



TINNIKE GODDHALS (GRAAFF-REINET ADVERTISER, GROUP EDITORS)



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HEATHER DUGMORE



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KAROO UNITES AGAINST SHELL

'It would be criminally negligent of Shell to push ahead with their exploration application without gathering comprehensive research and data on the Karoo's highly sensitive water systems, geology and natural environment,' international business leader **Johann Rupert** told farmers, landowners and community members at Shell's public participation meeting in Graaff-Reinet. **Heather Dugmore** reports.

TOP FROM LEFT TO RIGHT:

- Business magnate **Johann Rupert** at the Graaff-Reinet meeting.
- Adam Dodson, Shell's Holland-based exploration manager of unconventional oil and gas new business, said they haven't decided which chemicals they'll use, but one possibility is similar to a chemical used in ice cream.
- Ed Kingwill, farmer and chairperson of the Rooihogte Farmers' Association, Middelburg.
- Brent Baxter, business unit leader for environmental services at Golder, listening to Johann Rupert at the Graaff-Reinet meeting.
- 'All town councils in the affected areas should be consulted, because there are ever-increasing pressures on their water supplies to meet the needs of burgeoning townships,' said farmer and attorney from the Schoombie district, Mike Ferrar.
- Bradley Gibbons, project leader of the Karoo Crane Conservation Project.
- "You want to come onto our land and do what you like, but you can't tell us how you'll compensate us," said Karoo farmer and Agri EC council member Christo Botha at the Hofmeyr meeting.
- Princess Irene of the Dutch royal family not only owns a Karoo nature reserve – her family is a major shareholder in Shell. She's pledged to fight Shell's application.

AT A MEETING IN GRAAFF-REINET on 28 January, more than 150 farmers, landowners and community members called on global energy company Shell to halt the submission of three applications to explore for shale gas over 90 000km² in the Karoo, until comprehensive research has been done on the impact the exploration will

have on the region's highly sensitive water systems, geology and natural environment.

Certainly, this can't be accomplished in the two- to three-week time frame envisaged for compiling the Environmental Management Programme (EMP) required by the Petroleum Agency of South Africa (PASA), which administers applications as a designated agent of the minister of energy.

No science to support lower carbon-emission claim

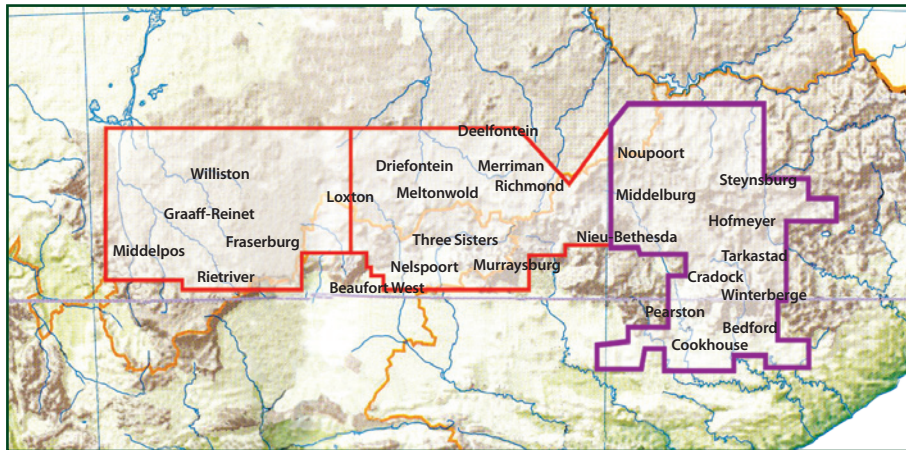
Shale gas is being punted as having a lower carbon emission than coal. However, environmental consultant Fritz Bekker says there's no science to support this claim.

"One-size-fits all studies can't be generally applied as there are vast differences in the geology from region to region, as well as vast differences in the cleanliness of the fossil fuel, be it coal, shale gas or any other fossil fuel, as is evident in South Africa's coal – some of which is high quality and 'clean', and some of which is low quality or 'dirty'," he explains.

Total carbon emissions should be calculated for the entire life cycle of a project and emission calculations can't be generalised throughout the industry.

The carbon footprint of a power plant that's fed by a nearby coal mine might be lower than that of a gas-powered power plant, where energy inputs may be high during exploration, extraction, transport, processing, maintenance, plant operation and distribution.

"The impacts of coal as a fossil fuel throughout the life cycle of coal-fired power stations are well known in South Africa, and many mitigating technologies have been developed successfully for local conditions," says Bekker. "A life-cycle assessment should be performed on a new energy source, such as the shale gas in the Karoo, before misleading statements can be made that it's a 'clean' source of energy."



Royalty enters the fray

Princess Irene of the Dutch royal family is adding her voice to the Karoo's opposition. Her support is significant, bearing in mind Shell's full name is "Royal Dutch Shell" and the Royal Dutch family is said to have substantial shareholdings in the company.

Princess Irene was not in South Africa at the time of the Graaff-Reinet meeting but she instructed the managers of her nature reserve in the Nieu Bethesda area to pledge her support and active participation in the fight against Shell's application.

"To try complete an EMP in a couple of weeks for the highly controversial fracking process they're proposing – which has never been done in the Karoo – is to risk possible ecological damage that could be worse than BP in the Gulf," said international business leader Johann Rupert, who owns farms in the Karoo and is active in the sustainable development of the region.

"This fracking process is targeted for 4km to 5km underground. What happens if things go wrong? Shell doesn't have enough assets in South Africa to cover a potential fallout of this nature. They're playing Russian roulette with the Karoo."

Farmer and environmental consultant Fritz Bekker describes fracking as "planting chemical bombs underground".

At Graaff-Reinet and other highly charged "public participation meetings" involving "interested and affected parties" held across the Karoo, representatives from Shell and Golder, the company hired to compile the EMP, failed to say where they would source the water required for the

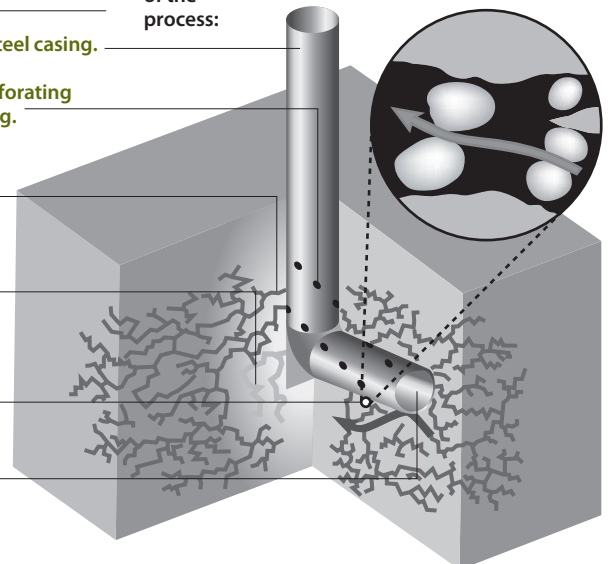
WHY READ IT?

- Shell is proposing a fracking process in the Karoo, which could cause ecological damage worse than that of BP in the Gulf of Mexico.
- Shell failed to assure "affected parties" that they would compensate them in the event of contamination, destruction or depletion of water sources and the natural environment.

The process of hydraulic fracturing

Hydraulic fracturing, or fracking, uses fluids pumped at high pressure to pulverise rock and release the oil and gas trapped deep underground. Here are the details of the process:

1. A well is drilled and lined with steel casing.
2. Holes are made by a special perforating gun shooting through the casing.
3. Under high pressure, fluid is pumped through the holes and into the rock. Pressure fractures the rock.
4. Fluid carrying sand is pumped into the fractures.
5. Gas pushes the fluid back out. Sand remains, holding the fractures open.
6. Natural gas trapped in the rock travels through the fractures and out of the well.



SOURCE: DENVER POST RESEARCH

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←○ water-intensive fracking process, or what chemicals they would use.

Neither could they say how many boreholes they intended sinking per square kilometre and how they would guard against contamination, depletion or destruction of the region's water systems.

'All farmers and towns in the Karoo depend on the water you're discussing and are severely water stressed, so go back and do your homework.'

They also couldn't say what research they had done into the Karoo's aquifer systems – a worrying omission, since leading geohydrologists have confirmed very little is known about these. Consequently, no-one can say fracking won't contaminate or decrease the yield of shallower aquifers used by farmers and towns in the Karoo.

"We welcome sustainable, environmentally sensitive development, but Shell's current approach could cause irreversible damage to the water systems and ecology of the Karoo," warned Rupert.

"Shell's intention to frack for shale gas affects the whole Karoo – and everyone who

lives there, irrespective of whether they stay on farms or in the towns. Yet when we asked Shell whether they think it's responsible to put together an EMP in a hurry and push ahead with their plans for exploration when there could be irreversible consequences, they were evasive and failed to comment."

A deafening silence

Shell also failed to give any assurances or guarantees that they'll compensate farmers, landowners and communities in the event of contamination, destruction or depletion of water sources and the natural environment.

"We're investigating the norms in South Africa for compensation," said Adam Dodson, Shell's exploration manager of unconventional oil and gas new business, at a public meeting held in Hofmeyr on 24 January.

Farmers responded by observing that there are no norms relating to this issue, because, as Dodson pointed out, "fracking for natural gas has never been conducted in the Karoo".

There was a deafening silence when Dodson was asked what the international best practices in terms of damage compensation were.

It's a lose-lose situation for farmers, landowners and communities, who won't receive any money if shale gas is located on their properties because government owns all mineral rights.

"You want to come onto our land and do what you like, but you can't tell us how you'll compensate us if, for example, our livestock is affected by contaminated water from your mining operations," said Karoo farmer and Agri EC council member Christo Botha at the Hofmeyr meeting, which more than 50 farmers, landowners and community members attended.

"We're committed to health, safety and sustainable development," Dodson reassured the gathering.

"What about the chemicals you use in the fracking process?" interjected a farmer in the front row.

"Yes, we do use chemicals, but we haven't decided which chemicals we'll use. What I can tell you is that one of the chemicals is similar to a chemical used in ice cream," said Dodson.

Pushed to list the chemicals, he declined, saying it's "a long list". Golder assured those who asked for a copy of the list of chemicals that one would be provided, but this has yet to materialise.

A precious resource

Dodson's PowerPoint presentation featured an image of a drilling rig comfortably positioned alongside some hay bales on a land.

He explained that once the exploration process is approved, a temporary drilling rig is established at the identified location

A Karoo landscape near Hofmeyr in the Cradock district. Without sufficient research and understanding of the Karoo's water systems, Shell and Golder can't discount the possibility of water depletion and contamination.

ROBERT SOUTHEY





for a couple of months. "Once we leave the site we rehabilitate the land," he added.

"So far you've painted a benign process, whereas in countries such as the US where fracking has occurred, there are huge concerns about its environmental impact," said Derek Carstens, farmer and chairperson of Agter-Sneeuberg Game Reserve. "We need to understand the dangers of this process because it's clearly not all benign."

Again there was no response from the Shell/Golder team.

Because fracking is water-intensive, many wanted to know where Shell would source the water required.

Golder's Brent Baxter said they have water specialists with 40 years' experience on their team. But once more it was pointed out that no amount of experience can make up for the absence of research into the Karoo's water systems.

"We know that water is a precious resource in the Karoo and we're looking at various sourcing options. One of these is transporting in sea water or brack water via the rail network, but these are just ideas at this time," responded Dobson. He seemed unaware that the carbon footprint and financial expense of the project was growing exponentially every time he spoke.

"Many of the questions asked here today aren't being properly answered," said Fundiswa Hans-Smouse from the Barkly East Municipality. "You were supposed to

come here with the necessary research, but you haven't even adequately answered how you plan to access the water you need for the fracking process, or how much water you'll need per borehole.

"The farmers and the towns in the Karoo all depend on the water you're discussing and are all under severe water stress, so I would suggest you go back and do your homework."

Farmer and attorney from the Schoombie district in the Karoo, Mike Ferrar, added that the town councils in the affected areas should also be consulted because there are ever-increasing pressures on their water supplies.

More evasion

Attorney Derek Light represents farmers, landowners and communities across the Karoo in the matter. At the Graaff-Reinet meeting he argued, "There's no fossil-fuel mining process that doesn't contaminate the environment in some way, and we're concerned about the superficial manner in which companies targeting the Karoo and other areas for natural gas are treating critical issues that can severely and detrimentally impact on the environment in the short, medium and long term.

"We need assurances from Shell and Golder that you'll be extremely thorough in this regard, and that no drilling or fracking will take place or be

entertained until thorough specialist studies as per the regulations for the Environmental Management Programme and the National Electrical Manufacturers Association's Environmental Impact Assessment have been done."

Shell and Golder assured the meeting they won't proceed with any drilling or fracking unless the necessary research, approval and licences are obtained.

Baxter also said Golder is an "independent environmental consultancy" and "won't recommend that Shell goes ahead with this project if we aren't comfortable with the process".

When asked how often Golder had recommended the "no project" option to a company that had employed them, Baxter said they have turned down certain companies, but wouldn't elaborate further.

Too much evasion and "public relations speak", and not enough hard information or research references, was the consensus of most of those who attended the meetings.

Ed Kingwill, farmer and chairperson of the Rooihogte Farmers' Association summed it up best at the Hofmeyr meeting. "It feels to us like the *aardvark* is lifting the fence to let through the jackal, and we have more than enough jackals in our part of the world," he said. **|fw**

Fighting back

The greater Karoo community is uniting against Shell's application to explore for shale gas in the Karoo.

All farmers, landowners, community members, farming associations and legal representatives who wish to participate are encouraged to submit Shell/Golder's registration forms to Golder and to send a copy to Derek Light Attorneys in Graaff-Reinet at 049 891 0183/6 or e-mail dlight@intekom.co.za.