

# farmer's weekly

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Profits and pollution are but two legacies of the Witwatersrand's gold rush. Today, toxic mine-water seepages and radioactive contamination have made living around mining operations potentially deadly. **Cornelia du Plooy** reports on how farmers are taking the news that traces of radioactive contamination were found in farm produce irrigated from the Wonderfonteinspruit close to Potchefstroom.



# Radioactive farming

**T**HE WONDERFONTEINSPRUIT Catchment Area (WCA) is situated southwest of Johannesburg and overlaps into both Gauteng and the lower part of the North West. It forms part of the eastern catchment area of the Mooi River. It's also the site of some of the biggest gold mining operations in the country.

Last year the National Nuclear Regulator's (NNR) Brenk Report noted radioactive contamination of river sediment, as well as radioactive contamination of agricultural produce farmed in the catchment area, close to Potchefstroom.

In the resulting media storm the Department of Water Affairs (DWAF) and the NNR issued farmers with directives ordering them to stop livestock from drinking from the WCA, and to stop irrigating their crops with the water.

Emotions flared, but the directives remain in place, pending the outcome of further investigations. While some farmers believe the mines and respective regulators are on top of

the matter – and that overly sensationalist reporting has done the area more harm than good – others say not only are the mines still polluting the environment, but authorities are dragging their heels about clearing up the mess.

Something of a stalemate has developed between environmental lobby groups, government regulators, farmers and the Potchefstroom residents – each group claiming to represent the best interests of the polluted area.

## The growing problem

Meanwhile, the pollution plume has slowly moved down the WCA and into underground aquifers. Now, not only surface water, but also sub-surface water is allegedly contaminated. The pollution is also thought to reach the bottom end of the WCA which joins the Mooi River that flows past Potchefstroom, before eventually joining the Vaal River.

In the meantime, the NNR has compiled a follow-up status report on the Brenk

Report, which supposedly outlines what action needs to be taken to remedy the situation. It also outlines the scope of the problem but has not yet been made public.

## A community in limbo

René Potgieter and her family produced peat on their farm near Potchefstroom.



- Uranium poisoning can cause cancer, reproductive problems and death.
- To clean up the pollution will cost millions of rand.
- Farmers in the area are in limbo after directives where issued that they halt their farming operations.

Peat is used to grow mushrooms, but with the radioactive contamination of sediment in the area, they had to stop producing it. Now they farm a small herd of cattle and a few cash crops.

René is also the spokesperson for the Potch Petitioners, a group of around 3 000 signatories who feel the mines should take responsibility for the pollution.

It was from the Potgieter's farm that the NNR took vegetable samples to establish whether there had been any radioactive contamination. "Our asparagus and onions showed problematic levels of exposure," says René. "Now they're calling for further studies. The NNR made the

Peter Coulter's farm is situated on the Gerhardminnebron, which supplies Potchefstroom with its drinking water. The water is tested every month, he says, and the results show the water is safe to drink.



## What the unreleased NNR report found

Some of the findings of the National Nuclear Regulator's status report on the study of radioactive contamination of the Wonderfonteinspruit

Catchment Area:

- A review of the sediment results confirmed that there are elevated levels of radiation in some of the samples taken from the dams along the WCA. The calculated dose in certain sample points to above regulated limits.
- Preliminary results of analysis on produce

grown in the area, indicate radiation levels that are of concern to the regulator.

- The water is further contaminated by non-radioactive heavy metals and salts.
- A comprehensive assessment of the catchment area should be done.
- Epidemiological studies should be considered and more sampling should be done on agricultural produce.
- Various sediment removal techniques should be investigated as part of the assessment.

assertion that the area is safe, unless one eats the river sediment or eats beef from cattle that have ingested the contaminated sediment. "It's still the old lament: don't get hysterical; the water's still safe," says René.

"Trust me, when a herd of cattle enters a stream, by the fifth cow they've upset the sediment and invariably swallow it. So to suggest cows shouldn't drink sediment is absolutely ridiculous."

And she is under no illusions as to the severity of the situation. "We could end up with uranium poisoning, which would mean our DNA could be altered, or we could get cancer or have reproductive problems. They've found lead, nickel and boron in the water, but where is the disaster management planning?" she asks.

### The community get few answers

René's dad Paul says one of the biggest difficulties is the collusion between government and the mines. "The mines pay a lot of tax to government, so government protects them at a cost to the people," he says. René adds that the regulators are completely dysfunctional, each one with its own agenda.

"DWAF has issued some of the farmers with directives that they can't irrigate their crops. Think of the economic impact," says René. "The government and mining houses now want to do another three-year study. Where are farmers supposed to get an income? They've been prohibited from using water and prohibited from planting crops or marketing their produce." Paul believes the only way open to the community is to take legal action.

"The Legal Resources Centre under the leadership of George Bizos supports us," says Paul. "The thrust of the case would be to force the mining houses and regulators to stop using delaying tactics and take action." He adds that the Legal Resources Centre is gathering information on how many people have and will be affected.

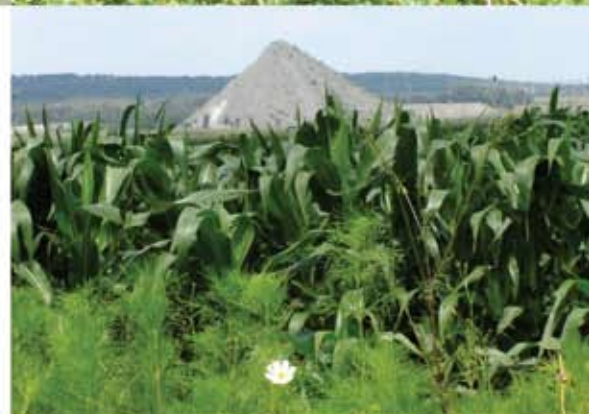
### A different approach

Peter Coulter is a second-generation farmer in the area. For over 60 years his family has farmed cattle, but he recently gave up commercial farming to pursue interests in the tourism industry.

Peter's farm is situated on the Gerhardminnebron, which supplies Potchefstroom with a large amount of its drinking water. Peter says his farm has always had good-quality drinking water and he thinks the environmentalists and petitioners are making an already bad situation worse.

"In the past there were horrific things done to the water. It's common knowledge that the mines were gods unto themselves. It's not like that anymore. For the past 15 years they've had to tow the line. Goldfields, Anglo Gold, all of them have had to spend millions cleaning up the mess. They couldn't afford not to with all the powers that be watching to see if they'd slip up. But you can't tell that to the lobbyists. They don't want to hear that the water from the mines is clean. They want to prove the mines have ruined their farms and that the mines are obligated to pay them out," he says.

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### TOP TO BOTTOM:

- René Potgieter says the directives have put farmers in economic limbo. Her cash crops were tested and showed signs of radioactive contamination higher than prescribed levels.
- Tests show that crops in the Wonderfonteinspruit area have been radioactively contaminated.
- Even though some of the mines now manage tailings properly, environmentalists and geologists agree it might be too late to solve the problem.

PHOTOS: CORNELIA DU PLOOY



One of DRDGold South Africa's shafts between Carletonville and Potchefstroom.

← Peter feels that the media propagate worst-case scenarios and that their involvement is helping no-one. "Nobody's denying the pollution problem, so it makes no sense to fight and make enemies and then think you're going to resolve the issue."

Peter says the water on his farm is tested by DWAF with hydrology-monitoring equipment every month. Each month the results are the same – the water is safe. "Even big companies like McCain's have given it the all clear," says Peter. "When the rumours started they sent in their specialists to test the water before accepting crops from the local farmers. They were satisfied and continue to support local vegetable producers."

#### What is DWAF doing?

The deputy director of water quality management at (DWAF), Marius Keet, says the regulators have formed the Wonderfontein Regulators Steering Committee (WRSC), which consist of officials from all the relevant departments and local municipalities. The committee is set to coordinate remedial initiatives for the WCA. A group called the Team Of Experts (TOX) was appointed to determine priority hotspots and provide the methodology for remedial action. The mines are to be approached to contribute financially towards any work that has to be done,"

*'Nobody's denying the problem, it makes no sense to fight and make enemies and then think you're going to resolve the issue.'*

says Keet. It's not clear when the remedial process will start or how fast it will progress.

#### No real remedy

During the course of last year, the major mines in the area such as AngloGold Ashanti, Gold Fields and DRDGold South Africa, formed the Wonderfontein Action Group (WAG). It was a statutory body supposed to monitor the quality of water discharged by the mines into the WCA. Since then, the WAG has been dissolved and its functions incorporated into various water management forums. One of them is the



recently formed mining interest group of the Wonderfontein/Loopspruit Forum. According to James Duncan of Russell and Associates, who handle all DRDGold's South African communications, the forum is now working together with other forums, local municipalities, private organisations, regulators, services providers and industry to address public concerns over the WCA pollution. He was however unable to give an estimate of how long it would take for the mines to implement a clean-up operation.

Reidwaan Wookay, Gold Fields corporate communications manager, says the water in the WCA has been found to be safe. He added that following the status report,

Gold Fields recognises the new concerns and has started to evaluate the danger. The evaluation includes sampling of potential receptors such as vegetables, chicken, fish, cattle and other livestock and crops. He added that results to date indicate that new pathways of exposure don't present a risk.

Gold Fields has also evaluated its sites and where there was a potential for public exposure to radiation or other pollution, it has put in place measures to restrict unauthorised entry. Asked what plans for rehabilitation the mines have in place, the mining houses

remain evasive as to what form a clean-up would take. Although several tailings sites are visible along the catchment area, it's unclear how the radioactive sediment would be cleared away.

#### Too little too late

The former head of the Department of Geology at the University of the Witwatersrand, Professor Terence McCarthy, says try as they may, it would be nearly impossible to get rid of the radioactive contaminated sediment.

"It can only be done at huge expense. You would have to dig out all the radioactive waste and transport it to Namaqualand's nuclear waste facility. It would cost tens of millions of rand," he adds.

As for the water polluted with other heavy metals, he says it is close to impossible to remedy. The pollution is continually being added to from mining areas and it's difficult to control. He says one of the major contributors to pollution is the mine tailings. If those had been better managed by adding limestone to the waste material, the heavy metal contamination could have been reduced and the dumps would not have become acidic, he says. "Sure, some of the mines are managing their tailings properly, but in truth it's already too late." In reaction to the NNR's findings of radioactive contamination in vegetable samples, he says the land where the samples of vegetables were drawn from "is sterilised in perpetuity". |fw