels of control over the farm-based resources resulting in minimal losses of livestock and other property, and good levels of overall safety and security of rural communities, including land users, farm workers and their families. This is in part a result of minimal through-traffic on most farms, and relatively stable local populations. The anticipated influx of staff of shale gas companies and the situating of SGD operations on farm land will expose farm property, for example livestock, to theft and increase vulnerability of local communities to farm attacks and violence. Long-term monitoring and evaluation is essential to measure the effectiveness and efficiency of mitigation measures applicable to agriculture under all scenarios of SGD. The outcomes of these monitoring and evaluation processes must be fed back to relevant stakeholders to ensure continuous improvement.</i></p> <ul style="list-style-type: none"> • In view of the increasing crime rates in rural areas, the safety and security aspects must be effectively addressed | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, potential impacts on landowner safety and security will be considered in the next phase of the EIA (see Sections 5.4.18 and 6.3.1.5 of the Scoping Report).</p> |

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| | | <p>prior to exploration.</p> <ul style="list-style-type: none"> This cannot be left to local police stations and municipalities to bear the load in terms of already stretched and scarce resources. | | |
| 1.5.15 | Tourism | <p><i>Tourism</i></p> <p><i>Tourism is a growing economic sector with the capacity to drive growth and upliftment in rural areas. Tourism has become the largest economic sector in the study area in terms of number of enterprises. All study area towns are reliant on tourism, some more so than others. The rural landscape is an important resource for specialised tourism niches, such as ecotourism, agritourism, hunting and adventure tourism. This has dispersed tourism activities into the rural areas of the study area. Tourism is the fastest growing sector in most Karoo towns, thus its importance in the study area is expected to further increase in future.</i></p> <p><i>The groups are: business tourists and those visiting friends and relatives (VFR); people travelling through the region; and niche tourists who actively seek out the Karoo as a destination in order to experience ecotourism, adventure tourism, agritourism, culinary tourism, hunting, stargazing, etc. Business and VFR tourism is expected to increase under SGD but might experience crowding out if shale gas workers use tourist facilities for accommodation in the towns of the N1, N6 and N9 routes. Tourists passing through the study area would experience traffic densification and possibly also crowding out in these towns. Niche tourists are most sensitive to disruption of peace and quiet and are also the most dependent on rural areas. They would be consequently be the most sensitive to SGD.</i></p> <p><i>The most likely negative impacts of SGD on tourism are</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.2.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, the potential impact on the local economy will be assessed in the next phase of the EIA (see Sections 5.4.19 and 6.3.1.6 of the Scoping Report). This assessment will not only consider the possible contribution to the local economy through the creation of direct employment opportunities and generation of direct revenues, but will also consider the possible impact on tourism and existing land uses.</p> |

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| | | <p><i>expected to be traffic densification and its associated noise pollution. This results from slow moving trucks continuously ferrying materials needed for SGD, also through towns in the assessment area. Other impacts would include visual impacts, a loss of sense of place, potential pollution (especially water) and small earth tremors. All of these changes could impact on the value of the Karoo brand which is associated with an undeveloped rural landscape. Negative impacts on the tourism sector would increase the risk of losses of employment and value addition to local economies.</i></p> <ul style="list-style-type: none"> • This is one of the issues that is glossed over in the exploration documentation we have seen and should take into account how the SEA deals with it. • Tourism is a significant driver of the local and regional economies and this is in all the IDP's and SDF's of local and district municipalities. • Tourism is incompatible with mining and thus it is a significant issue to be raised and addressed. | | |
| 1.5.16 | Economy | <p><i>Impacts on the Economy</i></p> <p><i>Shale gas development could deliver highly significant economic opportunities, but the extractive nature of SGD also brings economic risks. In both respects it is a little different to other types of mining. The opportunities include an increase in the national and local economic activity and employment. The principal risks relate to the 'boom and bust' nature of extractive industries, and to the effects of large new inward investments on increasing the value of the South African Rand, which would make exports less competitive. Shale gas development would increase employment opportunities. The 'Big Gas' scenario would be associated with approximately 2 575 direct operational jobs in drilling, trucking and power generation with residents of</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>See Response 1.5.13.</p> <p>Impacts will be managed through the implementation of the EMPr (see Section 7.7 of the Scoping Report). The EMPr will provide recommendations on how to select, establish, operate, maintain and close the exploration activities through all relevant phases of the project life. The aim of the EMPr will be to ensure that the project activities are managed to avoid or reduce potential negative environmental impacts, and enhance potential positive environmental impacts. The EMPr will detail the impact management objectives, outcomes and actions as required, the responsibility for implementation and the schedule and timeframe. Requirements for monitoring of environmental aspects as well as compliance</p> |

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| | <p><i>the study area probably able to fill 15% to 35% of these positions, increasing over time as training proceeds. It should not be assumed that indirect and induced impacts in terms of jobs in the study area would reach the same level as direct impacts.</i></p> <p><i>The risk that SGD could 'crowd out' other economic sectors in the study area, such as agriculture and tourism, by causing rises in the prices of labour and other inputs, is generally low for the scenarios considered. An important proviso is that shale gas development should not seriously compete with local water users or pollute local water supplies. Local government finances are likely to be put under significant strain particularly for the large scale development scenario. Appropriate mechanisms will be needed to effectively alleviate this strain.</i></p> <p><i>There is a risk that the residual costs associated with SGD become the responsibility of society. Financial mechanisms will be needed to ensure that developers make adequate financial provisions to allow the state to deal with remediating remaining impacts in the event of pre-mature closure and longer term risks associated with the post-closure period. Adequate and unambiguous compensation mechanisms will be needed for land owners to cover the use of their land, and for other affected parties where environmental and other damages cannot be mitigated. Property values on farms near where drilling occurs are likely to decrease. This applies to places exposed to water supply or quality deterioration, and to places whose amenity value is reduced by visual, noise, traffic or security risks. This loss can be balanced by adequate compensation. Property values in towns, on the other hand, are likely to increase due to increased economic activity assuming key externalities such as those associated with increased truck traffic can be managed.</i></p> | | <p>monitoring and reporting will also be detailed.</p> |
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| | | <ul style="list-style-type: none"> • This issue is merely presented as a positive impact – all the jobs (over-estimated somewhat?), knock on effects for entrepreneurs and municipal coffers – you name it. However, if mining were such a money-spinner to so many, why did the Marikana Massacre occur and why are all the mining towns having so many service delivery protests? • So much to be managed and mitigated.... By whom and with what funds? | | |
| 1.5.17 | Social | <p><i>The Social Fabric</i></p> <p><i>Large investments in small-town areas create boomtown conditions in the local economy. SGD under the Small Gas scenario, and especially Big Gas scenario, will create a significant mining sector in the study area. This will be associated with increases in construction, trade (wholesale and retail) and business services, which are likely to have extensive multiplier effects in the local economy, as well as job creation in these sectors. However, any threat to water quality and quantity would have significant and rapid negative consequences for local boomtown economies.</i></p> <p><i>Actual or anticipated large investments in small towns will stimulate rapid in-migration of workers and work-seekers, some of them with families, which will challenge the often already-stressed capacity to deliver services. SGD will place pressure on housing, guest houses, hotels, caravan parks, and retail services. Housing demand is likely to overflow into informal settlements. Municipal planning and infrastructure provision typically has a fairly long lead time. Demands on water reticulation, electricity, sewerage, schools, clinics and local roads are likely to exceed capacity at least in the medium-term,</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | See Response 1.5.14. |

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| | | <p>even under intensive exploration (Scenario 1) and Small Gas.</p> <p>Rapid development is associated with disruption of the social fabric and feelings of insecurity. The in-migration of people typically experienced in boomtowns leads to an increase in undesirable social outcomes such as teenage pregnancies, alcohol and drug abuse, property crime and violent crime. This puts pressure on the police, social welfare and health services. The challenge to local people's sense of identity and the feeling of accelerating and out-of-control change from the status quo increases the sense of insecurity and threat to the social and moral fibre of the community among local people, which could result in conflict with in-migrants and xenophobia. SGD, while anticipated to raise the mean social welfare at national and local level, may perversely simultaneously accentuate social inequalities and schisms. Governance processes and institutions need to be strengthened to minimize such unintended outcomes.</p> <ul style="list-style-type: none"> • Ditto above comments! | | |
| 1.5.18 | Health | <p><i>Impact on Health</i></p> <p>The health status of the present local population in the study area is below national average, making them more vulnerable to adverse human health effects from SGD. This is despite the perception of the Karoo as a healthy environment, and is largely related to poverty, inadequate housing, unsafe water and sanitation, and insufficient health infrastructure. Investment in health infrastructure and improving socio-economic status, arising from SGD or other sources, would improve the health outcomes in the communities. People living close to shale gas infrastructure (well-pads and roads) can anticipate negative health impacts through air, water and noise pollution. Through</p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases. SLR is of the opinion that the need for a baseline health assessment would only need to be considered, as part of a future environmental assessment process, if a resource were to be identified for possible production.</p> <p>With regard to the proposed exploration work programme, the potential impact related to increased noise levels will be assessed in the next phase of the EIA (see Sections 5.4.16, 6.3.1.3 and 7.5.5 of the Scoping Report).</p> <p>The potential impact on air quality is discussed in Response 1.5.3.</p> <p>The potential impact on water resources is discussed in Response</p> |

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| | <p><i>mitigation and exclusion zones the anticipated human health impacts on communities can be reduced.</i></p> <p><i>SGD workers are potentially directly exposed to toxic substances for extended periods. Short-term dermal and respiratory symptoms are common among SGD workers. Some cases of death have been reported in countries with a history of SGD. Airborne silica exposure at the well-pad is an important cause of respiratory issues. Mitigation options, such as engineering solutions and personal protective equipment, can substantially reduce the workers' exposure.</i></p> <p><i>Baseline monitoring is crucial to attribute a future negative or positive impact of SGD on human health in the study area. Currently the available information on health issues in the study area is inadequate to form a baseline. Metrics such as incidence of asthma and other respiratory problems, dermal irritations (rashes), cardiac, cancer, birth weights, birth defects, APGAR scales, kidney and liver, infertility, neurological impairment need to be monitored. Uncertainties in the chemicals to be used and evidence of the health impacts that might be expected are the major restriction in the health impact section of this study. The assessment is based on international data and experience.</i></p> <p><i>Many of the chemicals used in SGD do not have sufficient health data associated with them to make an assessment. Since the activity of hydraulic fracturing is relatively new in relation to the time needed to assess long-term health effects as well as trans-generational effects, scientific evidence that can be used with certainty is scant, but some of the chemical used are known to have long-term and transgenerational health effects. Detection of health impacts resulting from SGD will require baseline and ongoing monitoring for air and water quality, and health, especially for health symptoms associated with SGD. This will need to be carried out prior to initiating the activity to enable</i></p> | | 1.5.8. |
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| | | <p><i>ascribing any future health effects to a specific cause. Health issues should be recommended for inclusion in the Regulations for Petroleum Exploration and Production, which currently do not consider them directly.</i></p> <ul style="list-style-type: none"> • The poor will get poorer in every which way! • Who will do the baseline health assessment, where and by when? | | |
| 1.5.19 | Sense of Place | <p><i>Sense of Place Values</i></p> <p><i>There is insufficient underlying research and documented evidence for this assessment to adequately evaluate the issue of sense of place. There is not one, but are several, "senses of place" in the Karoo. Some of have local significance, while others are sensed by people living outside the area (for instance, by tourists), and perhaps never visiting the area (for instance, the senses of place resulting from elements of scientific significance or artistic representation). The multiplicity of senses of place has been identified from publicly available literature or media and potential areas of conflict or sensitivity highlighted.</i></p> <p><i>Shale gas development in the Karoo will affect values associated with sense of place, in some cases positively and in others negatively, and in some cases irreversibly. Sense of Place values are seldom adequately addressed in public participation processes in EIAs and development processes, although they often turn out to be major issues. For them to be adequately addressed would require detailed empirical research to elucidate the specific sense of place values in particular contexts. One way to fill this critical gap would be to include such investigations in studies such as EIAs, Spatial Development Frameworks (SDFs) and Environmental Management Frameworks (EMFs). It is recommended that both quantitative</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, activities would of short duration, limited extent and localised such that no real change to the land or sense of place would occur. Unlike with mining there would not be disturbance or sterilisation of large areas of land. As such a change in the sense of place is highly unlikely.</p> |

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| | | <p><i>(Likert type surveys) and qualitative (ethnographic type interviews) be applied to gauge sense of place. The results of this research should become public and made part of the processes which inform decision-making on specific SGD applications.</i></p> <ul style="list-style-type: none"> • This highlights the need for a moratorium until the regulators have a better handle on what is needed prior to applications being submitted for authorisation. | | |
| 1.5.20 | Visual | <p><i>Visual, Aesthetic and Scenic Resources</i></p> <p><i>SGD and its associated secondary developments, without mitigation, is likely to lead to the visual fragmentation of Karoo landscapes, and transformation of its pastoral or wilderness character to an industrial connotation in the affected areas. The visual impacts of SGD must be considered in conjunction with visual impacts resulting from other developments, for instance the possible uranium mining and the roll out of wind and solar energy in the study area. Mitigation consists primarily of restricting SGD activities in visually sensitive locations. A number of scenic 'hotspots' in the karoo could be affected by SGD. These need to be taken into account in EIAs and other permitting processes. Currently, visual resources have no specific legal protection in South Africa, except under the definition of the National Estate in the National Heritage Resources Act. It is advisable that national, provincial and local authorities enact legislation or by-laws to prepare for the effects of possible shale gas activities on visual resources. There is no standard approach to mapping or rating the value of scenic resources in South Africa.</i></p> <p><i>The scenic resources identified in this assessment correlate closely with areas of biodiversity and heritage significance as</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, activities would of short duration, limited extent and localised such that no real change to the land or aesthetics would occur. The primary mitigation to limit environmental impacts and risks would be the appropriate siting of any exploration activity at a locality that is of low sensitivity. It is recommended that the final site location should, if necessary, be adjusted to avoid identified sensitivities and the final site plan should be submitted to PASA for approval. These specific requirements for such detailed site assessments would be identified in the EIA phase and included in the EMPr (see Section 5.10 of the Scoping Report).</p> |

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| | | <p><i>described in other sections. The escarpment is a particularly sensitive feature of the study area, although impacts of varying significance could occur anywhere.</i></p> <ul style="list-style-type: none"> • The assessments so far have not shown which areas are sensitive from this point of view! | | |
| 1.5.21 | Heritage | <p><i>Impact on Heritage Resources</i></p> <p><i>The risk to heritage resources from SGD varies markedly from place to place within the study area. It depends on the type of heritage resource, the specific locations of well pads, access roads and related infrastructure, and the amount of induced seismic activity that occurs. There is no part of the study area where there is no risk to heritage resources. The impacts on heritage from the small and large SGD scenarios could be high, but are typically confined to particular areas. There is a potential for extensive but low intensity impacts from SGD exploration. Care in the exact positioning of the infrastructure and the implementation of management and mitigation measures during all phases, as required by legislation, will help to reduce the significance of the impacts that would be experienced. The cultural landscape is the most difficult aspect to deal with in terms of mitigation. Minimising the amount of landscape scarring that takes place and effective closure phase rehabilitation are key aspects of heritage impact mitigation.</i></p> <p><i>Current institutional capacity in terms of application of the National Heritage Resources Act (NHRA) is limited and a marked improvement will be required before SGD commences. The National Heritage Resources Act outlines procedural due diligence for heritage management and development. The status quo shows that many provincial and local authorities have yet to comply with the provisions of the NHRA. The functionality of the</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, the potential impact on heritage resources will be considered in the next phase of the EIA (see Sections 5.4.12, 6.3.1.1 and 7.5.3 of the Scoping Report). Since the exact location of a site is flexible and can be adjusted to accommodate environmental sensitivities, impacts on heritage resources can generally be avoided with the placement of activities on sites that do not have any heritage resources.</p> |

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| | | <p><i>single national and three provincial heritage authorities overseeing the study area is highly variable and this will affect the quality of decision-making and commenting. The South African Heritage Resources Agency, as the national authority, should take responsibility for all applications related to shale gas development and source comment from relevant provincial and local authorities.</i></p> <ul style="list-style-type: none"> • We trust the Heritage Impact Assessment is done thoroughly and addresses all these issues effectively. | | |
| 1.5.22 | Noise | <p><i>Noise</i></p> <p><i>Acoustic noise has a marked impact on the physical health of people and on their psychological wellbeing. The Karoo area is a quiet area. Residual day- and night-time noise levels are approximately 33 dBA and 25 dBA respectively (LAeq). This is 10 dB below the typical levels published in standards for rural areas. This is a significant difference. Subjectively a change of 10 dB is perceived as a doubling of "loudness". Exploration phase noise impact is likely to be localised and of short duration. Noise would be generated predominantly by trucks, and would only be noticeable in the immediate vicinity of exploration activities, for the duration of the activities. The construction, operation and decommissioning phases of SGD will likely cause noise impacts for humans and animals on sites within about 5 km of the sites. Noisy activities during the operational phases are expected to run constantly (day and night) for 6–8 weeks at a time, repeated 15 every 6 months at every wellpad, for a period of a decade or two, with quieter activities between. Night time noise impacts are therefore most likely, when residual noise levels are at a minimum. There is additionally a risk of noise impacts emanating from the surrounding roads due to increased heavy goods vehicle road traffic, especially under a Big Gas</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>With regard to the proposed exploration work programme, the potential impact related to increased noise levels will be assessed in the next phase of the EIA (see Sections 5.4.16, 6.3.1.3 and 7.5.5 of the Scoping Report).</p> |

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| | | <p><i>scenario, and if the roads used are otherwise quiet and seldom used. Proposed sites of noise generating activities will need individual Noise Impact Assessments in accordance with SANS 10328 to determine the likelihood and severity of these impacts. Noise control, attenuation and monitoring will likely be required for all sites. The extent of the required measures will be determined by the Noise Impact Assessment.</i></p> <ul style="list-style-type: none"> • This is a significant impact with really easily implementable requirements shown above. • Remember that noise goes outwards and upwards from the source, so is locality specific! Hence the need to know where the target sites are and the assessments done there, not generally! | | |
| 1.5.23 | Planning | <p><i>Integrated Spatial and Infrastructure Planning</i></p> <p><i>Towns in close proximity to SGD activities will experience growth exceeding projections based on past trends. Enhanced resource and institutional capacity to plan for, and address increased service delivery demand for housing, water provision, social services, electricity and roads will be required due to increase in demand by households and local enterprises (both because of new direct jobs and spin-off opportunities), as well as high probability of increased in-migration and expected increase in indigent population. The most significant direct impact on infrastructure is expected to result from the construction of a network of geographically scattered private local access roads and well pads. Even though most of this will probably be on private land, it will have implications for the need for scarce construction materials. This will have a major impact on availability and cost of scarce raw materials such as gravel and water. Action will be required to source construction material and identify and approve local sites for extraction of raw materials.</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | Towns are unlikely to experience growth based on the proposed exploration work programme. This is an issue that would need to be considered should a resource be identified for more advanced exploration or production (refer to Response 1.5.1). |

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| | | <p><i>This will be accompanied with the increase in number and complexity of land development applications and required expanded technical capacity development.</i></p> <ul style="list-style-type: none"> • If water and building sand availability (and sand mining) is already causing environmental harm and conflict how will this be managed? • Who will bear the cost – society or the applicants? | | |
| 1.5.24 | Traffic and planning | <p><i>The increase in traffic by heavy vehicles on regional roads will be substantial. This will require mitigation in terms of initial road rehabilitation to an adequate baseline and an increased cycle and quality of maintenance, avoidance of certain routes as well as development of expanded and enhanced law enforcement and safety and emergency response capacity. There may also be a need to develop pipelines and re-establish the rail infrastructure in the sub-region to reduce the pressure on the road infrastructure. There is thus a critical need to audit and establish the current baseline condition and usage of national, regional and local roads to inform mitigation responsibilities in future. Regulatory uncertainties and limited municipal capacity to facilitate an ongoing processes of land use and land development applications associated with shale gas exploration and development could pose risks to already limited municipal governance capacity and result in regulatory bottlenecks. This could impede effective decision-making and sustainable land development.</i></p> <p><i>Challenges with the rolling out of the Spatial Planning and Land Use Management Act, 15 2013 (SPLUMA), includes: major capacity implications for municipalities; procedural uncertainty with regards to land use and land development applications; and differences in its application between the provinces, with the Western Cape Land Use Planning Act, 2014 (LUPA) applicable</i></p> | Judy Bell, Frack Free South Africa, via email, 12 July 2016 | <p>Refer to Response 1.5.1 with regard to potential future exploration or production phases.</p> <p>The proposed exploration work programme would result in a minimal increase in traffic volumes (see Sections 2.3.5 and 2.3.6 of the Scoping Report). None of the proposed exploration activities require the establishment of any permanent infrastructure (including roads). Sites would be accessed on existing roads or farm tracks as available.</p> <p>Potential impacted related to increased traffic volumes relating noise (see Response 1.5.20), air quality (see Response 1.4.4), public / landowner safety and security (see Response 1.4.13) and damage to infrastructure, including roads (see Sections 5.4.15.2 and 6.1.4.2) will be assessed in the next stage of the EIA.</p> <p>The phased approach to exploration, which could be nine years in duration (see Response 1.5.3), should allow government sufficient time to consider implications of possible developments and projected growth and undertake the necessary pro-active planning, monitoring and control of impacts on land uses and activities.</p> |

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| | <p><i>in Western Cape Province. Clarification of legal and implementation practices in the land use and land development regulatory framework, as well as provincial support to municipalities in development of appropriate municipal planning by laws, the update of spatial planning and land use management instruments, and the establishment of institutional capacity for municipal planning tribunals and compliance monitoring will be highly supportive. Integrated spatial planning will be essential to deal with the multi-scaled and intersectoral issues that result from activities of magnitude and duration of shale gas development and downstream development. Spatial Development Frameworks (SDFs) and Integrated Development Plans (IDPs) plans in the area will require an update. Firstly, to ensure that they consider implications of possible developments and projected growth and facilitate participative visioning, planning, prioritisation, budgeting and mitigation across possible shale gas exploration and production periods and municipal planning cycles. Secondly, to fulfil new regulatory functions, provide guidance to a range of sector plans (i.e. integrated housing and transportation plans) and enable the infrastructure pipeline necessary to design, procure, construct and maintain infrastructure. Given a host of other activities in the area, the preparation of a Regional Spatial Development Framework (RSDF) (in terms of the Intergovernmental Relations Framework Act, 2005 (IGRFA), and the Spatial Planning and Land Use Management Act, 2013 (SPLUMA)) could contribute to proactive intergovernmental planning between the respective local and district municipalities, provinces, relevant provincial and national sector departments and other role players (including local communities interest groups business, and state owned enterprises such as ESKOM and SANRAL). The governance capacity for coordinated and integrated spatial and infrastructure</i></p> | | |
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| | | <p><i>planning, investment and management to deal with the implementation of potential shale gas exploration and development is currently limited.</i></p> <p><i>Given the anticipated extended timeframes, geographic uncertainty and phased approach to shale gas exploration and production activities, the establishment of regional (cross provincial) spatial and integrated development planning capacity (supported by specific task teams) could enable a cost effective shared capacity to provide the necessary technical capacity to inter alia assess applications, assist with pro-active planning, monitoring and control of impacts on land uses and activities.</i></p> <ul style="list-style-type: none"> • How will these recommendations be implemented with these current applications? | | |
| 2. | Categories | Process Related Issues: Objections | | |
| 2.1 | | <p>Folks honestly, we don't want it in our country or province, for every reason complained about here and abroad. ROG are simply lying about all the pollution effects of Fracking. We the population really aren't that stupid, only limited by the laws of our country which seem to look after big corps more than the little people hinder us from stopping your activities. Clearly you are not going to listen to our concerns, your mumbo jumbo pack of lies leaves us with no other view,. Why not just leave our dear nature alone, we want none of your snake oil thanks,..</p> <p>Please make sure ROG leave our province and country with due haste before they touch an inch of our soil !!!</p> | Dion van Zyl, Email, 19 April 2016 | Your objection is recorded. |
| 2.2 | | <p>Please note my objection to the abovementioned applications to explore for oil and gas and please register me as an interested or affected party in all applications; PASA REF: 12/3/291ER, 12/3/294, 12/3/295, 12/3/317, 12/3/318.</p> <p>Issues and concerns: Environmental, Health, Community, Economic Water, Climate Change.</p> <p>I reserve my right to elaborate and/or add to these issues and</p> | Jackie Nightingale, Email, 27 June 2016 | Your objection is recorded. |

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| | | concerns at a later stage. | | |
| 2.3 | | Issues and Concern: Environmental, Health, Community, Economic, Water, Climate Change. I reserve my right to elaborate and/or to add to these issues and concerns at a later stage. | Mark Gendall, Ben Yu, Munadiya, Shehzaahi, Strini Abrahams, Sharda Abahams, David V, Kwenzoleohle, Justin Ward, Dane Anderson, Waseera, S Gumede, Shawn Gardall, Zandalee Mohunlal, Sophi Naidoo, Nazira, Ammara Khan, Patricia Nkonzo, Sanele Ntuli, Derrick Ramasamy, Sindi Nlovu, Afaha Mzak, Thembile Mhlongo, Anita, Khumalo Mzwandile, Vanessa Kristan, Rehman Haffejer, Jerry Parmasiven, Mogie Mohunlal, Email 28 June 2016 Melisizwe Zindela, Mr Mbatha, Maurice Sachse, Mr P Ramwaran, GP Jones, P R Andrews, Usha Naidoo, TT Dube, Mr Mbatha ZBI, Email 05 July 2016 | Your objection is recorded. |
| 3. | Categories | Technical Related Issues | | |
| 3.1.1 | Commercial | Just for clarity, you say Rhino is an independent company. Is the | Nkosi Thozama Zibi, | The parent company is in Texas. Rhino Oil and is a South African |

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| | | parent company from Texas? | Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | registered subsidiary of Rhino Resources Ltd. (Rhino) |
| 3.1.2 | | Is Rhino to other companies? | | We are Rhino Oil and Gas Exploration South Africa (Pty) Ltd. We are an independent exploration company which means we are not listed on the stock exchange. We are not affiliated to anyone else. (Rhino) |
| 3.1.3 | | Are you operating in the Middle East? | | Rhino is not operating in the Middle East. Independent or private company means we hold the company and public company means it is listed on the Johannesburg Stock Exchange. That is the difference between a private and public company. If you look at a company like Royal Dutch Shell, it was initially started by British and Dutch people and Statoil is owned by the Norwegians and Total is owned by the French. These are national oil companies that have now become major international companies. The independent companies are those that have no specific affiliation with any specific government. (Rhino) |
| 3.1.4 | | Can you name one specific company? | | Statoil is majority owned by the Norwegian government whereas Rhino has no affiliation to the US government. (Rhino) |
| 3.1.5 | | Is Rhino Oil and Gas affiliated with to other company? | | Rhino is not affiliated with any other companies. (Rhino) |
| 3.1.6 | | Are there any shareholders? | | There are shareholders in place but all of that is private information because we are a private company. (Rhino) |
| 3.2.1 | Other | How was the area for the exploration application identified? | Clr Ntombizanele Gloria Ntaopane, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | Rhino made use of geological maps from the Petroleum Agency who handle all the maps in the industry. We have purchased all the maps that are relevant to the area and decided that this area has potential because the maps look like other places that have shown potential. They are not always 100% correct and that is why we do exploration so that we can tell. Exploration starts with a big area and then it is narrowed down to the areas that show the most potential. In South Africa there are no experienced seismic or drilling crews which is why there need to be brought in from the United States and other parts of the world. Some work is tendered out to companies that are specialists in that particular field. This makes the operation safe and safety is very important to us. (Rhino) |
| 3.2.2 | | What made you choose this particular area for exploration? | Rev Mhlauli, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | |
| 3.2.3 | | Which farms are affected, especially those owned by white farmers? | Clr Jackie Bosman Magangana, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | |

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| 3.3.3 | | When we search for water it is done on the surface and there is no need for machines. How do you search for gas, how can you know where it is? | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | There isn't only one machine that can show where gas is. We use a lot of machines for the process. It's a process of elimination. It starts with aerial surveys, then core hole drilling and then seismic surveys so there isn't only one special machine. The core holes that are drilled will tell you if there is water, gas, coal, sand-stone, mud etc. The core hole samples tell you everything about that area. (Rhino) |
| 3.4.1 | Monitoring and rehabilitation | Everything that is done during the exploration project must not be harmful and must benefit the local people because should anything happen that harms the environment or the local people the local leaders will be held responsible. | Clr Vuyisile Majikijela, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | This is noted. |
| 5. | Categories | Seismic Related Issues | | |
| 5.1.1 | Safety | How safe are the vibrator trucks? | Clr Jackie Bosman Magangana, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | The vibrations from the truck create acoustic energy which works in a similar way to a sonar scan of a pregnant woman to create a visual image of a baby in the womb. However, these vibrations do not cause the ground to shake. There are safety guidelines that stipulate how far the vibrator truck must be from different types of infrastructure and these will be included in the Environmental Management Programme so that Rhino will have to observe the guidelines when it carries out the exploration work. |
| 5.1.2 | | How far away must it be from the traditional mud houses so that it does not affect them? | | |
| 6. | Categories | Drilling Related Issues | | |
| 6.1.1 | Chemicals to be used | Are the chemicals that will be used if the drilling for oil and gas is approved safe for the community. | Mofumahadi RIP Sibi, Sibi Traditional Authority Scoping Meeting, 26 January 2016 | In the beginning, during the exploration process, no chemicals are used but further down the line if the exploration shows that there is potentially something worth investigating further then an exploration well will be drilled which would require the use of chemicals. The chemicals that are generally used are like a soap which make the drilling easier but they do not come into contact with the surrounding earth or groundwater because they are encased within a metal sleeve all the way down. The NGOs like to tell the people that we are coming to poison your drinking water but they are using examples of what happened 50 years ago and the technology has improved so much since then. The truth is that all the water and chemicals are pumped out again and the water can be cleaned so that it can be used again for agriculture or even drinking water. This is being done safely in the United States but like anything if it is not done properly then there can be problems with pollution but Rhino Oil and Gas will use the best and most safe technologies to ensure that |

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| | | | | the work is done safely and properly. |
| 6.2.1 | Drilling Activities | <p>Is there is a machine which can show us where the minerals are because we do have machines that can show us where the water is here in the villages. Some of the drilling we do takes about a week or a month depending on the type of rocks we encounter.</p> <p>When you take too long people will get frustrated because you are busy and they do not see anything that will benefit them. It is best you explain everything before doing anything because people are scared.</p> <p>You said it takes three years to do this exploration work. The problem is people come and give hope to the locals and then they do not deliver. That is why they always ask the chief what will happen after this?</p> <p>The chief and I want to make sure that we have plans which can be shown to the people and you need to make sure that you provide regular feedback as you go on with your work.</p> | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | <p>Oil and gas exploration is very different from water drilling. There is no one machine that can tell us what is there and we have to do a process of elimination. Even the biggest companies in the world do the same process, one after the other. The results will then tell you which area is better but the process takes approximately three years. It's not like we will be drilling everywhere. We only require permission to drill ten holes in the area we have applied for so we can get an idea of where the minerals are.</p> <p>The information will be computerised and will give us an idea of what is there. Using geological information the scientists are able to determine the areas with potential. If there is something we extract locally, there will be many side businesses that will benefit, for example security, transport, grocery stores, accommodation, etc. There are so many benefits that will come if something is found. If something is found in a smaller area Rhino will have to reapply for a permit to explore in that smaller area. For now Rhino has to work with a bigger area to determine where the oil and gas is. (Rhino)</p> |
| 7. | Categories | Air Quality Related Issues | | |
| 7.1.1 | Pollution | What are the disadvantages of the project and specifically with respect to air pollution. | Clr V M Mlandu, Matatiele Municipality's Council Scoping Meeting, 25 January 2016 | No significant air quality emissions are anticipated. |
| 8. | Categories | Heritage and Paleontological Related Issues | | |
| 8.1.1 | Medicinal herbs | Local traditional healers rely on the natural resources for their traditional medicines. What will happen if the project has a negative impact on these natural resources? | Clr Sarah Nosindabantu Mdlazi, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | The EIA process is undertaken to identify where there are sensitive areas. It is important that the local communities take part in the public participation meetings so that they can point out things like the places where they gather traditional medicines so that areas that have special significance are protected. For the proposed exploration, work there will be minimal impact because there will be a maximum of 10 core holes drilled in the whole study area and some seismic surveys. |
| 9. | Categories | Socio-economic Related Issues: land use, properties and daily activities/ livelihood | | |
| 9.1.1 | Land use | What will happen if gas is found in residential areas? | C.M. Mlonyeni, Amahlubi Traditional | Rhino cannot work in a town or city. Rhino will not poison the water because that will ruin the company's reputation and the company will not |

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| | | | Authority Scoping Meeting, 28 January 2016 | be allowed to explore in any other area. Rhino cannot vandalise people's property and they will have to respect everyone. Rhino wants to make it a respectable business so we can work with people in the future. (Rhino) |
| 10. | Categories | Socio-Economic Related Issues: Access to land | | |
| 10.1.1 | Access to land | How do you get access to land to do your exploration work? | C.M. Mlonyeni, Amahlubi Traditional Authority Scoping Meeting, 28 January 2016 | Rhino cannot explore in a residential area. If it is within farming areas then an exploration activity would have to be a distance away from that farm house. An access agreement would be negotiated with the with the land owners in order to work on their land. The environmental consultants will determine the safe working distance from the house. |
| 11. | Categories | Socio-Economic Related Issues: Benefits and compensation/ set offs | | |
| 11.1.1 | Benefits | What are the benefits of the exploration stage to the community? | Mr Vukile Matyeni, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | During the exploration stage Rhino will not be making a profit therefore the benefits for the people on the ground will be limited. It is only later when they start the production stage that there will be benefits and Rhino will start paying royalties and tax to the Government and create employment. The first seven years Rhino will only be spending money on exploration but should they find discover something that is commercially viable and receive a production right, the opportunities will come. |
| 11.1.2 | | It is understood that the government owns what is below the ground and the community owns what is above the ground. Does the South African government have a say in how this business is run? The gold mines make a lot of money yet the surrounding communities are poor. We as the people who own the land can't just allow anybody to come and exploit the land without there being a win-win situation and this can only happen if we participate in the resources from our land. How exactly will the people benefit from this project? | Nkosi Thozama Zibi, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | The MPRDA states that companies that hold production rights should have BBBEE participation and that they must also have a Social and Labour Plan that sets out how they will benefit the local community. At the moment Rhino is still applying for an exploration right. If production commences companies must also pay taxes and royalties to the government and establish various community development programmes and partnerships with the local community. These programmes can only happen in the production phase when the company starts making money because in the exploration phase for the first 7 years or more the company is only spending money and not making any profit. |
| 11.1.3 | | It is understood that Rhino is investing money in the project and they would therefore want a return on their investment. It is also important that the local community benefits from the resources that come from their land. Perhaps it is the government that should answer the question of how the community can benefit from such projects. It is important for the community to be treated fairly. By way of example MTN pays the traditional authority R 800. 00 per month rental for one of its cell phone masts in the Amahlubi area but in Johannesburg it pays R 8 000.00 rental for the same | Nkosi Thozama Zibi, Elundini Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | During the exploration stage there are minimal impacts to the environment and few benefits for the local communities beyond Rhino spending money in the local area. The exploration phase is expensive and Rhino could find nothing below the surface and then there would be no project. However, if Rhino does discover oil or gas that can be extracted then there will be major benefits for the local community and the local economy which will be managed through social responsibility programme. |

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| | | mast. This kind of situation cannot be allowed and rural communities should be treated fairly. We want to know what the positive impacts of the project in the area around it will be. | | |
| 11.1.4 | | Should oil or gas be found beneath the surface, what other ways will the community benefit besides job creation? | Clr Shukumisa Albert Ndlela, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | In terms of benefits these will vary through the different stages of the project. We don't want to create the impression that there will be lots of jobs during the exploration stage because exploration is a highly technical field that requires skilled labour. The benefits during the exploration phase will mainly be the services and supplies that the drilling and seismic crews will need such as accommodation, food and materials. During exploration the company will be spending money and not making a profit. The real benefits will only start coming should something be found and the project moves into the production phase. |
| 11.1.5 | | If the real benefits will not come for 7 or more years then there will be problems with the community. The staff that will be brought in for the exploration stage should find accommodation in the local areas rather than in town so that the community benefits in the early stages of the project. Ms McLeod said that when the core holes are drilled during exploration they will be left open and unattended. | Clr Jackie Bosman Magangana, Matatiele Municipality's Affected Ward Councillors Scoping Meeting, 25 January 2016 | The people who are against this project have said that Rhino will come and promise everybody lots of jobs to win them over and we want to make it very clear that during the exploration phase there will not be a lot of benefits. The benefits will only happen if something is discovered and the project goes into production. At the same time the exploration work does not have much of an impact on the environment and local communities. Most of the problems that Ms McLeod has spoken about relate to the production phase and the worst case scenarios (if something goes wrong and the work is not done properly). If the drilling team is drilling say 40km from Matatiele then they would either build a camp or rent a local house rather than travel to town every day. There will be a maximum of 10 core holes drilled in the whole area and these core holes are about 8cm in diameter. Once the holes have been drilled they are closed off with steel and concrete so that no contamination can occur and nothing can fall in them. |
| 11.1.6 | | How will this project help the community? When will the community start benefitting from this project proposed by Rhino. | George Moshoeshoe– Firewise SA, Moshoeshoe Traditional Authority Scoping Meeting, 26 January 2016 | This stage doesn't have many opportunities for employment but should there be any minerals found, there will be another application for the rights to start production. When production is in place the communities will then start benefitting from the project because more labour will be needed at this stage. The production stage will create hundreds of direct and indirect jobs. |
| 11.1.7 | | What are the positive and negative aspects of the project? How will the community benefit from the exploration on their land? | Mofumahadi RIP Sibi, Sibi Traditional Authority Scoping Meeting, 26 January | In the beginning there will not a lot of direct benefits because the drilling work for the core samples and carrying out the seismic survey are specialised tasks that will be done by people from outside the Matatiele area. However, there would be indirect benefits. For example, should it |

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| | | | 2016 | be decided to drill a core hole next to this village, we would need to hire a few local people for things like security and the drilling team would have to find accommodation and food from the local area and purchase all its supplies locally. The real benefits would only happen should Rhino be fortunate enough to find a commercially viable resource of oil or gas in the area and the project proceeded into the production phase. If this happens then there would be direct jobs created for local people and a lot of supplies and services would also be sourced locally. In terms of the legislation if the project goes into production there would also be a requirement for Rhino Oil and Gas to have social responsibility programmes in the local communities. |
| 11.1.8 | | I understand that if Rhino finds oil or gas and start production then they will have programmes that benefit the community but is it not possible to have some smaller programmes for the community during the exploration phase. | Phomolo Sibi, Sibi Traditional Authority Scoping Meeting, 26 January 2016 | During the exploration phase Rhino Oil and Gas will only be spending money at their own risk and they will not be making any profit. They will only make money if they find something and then get a production right to extract oil or gas so it is only then that they can consider social programmes for the community. It must be noted that even if Rhino drills a core hole in the Sibi area during the exploration phase the drilling only takes about a month so there is not much time spent in any one community. |
| 18. | Categories | Socio-Economic Related Issues: Employment and Procurement Opportunities | | |
| 18.1.1 | Service providers | When looking for water we know we must drill about 18 to 26 bore holes. We want malls and petrol stations to be built in the area but it is very difficult to build them if you say the land might have oil underneath. I want you to take my particulars so we can work with Rhino and make sure we tell people what is happening now because you said this might take three years. You must do your exploration work quickly so that we know what is underneath our land so we can develop our land. | Paulos Mayekiso, Amahlubi Traditional Authority Scoping Meeting, 26 January 2016 | |